

THEORY OF ECONOMIC RELATIVITY

The solution to
MONETARY CRISES

A critique of current economic theories:
Austrian, Keynesian, and Quantitativist

Carlos A. Bondone



Author's Note:

By axiom (ex ante and ex post): **$S \neq I$**

In irregular monetary (currency) systems by axiom (ex ante and ex post): **$i \equiv p$**

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Translator Note: The distinction between money and currency is essential in this work. The author places the term “currency” as a more general categorization than that implied in “money”. Thus, currency can acquire whether the form of money or of credit, and this last can be regular or irregular.

Carlos Bondone, **Theory of Economic Relativity: solution to monetary crises, a critique of current economic theories.**

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INTRODUCTION

■ Object

The object of this book is to present a new economic theory related to the role of time in the economy; more concretely, I can say that it is the theory of economic time.

Since time transcends all existents, inevitably we shall see that from the economic theory of time derive others, such as exchange, monetary, price, money, credit, interest, and wealth theory (its existence and variations), the theory of equality (distribution of wealth), the theory of accounting as an irreplaceable model for economics, and many more.

The object of this work from a social point of view, is to present an economic theory that will allow people to coexist in a society with more wealth and equality, in which each and everyone is in a better situation, with a framework of individual intellectual honesty in which each person lives by his or her own effort and not by appropriating others' goods. This appropriation may have a monetary origin -which will be analyzed here- and/or a moral origin, which has to do with adopting the posture of an invalid and not taking on the economic responsibility that each one should. Marx proposes: *from each according to his capacity, to each according to his need*. We will have the opportunity to analyze this from other perspectives, as soon as we correct the scientific mistakes his moral proposal incurs in; that is, we will see how science leads us to that goal but not following the path he proposed. So, from the point of view of the social object of this book, I may also say that it seeks to attain wealth in peace; just as the wealth of nations avoids military conflict, the wealth of individuals works in the same sense, avoiding violence among them.

Nevertheless, it must be clear that the main object of this book is the study of economic science and theories derived from it; the social conclusions I have summarized are a corollary or result of the scientific investigations expounded here.

Before ending these brief paragraphs on the object of this book, I want to say that one way of expressing my state of mind in relation to economic theory before beginning my investigations –from which I derived the theories I present here- is to refer the reader to a paragraph in the Introduction to the Spanish edition by José Antonio de Aguirre, of the book “Monetary nationalism and international stability” by F. Hayek, edited by Ediciones Aosta. Near the end of the introduction (p. 35), de Aguirre says:

“Everything seems to indicate that the most urgent task in the coming years will be to probe how we can reestablish the three pillars of economic policy that were subverted by the scientific optimism of these years, these being: a) monetary discipline, b) fiscal discipline, and c) commercial discipline. This is a congruent totality that survives as a whole when its three elements are engaged or inevitably collapses when any one of them is disengaged”.

Though in this work I deal, directly or indirectly, with all three aspects, the point of monetary discipline will be prevalent.

■ Whom this book is oriented to

The fact that the present work is full of scientific theories, many of which I believe are new, does not imply that it is beyond the reach of people involved in the economy, as we all are in every instant of our existence. But it is especially within the reach of those whose work is related to economic activity.

A case I especially wish to make is that the theories presented here conclude that the economy runs on accounting and financial tracks more than it does on those presented traditionally in economic models. This derives in a reformulation of econometrics and all the statistical studies used at the present time that do not consider accounting the essence of their investigations.

The language used in the text is simple enough so that the essential points of the theory can be understood by anyone interested in grasping the basic postulates, both the hypothesis and their corroborations, along with the immediate applications in different fields. To those not specialized in economics, and who wish to understand the basic postulates in simple form, I suggest that when coming to complicated technical sections, they should continue reading. In the end they will find it possible to grasp the essentials of the theories presented here.

It will evidently be very useful for those in fields related to economic science, be they scientists, experts, specialists, advisors or teachers, to understand the whole scientific process included in a theory with greater precision, beginning with the hypotheses, their corroboration, and comparison with other existing theories, to see if it includes or surpasses them, and ending with the phase of applying science to the laboratory of life, seeking solutions for concrete problems.

It should be no surprise that a scientific theory can be directed both to scientists and non scientific readers. This is due to the faster forms of knowledge transmission that we have grown used to, thanks to the information revolution. Estimates say that today the amount of knowledge at our disposal doubles every five years, while up to a few decades ago it took humanity a century to do the same. We must also consider that in one way or another all human beings are “experts” in economics, since it is the central problem for most people, in the same sense that every fan is a great coach of his or her favorite sport.

I can conclude this point by saying that this book is directed to scientists, accountants, experts, advisors, investors, teachers, students, businessmen and women, statisticians and all those interested in the fate of one or more economic agents. I specifically wish to reach those in important posts in politics and the judiciary, whose actions directly affect the lives of human beings, and who wish to acquire the basic economic knowledge necessary for the fulfillment of their tasks.

Finally, I wish to say to my accountant colleagues that in the sections of this book where I corroborate my theories, particularly where I specify my theory of the total or complete wealth equation, not only will they find reasons for a new interest in accounting, but they will also discover that they know more about economics than they thought, thanks to the ideas already present in Luca Pacioli (500 years ago) and the double-entry system.

The structure of this book

I must state clearly that, not belonging to academic circles –although I do have scientific training-, I was forced, and gladly so, to study the method of establishing scientific truth. My studies in philosophy and epistemology (scientific method) led me to conclude that the best way to present a scientific theory is as follows:

- Present the scientific theory, which involves identifying the problem it wishes to solve and how it is solved, within the realm of ideas.
- Corroborate the theory, which may or may not be done theoretically. Depending on each case, there will be different approaches to achieving corroboration with the highest possible degree.
- Then, compare the new theory with others, to see if it adds something new or simplifies existing ideas. A theory replaces others when it says the same things in a simpler way or when it says more, in such a way that current theories become special cases of the new one.

Even though Popper says that the new theory should clarify in which cases it is not valid, I believe that if a theory completes the process described above, it has advanced science from its current state. Evidently Popper’s requisite, called *falsifiability* because it implies that a theory is useful when it shows in what conditions it is not so, is an excellent definition of man’s fallibility. Personally, I underline my opinion that Popper’s falsifiability is contained in the concept that man is fallible relative to time, with the implicit idea that all is proven false in

the course of time, but since at present we do not realize this is so, we believe we have found truth, which makes truth time-relative and humans fallible beings who need that relative truth. What has been said up to here is not a specialized philosophical or epistemological account; therefore, it should be understood as a simple guide for the reader to see the logic presiding over the order of this work.

Before briefly summarizing the structure of the book, I wish to point out that the reader will find a sequence, going from the most elementary concepts of economics to the most complicated; also that the concepts incorporated in the book are repeated as the text progresses, to make it easy to retain them. This sequence, from simple to complex, and the reiteration of what has been learned is, on the one hand, a result of my didactical spirit. But, on the other, it is also a result of the fact that I have had to start from the very foundations of economics because, according to my ideas, the origins of most of the mistakes I find in current economic theories are to be found there. The didactic aspect is reinforced at the end of each theoretical exposition with a summary; nonetheless, the full text must be read, since more theoretical concepts are incorporated in it.

Now I briefly present the different parts of this work.

Part one – SCIENCE: here I show the elements from other sciences and disciplines I consider essential to the development of my economic theories. There are references to epistemology, set theory and Einstein's theory of relativity, with the degree of simplicity a specialist in economics requires.

Part two – ECONOMIC SCIENCE: here I present my theories, going from the basic to the more complex elements, including my central theory, which I call the *theory of economic relativity*. This is central because it is the key that allows us to understand the role of *time in the economy*, which in turn helps us reveal errors and contradictions in current theory, such as assigning the temporal aspect to money instead of credit, confusing one with the other, relating interest to money and not to credit, insinuating that the economy works with virtual money and/or credit, that there is such a thing as economic equilibrium, and many more things, which will show why economists have stated with complete candor that there is no satisfactory monetary theory that explains the facts we are referring to, specially when analyzing critical states. In short, my theories lead to the conclusion that there is no virtual monetary world that must be balanced or harmonized with the real one, instead there is only one monetary world and it is real. I will show that the monetary problem is a consequence of the exchanges that bring it about (in this sense current theories are not wrong). So it would not have been wrong to substitute "*A solution to exchange crises*" for "*solution to monetary crises*" in the title of this book. I did not do so considering the fact that crises which have their origins in money are generally identified as monetary crisis, because people do not realize that money owes its existence to interpersonal exchanges. So we shall see that key economic categories in interpersonal exchanges derive from separating cash from credit, and from not confusing money with credit. Economic experts will find in this section a reinterpretation, consistent with the new theories expounded here, of many current economic postulates.

Part three – CORROBORATION OF THE ECONOMIC THEORY –ACCOUNTING: Here we can corroborate the theories and confirm that accounting is the best model for economics. This not only strengthens the role of accounting in economics; it also shows that the roots of the theories presented here can be found in accounting. I believe that forgetting this fundamental test bench is what misled economic theory in two fundamental aspects: working with the partial wealth equation and believing that the fractionary reserve banking system makes banks the generators of credit, sometimes also wrongly calling them money generators.

Part four – SYNTHESIS, EXTENSION, AND COMPARISON OF THE THEORY OF ECONOMIC RELATIVITY: here I will present a short synthesis (not pretending to include

everything), so that the reader can follow the rest of the book, and, having a compendium of what the theory explained up to this point, add new theoretical elements on a sounder basis, comparing them with current ideas, which is the fundamental part of this work. As to the specific aspect of comparing my theories with current ones, I wish to alert the reader that the reading will go easier if he or she understands that the three theories I will compare mine with have the same scientific basis relative to their distance from the ideas presented here; I shall only present the formal aspects that distinguish one theory from the other and their main differences with mine. I call current theory “virtual”, versus mine that is “relative”, in a simple attempt to show visually and allow the reader to grasp quickly the central foci of the differences that will later become more complex, as we examine each topic. I have acquired this style of telling the reader beforehand what he will find in the text from Karl Popper, who stated that the best way to write a theory is presenting the result first, so that the critic can have a better panorama as a basis for his *fundamental task of reviewing it*.

Part five – A SOLUTION TO MONETARY CRISIS: As I have already said, the text concludes with an application of the theories to the problems they seek to solve and to the improvement of other aspects. For easier comprehension, I will use the laboratory of (past) real life to corroborate that the corrections proposed here to current economic theories are useful for avoiding or better enduring the maladies present in the economies of individuals or in the economies of the communities in which they live. We will be able to judge if I have made a contribution to the scientific and social object initially stated: to create greater wealth and equality, each and all better off, within the framework of human perfectibility, that shows us that each instant is the best thing we have. We will have the opportunity to see that my theories imply that human beings can benefit from understanding the rights and wrongs of collectivism and capitalism, creating a compendium of sorts that will allow us to benefit from capitalism’s economic progress, avoiding its currency crises, which are the main source of its implicit totalitarianism.

Appendix: as an appendix I add the implications of the theories presented here for current economic institutions, pointing simply to the fact that there is a need to take this path, developing a more in depth analysis. Not notwithstanding the fact that the economic theories expounded here lead me to say, in short, that *there are only two options for a central bank: in an irregular currency system it is impossible for the central bank to be independent from political authorities, and in a regular currency system its existence is unnecessary*.

■ Acknowledgements:

This introduction ends, and it could not have been otherwise, with the following acknowledgements, which are enormously satisfying because they remind us that a major part of what we enjoy is due to the fact that we live in a community.

I must thank my beautiful family (Mirtha, Martín, Matías and Alejandro, in the order they appeared in my life) and also my friends, Doctor Carlos José Toledo, Engineer Fernando Giordana and Engineer Enrique Klein (j), for having stoically endured the long exchanges I had with them as I progressed in my research. Each of them knows of my preference for the deductive method –something my mother discovered in me when I was still very young and made her say that I should not analyze things so much because I wouldn’t be happy- and they always encouraged me saying the things I remarked about my theories were “logical”. I wish to tell them here that they will never know how much strength that beautiful phrase gave me each time they said: “*what you say is logical*”.

Bearing in mind that human knowledge flows from the truths discovered by those who have striven before me and that were proven false by later discoveries (in time this work will also be proven wrong), I only have words of appreciation for those who have preceded me, researching the topics that are the object of this treatise, particularly those who have gone to great effort in seeking the meaning of time in the economy. As to the authors that have inspired me, there are all those that I mention in the bibliography at the end of the book –and

no doubt others-, not only those I quote, since at a very advanced point in one's research it is very hard to say where the inspiration for a certain subject came from or where the original idea was presented best.

These acknowledgements notwithstanding, the consequences of everything stated in this text are of my exclusive responsibility.

Part I

SCIENCE

Chapter I

“The Universe is finite but not limited”

“God doesn’t play dice”

Albert Einstein

“Good definitions from a fallible man that doesn’t give up”

Carlos A. Bondone

INTRODUCTORY CONCEPTS

In this first chapter I will introduce general concepts of science, specifically a brief review of the meaning of epistemology, science, set theory, and my point of view on the theory of relativity and what we need to know about its relation to economics.

In short, this first part seeks to introduce the reader to the contents or meaning of some of the concepts that will be used in the book, specifically the new economic theories it presents, along with their corroboration and comparison with other theories.

Introducing aspects of the theory of knowledge, set theory and the central aspects of the theory of relativity I will stress here, is a healthy exercise for science in general, given its high level of development.

EPISTEMOLOGY

It is generally accepted that man has a need or a tendency to master or know the whole universe that surrounds him. There are several motivations for this that are recognizable from the economic, psychological, cultural and other points of view. This first consideration points to a very important aspect: that man has access to an infinite number of views of the universe, including those I pointed out in my very incomplete enumeration, and that in turn admit successive infinitesimal subdivisions.

What I wish to stress here is the innate “curiosity” in man, his desire to know, motivating him to specialize in each of the points of view that interest him in his quest to understand the universe. From this desire to know derives what is known as science, a more precise knowledge of a subject or special point of view; specialized knowledge, in a more elaborate, precise, and specific degree. In short, scientific knowledge is more precise than general knowledge, and its motivation derives from a specialized effort.

This path of specialization according to each point of view led to the study of how to achieve knowledge and to inquire if all knowledge derives from the same method; in other words, if the same research methodology can be applied to obtaining knowledge in all scientific fields. I will not pursue this particular matter; I only wish to say that since it is man that searches for knowledge and, though we are all different individuals, there are common traits among us, we may say *a priori* that it would not be completely wrong to think that the same methods can be applied to all fields of science, which is not to deny the particular characteristics of each one. Among the most important aspects of epistemology or scientific methodology is the distinction between two forms of knowledge, in connection to its physical or metaphysical origins, i.e. the classification of knowledge as related to the realm of the senses or the realm of ideas. I only wish to say in this respect that what we call induction is what is known through the senses and observation, and what we call deduction is what the brain elaborates based on the idea of causality of things; in other words, induction observes first and then abstracts, deduction abstracts first and then observes.

In this imprecise and non academic synthesis I am stating that I agree with the concept that knowledge is a result of considering both the sensorial (physical) aspect and the aspect of thought or ideas (metaphysical); moreover, I agree with the methodology that establishes that any knowledge supposes the existence of a previous theoretical accumulation, any observation is a consequence of previous thought; observation through the senses (physical) has a theoretical origin (metaphysical). In general terms I say this method explains better all the phenomena of human knowledge, both scientific and artistic; and, at the same time, I believe it agrees better with the concept of human knowledge we present here, which has a uniform structure in its infinite diversity and which relates infinite similar things with infinite links among them.

Another aspect related to epistemology is the discussion of knowledge as the product of either evolution or revolution. Is it produced through a continuous and stable progress or an explosive revolution that admits no previous knowledge, at least of the type admitted by evolution? Is it what has come to be known as evolutionary knowledge, such as that in Darwin's ideas of the evolution of species –that Popper subscribes? Or is it the ideological paradigms that inspire scientists in each epoch, and rebelling against them, that generates new knowledge? Since I consider Thomas Kuhn's paradigms to be knowledge derived from human spiritualism, I prefer the methodology of evolutionary knowledge and I see the paradigmatic alternative as simply a deterministic attempt to establish that a unique being in an also unique point in time can claim to be in possession of the only true knowledge, that is independent from the contributions of those that produced knowledge in the past or will produce knowledge in the future. I wish to stress that I accept that knowledge can be of metaphysical origin, which means accepting the extra-physical nature of human beings, but this has a scientific air, of specialized and continuous knowledge as a species and not of a human individual; I also do not wish to share in the obscurantism of the concept of scientific paradigm or scientific knowledge through paradigms. The evolutionary aspect of science is much more related to ethics and solidarity in man than to the idea of a paradigm, since it recognizes that knowledge is produced by different men in different times, in an unending process; knowledge is just another fallible entity in the time continuum.

I also wish to stress that one of the central issues of epistemology has been the question of the possibility of attaining truth and proof of it or how it is established. In general terms and to the effect of the matter in hand I only wish to express that theory generally tends to accept that truth is relative to the need for it in humans. It is accepted that there is never a final and irrefutable truth, but that knowledge tends to develop in the direction of truth, and in its progress "yesterday's truths" will be displaced by "today's truths", which in turn will be replaced by "tomorrow's truths"; this should not lead us to despair but rather to understand that we are a small event in time from any point of view we might think of: physical, cultural, scientific, economic, etc. All this can be expressed in another manner, saying today's scientific truth is only provisory until another and better truth is found tomorrow, but all temporary truths relative to one point of view, aspect or topic, compete with each other. For one truth to be replaced by another better truth, the latter must show its superiority to the former, and to do this it must satisfy the requisites of scientific truth. It can do this in two ways: explaining the same truth as the former theory in a simpler manner, or explaining more than the old truth, explaining the same things the old one did and something more. In this way, the former theory becomes a limit case or special case of the new theory.

But we can go beyond this point and conclude that if things are so, the knowledge of man as a species is a process of permanently walking without arriving, today's theory must be displaced by another and better one tomorrow, which implies that we can consider that today's theory is on the right path –in the permanent amble of human knowledge- when we can show the conditions in which it will fail. I believe this last reflection is what Popper's falsifiability refers to, the contrary of what his epistemology is typically taken to mean by those who think it leads to pessimism.

In short, I do not presume to defend any epistemological viewpoint, all the more since I am no scholar in this field; I only wish to stress that I agree with "relative" indeterminism (or "relative" determinism), meaning to say that entities that are fallible in the flow of infinite

time can present a greater or lesser degree of fallibility in a finite or limited time; in other words, delimiting is an excellent tool for approaching the epistemological problem in the attempt to alleviate as best we can our own fallibility.

Fallible man

The title of this section implicitly states that I accept man is fallible; i.e. he cannot attain absolute truth of all things in the universe and so his actions are a permanent passage in search of truth. Determinism or indeterminism, this has always been debated in philosophy; the first presupposes we can know ultimate truth and the second says we can't, that man is fallible. In that struggle for truth, man went from the phase of seeking absolute truth in religion to that of science, in which humanity, by means of scientific progress, could discover those truths (Francis Bacon is charged with this arrogant passage).

In this way philosophical schools are labeled deterministic, if they hold that man can know ultimate truth, and indeterministic if they hold the opposite. In turn, in the scientific realm, determinism is considered to be an expression referring to scientific truths that are valid or precise, against those assumed probable. I believe in this sense it is very useful to include here Einstein's answer to Popper in one of his letters: "*God doesn't play dice*", expressing Einstein's deterministic approach in view of the indeterminism Popper postulates; I believe we must understand that Popper was trying to say that scientific indeterminism means that "temporal truth" sometimes appears to man as probability, which would be the equivalent of quantum theory compared to relativity in physics, not to mention the schism represented by Popper's physics when he posits that you can have "something from nothing".

From here on I accept as an axiom that man is fallible; this means man does not know or understand everything, etc.; that he has limitations, that he is not all powerful from all points of view and at all times. If the reader wishes to ascribe some fallibility to human fallibility itself in terms of time and/or space, this is no impediment for accepting the concept of general fallibility I adopt here. In other words, today's truth is the best we have, but in terms of time that transcends the human species, it is provisory.

The Implications of human fallibility

I will not analyze here if when we say truth we mean something specific or the truth in general; if it is relative to a specific point of view or all points of view; or if it is relative to time or space, etc.; it is sufficient to say that there are things we do not know.

This condition of man as fallible (i.e. he does not know everything) has general connotations if we consider man in time, that his actions in temporal space –man in movement- are diverse, according to his degree of knowledge of the future. In the particular case of economics, the fallible condition of man has connotations of such importance that, without it, we would have no need of economics in terms of knowledge or action; and gradually entering into the field of economic science that is our main interest in this work, we can say that economics identifies the condition of fallibility in man with a quite precise term: "necessity".

The struggle against fallibility – Primitive terms and definitions

In more recent times, the existence of a phase in epistemology which we can call intermediate has been accepted. This consists of the acceptance that, though man cannot attain ultimate truth, in his existence as a fallible man he needs to "temporarily" accept as truths certain things called **primitive terms**, concepts that he takes as a starting point as if they were valid and on which he builds scientific knowledge. As Einstein says, they are: "[...] simple propositions (axioms) that [...] we are inclined to consider true" (On the theory of general and special relativity).

Accepting the validity of these primitive terms implies then two things: 1) that for now we will not question them, which does not exclude the possibility of doing so later on and replacing these primitive terms, and 2) for the purpose of what we will build based on these primitive terms, we are satisfied with the degree of reliability we find in the primitive terms we have adopted.

As an example of what I have just said, we can take an engineer or mathematician that disregards the terms of a polynomial beyond a certain order because he is satisfied with a certain degree of accuracy; in this manner he considers that the small fractions that have no incidence in the object of this mathematical expression are negligible. And in the field of what is considered the exact science par excellence, we must remember that Gödel's demonstration of his theorem on the incompleteness of mathematics was quite a blow.

Another immediate consequence of human beings not being omnipotent is that we need to classify the knowledge we acquire –even though it is imperfect- because we cannot retain all of it at the same time and in the same space, which is also why we use **definitions** or concepts. But it is easy to see that every definition is based on another and we can go backwards indefinitely in this task of defining. To avoid this infinite regression, we adopt a mechanism for making things “finite”, which is to establish or accept some term in this chain of regression as a primitive concept, so it can be a starting point for our definition; this does not imply accepting this term as true, it just means that for now it satisfies our needs. This “temporarily valid” term is what we have called a “primitive term”, and here we can understand its crucial importance for scientific knowledge, since its degree of proximity to truth is as important for knowledge in science, as the quality of the materials used in its construction is for a building.

On this point we only need to say in reference to economics that it also uses definitions and primitive concepts, which vary as scientific knowledge progresses. The final result of the theoretical constructions built upon those foundations of knowledge will depend on their greater or lesser validity. All this shows the enormous importance of giving greater precision to primitive terms, an aspect I consider of fundamental importance in the development of the theories I present here.

We shall see that, according to my theories, we may change or correct deviations that are the result of abandoning the primitive terms or the more satisfactory definitions. So we see we must always progress, based on building with the best we have at each moment, and working with the greatest practicable excellence. As we can see, science is just like everything else in human knowledge only, possibly, more precise.

Seeking to reach my goal in this book in the most structured and simple possible way, I believe it is convenient to begin with a brief description of what I consider the fundamental concepts for economic science.

To summarize this section, I think it is useful to reproduce some of Einstein's expressions in the work I refer to in this book (page 113): *“The investigator, driven by experimental facts, builds a conceptual system based logically on what is usually a small number of basic assumptions called axioms. We call such a conceptual system theoretical. The existence of a theory is justified by the fact it connects a great number of individual experiences; therein lays its truth”*. This is why I so insistently stress that all this begins with the word “theory”.

SETS

Set theory, being highly developed, is perfect for its application to economics, notwithstanding generalized opinions to the contrary. I believe that attitude of rejection is due to the idea that economics uses abstract concepts, understanding as such any entity that has no mass, and that set theory cannot deal with; on the other hand, it is as if economic science dealt only with quantities and not qualities. If we understand the current status of set theory, which deals with all kinds of things, entities, etc. –be they material or abstract-, and that economics also deals with ordinal subjective concepts, along with cardinal measures, then we should understand that economists need not reject set theory. This does not necessarily imply that this scientific relation is useful or otherwise, but I venture to mention the elements of set theory that are perfectly applicable to economics, and which I will permanently apply in this work, though surely they do not represent all the tools that can be used.

Economic theory contains many mistakes that are due to not adopting key concepts of set theory; among the most important mistakes, in my humble opinion, is considering a set as

equivalent to the sum of its parts, not realizing that as a set it is different from the elements that form it; the set is a new entity, with biunivocal relations among its elements that give birth to it. You can say it is composed of elements, but together they form a new entity, that is different from their sum.

For more on this subject, to clarify doubts or to correct mistakes I will surely introduce here, I suggest the reader consult Roberto Salama's work "Los Conjuntos" (Sets, a logical-philosophical essay).

A set is an entity composed of other entities, called elements, which are entities that are parts of another entity, called set. In this way we see that we must end in one of the two definitions; i.e. adopt one term as primitive and build up from it. Clearly, something is an element (singular and/or plural, including the element called void) if and only if there is a set; in other words, an element can only be conceived as belonging to a set. And vice versa, there is only a set if there are elements that belong to it. Every material or immaterial entity is a set, including the universe. For example, you cannot say there is a necessity without "something" or "somebody" that has that necessity.

Thus, we observe the following characteristics of each concept:

- Set: implies that it is divisible (partitioned), it has elements that belong to it, it can become an element (as part of the identity of another entity), which is the case when it has the characteristics of an element and implicitly includes the void set.
- Element: implies it is indivisible (it is inalterable because it has no void element, which prevents the development of an element that has not been made explicit or incorporating it into an empty set) and belongs to a set.

An aspect of set theory that has extraordinary relevance for economic theory, and which I believe justifies by itself its application to this science, is the fact that it is man that considers the entity a set or an element, according to his needs. If we relate this thought to Popper's idea, that human action is the result of a problem seeking a solution, the same being true for any scientific theory that is originated in a problem, we observe that human action is driven by problems. This is true for set theory and for science as a whole. In the case of economics, the existence of an unsatisfied necessity –which we can identify with Popper's "problem"- is its special characteristic, its reason for existing.

We cannot speak of quantity without referring first to quality; we cannot quantify what we have not qualified beforehand. In other words, it makes no sense to say five without mentioning that which we are quantifying. Thus, there is no set without a quality. In this manner, a quality is always a point of view of a human being, the "I" that qualifies and, as such, belongs to the set that includes the quality.

An ordered set is the set that includes order as an element, which includes not only the elements that belong to it, but also includes as an element the way in which the elements of the set are arranged. The set 1, 4, 2, 3 is not the same as the set 1, 2, 3, 4. This aspect is of singular epistemological importance, since it has to do with the causality of knowledge. Causality is the chain of human knowledge, understanding causality is discovering the chain of events. So taking into account that a notion is valid or not according to the order of its elements is of primordial importance. And this is the origin of scientific deduction, a concept I will not expand on here. As this exposition progresses we will have the opportunity to see the mistakes that economic theory incurs in as a consequence of forgetting this fundamental aspect of knowledge.

We say a set can be formed by other concepts, which are subsets of the first one; we can say that is composed of subsets, which in turn are also sets.

We need to clarify that we take a set as a totality and only as a totality, since any modification –union, intersection, division, etc.- means there is another set. It is as Popper says: a scientific theory is a totality, it is corroborated (or not) as a totality, which does not imply that if it is not corroborated, its component parts are also not corroborated.

I believe it is not convenient to include here more than these elementary concepts of set theory considering the object of this work, which does not preclude including more elements in economic theory.

Gender and species

Here I will introduce a brief commentary about something that will be very useful in this work, and that is in close relation to set theory and subsets. I am speaking of the difference between gender and species. I define these concepts as:

Gender: a set of entities that have one or more common qualities.

Species: a set of entities which are similar to one another.

What I wish to stress is that the similarities in the elements of a species are what determine their being part of the gender they belong to, which tells us that the elements that belong to a species can be, and generally are, different in other qualities not comprised by the gender. As an example we can say that both man and woman are human beings, but both have characteristics that are different from those that define the human species.

In daily life we have infinite situations that can easily be seen as an expression of this; for example, the gender “oil” has different species of oils (“motor oil”, “olive oil”, etc.).

From these very useful categories of gender and species derives the immediate possibility of classifying entities, establishing the different species that make up a gender. In economics we can speak of the gender “currency”, composed of the species “Dollar”, “Pound Sterling”, “Euro”, etc. We will see that in my theory the gender “currency” includes the species “money” and “credit”, which is one of the essential differences it has with current economic theory.

Quality and quantity

Deriving from the concepts *gender* and *species* we immediately have another enormous epistemological possibility, clarifying the meaning of the concepts of quality and quantity and their enormous relevance for economics, in which we generally distinguish quality on the one hand and quantity on the other, to avoid very common mistakes, such as believing both concepts mean the same or treating them separately, when they are part of a whole, and must be treated jointly.

When we are referring to the quality of an entity, we are alluding to the specific elements (one or more) that distinguish one entity from others. Notice that qualifying implies the act of comparing, since by definition we have said we are “separating entities according to an element that distinguishes them”, that other sets do not possess; at the same time, the fact that we are speaking of differentiating leads to a situation in which “difference inevitably means comparison”, since without comparison there is no difference; thus we say men, dogs, etc.

When we mention quantity we are alluding to a number of entities with the same quality; thus we say one hundred men, fifty dogs, etc.

What I wish to clarify is that first we must define the quality of the entities we are considering, and then we can count them, incorporate the concept of quantity. In other words, we can only add homogeneous things; as the popular saying goes: you cannot add apples and oranges. But this conclusion leads us, in turn, to another more important one: that we cannot apply quantity to that which has not been previously qualified. This leads us to consider the criteria discovered by humanity for qualifying. The answer is simple; we cannot quantify what has not been qualified, and by definition we know that qualifying is done by comparison, and from here comes the possibility of establishing an order.

In short, to qualify we compare, establishing an order, “we qualify with ordinals”, and once this is done, “we quantify with cardinals”; in other words, we “quantify (cardinal) what we previously qualified (ordinal)”.

This conclusion is extremely important for science, since the most difficult task for human knowledge is to qualify, specially the smallest things, because it is easier to compare and find differences among large things than small things. Small things appear so because they have

undergone several processes of separation. This is why science says that we find more regularity in large things than in small ones, as it is much more complex to study the infinitely small than the infinitely large. The best proof of this is found in applying probability to very small things, as in quantum theory. This was a great surprise to physicists, who thought that, the smaller the entity, the greater the scientific determinism they would find; but we must remember this debate is not closed and this is part of the beauty of life and knowledge. We shall see that in economics, to speak of the quality of things means speaking of their usefulness for satisfying human necessities; in other words, to speak of economic quality means speaking of usefulness and, in economics, to speak of quantity means referring to physical units of goods of a same quality –homogeneous-, useful for humans.

The individual and society

Depending on whether we consider man alone, i.e. out of contact with other human beings –as in the case of Robinson Crusoe- or in contact with others of his same species, we are speaking of an individual, in the first case, or society, in the second.

This categorization, even though it is common to all sciences –with greater or lesser reach-, is still of fundamental importance for economics, particularly considering the enormous theoretical deviations seen as a consequence of not understanding clearly the roles of different entities in economic theory, depending on if we are speaking of individuals or society, and also of individuals or legal entities. Given this aspect of the discussion, it will be important to devote a small paragraph to what I understand by economic agent and, on the other hand, I will also state clearly when we are in the presence of economic entities or concepts that only exist when man is in society, but not when man is alone.

What is most important for me here is the aspect of economic isolation; i.e. the self-sufficient individual compared to the individual that needs support from others to satisfy his needs. I will introduce here the concept of economic agent as a broader notion that can include several human beings acting as an “economic individual” for the purposes of their economic life.

We shall clearly see that the concept of interpersonal exchange cannot exist without the presence of at least two proprietor economic agents –“economic individuals”-, also that there is no concept of price without exchange, and that the concept of value only exists in the individual (an isolated human being that acts as a group as soon as he associates through a common point of view). On the other hand, the concept of economic time exists both for the isolated individual and the individual in society, and the same holds for the concept of scarce resources.

Things

Without seeking to establish a very precise definition and only to the effect of what interests me here, I will say that a thing is any entity that is not a relation, all existents that are not a relation among things; then I conclude that “all” or the “universe” is made up of things that relate to one another.

I suggest you should not try to think about this in a more complicated manner, since what I wish to show here is the classification of entities in things and relations: things relate to each other, and relations are established among things.

In turn, things are sub-classified as human and non human, material and immaterial, etc.; there are relations among individuals of the same species and also relations among individuals of different species (humans with non humans, material with immaterial, etc.).

Relations

I call the links among things relations. Once a relation is established it becomes biunivocal among the things that are related and the relation that unites them; there is no relation without the things that are related, and things without relation are not related; in this way I can say the relation is an entity, something that exists.

Among all the possible infinite relations there is one that specially interests me, and it is the relations that link each human being with all other things (including other human beings).

These relations are classified as Human economic, cultural, etc. Economic science specializes in the study of human economic relations and this is my focus in this work.

PHYSICAL RELATIVITY

In this section I will present a simplified version of my concept of Albert Einstein's theory of relativity, specifically referring to its general aspects. These will be very useful as a support to my economic theory. More precisely, I will borrow from physics a concept that I refer to as *economic time*. Concretely I derive the following philosophical analysis: change inevitably implies time; time inevitably implies change; therefore, economic time inevitably implies economic change from where we derive that the study of economic time implies the study of changes in the economy, the study of change in economic entities; retaining this simple reasoning will allow the reader to understand from the beginning the simplicity of the theory of economic relativity I expound here and the enormous connotations that derive from it. For a neophyte in Physics as myself, -and very possibly for most readers- it may seem too difficult to introduce the theory of relativity in a text on economics; I hope that by the end of this section and of the book in general, the link I wish to establish will be clear. And if this is so, it will not only give the economic theory I present here strong scientific support. It will also corroborate the common value of epistemology for the different sciences; in other words, I will confirm the existence of a common epistemological root among all sciences. The gender of epistemology is one for all sciences, each of which can be considered a species of a single "human" or "intelligent" scientific epistemology.

For the sake of establishing there is a single epistemology for all sciences, up to now I have only mentioned that the knowledge we are referring to is exclusively human knowledge. And since man is unique in relation to other species, we deduce that there must be some unique aspect by which man knows –derived from that exclusivity of being human- or, on the other hand, there could be aspects common to those who have man's same characteristics, as other living beings have. This is no small idea. We will see that many economic concepts can be applied perfectly to other living beings, not exclusively to human beings; in other words, where we speak of man or SELF, we can perfectly substitute another animal species and we will then see we are talking specifically of that living organism's economy and of temporarily fallible entities in general. So we see that linking Einstein's theory of relativity to economics corroborates what has been said about "the universality of epistemology" and this springs from the common aspects implicitly included in the inter-scientific knowledge of human beings in particular and organisms in general. In other words, we are acquiring knowledge of entities that intervene "in some way and equally" in all phenomenon of all men and all species, which means we are building the same epistemology for all of them at the same time. This continuum of reason means that if we know about time in physics, we also know something about time in economics. This is a result of time being common to both sciences, inasmuch as it equally transcends physical and economic entities; in other words, physical things are related to time, since they are thought of in temporal terms; they come into existence, they change and perish, just like human beings; so what physics teaches us about the objects it studies can be useful for understanding the objects we study in economics. We will be surprised to find this is so in our study of economics, and we won't need to go very far to confirm that the concepts of human economics are perfectly applicable to the economics of all entities. From another point of view, we will see we can refer to physics in economic terms and to economics in physical terms, arriving at something similar to what is called "Lorenz's transformation" system –referring to a physical object from different points of view- which is tantamount to saying that we can refer to anything from the infinite points of view humans have.

Now, referring concretely to the subject I am specifically interested in here, the mathematical synthesis of Einstein's theory of relativity is:

$$E = mc^2$$

where E is for energy, m is for mass and c is a constant that represents the speed of light in empty space equivalent to 300.000 kilometers/second, and the reader can calculate what that figure squared (not multiplied by two) is. From a physical point of view we can say that a mass at that speed “disintegrates” and becomes or is transformed into energy; manipulating terms in the equation following simple mathematical rules, we can present or imagine another conclusion: if energy is divided, broken up or contracted (since $E/c^2 = m$), it transforms back into mass, with the possibility of zero occurrence, in Popper’s terms.

For our purpose here, it is not essential to remember this formula is valid only for empty space or that it is part of a more extended polynomial, the rest being negligible because of its scarce significance; the process of limiting has been applied here in accordance with theoretical needs.

But to the effect of what I am interested in it is not necessary to take an accelerated or intensive course in physics, since what is important here is the following:

- The variables or concepts that Einstein linked in this equation are mass (a body or *stock* of matter) with velocity, only conceivable in a period of time -time is an entity-; and from their combination he obtained flux, energy.
- We can conceive energy then, as the changes a mass experiences when subjected to the passage of time, which in physics is equivalent to velocity; in this formula it is expressed in the intensity with which light passes through time in empty space, but what is essential to us is it represents the variable *time*. In other words, with this formula Einstein is telling us that a mass subject to the passage of time at an intensity equivalent to c^2 is modified until it becomes a flux, energy.
- From here we can infer that the mass or body is modified only in the course of time and that the modification depends on the period of time elapsed and the intensity of the transformation. Einstein referred to the specific intensity c^2 because he was looking for energy as the result, but we do not always want the same result; in general terms, we are interested in the first place in confirming bodies only change when time is greater than zero, and that movement in general –velocity in physics- is what changes the state of bodies; in second place, the characteristics of the changes a body will undergo depend on the lapse considered and the characteristics and intensity of the factors acting on the body in that lapse of time. We conclude, as philosophy has since Heraclites’ time, that change inevitably implies the passage of time, or time implies change; and we stress that what we have to discover is the intensity and characteristics of change –which would then be the knowledge of time we can have access to-; the result is that the basic step for each discipline is to understand quality, and that intensity and the importance of quantity derive from it.
- But the most important conclusion to be derived from physics for economics is that what is relevant in Einstein is that he discovered how time is expressed in physics; in other words, he showed us the role time has in physical matter; he treated abstract time with physical things or entities and the result is the control man now has over *physical time*.

The synthesis would be that time transcends both the physical and economic realms and Einstein showed us how to “know physical time”, how to speak about time in physics, and he did it by taking the simplest road, to try to understand time in physics through physical entities or categories; this is what explains the enormous relevance of his theory; with his “exquisite mixture” of the physical ingredients we know (mass, light, and energy) he defined physical time, expressed in terms of movement or change in physical entities. We will see the same thing in economics. Einstein spoke of the “*Theory of Physical Relativity*” and we will have the opportunity to speak of the “*Theory of Economic Relativity*”.

I reiterate that this indicates -in complete accordance with indeterministic philosophical ideas- that things change in the sense that they are modified or altered only with the passing of time; this means that there are no two states that are the same in different temporal instants, or that

the probability of its occurrence is null. Thus, movement inevitably implies time; changes in entities inevitably imply time. We must understand this clearly. We could think that a durable good or a mineral do not change. Our answer is that they do, only that possibly the changes are so small we cannot perceive them with our senses and without the help of some very special instrument. It is possibly easier to understand that all things change in time, not just one thing, especially if each thing can “observe” all others from its permanently changing position; everything is in a permanent state of change, whether we speak of one entity or several, and this “relative” change is continuous. Thus we can say that *the study of change in things is the study of time*.

We will see this point has a lot to do with economics, especially the concepts of value and prices in economics and their alleged persistence in time, along with the mistake of separating quantity from quality when we speak of the value and price of economic goods.

The synthesis of this chapter is in the heading with two of Einstein expressions that I combine: “*The universe is finite but not limited*” and “*God doesn't play dice*”, which induce the expression “*Good definitions from a fallible man that doesn't give up*”, since the expression *finite* implies that man needs to establish “finitude” to understand, due to his fallible condition; that man does not have the capacity to understand everything; and that with the expression *not limited* he recognizes that what he knows is not all there is, that when he is about to reach his goal it eludes him, but he doesn't resign himself and keeps on investigating to know more, because *God doesn't play dice*. And it is here that Einstein does not accept probability as a scientific explanation –particles and waves- and struggles to the end of his life to prove his point; he doesn't achieve his purpose, but he encourages others to continue developing relativistic field theory. My humble “bet” is that “the dice exist”; the opposite is determinism. In this sense I believe that Einstein didn't devote himself to social science, considering it too difficult, because of his idea that it has more variables than constants, not realizing that the same holds true for physics.

Einstein expressed physic's relativity to time with clarity and with his contribution he opened up a path for all science, a path this small work on economics also takes, even including this idea in its title. And this is a consequence of the fact that my theory of economic time has the similarities mentioned here with Einstein's theory of the relativity of physical time, which I analyzed very superficially, only to the effect of establishing that we both consider things relative to time, he in the physical field and I in the field of economics; we can generalize saying all entities are fallible relative to time and that for each entity everything is relative according to the point of view in question, as Salama surely explains better than myself in his work on set theory.

Part II

ECONOMIC SCIENCE

Chapter II

*"All things are subject to the law of cause and effect
This supreme principle has no exceptions..."*

Carl Menger

ECONOMIC CAUSALITY

After a brief introduction on science in general, epistemological concepts or terms, and set theory, along with our understanding of the theory of physical relativity, we now undertake the same task regarding economics.

Carl Menger began his celebrated work "Principles of political economy" saying: "*All things are subject to the law of cause and effect. This supreme principle has no exceptions...*", which takes us directly to the heart of the object of this chapter: the development of a systematic chain of economic thought, which I simply call "*economic causality*" and that can be defined as a set of economic terms arranged according to cause and effect.

In this sense I will try to apply the scientific method of deduction, starting from primitive terms, and seeking to present economics as a chain of logical causality that can be easily understood. In other words, I wish to show the role of primitive terms in a causal order; how a set of elements that we know, arranged in causal order, can be very useful for organizing a science such as economics in a simple manner.

To do this I will continue developing primitive terms, though in this case more oriented to those that are related to economics.

I believe that, relative to the economic concepts I will present in this chapter, it is convenient to point out that I include here the ones that, in general, I consider satisfactory; in other words, I don't believe there is a need to analyze them further, and I can use them just as they are to explain what is essential to my economic theories.

Human need

I believe there is no term in economics that shows human fallibility better than need, if we understand it in the sense of a problem that must be solved, an unsatisfactory situation, a desire to improve the present situation, etc. In short, a problem or an unsatisfied desire indicates the presence of a need, which may or may not become economic, relative to its satisfaction with goods or economic goods, as I will explain later.

According to what has been said, I am speaking here of the economic need of man; that is why I say human need.

This means it is the need that causes man to act in the space and time in which he lives, and that this book refers specifically to human economic needs, which is what gives economic science the reason for its existence. In other words, within the universe of fallible man, I am referring specifically to economic man.

Lastly, I wish to stress that the concept of need I present here is in complete harmony with the meaning of objective or problem that must be solved; I am not referring only to need, as usually is the case, in the sense of extreme insolvency; instead I am referring to a situation one wishes to improve and this causes human action; It has to do with Popper's concept that the actions of all organisms are caused by problems that must be solved, and with Mises' idea that means satisfy ends.

Possession

In economics, possession is understood as man having at his disposal –individually or in association- the things that satisfy his needs.

This immediately shows that possession is a relation entity: it results from the pre-existence of men and things that establish a relation of possession, a new set I will call the biunivocal relation things-possession; I am referring to things inasmuch as they are possessed by an

individual or society, where the new set includes the relation of possession as one of its elements.

Up to here, then, we have the following elements according to their order of causality:

Man → fallible → need (problem) → things → possession

Goods

Of all existing things, I am especially interested in those economics has called goods and economic goods in particular.

From Carl Menger in his “Principles of political economy”, a fundamental work in the history of economic theory, I take literally his concept of goods when he says:

“Those things that have the virtue of entering into causal relation with the satisfaction of human needs, we call useful things. In so far as this causal connection exists and, at the same time, we have the power to employ the things we are speaking of in the satisfaction of our needs, we call them goods”.

Since this is in line with the correlation established in this book, I do not wish to extend the definition of goods and I simply remit to what Menger expresses.

I stress once again that there is a biunivocal relation “goods-man”, and that by definition one doesn’t exist without the other; things become goods when they are useful to man, and man gives them entity as goods when the things are useful to him.

So far we have the following elements in their causal order:

Man → fallible → need (problem) → goods → possession

Economic goods

Continuing with Carl Menger, in the harmonious and didactical work we have quoted, we come to the concept of economic goods. These goods –defined above- are inferior in quantity to what is needed (demanded); we can call this “scarcity”. Though Menger explains these and other concepts more extensively, for the purposes of this work I only emphasize those I consider essential; nevertheless, I will never tire of recommending reading and studying Carl Menger’s “Principles of political economy”.

Separating the general concept of goods from the more specific concept of economic goods is important, since it gives us the first clue of how goods appear in the concert of human economy; in other words, when goods become economic goods, always relative to the SELF (man). But we also analyze, in connection with this concept, when goods can no longer be considered economic goods, disappearing from the sphere of human economy.

It is convenient to stress that economic goods satisfy different human needs, alone or in combination with other economic goods. This aspect will have significant importance when we speak about the value of goods, but as an intuitive preview we can say the value of economic goods rises for man depending on the amount of needs it fulfills and the diversity of these: the wider the diversity of needs they satisfy, the higher the value of the economic goods will be for man, who values goods relative to his needs.

It is important to emphasize all that the definition of economic goods comprises and, in this sense, we must say that human work is an economic good when it is under the category of goods, and when what it offers us such is inferior to the quantity demanded.

Another economic good par excellence –and it is very important to emphasize that it is such because it has produced much confusion in economic theory and will occupy an important portion of this book, seeking to present another theory about it- is time.

Time is essential, in turn, as an element for defining if goods are economic or not, since it makes no sense to say that the existing quantity of certain goods establishes them as such or as economic goods if we do not define a time frame as a reference for it. In other words, the quantities demanded and offered are always a flux, spatial quantities that refer to a specific period. By virtue of it being a flux, the same as work, the use of time has given rise to wrong

interpretations when pretending to establish it as an economic good; I dare say that it is the economic good par excellence: it implies movement and/or change, what in philosophy is called indeterminism, since it is not possible to conceive of movement without change (in other words, if everything is determined, nothing changes, and time does not exist). I will not continue analyzing economic time here since I will refer to it with special and central care in this work; I can even say it is the topic in which my theoretical discrepancies are centered. Another economic good that is generally not considered as such is the good that satisfies the human need to relate. No living being relates economically with another if it does not have the need to do so, and just like any need, this can be satisfied or not (partially or totally). From this we can derive that the “supply” of human relations can become an economic good.

Within the sphere of human relations there also is the economic good that has to do with interpersonal exchanges of economic goods, which are carried out with the object that the human agents participating in them benefit from the act of exchanging. It would be absolutely no mistake to say that the interpersonal exchange of economic goods is what distinguishes the civilizations we know today from tribal or primitive ones, to the point that the degree of participation in those acts goes hand in hand with the degree of economic development (the countries where interpersonal exchange of economic goods is adequately institutionalized enjoy a better economic situation). We will have the opportunity to do an in depth analysis of interpersonal exchanges and the criticism of current theories included in my ideas on this topic. I will only add that the essence of interpersonal exchange lies in the fact that it allows each individual to concentrate on the economic activity for which he is relatively more apt, so that this can benefit the whole of society, and the economic goods that are his property can be offered to others, thus generating greater wealth.

Again I will emphasize what I have been repeating: there is a biunivocal relation in “economic goods-possession”; one does not exist without the other. Here we see how my idea of a biunivocal relation advanced from man in general to economic man, and so I have gone from the biunivocal relation “thing-man”, to the biunivocal relation “goods-man”, arriving at “economic goods-man”; but you will see I have not come to the end of this path of biunivocality yet.

Finally, it is important to emphasize that goods as well as economic goods can fulfill this role taken separately or individually; and that when two goods join together to satisfy a new need, we have a new good, since it is defined primarily in relation to the need it satisfies, be this with one good or with the concurrence of several; but as far as economics goes, we are in the presence of a new good, a new entity. This is similar to what Popper’s epistemology says, dealing with the topic of scientific theory as a whole, when it states that a theory must be corroborated (or rejected) as a whole, and that this whole passes (or not) the test of science, which does not imply component theories are invalid when the whole theory is not corroborated.

Up to here we have then the following elements according to their order of causality:

Man → fallible → need (problem) → economic goods → possession

Property

Previously I defined what I understand by possession, saying it is “man having at his disposal –individually or in association- the things that satisfy his needs”; now I will be more specific referring to economic things (not only things in general), to man’s relation with the things that acquire the status of economic things. When we refer to man’s possession of economic goods, we are implicitly speaking of a previous concept, the ownership man exercises on economic goods, a relation that establishes the biunivocal situation “economic goods-ownership”. *There are no economic goods without an owner, nor owners without economic goods.* In this manner we see how a new set appears when we include the relation of ownership.

This specification of the transition from the biunivocal relation “thing-man” to “economic thing-owner” is very important, because it is what allows us to introduce another element of causality in economic science: that not all owners of certain economic goods will use them or will receive the direct usefulness of having those goods. That is why the relation of loan

appears. A man –individually or collectively- can offer another man economic goods he owns so the other man can use them. This loan can take on diverse forms: for free or at a price, for an established or indeterminate time, etcetera.

We can say the institutional or legal relation “economic goods-owner” is as follows: for the owner to exist, it is essential that he have possession (ownership) and disposition (be able to use) the economic goods in question; if not, we do not have the necessary conditions to establish the biunivocal relation between both elements. In other words, ownership is the institutional framework that allows the economic agent the free disposal of economic goods. From this angle, the object of the economic agent is to have the economic goods at disposal for use, which leads us to repeat that the agent can have at his disposal economic goods he owns or that a third party owns, and that are lent to him. This disposal of goods can come in a violent or civilized manner; in this last case, there must be a legal framework and guarantees for the free exercise of the institution of ownership, public or private, that has to be freely accepted.

From this derives the fact that the institutional organization of society as a whole in which economic agents act always has a property regime, which is no more than an axiom, since I have clarified that the relation of economic goods and their owner is biunivocal and permanent. So what can be debated is not the existence of the biunivocal relation “economic goods-owner”, but rather the way a property regime is institutionalized in a community. This legal framework can vary, from absolute collectivism to total freedom, or it can be mixed; economic theory has tools to prove which is most efficient in economic terms –accepting this or prioritizing other aspects over economic ones is another thing- but it must be clear that, if the most adequate institutions for the highest possible economic development are not instituted, the society will be poorer economically than if it were otherwise. The degree of priority the economy is accorded is something each society has to decide and once the decision has been made, society must live with the consequences.

Up to here, then, we have the following elements, according to their order of causality, and we can give this:

A name and a definition:

“**economic causality**”: economic elements in causal order.

Order of economic causality:

Man → fallible → need (problem) → economic goods → ownership → possession

Chapter III

ECONOMIC AGENT

Let us leave goods aside and concentrate on man, whom I have put centre-stage. We go back, then, to the beginning of the economic causality chain: man

Among the things that exist, the central one is man, and to the effect of economic theory it is important to give him a special place in the world of economics; that is why I resort to the concept of “economic agent” that allows us to study human involvement in the economy as a more precise entity from the scientific point of view, not forgetting that the relation “man-economic agent” is biunivocal (one does not exist without the other); this clearly shows we are not dehumanizing man with the term “economic agent”.

We can define “agent” generically as a “group of men” (men in the anthropological sense, that is, male and female). I believe this expression by itself defines man in all the different points of view: social cultural economic, etc. In turn, if we are speaking of a set, this can be made up of only one man (an only human element of the set) or several men (several human elements), which can also be grouped in subsets that belong to a set. Seen this way –i.e., from the point of view of set theory-, allowing us to generalize the principles of economic theory, including both the case of a Robinson Crusoe and of man in society.

Adding the expression “economic”, I can have a more precise definition of the economic aspect of human beings, which specifies I am referring to man as an economic entity (in the same way, from other points of view, he is a cultural entity, and so on) if we recognize his fallibility, i.e. that he cannot satisfy all the needs he has; in other words, he always has some limitation or unsatisfied need, be it individually or collectively, total or partial. The economic essence of man is born out of recognition of his fallibility.

We can specify this concept more, defining “economic agent” as a “set of economic men”, taking economic man exclusively from the point of view of his fallibility (in the sense that he always has some problem or some unsatisfied need).

Since from an economic point of view there is a biunivocal relation (one part of the relation cannot exist without the other, as far as the topic or the point of view that relates them goes) between the economic agents need and the economic good that can satisfy it, we must say that no good can satisfy the economic agents need if said good is not at his disposal, if he does not own it; then, there is no economic good without an owner, an economic agent that holds its property and can satisfy his need with it.

I again stress that I am speaking of a “set of men”, which means that there is always the possibility that this could be a set with only one human element or several elements and/or human subsets. What is clearly established here is that the set “economic agent” acts as an entity, inasmuch as it has a need it wants to satisfy; and said economic agent has identified it for his action, which implies –nothing more and nothing less- making contact with the economic goods that will satisfy it (contact that materializes through property so he can dispose of the economic goods that have the utility of satisfying those previously identified needs).

It is also important to emphasize that, though an economic agent can have several needs, the fact that he shares some of them with others is what makes him a part of another economic agent and “associates” to form this new economic agent, with which he can be connected only from one point of view. As an example, we can take an economic agent that belongs to a community and pays for street cleaning services in his town; in this sense, he is an individual that belongs to the economic agent (set) “municipality”, as far as street cleaning goes. The same can be said of a shareholder in a public company, an economic agent formed by shareholders that are no more than human beings that hold a common point of view (which is the economic object of the public company): to satisfy a need of an agent presented as a public company. Finally, the same is true for the economic agent “society”, insofar as it is

made up of human beings included in a set with different common points of view, those that are born of the common needs they must satisfy; for example, the need to have a currency, a language and common borders. It is essential to emphasize that the point of view element that unites them as one economic agent is that of those “common points of view” that, as far as the economic aspect I am interested in here goes, are one or more human needs.

Thus, I give greater specificity to my definition of economic agent and I can say that it “is a set of men with one or several economic spatial-temporal needs in common, and have the ownership of the economic goods biunivocally related to them”.

I also say that an economic agent is only interested in the ownership of economic goods and not other goods.

The “definition” of “economic agent” I outline here –with no pretension of scientific rigor- is to the effect of emphasizing the following aspects:

1) Man: the human being is the centre of the economy, acting individually or as a group. From the point of view of set theory, there is no economic set without the SELF of the human being. Though economists hold the common point of view that set theory cannot be applied to this science, I believe that with its advancement, and considering not only the material but also the immaterial aspects (such as human points of view) of the elements that belong to a set, this theory can be perfectly applied to economic science.

2) Needs: the economic agent identifies needs he has and that make him act to satisfy them.

3) Time: it is not possible to speak of needs or problems in general without referring to time, i.e. without there being a period different from zero. In other words, no need of an economic agent can exist that does not refer to a period, with a beginning and an ending.

4) Ownership: the economic agent relates needs with the economic goods that satisfy them through the ownership he exercises upon them. The economic agent cannot satisfy his needs if he does not have at his disposal the utility of the economic goods for satisfying them; it is not enough to identify the need and the economic good that satisfies it, there must also be the ownership of the good to be used in satisfying the need. I stress once again that it is indifferent here if the economic agent owner is an isolated individual, a group of individuals or all individuals; what I wish to emphasize is that the institution of ownership is a necessary condition of the economic aspect of man, in such a way that the biunivocal relation “economic goods-ownership” establishes that there can be no economic good without an owner, and that economics is only interested in the ownership of economic goods. This notwithstanding, economics does have the task of generating and corroborating theories that establish which form of ownership of economic goods is more efficient relative to the goal of satisfying continually changing human needs.

I could say I have established the characteristics of man relative to the economic aspect that is known as “demand”; i.e. related to man’s need for solutions in areas such as consumption, investment, savings, liquid assets, etc., and which create what I will call “total demand”. But the biunivocal relation stressed here confronts us with another aspect, which says that all human need, technically called demand, must be satisfied by an owner economic agent, since, even though satisfaction of the need is provided in material terms by the economic good, this good is always a property of an economic agent, that makes it available for the demanding agent to satisfy his need. This is how the offering economic agent appears on the scene, and in his role as owner of economic goods makes them available to the demanding economic agent. This is how we obtain what is called in technical terms “supply”, the provision of economic goods to satisfy demand. And this is a direct consequence of the ownership man exercises on economic goods; in other words, having the ownership of economic goods is what allows owner economic agents to make the economic goods that will satisfy their needs available to the demanding economic agents. In this way owner economic agents will be able to satisfy both their own needs and those of other demanding economic agents, by offering the goods they own; and this is so because generally the specific demands of economic agents do not coincide with ownership of the economic goods that satisfy them; the demand is almost always for things that others own. I wish to point out that this simple conclusion points to the

origins of interpersonal exchange of economic goods, a very important factor in terms of generating wealth.

So we can differentiate economic agents as:

- 1) Demanding agent:** that needs economic goods.
- 2) Supplying agent:** that owns economic goods.

Including the economic agent as a supplying agent is of great importance, since it leads us to equate this with the category of economic good, when what he offers is a product of his own activity –what we call work- and not something derived from nature. This derives from what we have accepted conceptually as economic goods, when we said there are “economic goods that satisfy his needs, wholly and/or partially, that we call economic goods when the available quantity is less than what he needs” (Menger’s primitive term). So, if the work of a supplying economic agent is a good that satisfies needs of demanding economic agents, and if the supply of this good is less than the demand for it, it is a good that has the characteristic of being economic; in other words, from the economic point of view there is no sense in working if not to satisfy some human need (sometimes we believe we are satisfying an extra human need, as when we tend to an animal, but it is not so since, if there were no –subjective- human need that the animal be tended to, there would be no reason to tend to the animal’s objective need, such as feeding it).

In the same way I emphasized the aspects of the demanding economic agent that most interest me, it is also very important to stress those referring to the supplier:

- 1) Man:** the same as before in relation to the demanding agent.
- 2) Goods and economic goods:** there exist man produces goods that satisfy human needs wholly and/or in part; we call them economic goods when their quantity is less than what would satisfy their need; contrary to that, we simply call goods those that fully satisfy human needs (Menger’s primitive terms). Economics implies accepting that the human being is fallible, that the number of problems is larger than the number of solutions; man can have some needs solved –in part or as a whole- but not others; man will always have problems and the day he stops having them he will no longer be an economic man. I believe this expression is directly related to Karl Popper, when he says that every scientific theory begins with a problem, and so we can say the problem is what leads to action, and a man without action is a man without life; in the case of the economics we are referring to problems derived from the satisfaction of needs provided by economic goods.
- 3) Time:** the same as with demand, only referred to the time of supply, related to the time of demand. The life span of the economic good offered is tied to the life span of the need it satisfies; in other words, there can be a need without an economic good that satisfies it, but there cannot exist an economic good that satisfies no need. This simple conclusion is very important for economic theory and it shows it is wrong to speak of unemployment of economic goods –productive factors- and the error underlying Say’s law, which I will analyze later. In this sense, we can see need and satisfaction also have a biunivocal relation from the temporal point of view, and this should be no surprise because it has to do with the essence of life.
- 4) Ownership:** the supplying economic agent must also have the property of what he offers, be it his work or some other economic good. The economic agent cannot satisfy the needs of the demanding agent if he does not dispose of the economic goods he offers, being or not the economic agent both demander and supplier. In other words, this only adds to the fact there is no economic good offered without an owner, and that no economic agent can satisfy any demand if he is not in possession of the good that satisfies it, so if he does not own the economic good, he must obtain it from the owner.

Comparing the characteristics of the elements that define the set *demanding economic agent* with the set *supplying economic agent*, we find the following relations of essential importance:

- 1) Man:** is the SELF of both sets, which puts the human being at the centre of the economic scenario; without him it makes no sense to speak of a human economy.
- 2) Need – Goods or economic goods:** There is a biunivocal relation in the sense that there is no need that is not satisfied with a good or an economic good, as there is no good or economic good that does not satisfy some need, a notion that will be the origin of what I will later define as the “*equation of total or complete wealth*”. In other words, that before the existence of the economic good, there is the existence of the need, and once the former appears, its existence depends unconditionally on the existence of the need that is its origin. You cannot speak of economic goods if they do not remit to a human need, which leads us to man, that has the need. The relation is triunal: “need-economic good-owner”. This is much more important than what would appear at first glance. As we move along we will see its crucial importance relative to what I consider one of the errors of economic theory, which I will refer to as the “*partial wealth equation*”.
- 3) Time:** is a key element in each set (demand and supply), since without it, a set where man intervenes is inconceivable. Time transcends all things, and this of course also holds for economic elements; it transcends all economic elements, need, economic goods, economic agents, etc. But specifically relative to time in demand and supply, I reiterate there is a great dependence of time on economic goods, on time related to demand; in other words, demand conditions economic goods temporally (we will see the same is true for the value and price of economic goods). My essential critique in relation to current economic theories derives from what I consider an erroneous way of theorizing on economic time. My theory (*theory of economic relativity*) basically seeks to correct this error, and from here I derive new theoretical ideas about aspects such as money, credit, interest, prices, etcetera.
- 4) Ownership:** I have already stressed the biunivocal relation it has with demand (without the ownership and the capacity to dispose of an economic good that satisfies it there is no possibility of satisfying demand), and supply (there is no economic good without an owner), and the way property links demanding and supplying economic agents.

We have taken one more step on the path of the biunivocal relations that interest us: we started from the biunivocal relation “thing-man”, we went from there to the biunivocal relation “goods-man” and from there to “economic goods-man”, now arriving at the biunivocal relation:

“Economic goods-owner”

I leave for the end, just as I did with economic goods, a key aspect referring to economic agents, more specifically the relation they exercise with economic goods as owners, and this is that there never are two owners of the same economic good in the same space and time. In other words, the biunivocal relation “economic goods-owner” is always between one economic good (as we saw, it can be composed of several economic goods) and one economic agent that can be composed, in turn, of several individuals or a subset of individuals that “share the ownership”; but in the cases in which the owner is a plurality of individuals, before the new biunivocal relation –the one that interests us- comes into being, the agents that form that plurality become a new economic agent, which can be constituted formally or informally, explicitly or implicitly. Life constantly shows us situations in which there is a need to establish who is the owner of an economic good because the composition of the owner agent is unclear; but the indefiniteness of the situation only exists relative to human formalism, not from the point of view of economic reality, that always demands an only owner of an only economic good (no matter if there exist enormous quantities of this good, with identical qualities satisfying the same need).

In short, the biunivocal relation “economic goods-owner” is between the set economic goods and the set owner, which is always an economic agent, though this does not mean they cannot be composed of more than one element, and this is true for economic goods as well as for owners. So we can be in the presence of an economic agent composed of a plurality of human

beings, an owner of an economic good composed of a plurality of economic goods (which in accounting are called assets), and several combinations more (for example; a “plural” economic agent as owner of an “individual” economic good). It is important to stress that today there are almost no individual economic goods, since a majority of them have a certain number of components that, separately, are by themselves economic goods. Possibly we can say the same of the composition of the economic agent as a shareholder, member of a family or community, etcetera.

Types of economic agents

I can speak of types of economic agents in the same manner as I can speak of the different types of economic goods, completing the analysis of the classifications involved in the two parts that form the biunivocal relation “economic goods-owner”; in this sense, the economic agent that is a part of any biunivocal relation can be:

- 1) A physical person:** the human being by himself, as a unipersonal company
- 2) Corporate person:** a society of physical persons that can have different legal forms (public society, limited public society, collective, municipality, province, state, nation, club, civic association, etc). They can be differentiated in turn between those that contribute capital and/or capital and industry, and there are other classifications that are of no interest here.

Chapter IV

ECONOMIC GOODS

With the definition of economic goods in hand (goods with a quantitative relation of less availability than needed), in this chapter I will focus on their different types, value and prices. I reserve a special chapter for ‘special’ economic goods, including interpersonal exchange (cash and credit), that is the origin of the monetary price of economic goods; time; money and credit with its price, called interest. I will also comment on the way economic science deals with economic goods.

TYPES OF ECONOMIC GOODS

Now that we have introduced man –in truth he was always present, being the origin of economic causality; without man it cannot exist- I return to economic goods. We observe it was important to introduce man before attempting a classification of economic goods, because it would make no sense without his presence. It is man that needs this classification and who undertakes the task of classifying.

Taxonomy or the activity of classification is very useful for economics, as it is for all science in general.

It is important to emphasize goods, even if they are not economic goods, that is, if they satisfy human needs but are not scarce, have some of the characteristics that are the basis for my classification of economic goods. In other words, I can say that some of the classifications in this section include goods in general and not only economic goods specifically.

The first requisite for classifying things is to define what point of view (an essential element for any set, since the set has no sense without man, and man is ‘every’ point of view) we take as a reference for classifying; from this we conclude that the following classifications are relevant to economics:

a) According to the time period intervening in the satisfaction of a need

Here I will classify goods according to the period of time intervening between their ‘physical’ use and the moment they satisfy the human need that established them as economic goods. The economist that identified this distinction among goods was Carl Menger, in his most important work, already referred to. This classification includes the time element (which I have already stressed is an economic good), related to the temporal distance between the existence of an economic good and the moment it satisfies the human need that originated it (completely or partially, by itself or with other elements); in other words, related to the time between the moment the economic good comes to exist and the moment it will ‘participate’ in satisfying the need that defined it as an economic good. Again, this is a very important aspect, since it is one of the ways we can include time as an economic good; we considered this necessary for man, because not all economic goods are immediately at his disposal for satisfying his ultimate need.

From the point of view of intervening time periods for economic goods, we have the following classification:

- 1) **Consumer goods** or goods of the first order or for the final consumer: they are the economic goods that are in the last phase of satisfying needs; they are what Menger called ‘goods of the first order’, those that directly satisfy human need.
- 2) **Capital goods** – Investment goods or superior order (Menger) or intermediate goods: the goods used in the last instance to produce consumer goods; the chain of intermediate goods – what we call capital or investment goods- conducive to the production of consumer goods, begins with the primary need for these. In other words, consumer goods can be obtained

directly from nature, without any intermediate task up to its consumption, or through production stages involving other goods –capital-, conducive to obtaining consumer goods. All these capital goods used in stages that are previous to obtaining the final consumer good owe their existence as a good, and specifically as an economic good, to the existence of the final consumer good, in whose production they intervene. Their economic value is derived in the same manner.

As to the distinction between the terms ‘capital’ and ‘investment’, I will only say that capital goods is generally used as a reference to their *stock*, and investment is the variation of this stock of capital in time; it can be positive or negative, since those goods are also used (consumed) in the economic process and they don and lose the guise of economic goods, in which case they continue to exist as goods or things. So I refer to the *stock* of intermediate economic goods as *capital goods* or of superior order, and to the variation of these *stocks*, as *investment*.

It is very common to find economic goods belonging to the categories of consumer or capital goods according to their ‘intrinsic traits’, but that momentarily are not being assigned to either of these; this gives rise to another classification which will be of great help, especially to complete what I will call the *partial wealth equation*, transforming it into the more useful *total wealth equation*. I specifically refer to classifying economic goods relative to the purpose their owner assigns them.

b) According to the purpose their owner assigns them

It is essential to separate this classification from the one in the preceding passage (according to the period of time relative to the satisfaction of a need); confusing them has led to many mistakes in economic theory. In other words, in the first case we are talking about the temporal classification of goods relative to the time between the moment an economic good exists, and the moment it will participate in satisfying the need that gave it its significance as an economic good; here I am referring to the purpose its owner assigns it.

1) Final own use: the goods the owner sets aside for his own use. They can be both consumer goods and/or capital goods, though capital goods are rarely used to produce goods for the exclusive use of the agent owner of the capital good. If we utopianly thought of an only owner of all economic goods, this would be the case; in this way we have such a general classification that it admits including Robinson Crusoe, an extreme collectivist economy, and a tribal economy.

2) Merchandise: the goods an owner has to exchange with other owners; which means he does not set them aside for his own final use, but instead has in existence with the purpose of transferring their possession to another economic agent. In accounting terms today they are called exchangeable goods. Clearly these can be consumer and/or capital goods.

3) Stored: these are goods not destined for own use or for their exchange as merchandise, but that the owner has in stock for reasons of contingency, greed or speculation, etc. In other words, if we consider legitimate the human need of storing economic goods for future contingencies, accumulated wealth would be an economic good for use with that finality, and it would be a subcategory within the classification of goods for own final use. But we could say the same of merchandise, since they are used to satisfy the human vocation for commerce. And both consumer and capital goods can be stored. In other words, the stores of an owner are the *stock* of economic goods he does not keep for his own personal use or as merchandise. But from the point of view of storage, any economic good that is not stored is for own use or is a merchandise; introducing time here, we see stored goods will be for own final use, for exchange as merchandise or they will remain as stored goods, but in this case they could end up not being economic goods (this could happen with any economic good for own use or merchandise). We can conclude then that, if we consider storing as one among many human needs (security, vanity, etc.), any good that satisfies it can be a stored economic good, no matter what type of economic good it is relative to other classifications.

I reiterate the importance of separating this classification from the previous one, since confusing them has led to numerous mistakes in economic theory, to the point of assimilating stored goods to investment (they are two completely different things). According to my categorization, capital goods can be stored goods or merchandise, according to the use the owner gives them.

c) According to the flow of the biunivocal relation ‘economic goods-owner’

Here I am referring to the variation or the flow of the biunivocal relation ‘economic goods-owner’. I specifically said no economic good can exist without an owner and vice versa. But as with all that exists, we need to study the variations that occur in goods in the course of time, their appearance and disappearance; that is why we add the aspect of time and we speak of flows (birth, life, and death).

1) Incorporated economic goods: this is how I call economic goods that do not have their origin in an exchange by economic agents (they are not bought), instead they are obtained for the first time as property by an economic agent. This concept is in line with what I have said (that there are no economic goods without owners and vice versa, that there are no owners without economic goods); consequently it is clear I am referring to the primary biunivocal relation of ‘economic goods-owner’. The cases of incorporated economic goods are those we generally know of discoveries or invention of an economic good, be it natural or otherwise and composed or not of several preexisting elements. In this case also we can be dealing with consumer or capital goods. In short, when I speak of an incorporated economic good I am referring to an economic good that establishes for the first time a biunivocal relation of the ‘economic goods-owner’ type. Observe that there is also the possibility of incorporating as an economic good a good that had an owner –that is, a good and an owner that had a biunivocal relation as such- but were missing a key feature: that this good be incorporated as an economic good, that human needs introduce it into a quantitative relation, such that the quantities offered are less than the quantities demanded. This gives birth to economic visionaries, the so called entrepreneurs that are ‘inventing’ tomorrow’s economic goods today. Coming back to what we are interested in here, this transformation of goods into economic goods is also included in the concept of incorporated goods, and so the biunivocal relation can have been established first with a non economic good; but economy is interested in the materialization of the biunivocal relation between economic goods and owners. Finally, there can be cases of an economic good and an owner that doesn’t know of its existence –an undiscovered mine- which presents us with a relation of a ‘thing-owner’, but not an ‘economic goods-owner’; in other words, the thing is not available as an economic good because, even though it has the necessary traits to be an economic good, the ignorance of this means it does not become a part of the sphere of economic goods for human beings.

Nevertheless, all this has allowed us to see the different ways economic goods –those which I have called ‘incorporated’ economic goods- can make their appearance, as distinct from those that are exchanged (bought and sold); this is what matters for this very important categorization, and we will be able to appreciate its full relevance when we deal with employment and unemployment.

2) Eliminated economic goods: this would be the antithesis of incorporated economic goods; I am referring to the moment when the biunivocal relation ‘economic goods-owner’ disappears and not as the result of an interpersonal exchange operation (buying and selling). An economic good can lose this condition when that relation disappears, which can be the result of a physical disappearance of the economic good or its returning to the condition of a good or even a thing, or that it stops being available for satisfying a need.

3) An exchanged economic good: a good that changes owners. We must observe here that in this case there have been no economic goods incorporated to or eliminated from the economy as a whole, as I described in the preceding situations. We can differentiate two types of exchanged economic goods, depending on their coming into or out of the possession of an economic agent:

a) An economic good that is **bought**: is received in property from another owner. In this case, there are not more economic goods, just a transfer of property. This act refers to consumer and capital goods alike. In terms of accounting it is the act of buying and this implies that the activity of buying is derived of necessity from all the economic categories I have developed previously: it cannot exist without ‘economic goods-owners’.

b) An economic good that is **sold**: is an economic good transferred as property to another owner. In accounting it is known as sale and it also includes both consumer and capital goods. Here I state the same as I said about buying: the activity of selling necessarily derives from all the economic categories I have developed previously: it does not exist without ‘economic goods-owners’.

c) An economic good that is **loaned**: is the economic good that its owner lets another economic agent dispose of and it also includes consumer, capital and stored goods. Loans or credit can have several characteristics; but what is relevant here, given the important consequences, is everything relative to their being regular or irregular credits (loans), in accordance to the theory I will present at the appropriate time.

d) Others: evidently we can add new categories to those outlined here (rent, mutual, leasing, etc.), but for our purposes here what has been said is enough.

I will have the opportunity to come back to this classification, to show all the mistakes economic theory has incurred in as a consequence of misinterpreting the merely symbolic or legal meaning this classification has for economics, especially when introducing the economic entity ‘money’.

d) According to durability

Considering this objective or physical property of economic goods, we find the following classification:

1) Durable: the economic goods that do not disappear with their first use. There are also consumer and capital durable goods.

2) Non-durable: their difference with the previous category is that they disappear with the first use and there are also consumer and capital non-durable goods.

Another classification of goods relative to their durability is that of perishable goods (short ‘economic life’ span) and non-perishable goods (prolonged ‘economic life’ span).

e) According to the moment of their existence relative to the existence of their owner

It will never be wrong to reiterate that, when speaking of the ‘moment of their existence’, I am considering it always relative to the existence of the economic agent associated with the condition of owner in the biunivocal relation ‘economic goods-owner’.

1) Past: economic goods that existed as such in the past for the economic agent, having been consumer or capital goods. We must not forget they can continue to exist as goods or things and even economic goods at the present time, but not as a property of the economic agent the quality of past refers to; in other words, they can be present economic goods for another economic agent.

2) Present: they are economic goods existing as property of the economic agent in the present, be they consumer or capital goods.

3) Future: These are economic goods that will exist as such in the future for the economic agent and they can be consumer or capital goods. We must keep in mind that the quality of economic goods is always given by the human being in the biunivocal relation ‘economic goods-owner’; which means a thing or a good is an economic good when man determines it is so. From this we immediately deduce that a future economic good can have a physical existence in the present, as a thing or a good, and that this also can be true for its component parts, as things, goods and/or economic goods. Bearing in mind these can be present economic goods for another economic agent.

f) According to their being generic ('fungible') or specific ('non fungible') economic goods

Given its importance for the theory of money and credit, we must specify the way goods are classified depending on their being fungible or non fungible, and the relation this differentiation has with the quality on which this classification is based. To do so I will first proceed to emphasize the conceptual differences between the general sense and the economic sense of the term **fungible goods**.

- a) In a general sense fungible is an adjective meaning something is '*consumed with its use*'.
b) The economic definition of fungible goods is: '*Things that cannot be used without being consumed. Things are fungible when any individual of the species is equivalent to any other and they can substitute for any others of the same quality and quantity. Goods traded in a free, open and transparent market and that do not require a great effort to market. e.g.: bonds and shares, foreign currencies, grain and oil seeds*' (according to the 'Diccionario de Economía', Valletta Ediciones, by O. Greco, Buenos Aires, Argentina, 2003). We can add the concept included in the work by Huerta de Soto we have already referred to: '*On many occasions in real life there is an interest in storing, not specific things (a painting, jewelry, or a chest full of valuable coins), but fungible goods (hectoliters of oil, cubic meters of gas, quintals of wheat or millions of dollars) [...] This indistinguishable mixture of different units of the same gender and quality means we can consider depositing fungible goods to be the equivalent of transferring the property of the thing deposited...*'

Let us observe that, within the general meaning, in economics even capital goods could be included in the concept of fungible goods, because they are destined to be consumed through their use. On the other hand we see that Valletta's understanding of the term in an economic sense –when he stresses the gender aspect over the specific- can induce confusion as to what is specific and what is generic; this possible confusion seems to be rectified concerning the economic sense of the term, when he mentions it is the market that establishes them as generic, since they are '*goods traded in a free, open and transparent market, and that do not require a great effort to market.*' In turn we see that in Huerta de Soto the dominant idea is the qualitative equivalence of fungibles, referring to the gender-species classification, rather than the concept that they cannot be used without consuming them.

Seeking to establish the primitive term on which to build the general economic theory, and the theory of money specifically, I will adopt the definition focused on the generic aspect of fungible goods, in the sense that one unit of these goods can be replaced by another without any difference in its intrinsic physical traits.

In short, to the effect of this theoretical work, I adopt the intrinsic quality of the economic good as the meaning of fungible; so from here on I will refer to Huerta de Soto's hectoliters of oil to which, once their quality is defined, we apply a subjective economic valuation.

g) According to their material composition

As any other entity, economic goods can be classified according to their physical composition; from there we have:

- 1) **Material** economic goods: those that have a physical or corporeal presence.
- 2) **Immaterial** economic goods: those that have no physical or corporeal presence.

h) According to their mutual relations, relative to the need they satisfy

This classification is based on the different ways economic goods satisfy human needs; i.e., if a need is satisfied by one economic good or several. So we have:

- 1) **Complementary economic goods**: the economic goods that are component parts of another economic good that satisfies a need. In this case the economic good is a subset of a set. Here we can include economic goods that are intrinsically and qualitatively the same, but for economic purposes are considered 'packs' of units: for instance, when an economic agent offers a pack of x units of the economic unit X with a price per unit that is lower than the

price of each unit sold individually; in this case we have an economic good xX , different form the economic good $1X$.

2) Competitive or substitutive economic goods: economic goods that, being intrinsically and physically different, satisfy the same need. It is important to say here that the need can belong to an intermediate stage of production, i.e., we are not referring only to the ultimate or final needs of human beings; for instance, plastic can substitute for steel in a machine.

This classification is of great importance, because it allows the economy to measure and calculate the procedures with which competitive economic goods can be obtained with less effort; this aspect is of singular importance for economic science, it is part of the reason for its existence: to allow man to better satisfy his needs, and these taxonomic applications are tools for achieving this goal. I will have the opportunity to show how economic theory has approached the marvelous task of valuing the contribution of each competitive economic good, in the section of this book on input.

We will have the opportunity of appreciating the great relevance of this classification when I show how my theory relates money with credit, which is opposite to the way current theory deals with this matter.

i) Other classifications

There are other classifications of economic goods, among them: more or less tradable, more or less available, inferior (Giffen) or superior, etc. I will deal with these classifications as I include more concepts on economic causality.

HOW ECONOMIC SCIENCE DEALS WITH ECONOMIC GOODS

In this section we will see aspects related to the way economics deals with economic goods and the way information about them is registered, to be able to measure stocks and their variations in time; to this end I include here the economic concepts of wealth-savings, stock turn or rotation, and idle capacity.

Wealth and savings of economic goods: equations

There have been different concepts of wealth and savings. I use Menger's concept of *wealth*, in the sense that it is 'the totality of economic goods an economic individual has at his disposal' (economic agent here), so we consider wealth a *stock*, the holdings of economic goods at a certain moment; a present *stock* of economic goods that may or may not be in the possession of their owners (loaned).

As to what economics understands by *savings*, generally it alludes to the economic income an economic agent has in a certain period and does not consume; the remnant of economic goods that is the difference between the economic goods he receives and those he consumes in a certain period of time; i.e. it tries to explain savings as a temporal flow of economic goods. Thus, when we refer to the income of a certain period, we are alluding to the amount of economic goods that become –in the biunivocal relation ‘economic goods-owner’- a property of the economic agent in question, including both the economic goods that are incorporated and those that are bought. But seen from this point of view, I can also refer to the economic goods that are consumed in a certain period, the counterpart of income, that is, economic goods that are eliminated and sold. In this way, we have a better analysis of savings —it appears as the result of income and expenditure of economic goods in a certain period—, and at the same time we give these two concepts that are its components more precision and consistency. We also see that this new concept of savings is valid both for an individual economic agent and for a set of economic agents, since, if we wish to determine the savings of a set of agents that have exchanged economic goods in the period analyzed, we only have to eliminate from the income and expenditure of economic goods the purchases and sales of goods among the members of the set (which cancel each other out) and we will have the aggregate savings of the new economic agent (set of several agents). This new approach allows us to point to a *very important error* in economic theory, as in general terms I can say:

Wealth or stock of economic goods: is ‘the totality of the current economic goods of an economic agent (micro) or a set of them (macro) in a spatiotemporal segment’; it is a *stock* of current economic goods. In accounting this is called an economic agent’s assets, which, when he is exempt of debt (liabilities) to other agents, coincides with his estate; based on this from here on I will be speaking of an equivalence of economic wealth and assets. And this approach is completely legitimate if we consider that, to calculate the wealth of all economic agents together (i.e. the economic agent *community*), we cancel out liabilities and credit, process that in accounting is done by means of what is called a consolidated statement or balance sheet (more on this later).

There must be no doubt that wealth as an economic entity is an economic good in itself, since it is the sum total of economic goods (it is as if we were talking of a compound good), and it is economic because it is scarce, inasmuch as the total quantity of stocks is always less than the sum total of needs. If there is an economic good par excellence and which will never be otherwise, it is wealth or assets, being an inseparable part of the essence of the human individual; and when an economic agent has no asset, he practically is no longer an economic agent, because he cannot act as an offerer, and as a demander he can only act from the position of an invalid that another economic agent must contain.

Savings or stock of economic goods flow: we call ‘surplus’ of incoming economic goods (incorporated and bought) the property of an economic agent or of a set of these (macro) in a certain period above the egresses (eliminated and sold). The savings of an economic agent would thus be the positive variation of wealth in a certain period; the opposite is dis-savings. What has to be clear is we are talking of the way the current existence or stock of economic goods of an economic agent owner, called wealth, vary in a certain period; savings and dis-savings is the flow, movement or change of wealth. The reader should notice how I gradually render a more precise concept of economic time as we study the idea of ‘economic change’; more specifically, the way I incrementally present ‘changes in economic entities’, knowing that change inevitably implies time.

This wider concept of savings (positive or negative) as the variation in the wealth of an economic agent in a certain period, replacing the idea we commonly use (the difference between income and expenditure in a certain period), will allow us to apply accounting as a model of the economy. This is no small modification, because it allows us to approach economic theory and its corroboration from other perspectives. In this case we see that, when I define savings as the variation of the wealth of an economic agent (or set of these), research can be more precise. Then, I can study savings with more adequate tools provided by accounting, with concepts such as: income and expenditure; sales, procurement, expenditure and costs; profit and loss; permutative and modificative estate variations; accounts and titles; estate, financial and economic statements, and other categories used in accounting analysis that allow us to deal more precisely with the biunivocal relation ‘economic goods-owner’. Not using the accounting approach is what misled economists in their use of concepts such as income, savings, investment, equations of equilibrium –that does not exist- and others; so called ‘Keynesians’ and ‘Quantitativists’ incurred in these mistakes and ‘Austrians’ validated them by scientific omission but not intuitively. They were right intuitively but not scientifically; and that is why the debate between Hayek and Keynes did not come to a scientific conclusion; Hayek only won intuitively.

The preceding discussion is better understood when we see the equivalence between economic and accounting terms –accounting preceded economics as a science and already had economic theory incorporated; economic wealth –which is nothing more than an economic agent’s *stock* of economic goods- is what in accounting we know as assets; savings (positive and negative) are the variations of an economic agent’s wealth in a certain period, and this is the same as the variation of wealth in accounting. If we wish to speak in accounting terms of the wealth and savings of a society in the manner of microeconomics, we only have to consolidate the accounting statements of the economic agents.

Also, we know variations of wealth can have different compositions, according to their being variations of consumer or capital goods –between two specific dates that define a period of time-, that accounting can analyze with greater precision.

Having established that accounting categories are the most adequate for analyzing the economy (as Mises said), I continue with this new approach to economic terms and I observe I can define wealth –individual and collective- as savings of economic goods pertaining to a specific spatiotemporal segment (*stock* of current goods, expressed as net income and expenditure, obviously for a certain period). In other words, the wealth or assets of an economic agent are no more than the sum of the economic goods he currently owns, composed of the past economic goods conserved as current economic goods, plus those he adds in the present instant. All sciences deal in this manner with *stocks* and flows; any stock can be expressed as the accumulation of net flows of a period, and any flow can be expressed as the net variation of inventory in a certain period, which allows us to express wealth (*stock*) in terms of the variations of *stock* (wealth).

We observe that if we equate economic goods to Einstein's matter (with the sole difference that the economy is more complex than physics since it includes immaterial goods), and we study the variations that the passage of time produces in them, we conclude that we can perfectly apply Einstein's central idea -of dealing with time in physical units, to understand 'physical time'- and deal with time in economic units, to understand economic time. Again we see that just as Einstein studied physical relativity, here we study economic relativity; this is the reason why we study key economic elements, which we need for understanding economic time.

The study of elements of economic science allows us to deal with time using economic entities, in the same way this was done in physics. So we have the:

Equation of inventory of economic goods

If we call the *stock* of saved economic goods S^* , the *stock* of consumer economic goods C^* , and the *stock* of capital economic goods K^* (where * means inventory), according to what was discussed before, we have by definition the following axiomatic equation of the wealth of each micro or macroeconomic agent:

$$S^* = C^* + K^*$$

Now we must express mathematically the biunivocal relation 'economic goods-owner' –one does not exist without the other-; we must add a fourth term, and identifying the owner (proprietor) as Pr^* , we have:

$$S^* = C^* + K^* = Pr^*$$

This is the same as saying that economic wealth, equivalent to S^* (savings accumulated up to the present) always has an economic agent as its owner, equation with which we only refer to the essence of double entry accounting in its expression of wealth, in the way conceived since the times of Luca Pacioli (proof again that accounting always had a previous and very adequate content of economic theory).

As an introduction to the way I will apply accounting to corroborate my theories –based mainly on the existence of the biunivocal relation 'economic goods-owner' I have developed-, I advise readers to think simple, as if each economic good had a label with its physical and economic traits (its physical composition and what need it satisfies), along with the units it is composed of and the name of its agent owner.

Equation of economic goods flows

But if we refer to flows, meaning changes or variations of these inventory, we see that in each spatiotemporal moment of each economic agent, there is the following equation (here I eliminate the * to denote a flow and not inventory).

$$S = C + K = Pr$$

An axiomatic expression by definition, that only says that net variation (we already know all variations are always periodic) of the *stock* of all economic goods that are always the property of some economic agent (that is why I reiterate Pr), are the sum of all the net variations of economic consumer and capital goods. If we substitute K (remember that, not having the *, it refers to a flow) with its equivalent, which we have called investment (the variation of economic capital goods), and we call it I, we then have:

$$S = C + I = Pr$$

But here we find a notorious difference with the equations used by current economic theory. The easiest way to deal with flows is using the process adopted by accounting, which analyzes the variations of the inventory of economic goods of an economic agent; this allows accounting not to lose its bearings, because it only analyzes economic categories that have a real existence, and not an imaginary one, like the categories economic theory sometimes analyzes, adopting, in its effort to explain things, abstract ideas with no scientific corroboration, which is theoretically wrong.

When referring to the equations current economic theory uses, I concretely allude to the theories identified as ‘Keynesian’, based on income and expenditure flows; Friedman tries to explain these with his modern quantitative theory, including more economic variables to complete the whole range of flows that produce income, according to their different sources (human wealth); the Austrians accept all this, through confusion or by omission.

This difference of my economic theory with all current ones will be clearly visible when I compare the equations on which each of them is based.

The current equation of economic goods flow versus ours

In current economic theory, the income of a period is the preferred concept of flow and it is defined in two different ways: the first definition says it is all the economic goods consumed plus the investments in a certain period; this is derived from the concept that the income of a period is consumed or invested (what I call partial wealth equation, and which in my theory will be total wealth equation). Thus we have the net flow of the *stock* of economic goods (Y) = the net flow of the *stock* of consumer economic goods (C) + the net flow of the *stock* of investment goods (I):

$$Y = C + I \quad (1)$$

The second definition says the income of a period is consumed or saved; so we have the following equation: net flow of the *stock* of economic goods (Y) = net flow of the stock of consumed economic goods (C) + net flow of the *stock* of saved goods (S):

$$Y = C + S \quad (2)$$

From (1) and (2) we have the equilibrium equation:

$$S = I \quad (3)$$

We observe an important contradiction, considering the definition and equivalences I established for accounting and economic terms, since Y is equivalent to my S (without the *, because we are speaking of flows or variations of wealth). And there can be no doubt as to that equivalence, because it is so defined by the equation (1), which is in complete agreement with the classification I established for economic goods according to their temporal mediacy; so it is identical to my equation $S = C + I$ and, thus, assimilating the equation (1) to my equation of S, we have:

$$Y = C + I = S (= Pr)$$

Which implies, no more and no less, that when economic theory refers to the income of a period, it is referring to what I define as savings. In other words, the definition economic theory adopts for *income* flows is the same I adopt for *savings* flows. And if we wish to convert this to inventory units, we only have to include the (*) with all the variables.

There are no difficulties up to here, but things get complicated when we refer to the second equation (2) of economic theory, since with:

$$Y \text{ (current theory)} = S \text{ (my theory)}$$

we have the following:

$$Y = C + S = S \text{ (= Pr)}$$

Here everything is complicated or, alternatively, it is much simpler than it seems, since we are only left with these options:

- 1) That economic theory defines the S differently in equation (2) from what it had in mind when it defined equation (1): I must reject this because I defined that the Y in current theory ‘refers’ as an equivalent to the S in mine; so the last expression is not acceptable here.
- 2) That consumption in the period analyzed is always zero and so we always have $Y = S$; this supposes that human beings have no needs –which is unsustainable for the definition of fallible man- or that they die of starvation; so the last is not acceptable here either.
- 3) The other option is to accept that $Y = S$ (implicit in both of the previous observations), but this is precisely my theory, which can be sustained without supposing consumption –need— does not exist; so the term $C + S$ in the last expression is not acceptable, but the rest is.

We observe equation (1) makes sense, and we can leave it as it is or replace Y with S, and continue with my original equation:

$$S = C + I \text{ (= Pr)}$$

What I cannot accept is equation (2), because of what has been said. Rejecting equation (2) means also rejecting (3), $S = I$, which inevitably supposes one of the three situations that led me to reject equation (2).

This simple analysis leads us to eliminate another very important concept of economics: equilibrium, based fundamentally on the equivalence $S = I$, where S is expressed through the growth of the *stock* of C goods or K –or I- goods.

It is not only important to reject the concept of equilibrium from the point of view of its ontological inexistence, i.e. the possibility of its realization (a human being without needs is not an economic being, which is who I am referring to), but also taken as a ‘trend’ towards a state of equilibrium, which is the way economic theory tries, unsuccessfully, to sustain the concept of economic equilibrium. I partially exonerate Hayek, who, in his final years, stopped believing in this idea, but again only intuitively, not knowing the theoretical base presented here; his correct intuition allowed him to be right, also intuitively, in his debate with Keynes. What happens here is that the human forces that tend towards the realization of economic exchange among economic agents –that converge in an interpersonal price reached through Marshallian bargaining, within the boundaries of the lower and higher limits of the quantities offered and demanded by the agents that carry out the exchange in a precise spatiotemporal point- are confused with the concept that the economy ‘tends to an equilibrium’. Economic agents can increase, diminish or maintain wealth (with qualitative variations), but they will never be in equilibrium because the essence of that state is a man with no needs, non economic man, a man that does not exist, since the only way to imagine this economic man in equilibrium is by thinking of him as not subjected to the passing of time, a man not born or already dead, a man that does not live, and economics is of no interest in this man’s case. If we wanted to refer to equilibrium as a situation in which wealth does not change in a certain

period of time, this would also be unacceptable, because the absence of change implies inevitably the absence of time. This consideration on economic equilibrium is not lightly given; this concept has concerned economists in their effort to explain economic science taking the economy in equilibrium, an evenly rotating economy, etc., as a starting point, pretending we have to start from a motionless economy to explain the economy in motion; but we see those theoretical categories are unnecessary to understand the economy. Further on I will consider another error in the concept of equilibrium: the search for equilibrium between the 'real' and monetary spheres and everything derived from this.

In short, in terms of set theory we would say: the set S contains the set I and the set C, so the possibility of set C (which is a subset of S, the same as I) being zero inevitably implies the non existence of human beings. And this conclusion is obviously equally valid for the concepts of flow and inventory, since they are two ways of seeing the same object, as a net flow that is deposited (S^*) or as a deposit that flows with the highs and lows of a *stock* (S). This analysis is of fundamental importance –though its simplicity could make you think otherwise-, because it proves many economic theories and techniques wrong, especially considering it is the basic hypothesis for Samuelson's 45-degree curve, IS-LM curves, and Lipsey's aggregate supply and demand curves, as I will have the opportunity to show.

Everything I deal with in this section is of special relevance, which will become clear when I develop and compare my total or complete wealth equation with the partial wealth equation, still valid for current theories.

Economic goods inventory rotation

It emphasizes the number of times a specific *stock* of economic goods leaves a deposit in a given period of time, expressed in terms of its *stock* and average shipments. This is a very useful concept in the analysis of accounting statements, more precisely financial statements. This is known as inventory turn (rotation) and is also defined as the rate at which inventories –stocks- become sales. No matter the exact words used in the definition, when we speak of turn (rotation) we are referring to the essential elements that define its existence, and these are: 1) specific *stock* of goods –as in any set, we must first define the qualitative aspect, without which we cannot apply cardinal calculus; in economics this aspect is often forgotten and the rotations of different goods are compounded, not understanding they are not necessarily the same just because they satisfy 'the same' need; 2) the period of time for which the turn is calculated -it is a measure of flow that implies a period of time with a beginning and an end; to dimension time; 3) a reference to a (several) specific storage site(s) where the *stock* flows occur –when speaking of turn (rotation) it is essential to refer to the spatial aspect, the place where temporal events occur, an essential element often forgotten by economic theory.

It is important to consider these aspects, mainly because they sometimes appear under the heading 'velocity', instead of turn (rotation), and this has created –and still creates- enormous problems for economic theory. This is especially visible in the conduct of monetary 'authorities', who use these concepts in an inappropriate way.

Continuing with the analysis, we see the definition of rotation or circulation velocity of economic goods is in perfect relation to the concept of velocity in physics. We can see this with greater clarity if we remember Einstein, with his theory of physical relativity, expressed time taking velocity as its representation, which is perfectly correct because movement is time (since time inevitably implies movement and movement inevitably implies time and to say velocity is to speak of time). Then, through the well known formula $E = mc^2$, we can obtain c, equal to the square root of m/E , which is simply the measure of physical time; in this case the speed at which a ray of light traverses a second in a vacuum, something physics had already corroborated. But we are not interested in the velocity of light here; instead we wish to concentrate on the focus of Einstein's analysis, his treatment of time in physics through the concept of velocity or movement of physical bodies. What we are interested in is the way in which physical science deals with time: by means of physical entities and their relation with velocity, which it takes as the expression of physical time. Well, the concept of turn (rotation) is simply applying time to economic goods; and assigning them economic *existence* allows us

to express each and everyone of them temporally, by means of the concept of velocity or rotation, just as in physics.

We will have the opportunity to appreciate more fully the special treatment I have given this subject when I refer to economic time.

Unemployed economic goods

From the economic causality chain I am building I also derive a crucial reflection that deeply concerns economic thought and it is ‘full employment’ of the so called productive factors, the most important of which is work or labor.

I must emphasize the inconsistency of the way this problem is presented from the beginning, since productive factors are economic goods and we know by this fact that they are employed, and if they are not, then they are not economic goods; in other words, all this becomes clear if instead of speaking of employed or unemployed economic goods, we simply say they are or are not economic goods. Thus we can say that if a machine is not in use, it does not mean it isn’t an economic good; at the precise moment in question it is stored, which means it is the same thing with another function, as an economic good –that’s why it makes sense to speak of the potential of an economy. This appears to be an obvious truth, but it is not so, and less still when we speak of human work. To expect every human being to have a job in which he or she satisfies human needs –that he or she will be an economic good at every spatiotemporal point and will, thereby, always be economically ‘employed’- ignores two aspects that make this utopian: 1) the impossibility for every human being to be permanently available for work; that man could permanently be an economic good and nothing else -this is the most extreme expression of so called economic materialism, and 2) the impossibility for every human activity to be permanently economic. Any of these two suppositions would be utopian.

In this way we can better understand that to speak of employment of productive factors means referring to the relation of availability of things and goods that acquire the *status* of economic goods, and more specifically when it is considered within the biunivocal relation ‘economic good-owner’, with the constant mutation an economic good undergoes in the hands of its owner, in such a way that at a certain point, the owner goes from owning what is an economic good to owning a good or a thing, with the consequent loss of value. And here we can understand Say’s law in its two interpretations:

1) J. M. Keynes’ interpretation: ‘all supply creates its own demand’, which would be in line with the concept that any good is economic when it satisfies a human need in a quantitative relation in which the amount supplied is always less than the amount demanded; in the opposite case it is a good or a thing. In other words, if an economic good satisfies no demand it is not an economic good, and it is improper to speak of unemployed economic goods when what we have really is goods that are not economic. What Keynes said was correct, but he wasn’t conscious of it; his intention was to prove Say’s law was erroneous; but we see it was correct even in the conception expressed by Keynes, since if there is a supply it is of economic goods and in the economy there is only demand for economic goods; goods that are not scarce are not on offer in the economic sense. In this manner if a good that was an economic good is no longer so and has become a good or a thing, we cannot say it is unemployed; we must say instead that it has stopped being an economic good; if not, for example, we would be saying that a human being that has died is unemployed as a human being, when what we wish to express is that he or she no longer exists as a human being. In short, Keynes was not talking of unemployment –more specifically of labor- in scientific term, but rather in ethical and moral terms –which is understandable, because he had the experience of unemployment; this is worthy of praise. But we shall see that the best ethical and moral solution is the scientific one.

2) A different interpretation from J. M. Keynes’s states that Say meant that no-one can demand economic goods belonging to others if he or she does not have economic goods to offer in exchange. This interpretation is an axiom if we consider there can only be economic exchange with economic goods, which add nothing to the chain of economic causality I am developing.

With either interpretation it doesn't make sense to speak of employment-unemployment of economic goods simply because they are employed or they are not economic goods. With this approach, the fact that part of economic theory has been based on the assumption that the economy is always fully employed acquires relevance, and at the same time the theory known as Say's law can be seen under a new light and with greater precision.

So the fact that there are people that have no income derived from economic exchange does not mean they are unemployed from an economic point of view; instead they are unemployed from a moral point of view –if we wish to give this figure a name- as is the case of those who do not offer their labor as an economic good (minors, invalids, retired, etc.), and providing them with economic goods results in their inclusion as ‘elements’ of an economic agent – family, friends, government; it is incorrect to speak of unemployment of economic goods, be they consumer or capital goods (and the most valued among these: human labor).

When a man or a woman offer their work and it does not become an economic good –by accident or negligence- this human being adopts a conduct similar to that of animals in economic matters: he or she tries to ‘sell the affection of the pet’ to be fed, what is known as servility. This is not derogatory; instead it leads us to the immediate conclusion that the best way for humanity to develop is adopting the scientific explanation of the theory of economic causality presented here. We must not confuse servility with the case of belonging to a family or group that provides ‘economic love’; this concept of one person taking charge of satisfying the needs of another human being should be a part of economic science. This economic love or solidarity should be the most precious of economic goods, but we see it is also subject to the laws of economic causality. By definition, love springs from the -individual or collective- economic agent, not from an external compulsion. Could this possibly be true solidarity? This aspect is of great importance, because it is what links economic science with all other human doings; this leads us to conclude that ethics, morals, politics and religion should not forget the scientific aspect of economics, which is not at all in contradiction to them, far from it, it would help them define their axioms, theories and principles. This shows why the countries that have better adapted their politics, ethics, morals, religions and all sciences to the chain of economic causality, have attained greater economic progress for their inhabitants; and this should be no surprise, since all these sciences or disciplines are simply different human points of view and have a common origin: man that is fallible, confronting problems and in the face of time.

At a more advanced level of my theory I will return to the topic of employment-unemployment.

THE VALUE OF ECONOMIC GOODS

The ‘value’ of economic goods is ‘subjective’

With the discovery of the theory of subjective value by three economists (Carl Menger, W. Stanley Jevons and León Walras) at the same time, at the beginning of 1870’s, economics took a step forward that in my view is among the most important in its history.

As a quick synthesis I can say the objective theory of value –also called supply theory-, considered valid before the existence of the theory of subjective value, assigned value to economic goods analyzing the object –from there that it was considered objective-, from the point of view that the value they had was related to the effort needed to obtain them. This theory could not explain how certain economic goods with higher value had less effort – generally, work- incorporated. The theory of subjective value changed the angle and centered the origins of value in man, in the utility that economic goods have for him and for satisfying his needs; from there the concept of economic goods that report a utility (that are useful to man), which we assimilate to utility or profit in accounting and daily life in general.

To emphasize the aspect I consider most relevant to the purpose of this work, I begin by saying that the outstanding characteristic of the theory of subjective value is its concept of the decreasing intensity of individual wants, which is evidently in line with my economic causality, since I began the study of economics with man that has needs (adopted from

Menger), and this concept tells us precisely how the economy will perform as time goes by and its needs are satisfied.

The analysis of the theory of subjective value can be found in several textbooks, but what we need to stress here is the development, along with it, of what is called the law of marginal utility that goods offer man, different from total utility. We can say Hermann Heinrich Gossen developed this concept, originating his three laws (that I extract from F. A. Hayek's book 'The Trend of Economic Thinking'):

Gossen's First Law – On Wants-Satisfaction:

Wieser formulates this law as follows: '(p. 373) *within every singular period of want, every additional act of satisfaction will be less estimated than a preceding act, obtained from a number of goods equal in class and quantity*'.

We can clearly observe how time is integrated into economic causality as an essential element that links the need with the good that satisfies it, and how this biunivocal relation 'need-good' varies in quality and quantity, precisely due to the existence of this period of time; in other words, we are speaking of time in terms of human needs, but we are not yet in the economic sphere; we will need the third law for this.

Gossen's Second Law. According to Hayek (p. 374):

'... that Lexis has christened Gossen's second law (in contrast to the already mentioned first law), is by far the most important. Gossen supposes here that an individual is barred from obtaining all pleasures by himself because of the limitations imposed by the time he has at his disposal, and for this case he establishes the rule that the diverse pleasures will only be satisfied in part 'in such a way that the magnitude (intensity) of each singular pleasure is the same for all pleasures at the moment his enjoyment ends'. With this enunciation [...] we obtain the bridge that was sought in vain before Gossen, between the two elements of value, the utility and the obstacles to its realization. This bridge is the idea of margin, acquired by economic science as a definitive achievement [...] Gossen introduces then the concept of value that –entirely in the sense of the modern subjective school- derives from the utility (the vital pleasure) that things from the external world are able to provide us...'.

We can clearly observe how the chain of economic causality I am elaborating is gradually being completed; now, what we have emphasized from the beginning is included: fallible man, that never sees all his needs satisfied, leading him to choose within margins (from where the concept of *marginal* derives).

Gossen's Third Law: Hayek (p. 375) tells us:

'In the following investigation on the factors determining the value of goods, Gossen discovers that the limitation of the available quantity of a good restricts the pleasure that can be attained in a way similar to the case examined previously of the limitation of time at our disposal. In consequence, the goods at hand must be economized in the same way previously indicated for time. The law of the diminishing value of each additional unit of the quantity of a good, that Gossen proposes here, corresponds to the law of marginal utility of the modern subjective school and surely is worth mentioning –as Gossen's Third Law- along with the other two. This law should be clearly distinguished from the Law of Wants-Satisfaction, since this can be universally applied to all wants, independently of their requiring or not material objects for their satisfaction. The Third Law, on the other hand, only refers to the importance of the given quantities of a good for obtaining satisfaction. Gossen understands it is only with this last law that he enters into the sphere of conventional economics. But he wishes to expand this discipline into a general theory of pleasure, incorporating all the principles of pleasure, including those that are not conditioned by the limitation of disposable goods.'

Here we can clearly see quantitative restriction is essential for a good to become an economic good. Though the road Menger proposed and I follow is much clearer, I believe it is important to see how Gossen anticipated the theory of subjective value. As to Hayek's last paragraph, I do not believe his expression 'material objects' is adequate when comparing the first and third laws, because I believe this refers to the economic aspect of the quantities available that are smaller than those demanded (a more adequate concept for economics than the one he uses).

To recognize the merits of all those that added new elements to economic theory in its constant progress, we must mention there is a debate as to who really discovered the subjective theory of value or marginal utility, if it was Gossen or Jevons, Walras, and Menger, and some authors even say it goes back to Aristotle. Some say Gossen was the discoverer, but the three other authors developed the theory further, making it more useful for economics. I believe Menger's works made huge contributions, not only to this aspect of the theory of value, but also to others, such as his concept of money, with theoretical components that are correct, and that unfortunately were not applied by those who considered themselves his continuators (such as Mises and Hayek) to the theory of subjective value and the theory of money; believing to be on the same theoretical path, they were equally mistaken as those they confronted, Quantitativists and Keynesians.

What I wish to stress here is that the concept of utility of economic goods in the satisfaction of human needs –where the very nature of economic goods originates-, is a spatiotemporal concept relative to the economic agent; it is a way of showing needs and their corresponding satisfaction must include the following indispensable elements:

- 1) A specific economic agent with spatial and temporal existence.
- 2) A specific need of that agent, which is also spatial and temporal.
- 3) One or more economic goods spatially and temporally existent that can satisfy the specific need of the specific agent (implicit in the previous items).
- 4) Time, manifest in the inclusion of the economic good through (additional) marginal units that are added as time elapses, to satisfy the need progressively until it disappears. So the first unit consumed satisfies more than the last (when eating chocolate, the first bar will obviously give more satisfaction than the last).

In other words, the change in economic theory, from dealing with total quantities to dealing with marginal quantities, places the whole economic spectrum within the relativity of concepts to time, since goods are or are not economic and have a greater or lesser economic value according to the spatiotemporal relation with the economic agent. In other words, the biunivocal relation is relative to space and time; e.g.: sand in the desert is not an economic good, but it is when used for construction in other places; the abundance of spring water for those economic agents with free access to it determines that it is a good, but not economic; the units of a perishable good that are more than Robinson Crusoe can eat before they rot are not economic goods.

This temporal relativity of the biunivocal relation 'economic good-owner', considered here as the basic cell of economics, has been a great discovery for economic theory that allows us to stand on sounder foundations. Other concepts in economic theory have been developed with great consistency thanks to this new theory of value, such as differentiating use value from exchange value, which I have already mentioned as one of the ways economic goods can be classified according to what their agent owner decides; these concepts, of incalculable importance, could not have been introduced consistently without the discovery of the subjective theory of value or marginal utility, and thanks to it we can establish:

- a) *The use value of economic goods* is their usefulness for their agent owner; he or she has them for his or her own particular use.
- b) *The exchange value of economic goods* is the value economic goods possess, not for use by their owner, but for exchanging them with other economic agents.

We can see an economic good that not only serves the specific personal needs of the owner but is also useful to other agents, has a higher value –supposing there is the same quantity available- if the sphere of demand is greater; there are more agents that need this economic good.

It is important to stress that exchange value is what originated merchandise.

Lastly, we must remember that since an economic good can satisfy several needs acting individually or collectively with other economic goods, it will acquire greater subjective value for an economic agent the more needs it satisfies, and this condition is transmitted both to use value and exchange value. Generally speaking, the smaller the quantity and the greater the diversity of qualities of an economic good, all other things remaining constant, the higher its subjective value will be, affecting the prices it will obtain in interpersonal exchanges.

The incommensurability of subjective value

The use and exchange value of economic goods cannot be measured cardinally (assign it a precise quantity adopting a unit of measure), but it can be done ordinally, giving an order of precedence to the utility each economic good has for an economic agent in a certain period of time or in a precise instant.

As Mises says in ‘Human Action’ (p. 157):

‘Man, when acting, decides among the different possibilities offered him. In the alternative he prefers a certain thing above all others.’

I believe this passage clearly shows that, when we say the value an acting subject gives things is cardinally incommensurable and ordinally commensurable, this is due to the fact that a human being always confronts alternate actions derived from the fact that he or she is not a mono-problematic agent, which compels him or her to arrange his or her ends or needs according to a certain order and act according to the priorities derived from that order. It is important to analyze this in these terms, because the need or end could be satisfied at some moment with a specific quantity of certain goods; such is the case of a certain and specific combination of qualities and quantities of food that can satisfy the appetite of a human being in a certain period.

To emphasize this point with greater precision I believe it is convenient to return to Mises (A.H.):

(p. 157) *‘The ends, as we were saying, are irreducible data; they are purely subjective, they vary from person to person and even for the same individual according to the moment [...] [p. 158] Value is the transcendence man attributes, when acting, to the final ends he himself has decided to reach [...] [p. 160] The benefit, in this first sense, is of a purely subjective nature; it is no more than the higher satisfaction man experiences after acting; it is a psychic phenomenon, that cannot be thought of nor measured. The elimination of the discomfort can be attained to a greater or lesser degree. One can only feel the quantity in which a satisfaction is greater than another; the corresponding difference cannot be pondered or determined relative to any objective module. A judgment of value does not measure; it only arranges in a gradual scale; it puts some things before others.’*

I believe in these passages Mises clearly establishes a human being has a multiplicity of ends or needs and must always opt among them, proceeding to arrange things, consciously or unconsciously, establishing priorities. There are two more aspects; first the individual origin of ends, that has its roots in what is most intimate to an individual –it is most difficult to know the infinitely small- and, second, that there are no two individuals alike, as an individual is not the same in different instants; all this conjugates a universe impossible to measure, because it is infinite or simply because its extension is beyond the reach of fallible man.

It is very important to bear this in mind, because the idea of the price of merchandises is often confused with the value they have for economic agents, an aspect I will specify when I deal with the prices of economic goods.

We can summarize by saying subjective valuations are only pertinent to the human being –as parts of an economic agent-, and they influence his actions, both when using and exchanging economic goods. In other words, they are what economics calls determinants of the conduct of economic agents, which for us, in this case, are the subjective valuations, that is, those ‘behind’ the actions of human beings and that can operate at a higher or lower level of consciousness.

Epistemology established the difficulty of measuring small objects, the difficulties we encounter when trying to understand infinitudes, because the search for the smallest units takes us ever closer in an approximation to the qualities –the essence of the object being studied- instead of quantities; that’s why qualifying almost always implies ‘limiting’, determining, adopting primitive terms. As opposed to that, big things are more related to the quantitative, cardinal measures, the qualitatively homogeneous; quantifying comes after qualifying, since you can quantify what is homogeneous, and for man it is easier to find homogeneity in big things than in small ones. This aspect is of essential importance, since in economics we can constantly observe the same scenario in which what is small (scarce in quantity) and exclusive (rare in quality) has more economic value; thus, economics corroborates once again what other sciences have shown by other routes, and this is a very important aspect, because one way to corroborate a theory is to confirm it from different points of view, scientific views in this case.

Finally, we see there is scientific proof that the value man assigns things is ordinal and not cardinal and that the theory of subjective value in economy has been widely corroborated and that is why it displaced the theory of objective value. This is one of the key aspects in which economics must resort to the concepts of gender and species we have analyzed in preceding pages.

We must clearly see then that economics is in the same conceptual terrain as physics, where it is impossible to be a scientific determinist in the infinity of smallness, to the point of applying probabilistic quantum theory instead of scientific certainty, in spite of the God that does not play dice. This notwithstanding, physics and economics are still open roads. What we need to stress relative to the incommensurability of value is its subjective aspect and why it is closer to being dealt with ordinally than cardinally. I believe research in economic science oriented to determining the origins of economic conduct in human beings is looking for certainty where we have probability up to now; nonetheless, we should remember probability is also gods creation, just like dice, and this is shown by the fact that progress in different disciplines such as biology, biotechnology, and physics, results from accepting this idea.

Conservation of subjective value

Relative to the temporal aspect of the economic activity of man, it is essential to consider value not only in the sense that it is subjective and cardinally incommensurable, but also in its relation to time.

To speak of value relative to time means asking how long it exists and how the biunivocal relation ‘economic good-owner’ varies with time, since the existence of this relation is the reason for the existence of the concept of economic value, and its variation or absence.

We can infer then, based on all that has been said, that the time factor in the concept of value is already implicit in the definition of economic good, by virtue of the fact that if it is not such, it has no economic value for human beings. In other words, a thing can become a good and then an economic good, if it is useful to man –if it satisfies human needs- and is in a relation where the quantity offered is less than demand. Thus, the temporality of the subjective value of economic goods is in direct relation with the temporality of the needs it satisfies, both in quality (intensity) and in quantity (volume).

In short, as long as a thing or a good is an economic good it will conserve value, which in turn will vary with time. This concept is as simple as it is difficult for economic theory; in other words, having forgotten the simplicity of the concept, economic theory has lost its way in the topic of conservation of value of economic goods, and there have been theories developed centered on ‘special conditions of some goods for conserving value’ or that ‘the value of some economic goods and more precisely money must be maintained constant –deriving in

constant prices', a concept that evidently has no basis in the human universe; we saw it has none in physics and neither does it in economics. Possibly this mistake has its origins in confusing conservation of value with variation of values, or with variation of prices – something different from value- that differ from one good to another, but we must remember value and price derive, in the first place, from man, that pays attention to things according to his needs, and this will determine which things acquire the *status* of goods and economic goods.

It is very important to relate conservation of value in economic goods to the types of these we have seen; we see it is related to all of them: a) consumer and capital economic goods: it evidently affects both types of goods, which leads us to analyze the composition of total wealth and the relation existing between capital and consumer economic goods, and being the former superior goods that in time become consumer goods, they are more exposed to variations of value, both because their value derives from the consumer good which they become a part of, and because of their temporal distance from the satisfaction of the final need they help to satisfy; b) goods for own final use, merchandises and stored goods: evidently merchandises and stored goods depend on goods that satisfy those uses conserving their value in the course of time, and continuing to be economic goods; c) incorporated, eliminated or exchanged goods: this classification precisely expresses the consequences of changes in value of the economic goods which determine that they be incorporated, eliminated or exchanged; I believe it is the classification that better expresses the consequences of changes in value of economic goods; d) durables and non durables: evidently there is no use in conserving a durable good which will become a non economic good; i.e. it will be useless and will not conserve economic value; past, present and future goods: we can say that goods conserving value in time is precisely what differentiates among past, present and future economic goods; f) fungible and non fungible; g) material and immaterial; complementary, competitive and substitutive, and any other pertinent classification that could come up.

Imputation of the value of economic goods

Hayek stated –very correctly from my point of view- that an economic theory is not complete if it does not say how the value of an economic good is formed when it is obtained by complementarity to others; the theory that incorporated the concept of imputation of value is very apt for this.

I believe the theory of imputation has been a great theoretical discovery, explaining how each economic good concurs in obtaining another, not from the technical but from the economic point of view of the value a human being assigns it, when it satisfies his needs; in other words, imputation is dividing the subjective economic value of the final consumer product among all the economic goods that intervene in its obtaining.

This aspect of imputation of value to economic goods is significant and of great importance for economic science, especially because it is closely related to what has been called the theory of wealth distribution, on which I will give my views when comparing my theory to current ones.

In short, imputation must be associated with the concept of subjective value of complementary economic goods, which derive their value from the value of the final good to whose existence they contribute.

CHAPTER V

INTERTEMPORAL EXCHANGE

ECONOMIC TIME

Given the great importance time has in economics, as in all events in general (since it not only transcends human beings) I have reserved a special chapter for it.

In these lines we will see why I speak of economic relativity, just as Einstein spoke of physical relativity.

I have made many references to time in the development of the chain of economic causality up to now; in this section I will specify a bit more what it means in human economy.

It has been stressed that the existence of man –as of all entities in general- is inconceivable without time, that all human beings have a temporal component that is a part of their essence. Thus, time transcends in general the category of man, and because of this, we need to restrict this concept of time and refer specifically to the economic time of man.

From the economic point of view, that is, from the point of view of humans in constant action, seeking to satisfy their needs that are relative to spatiotemporal instants, we are interested in **time relative to the human relation of need-satisfaction**, and specifically in **scarce time**, time having the conditions established for all economic goods, time that satisfies needs and is in a quantitative relation of scarcity.

In economics, we are interested in the time that relates the lapse in which the need that must be satisfied is present with the time needed to obtain the economic good and make it available for the satisfaction of the need.

To be more explicit, in economics everything springs from need, which implies time is inevitably associated with temporal concepts such as beginning, maintenance, continuity, ending, periodicity (frequency), etc. In turn, economic goods owe their existence to need, which intervenes through the biunivocal relation ‘need-economic good’ in all the temporal aspects we assign to need.

I believe this simple and concrete form of expressing the place time has in economics is in keeping with all the theoretical developments in economics that have incorporated time, which –in the form of a list that does not pretend to be complete but does try to include all the most important aspects- are:

1) Marginal: obviously this concept that is so useful for economics is completely contemplated in the concept of economic time I present. I can also say that marginality in economics does not exist without the presence of the time factor. Our concept of time leads to the concept of marginal, since marginal implies time and time implies marginality. Presented in another way, marginal means flow –only conceivable in time-, the opposite of totality, equivalent to *stock*, measured at an instant. I had the opportunity to express the importance of time relative to marginality when I spoke of the theory of subjective value, but it extends also to everything relative to measuring variables or economic concepts such as yield, production, etcetera.

2) Temporal preference: meaning current economic goods have a higher value than future economic goods. My concept of economic time, in so far as it refers to the temporality of ‘needs-economic goods’, considers temporal preference is implicit in that biunivocality and does not need to accept it as valid; it does not even consider it indispensable, since the need is always present and is subjectively different in each instant, by which different needs become incomparable. In other words, the economic needs that are in a better temporal relation with the need they satisfy will have greater subjective value and, because of this, they will have a better price level in interpersonal exchanges. When speaking of a better temporal relation, I am simply referring to the time period in which the economic good satisfies the need according to the latter’s time constraints. The fact that we can dispense with the principle of temporal preference is corroborated by the existence of economic goods that will have greater

value in the future than in the present, as is the case of an economic good that has no utility in the present summer season but will have a utility next winter, allowing us to say it is a future economic good and that at present it is simply a thing. We see my theory has no need for the principle of temporal preference, except if you take it to express the natural tendency of man to solve problems and/or better his current situation, which includes an appreciation of the future.

3) Productive efficiency: the concept that with the passage of time man produces the same or greater quantities of the same goods with less effort; for example, the need to know what time it is can be satisfied today at a much lower cost than many years ago; today watches are much cheaper. This temporal aspect of economics is also known as the passage of niche-differentiation-cost that says all new economic goods begin being dear and later become cheaper. We can also say it is the synthesis of so called 'classic adjustment', through which competition increases supply and reduces prices. My theory includes this aspect in my considerations on the time it takes an economic good to be available, in the required quantity and quality, to satisfy a need of an economic agent.

4) Production times: generally involving the need to include capital or intermediate goods to produce more economic goods in the same period of time. We can consider it a particular case of productive efficiency, something we have already referred to; it is the essence of a very useful and elaborate theory by Böhm-Bawerk and his disciples especially Hayek (with his famous triangles). The essence of this reasoning springs from Menger, when he speaks of economic goods of the first order, second order, and so on up to general goods of superior order, which are those that are most distant from the moment in which they will concur in the satisfaction of the final need which their participation derives in. Obviously this economic time is contemplated in my expression referring to the period of time in which economic goods are available for the satisfaction of the need of an economic agent.

5) Durable and non-durable goods: The temporal aspect that leads to the classification I have established is completely included in my concept of time. Including both durable capital goods and durable consumer goods, which we know satisfy needs through a period of time, precisely because they have durability; the same can be said of the satisfaction afforded by the economic goods known as services, which satisfy temporally continuous or periodic needs. This is also contemplated in my expression referring to the time in which economic goods are available to satisfy the needs of an economic agent. Especially if we consider that the categories of durable and non durable goods are specifically defined relative to the period in which an economic good exists for this purpose.

6) Types of economic goods: in general terms we see my concept of economic time comprises all types of economic goods that, in turn, are linked to the types of needs they satisfy (it could not be otherwise) through the relation 'need-economic good' already emphasized, which is the essence of economics and the cause of the concept of economic time presented here.

I could go on searching for terms and concepts developed by economic theory in which time is involved, but I can conclude that according to the axiomatic definitions of economic terms in general, all of them include the temporal aspect. Nonetheless, I believe it is important to differentiate the two essential points of view on time in economics:

a) Period of need: referring to periods of time related with the appearance, duration, continuity, periodicity, and ending of the need, that originates human economic action.

b) Period of satisfaction: referring to the periods of time in which human beings give (total or partial) satisfaction to a need, related to the period of time in which economic goods appear, and their duration, continuity, periodicity, and ending.

So we see that economic time is the sum of these different times and it could not be otherwise, given the logical causality of the economic ideas I am developing; this is the origin of the concept of economic time I present.

We can say time in general, and economic time in particular, transcends the chain of economic causality developed here –as the set *causal chain*- and each of its elements.

Economic time is an economic good

Continuing with what has been said up to here about economic time (a particular case of time) and what has been defined as an economic good, we can have no doubt that time is an economic good. And this is so, given the fact that it is a part both of the need and of its solution, and that in economy goes by the name of economic good. We are not wrong if we say economic time is the economic good par excellence because, if man had all the time he needed to satisfy all his needs, there would be no needs, and we would be back to infallible man and everything that was said at the beginning of this book.

So, economic time is the economic good par excellence, because it is implicit in man in general and economic man in particular. Time is life and life is time; there is life only if there is time, which says that for an economic agent economic time begins and ends with life.

All that has been said in this book about time is in line with the theory of subjective value and the temporal aspect implicit in it. I could say the only thing that changes is the more general approach of my theory, without the constraints introduced by marginalism that presents cases that cannot be explained from its point of view, or that are explained with theories that confuse subjective value and prices, as we will have the opportunity to see.

The value of economic time

The economic chain I am deducing clearly shows that economic time accompanies the economic agent during the whole of his or her existence, which means it has a subjective value for the economic agent as long as he or she exists.

It is not convenient to add anything more in relation to the value of economic time, since everything on the theory of value in economics applied to economic goods in general is valid for time. From this simple reflection spring economic deductions that are also very simple and that have the virtue of explaining with new theories concepts that are very confusing for economic science up to now, such as interest, credit, money, monetary prices, monetary economic cycles and others.

Finally, I wish to stress time has economic value for economic agents one and all at all moments of their existence, be they solitary individuals (Robinson Crusoe) or social groups (social sets, such as legal entities, communities, etc.).

As all value, time also is subjective and varies as it goes by.

INTERTEMPORAL EXCHANGE OF ECONOMIC GOODS

'Theory of economic relativity'

One way of introducing the study of economic time is considering it equivalent to an exchange of economic goods that one or more economic agents carry out in time.

The economic good “economic time” is always valued, expressed and materialized in other present economic goods; in other words, economic time is the only economic good that *always* materializes in other present economic goods, and this is because in the chain of economic causality what we have identified is the relation ‘need-economic good’, which can only be conceived in time. In this way we see time in economics must be considered another dependent variable –just as in physics- not as a variable independent from economics.

In other words, any economic good, with its quality and quantity specifically established relative to the need it will satisfy, is expressed in units of the referred economic good; for example an economic agent that needs one kilogram of bread a day to satisfy his hunger is an expression that says there is an economic good “bread” but referred to economic good “time”; this is present in every expression that speaks of need and satisfaction; time is previous to need and satisfaction, and also to the existence of the economic agent that has both sensations, but the bread is what refers to the concrete satisfaction of hunger, both as a need and its satisfaction. In this same way we can say that, with two liters of water, the economic agent

satisfies his thirst for two days; and so we see time is always there; what varies are the needs and the economic goods, that are expressed in quality and quantity, but time always appears inseparably referred to them, to the need and the economic goods that satisfy it, and this is precisely because we are speaking of economic time, not time in general.

So, we see economic theory deals with time in the same way that physics does: it expresses it with economic entities, just as physics does with physical entities. In other words, in economics we speak of economic time just as in physics it is physical time; in this way economic science takes an idea from physical science and applies it to the theory of economic relativity, just as Einstein did with the theory of physical relativity.

The famous example of the fisherman that suspends present consumption of fish to invest time in building a net that will allow him to catch the same amount of fish in less time in the future, and dedicate ‘excess time in the future’ to leisure, to obtaining other economic goods which he does not have today or to consuming more fish –that is the Austrian theory of capital- is a very good expression of how the economic agent exchanges a quantity of present goods for a quantity of future goods (so many fish today for so many economic goods in the future). But to speak of the present relative to the future is to speak of time, which makes sense in economics if it refers to economic goods, that are the only ones it is interested in; that is why we say Robinson the fisherman or any economic agent in particular is carrying out an intertemporal exchange of present economic goods today for economic goods present tomorrow; this is what economics deals with in terms of temporal things. I wish to stress all economic agents carry out this intertemporal exchange, not only Robinson Crusoe the fisherman, and they do so all the time, being or not in contact with other economic agents; and not only that: they are *‘condemned’* to deal with time at every instant; which shows why it is not an independent variable in economics, just as in physics.

This last reflection is very important, defining the path time theory must walk in economics: the path of economic causality I am developing here and which will allow us to see the errors of current theory relative to economic time. This path is simply dealing with time relative to economic entities; in this way we see man can or should speak of relativity in physics, economics, culture, etc.; with this I am only expressing how we consider time, which we know inevitably implies movement and change in each aspect of human life and, in general entities that are fallible relative to it.

Though I will deal with the topic of prices further on, I believe it is convenient to introduce this commentary and that it will be easily understood: saying economic time is relative to economic goods can be confusing, since the prices of economic goods are also relative to other economic goods; but this is precisely the difference of one relativity to the other: the relativity of the prices of economic goods appears through *comparison* with other economic goods and the relativity of economic time is a result of it *materializing* in other present economic goods.

The synthesis of this theory would be: though prices –which I will deal with as deriving from exchange-, are relative to other economic goods, the difference with economic time is that it is always ‘materialized’ –rather than expressed- in other economic goods; we do not recognize its existence other than in its link to another ‘need-economic good’ biunivocal relation, which it transcends. In other words, we can say of other economic goods that the good X is exchanged for specific amounts of the good R, and of the subjective value of other economic goods we can say human beings prefer certain specific quantities of the good X to certain specific quantities of the good R; but with time things are different, and we can only say that economic time has the subjective value of certain specific quantities of the good X, R, etc., and the price it reached in the exchange is that of certain specific quantities of the good X, R, etc., its qualities and quantities always being those of other present economic goods. In economics, a day, a month, a year, means nothing; you have to speak of the subjective value of a minute or that its price is x units of the economic good X. The existence of economic time only exists for man linked to the ‘need-economic good’ biunivocal relation, referring to other present economic goods.

The following table helps to understand my theory:

Need	Time	Present economic good
Hunger	1 day	1 kg of bread
Subjective value		Material or abstract units
Ordinal	Present economic good	Cardinal

In this simple table, in the top row I show the chain of causality, a need that is satisfied with a present economic good in a given period of time; in the second row the specific need, time and present economic good that satisfies the former in the period indicated. The third row tells us that the need is subjectively valued by each individual and that this only admits an ordinal measure, different from the present economic good that is always expressed in cardinal units, be it material or abstract; then, if we wish to express economic time, we can only adopt the sole cardinal and ordinal measure we have: that of the present economic good.

We can call this theory of economic time the **theory of economic relativity (TER)**, since it is the same concept as in physics; time makes no sense in this science if it does not materialize in physical entities, and it was precisely through establishing a link between velocity, matter and energy, in an equation, that Einstein dealt with physical time; this is completely logical, because velocity is a flow that implies time, and mass and energy are the *stocks* that transform according to velocity or movement, as in economics we speak of wealth and its variations in time. In short, man's economic time can only be conceived relative to the trilogy 'man-need-economic good', to which I now add time as a dependent and explicit economic variable that is present in the three components of the trilogy. We see what was expressed about time is repeated here, only now it is applied to the economy: time inevitably implies change, change implies time, then economic time implies economic change and economic change implies economic time, and since economic change implies a change of economic entities, this in turn means change in economic entities implies economic time.

This implies an important correction to the methodology of economic science employed by current theories: these establish a distinction between the case of Robinson Crusoe and the individual in society; my opinion is that for Robinson Crusoe time was an economic good with a subjective value relative to present economic goods, with a temporal existence different from the present, since he compared with past, present and future economic goods; but this is the same any economic agent does even if there is no interpersonal exchange; which shows us there is no need to resort to Robinson Crusoe the fisherman, except as a symbolic figure representing certain economic situation. But the existence of the solitary man isn't indispensable to speak of time in economics, except relative to the entity of intrapersonal exchange and its derivations; in other words, economic theory does not need to study the isolated individual with such special care as if he were different from the individual in society, except for the welcome presence of the economic good 'interpersonal exchange' that we will come to.

Derived from this concept of the relativity of economic time to other economic goods is the fact that its 'utility' as an economic good derives from those same present economic goods in which it materializes; for example, we can say economic time is both a use and an exchange economic good; and the same is valid for the other types of economic goods we have classified, since it materializes in any of them.

The TER is of great importance and we will have the opportunity to come back to it when we deal with money and credit; nonetheless, at this instance of the chain of economic causality we can say not taking into consideration this 'materialization' of time in other present economic goods is what has produced the greatest confusions in economic theory, especially concerning money and credit theory; In other words, since generally economic time materializes in the economic good money, the error I am referring to is visible when I say money must not be confused with credit.

I think it is convenient to say there is another error derived from current economic theory, due to its not taking this theory of the relativity of economic time into consideration, that is present when there is reference to different interest rates according to the good in question, a subject I will refer to especially when speaking of interest.

From here on I will call the process of materialization of economic time in present economic goods **materialization**.

Types of intertemporal exchanges

The concept of economic relativity is valid when speaking of an isolated individual without contact with other members of his species, as in the case of Robinson Crusoe, and for economic agents that exchange economic goods. From here we have the following general panorama of intertemporal exchanges:

Intertemporal exchange: is the exchange of present economic goods for future economic goods. This simple definition, along with the TER, are the only elements we need in economic theory, allowing us to dispense with the concept of temporal preference and the three factors that are its cause –according to Böhm Bawerk- since it is included in the entities incorporated here. We shall see why Mises relates –erroneously according to my theory- this concept only to credit.

Intertemporal exchange can be of two types:

1) Intertemporal-intrapersonal exchange: it is the intertemporal exchange of an only economic agent, a case that we saw with the fisherman that deprives himself of present fish to obtain a greater quantity of future fish building capital goods. Evidently the concept analyzed here is not only valid for the solitary fisherman, but includes any economic agent that decides to exchange present economic goods for future ones. In more general terms, every economic agent is permanently influencing the future he foresees when deciding his present conduct because, in economics, this is done through economic goods.

2) Intertemporal-Interpersonal exchange: is the intertemporal exchange between different economic agents. It is generally called credit, which is defined as the interpersonal exchange of present economic goods for future economic goods. When dealing specifically with this type of exchange called credit, I will introduce a central criticism of the way it is understood –incomplete in my view-, and that is a hindrance to acknowledging the existence of the theory of economic relativity.

Each of these types of intertemporal exchanges is in turn an economic good in itself. This theoretical approach explains better and simplifies current economic theory as to the relations existing between micro and macroeconomics, and concepts derived from them, since with this theoretical way of analyzing the economy there is no problem of the type of the fallacy of composition –what corresponds to an individual does not correspond to a set and vice versa-; instead these become topics that correspond to any composition, that must be treated in the manner of set theory.

I have introduced here the concept of interpersonal exchange and explained exchanges of economic goods among economic agents; in the following chapters I will study in greater depth interpersonal exchanges, an economic good that is the main factor responsible for the growth of economic wealth in the last centuries, from the time its free development was institutionalized.

CHAPTER VI

*'From each according to his abilities,
to each according to his needs'.*

Karl Marx

'Equivalent to David Ricardo's individual comparative advantages, a tribute to freedom that opens the way to solidarity'

Carlos A. Bondone

INTERPERSONAL EXCHANGE

Definition, economic goods and the value of interpersonal exchanges

I have decided to deal with the subject of interpersonal exchange of economic goods – separate from intertemporal exchange which we have already studied- in a special chapter, because its emergence in human life has brought with it new institutions in the economy, and they are the object of permanent research, giving rise to different theories to explain them. To introduce some precision in the subject, I present the following concept or definition of interpersonal exchange: it is the exchange of economic goods among different economic agents.

Among the economic institutions or entities that appeared because of the presence of interpersonal economic exchange –from now on I will simply call it interpersonal exchange-, and without which they could not exist, are money, credit, interest and monetary prices, central topics of this book. In other words, these categories find their reason of existence in the previous existence of interpersonal exchange.

As Menger stressed, when the exchange value of an economic good –that the owner assigns it subjectively- is higher than its use value –also subjective-, this agent will be motivated to cede its property (disposition of its utility) definitively or temporarily (rent, loan, etc.) to another economic agent.

We must consider the economic agent participating in the interpersonal exchange will cede the property of an economic good to another economic agent in exchange for another economic good; otherwise he will not carry out the interpersonal exchange. Moreover, he will consider the utility of the other economic good greater than that of the economic good he is willing to cede; otherwise he will have no incentive; and if he cedes the economic good ‘in exchange for nothing’ –a donation, for example- it doesn’t mean there is no incentive, since the act of donating is an economic good of superior value to the economic good donated; the gratification of donating is the economic good one receives in exchange.

We must also remember the economic good received in exchange will have the purpose the economic agent assigns it: own final use, merchandise or store. It is important to stress that the economic agent with which the exchange will be carried out will also have subjective valuations of the economic goods he owns and those he wishes to add, and will be driven to interpersonal exchange in the same way as the one that gives up the first good.

From what has been said we see in economics there is no such thing as what is commonly called buying and selling, instead we have interpersonal exchange of economic goods, and this is very important, since economic theory has been misled because of it. The concept of buying and selling springs from economic agents’ need to keep accounting records, and their recording technique and the need to have the best analysis of information require the use of these categories; but from the economic point of view of the society as a whole, and the economic theory referring to the society of human beings those concepts do not exist. We will

study the error in economic science of separating the interpersonal exchange of economic goods between two economic agents in two operations, one of buying and the other of selling, with more precision when we introduce the concept of *money* as an economic good. This analysis clearly shows interpersonal exchange is in itself a good, satisfying the needs of the economic agents that exchange; if it is in a quantitative relation of supply being less than the demand –in the exchange this is expressed in obtaining benefits that would not be obtained if there were no exchange- it is an economic good. And that relation of quantitative scarcity is established from the moment interpersonal exchange appears with the purpose of reaching a situation of greater satisfaction, which indicates a state of economic need. Then, there is no doubt interpersonal exchange is an economic good. The case is different if the interpersonal exchange produces a loss at the end, as when an economic good is no longer such after a time; the same can happen with interpersonal exchange as an economic good in itself: it is carried out so that each agent benefits from it, but then the exchanged economic goods can lose their condition of such.

I believe the best way to express that interpersonal exchange is an economic good is to expand the explanation of its origin as follows: though Menger refers the existence of an exchange to the precise case where exchange value is higher than use value and that is why the interpersonal exchange is carried out, the most common cases that give rise to interpersonal exchanges are those called commerce, service and production of economic goods, where economic goods are acquired for their exchange; in other words, economic goods that are exchanged, acquired or added to the patrimony (mostly) of companies, for the purpose of being exchanged again –in the same state or undergoing some transformation process- are to be considered what we have called merchandise, and goods in the process of being transformed can be added to them. This more general motive for interpersonal exchange also appears in Mises expression, in ‘The theory of money and credit’ (p. 5) ‘*Man only proceeds to indirect exchange when he obtains a benefit from it*’; even though he refers it to interpersonal exchange where money is involved, it can be extended to include all types of interpersonal exchange, which leads us to corroborate that interpersonal exchange is carried out to obtain a higher value for the agents that exchange, which means agents had the need to improve their previous status and saw that interpersonal exchange satisfied that need; they do it to improve the subjective value of their present situation compared to the previous one; this shows us interpersonal exchange is an economic good in itself, because it satisfies a human need and because the quantities available are less than the quantities demanded.

What has been said about interpersonal exchange being an economic good and having, therefore, economic value, is no small thing, especially if we remember that for interpersonal exchange to exist, there must be two biunivocal relations ‘economic good-owner’ preexisting the act of exchange, that are replaced by two new biunivocal relations. In other words, I am referring to the interpersonal exchange of economic goods by two economic agents; that is why I say interpersonal exchange is a change or modification of ‘economic goods-owner’ biunivocal relations. Or, more graphically, from the biunivocal relation ‘economic good 1-owner A’ in interpersonal exchange with the biunivocal relation ‘economic good 2-owner B’, spring these two new biunivocal relations: ‘economic good 2-owner A’ and ‘economic good 1-owner B’, where both owner-sets will be better off than in their previous biunivocal relations, and the sum of the subjective values of the two latter relations is superior to the sum of the former. When we do accounting exercises we will see how these higher values deriving from the economic good interpersonal exchange and not from the exchanged economic goods are expressed (‘in a certain way’), and at the same time I will confirm the existence of the biunivocal relation expressed in an unsurpassable manner by double entry accounting, still valid today after 500 years; I will corroborate the biunivocal relation ‘economic good-owner’ was explicit in accounting before economics was formalized as a science.

In this case it is clear the higher value of the better economic state for both agents derives exclusively from the act of interpersonal exchange, since the economic goods have suffered no variation in their intrinsic objective composition.

This leads immediately to the following idea: if the existence of economic goods improves human condition and interpersonal exchange is an economic good, and the latter only exists if

there is at least more than one economic agent that holds it in property, we clearly derive from this that the greater or lesser concentration of the property of economic goods limits or promotes the development of a greater or lesser quantity of the economic good interpersonal exchange. Concentration is related to a better level of intensity of grouping of property, corresponding to the permissibility that will attain the highest development of the relative comparative advantages of human beings –economic calling-, a topic I address when dealing with promoting competition.

The fact that interpersonal exchange is an act or an event and not a *stock* does not prevent it from being an economic good. I already said, when speaking of economic time, that man is temporal in his needs; this implies all satisfaction is inseparable from time.

From this we derive that the way a society is organized in administrative-economic terms is an economic good, from which results that the institutional and legal organization of a community is so to, since the structure of property is dependant on these institutions, while the juridical framework depends on the law, and the framework of economic events depends on their administration, management, etc.

This idea is very important, since it shows us the question of which is more beneficial, more or less collectivism or liberalism, more or less equality or freedom, is a scientific topic, not ideological (I am not referring to a positive ideology in the sense of metaphysics that can be the origin of scientific theories). So the society that obstructs free interpersonal exchange is opting for another benefit or satisfaction, but it cannot hypocritically deny that the origin of its economic backwardness lies in the circumstance of rejecting the benefits of property linked to human freedom, which allows interpersonal exchange, derived from comparative advantages, each one producing that in which he or she is most productive, what I call *economic calling*. Finally –though evident in all that has been said- it is convenient to reiterate that the economic good interpersonal exchange appears due to the previous existence of economic goods that, being in the hands of certain owner, exchange those biunivocal relations for new ones; in other words, there can be no interpersonal exchange without the presence of the following elements that appear as necessary and sufficient: 1) two biunivocal ‘economic good-owner’ relations, preexisting the exchange; 2) the act of exchanging those biunivocal relations for new ones. And this is so even when we refer to the interpersonal exchange we call credit, because it derives from trust, which is an economic good preexisting the act of giving credit; it cannot exist without it.

I wish to reiterate once again interpersonal exchange exists as a consequence of men living in society and previously establishing the relation ‘economic good-owner’, since no-one can carry out an interpersonal exchange of that which is not his property or which he cannot dispose of; a situation that, together with the fact that every economic good has an owner, leads us to the conclusion that, by virtue of the fact that interpersonal exchange occurs between owners, it cannot exist if there is only one economic agent owner of all economic goods, even if we are speaking of a community with many human beings. This concept ratifies once again the enormous economic importance of the structures societies adopt, and the fact that the greater or lesser permissibility of the institution of property is related to the greater or lesser degree of freedom with which human beings that are part of a society can dispose of economic goods. When I deal with prices I will come back to this topic that is so important for economics and we will see that, notwithstanding what I have said here, where there is a division of labor, there is inevitably private property. In short, private property exists where there is division of labor; it can be more or less limited and more or less explicit, causing serious consequences where free development is obstructed.

The moral aspect of interpersonal exchange

From what has been said about interpersonal exchange we derive that, if we exchange our individual abilities –economic calling- to satisfy our own needs and those of our fellow men, we will all be better off, since the economic good par excellence is interpersonal exchange of the individual abilities our counterparts recognize or judge we have. This is in complete agreement with the idea that true solidarity is voluntary; there is no such thing as compulsive solidarity, which is in the essence of the theory of subjective value but not of the theory of

objective value. The introductory note to this chapter is comprehensible if we understand that *intuitively and scientifically* Marx was right when he stressed solidarity '*from each*', since he was recognizing the individual above the totality of the State, as he was intuitively and scientifically right in saying '*according to his ability*', which means accepting the law of supply and the demonstration of comparative advantages by David Ricardo extended to each economic agent –each economic agent dedicated to producing that in which he is relatively more efficient, which in turn is nothing more than a theoretical substitute for what is known as the benefits of free competition-; finally he was intuitively and scientifically right when saying '*to each according to his needs*', that sums up the spirit of solidarity of human beings (opposed to all other animals, that eliminate the invalid) and corroborates the law of demand (each one must give others what they need); in other words, he agrees with my interpretation of Say's law (opposed to the two other interpretations of it).

It is important to explain why I say Marx was intuitively and scientifically right; he was 'intuitively right' because he had scientific knowledge that was correct –he did not accept, as is believed, that science progresses by paradigms, but instead by the evolutionary continuity of scientific progress, what is erroneously and derogatorily called 'conservative'-, because if this were not so it would probably have been impossible for him to be right about his scientific theories; and he was 'scientifically right' because of his correct intuitions. He wished to present himself as a scientific revolutionary to those who had no scientific knowledge –those that had scientific knowledge did not consider him as such-, and so he expressed in popular terms the errors of science relative to the theory of objective value –which he embraced-, and with this he misled unscientific minds. Possibly this is due to the fact that Marx's mission in life was to be a political leader, and with his political aspirations he popularized the most erroneous economic theory: the theory of objective value. We can say Marx's spirit of solidarity is reflected in the principle we presented at the beginning of this chapter, which only has scientific substantiation in the theory he rejected –subjective value- and not in the theory he embraced –objective value materialized in labor- which is imbued of pure selfishness (only what I do has any value, independently of it being useful to others). This shows us that his intentions were good, but based on an erroneous scientific theory, attitude that is repeated daily by those that are on his same road and persevere in their mistake with good intentions, causing harm to fellow human beings.

There is only one interpersonal exchange

From all that has been said we derive there is only one interpersonal exchange: the one carried out by two economic agents when exchanging economic goods they own. It is very important to understand this to avoid theoretical mistakes derived from thinking there can be interpersonal exchange without the existence of economic goods –that are those that satisfy concrete human needs based on the quantitative relation of scarcity- and without owners. Not notwithstanding there is only one interpersonal exchange, it has to be taken as a generic concept, which immediately implies it admits classifying according to the different species we consider; thus we have different types of exchanges that interest us in this book. In conclusion, I am referring to interpersonal exchange of economic goods, taking 'personal' to mean economic agents. Now I will present a classification of interpersonal exchange.

Interpersonal Exchange and peace

Considering the concepts of scarcity, wealth and interpersonal exchange presented here, it is evident man has found a very efficient formula for alleviating scarcity with the use of interpersonal exchange and generate more wealth; let us see:

- 1) Specialization:** humanity has discovered that specializing people in the task they are better at –individual comparative advantage or economic calling- allows it to obtain more wealth and with greater variety than if each one opts for providing his or her own wealth (Robinson Crusoe).
- 2) Interpersonal exchange:** humanity discovered that with specialization it produced more wealth, but for each individual it was composed of an only good and in much greater

quantities than those he needed. In other words, specialization brought with it an advantage, more wealth, and, at the same time, a disadvantage, its uniform composition. Humanity discovered interpersonal exchange as a solution to the second problem.

As a result of combining these two simple but conclusive economic elements to sort out the problem that is responsible for the existence of economics, man observed this combination led him to a different state of things: the desire to establish a trade relation with other human beings instead of going to war. This simple conclusion explains why war hypothesis exist among poor and primitive peoples today.

In turn, with this formidable combination, specialization-exchange, mankind solved another problem, that is basic in the first studies of economics, defined by Malthus when he stated the human race expands in geometric progression while food production grows in arithmetic progression; in other words, that population growth condemns humanity to the Apocalypse. With the combination mentioned above, specialization-exchange, humanity found the economic formula to escape the Malthusian prediction, so that *each one could be better off as population expanded*.

We can conclude then that the great discovery of specialization, which brought about the generation of greater wealth, is in vain if it isn't complemented by an adequate institutional interpersonal exchange system, a set that in turn depends on the health of the basic cell, 'economic good-owner'.

In light of the conclusions of this paragraph, that obviously are not original, we immediately conclude that national frontiers are the main obstacle for generating wealth with equality. On principle then, resistance and criticism to 'globalization' is unexplainable.

As a derivate from this section we can conclude the best way to solve current migratory problems is to lift economic barriers, so that migratory currents can lead to the development of the economic calling of each human being and not merely to escape a situation of misery or 'unemployment', generally caused by the lack of an adequate institutional system that allows the basic economic cell 'economic good-owner' to sprout. That authorities do not act according to these scientific conclusions of economics makes one think their actions opposed to these are the result of great ignorance, or psychic or psychological pathologies (desire for power, adulation, etc.). Unfortunately not obeying these scientific rules leads to states of violence intra and extra frontiers, considering that the lack of solution of economic problems implies a state of belligerence.

Though this paragraph can appear to be a digression in this work, its intention is to show the huge relevance of interpersonal exchange in economics and explain its importance for macroeconomics and especially monetary theory, central topics of this work.

TYPES OF INTERPERSONAL EXCHANGE

Interpersonal exchanges are classified according to their relation with economic time and the purpose the economic agents assign the economic goods they receive in the exchange (corrected by my theory).

According to the temporal existence of economic goods

According to Mises in 'The theory of money and credit', page 238, (author's italics):

'Acts of exchange (I suppose he alludes only to interpersonal ones, since he makes no precise reference to intertemporal exchanges), direct or indirect (a classification I will reject), can be carried out in such a way that both parts can fulfill their part of the contract at the same time or at different moments. In the first case, we are speaking of cash transactions; in the second, of credit transactions. A credit transaction is an exchange of present goods for future goods (accepting he is referring to interpersonal exchanges exclusively, and to economic goods, it is obvious I differ with this concept, since it is intertemporal exchange in its most general expression in my theory and not specifically credit).'

Having referred to credit in the preceding chapter, I can present my criticism here (between brackets in the quote). Since Mises, when defining the credit transaction, refers to interpersonal exchange of present economic goods for future economic goods, it is obvious in this definition he is not considering -at least with the simplicity and accuracy in mine- interpersonal intertemporal exchange. But as we are aware of the importance Mises gave time in other parts of his theory (remember we was an Austrian disciple of Böhm Bawerk), it is obvious the flaw in his theory is in his erroneous classification of intertemporal exchanges and their relation with interpersonal exchanges, a circumstance that did not allow him to perceive the existence of TER, and misled him with the concepts of money, credit, interest, etc.; mistakes which, as we will see, are not exclusively his.

We see that, according to the temporal existence of economic goods for economic agents that exchange them, there are two types of interpersonal exchanges:

a) Cash: it is an interpersonal exchange carried out when the goods exchanged by the economic agents exist in the present; each agent at the time of the interpersonal exchange delivers the specific amounts of present economic goods. It is essential to consider a majority of economic dictionaries and text books in general make no reference to cash exchanges that appear, rather, as the opposite operation from credit, which confirms –by omission- the classification presented here. Some define it as an immediate payment operation; but we can assume the present definition is valid for cash exchanges, and it will be of vital importance when we speak of money and compare it with barter.

b) Credit: it is the interpersonal exchange of present economic goods for future economic goods, as we saw in the preceding chapter. It is essential to stress credit leads to a future commitment that will be totally perfected or completed when the part that commits to delivering a present economic good at the maturing of the liability, proceeds to deliver in that new present a present economic good in exchange for a past economic good, the opposite of the act with which the credit originated. When the credit matures, then, there can be one of the following situations: 1) fulfillment of the commitment with the delivery of present economic goods in exchange for past economic goods, plus interest; 2) a renewal of the expiration date, commonly known as refinancing a credit; 3) non compliance with the credit that is declared non-collectable; 4) a combination of the previous; and, last, 5) what is generally known as endorsement or transmission of ‘monetary substitutes’, which are ‘on sight’ credits that simulate the presence of interpersonal cash exchanges with money, since they are real credits; I will have the opportunity to present this as a new theory with its subsequent corroboration.

This classification is essential, especially when we are looking for greater precision on money and credit, and it helps clear up current theories’ mistakes, that have led to much confusion and mistakes in the analysis of economic information, and in the methodology applied to obtaining statistical data, that are gathered erroneously due to errors in the definitions of variables and constants. In other words, the theory guiding the observations being wrong, these are bereft of adequate theoretical grounding.

Using a different expression, we can say the difference between one type of exchange and another is based on the different spatiotemporal existence of interpersonally exchanged economic goods relative to the spatiotemporal existence of the intervening agents. There must be no doubt that every interpersonal exchange is a new biunivocal relation ‘economic good-owner’ for each of the intervening agents; so the requisite or necessary condition is the existence of the spatiotemporal point of interpersonal exchange, carried out with present or future economic goods. The same is true for the spatiotemporal existence of the intervening economic agent, that can exist or not at the time of the interpersonal exchange; the second alternative would be the case of an interpersonal exchange carried out by a ‘representative’ of the economic agent (as representative, agent, on commission, etc.), that could be a legal entity that does not exist at the time of the interpersonal exchange. Notwithstanding the possibility of the inexistence of the interpersonally exchanged economic goods and/or the intervening agents at the time of the interpersonal exchange, we must clearly establish that any

interpersonal economic exchange is always carried out at a present spatiotemporal point that is unique. This concept is essential to understanding the true significance of the interpersonal price –which I will refer to further on-, which is important for economic calculation; and since, in turn, there is no interpersonal price without interpersonal exchange and this cannot exist without owners, we can understand why Mises concludes economic calculation is not possible in collective societies.

It is also important to stress that in any interpersonal exchange both agents are acting with the double status of supplier (of the economic good they deliver) and demander (of the economic good they receive). This shows us life in society is a permanent interpersonal exchange of economic goods, the most common being the exchange of the economic good labor for the exchange economic good of common use, which can then be easily exchanged for other economic goods. In this way, every economic agent is at the same time a businessman, subject to the hazards of an unpredictable future, an essential aspect emphasized by the Austrian economic school (Mises, Hayek, Kirzner and others). Only, in my theory, all economic agents are businessmen, with more or less patrimony to their name and with a different complexity in the composition of their economic goods. This is of great relevance, since supply and demand are often seen as entities with a life of their own, not considering them univocally related to economic agents, without which those concepts do not exist; it is not economic goods that offer and demand, instead economic agents demand because of their needs and supply economic goods to satisfy them; and this is valid for any property scheme society adopts.

From all this theoretical discourse we conclude there are an infinite number of combinations of interpersonal exchanges, when speaking of the different types of economic agents and goods and relations among them.

In the following chapter I will refer specifically to the development of exchanges seen here – cash and credit-, and we will have the opportunity to analyze other entities or economic tools that are too delicate to commit theoretical errors in dealing with them –as I believe has been the case-; among them, money, prices, interest, and others.

In keeping with the huge relevance of each of these types of interpersonal exchanges, I will dedicate a chapter to each one, taking the opportunity to compare the essential discrepancies of my theory with current ones, having at the same time special chapters dedicated to criticism of Keynes and Hayek and quantitative theories.

According to the time period intervening in the satisfaction of a need

Here I refer to the classification of interpersonal exchange according to the use economic agents give to the exchanged economic goods; in other words, according to ‘what’ an economic agent receives the goods that are a product of interpersonal exchange for; in this sense the following differentiation is often emphasized:

1) Direct exchange or barter: according to the definitions in economic dictionaries, this is the denomination for an exchange of merchandise without money intervening in the transaction. Further research of the term shows us that direct exchange is that in which an economic agent delivers goods which for him have less use value than exchange value, and receives in exchange economic goods that directly have use value, to satisfy his final needs. We will have the opportunity to show we can equate barter to interpersonal exchanges that include money – excluded here- by the sole fact of considering the need to possess it (similar to possession of any economic good); in other words, in my theory there is no relevant difference between barter and interpersonal exchange with money, which is the essential motive of this separation.

2) Indirect exchange: opposite to direct exchange, money (means of exchange) intervenes here. According to Mises, in ‘The theory of money and credit’, page 4: ‘*Indirect exchange is different from direct exchange in the use or not of a means [...] and the demand of goods to satisfy immediate needs is transformed into demand of goods to be exchanged for others*’. But if we continue our research of the term, we see it is the interpersonal exchange by which an economic agent delivers a good that has less use than exchange value for another economic

good that, in turn, can be destined to be a use value or again an exchange value; in this last case an economic good, called a means of exchange, is used as a mediator between the mediate economic goods and those the economic agent needs for his final need, i.e. use economic goods. Here the same reflection at the end of Mises' paragraph is valid, referring to his classification being irrelevant for my theory.

Clearly with division of labor, a direct exchange or barter situation, as has been described here, alluding to the difference established by the presence or absence of a means of exchange –money- in interpersonal exchange, is practically impossible.

It is essential not to confuse this classification with the one I established before based on ‘cash’ and ‘credit’. In other words, we must not equate these two classifications of interpersonal exchange; cash-credit, on the one hand, direct-indirect on the other.

We must clearly establish that when we speak of cash-credit we are referring to the *temporal* aspect of existence of economic goods (present and future), and when we speak of direct-indirect, we refer to the mediate or immediate *purpose* of economic goods that move an economic agent to carry out an interpersonal exchange. A possible comparison would be to include direct (barter) and indirect exchange in what we call cash, on the one hand, and credit, on the other; in other words, cash is often separated into direct and indirect exchange. We will have the opportunity of seeing this is so in my theory of money and credit (as opposed to current economic theory that confuses money and credit).

If we relate the concept of indirect exchange with that of merchandise, we see the definition of the latter is quite similar to that of the economic good acting as an ‘exchange good’ in indirect exchange, since in both cases goods that are not for the final use of the agent are received in the exchange. But what is used as an ‘exchange good’ in indirect exchange is nothing more nor less than a merchandise, which has a special condition –more salability- to satisfy the need of indirect exchange (we will study this with greater specificity when we deal with money).

Then we see if we include the purpose of owning an exchange good as just another human need, we conclude there is no difference between direct and indirect exchange, and this difference is only of use as a financial technicality, not adding new meaning to economic theory. We shall see that not considering things as we have here is the main reason for economic science being misled in aspects that are very dear to mankind, such as the theories of money, credit, interest and monetary prices.

In short, the categorization of interpersonal exchange in direct and indirect resulted in disturbances in economic theory, to the point of re-discussing theoretical aspects corroborated under conditions of direct exchange or barter (that supposedly are not so in indirect exchange). My theory says the opposite: that this classification is only of taxonomic use for financial purposes, but does not alter economic theory at all; in other words, it makes no sense to separate the economic theory for conditions of barter from the economic theory excluding barter; instead what we must consider is the difference between cash and credit interpersonal exchange; but dividing cash interpersonal exchange in direct exchange or barter and indirect exchange is useful for financial analysis.

NON-COMPLIANCE IN INTERPERSONAL EXCHANGE

From the economic point of view, there is non-compliance in interpersonal exchange when at least one of the parts does not comply with what has been agreed; there is non-compliance in the following cases:

- a) When economic goods are not delivered in the agreed qualities and quantities.
- b) When economic goods are not delivered on the dates agreed.
- c) When the debtor and creditor economic agents are not clearly identified.

We can clearly see that when referring to material aspects (such as quality and quantity of the economic goods) and temporal aspects (the dates of delivery of economic goods) I am stating

that only the owners or economic agents that exchange can fail to comply with them. The material and temporal aspects do not exchange; it is human beings that exchange material and temporal aspects (both of them economic), a concept that is in line with the biunivocal relation ‘economic good-owner’ I sustain.

I will have the opportunity to extend my comments on how the aspect of greater or lesser precision in identifying the economic agents intervenes in interpersonal exchange, in reference to the improper appropriation of wealth, and to what I will call the *unknown debtor syndrome*. It is up to law to decide if non-compliance is punishable or not, according to it being more or less unintentional, more or less a result of chance or intention. I only want to emphasize non-compliance diminishes the economic value of interpersonal exchange by virtue of the need that motivated it not being satisfied, or at least in the quality and/or quantity desired by the agents who were motivated to interpersonal exchange.

This immediately shows the importance of the legal aspect in economics, that considers the penalties for non-complying economic agents; if not it predisposes economic agents to include in interpersonal exchange the intention of damage and of not seeking mutual benefits, which is the reason for the existence of interpersonal exchange; in other words, in this case interpersonal exchange would be distorted and it would no longer be an economic good –the essence of which is satisfying human needs-, becoming instead a weapon for hurting fellow human beings. It is important to stress once again that non-delivery of the economic good I am referring to contemplates what can be included in the category of gifts or donations, that is, the result of altruism or similar, since the gratification received is an economic good too; in other words, reimbursement for a donated good or a gift is not required.

Another important aspect we must analyze is that when we are in the presence of the operation we call credit (which is an economic good in itself), the future delivery of economic goods by one of the economic agents is pending; in other words, one or several acts the parts have committed to are subject to the expiration of the pre-established term, and not fulfilling them incurs in what I have called non-compliance. I will further analyze the lack of compliance with an agreed interpersonal exchange through a credit transaction, at the appropriate time, focusing particularly on it, given its importance, and also on the subtraction of economic goods from an economic agent who involuntarily receives nothing in the interpersonal exchange.

Non-compliance is applicable to both types of interpersonal exchange: cash and credit. The economic category of non-compliance is of no small importance: we will see there are numerous economic activities that economic theory does not consider us such; giving cause to validation of illicits (emitting ‘money’ without backing, bank credit, modifying qualities and quantities of goods originally intertemporally exchanged, etc.).

When we speak specifically of credit, we will be able to clearly observe the prejudicial effects produced by what I will call irregular credits, according to the irregularity they present relative to regular credit, and which are real cases of non-compliance in interpersonal exchange.

INTERPERSONAL PRICE OF ECONOMIC GOODS

The stress on ‘interpersonal’ in the title is of great importance, due to the fact that in this chapter I will refer only to interpersonal prices –deriving from interpersonal exchange- and I will do so with the simple expression of *price*, this being nonetheless a much more general term, of which those derived from interpersonal exchanges are just a part. I reiterate that, since this chapter focuses on interpersonal exchange, with the term *price* I am referring to the prices generated by it. Considering I will add more theoretical tools as we progress, I will summarize the concepts and classifications of prices in general in chapter XIV.

In all interpersonal exchanges, the relative quantities of economic goods exchanged are called price. When two economic goods are exchanged, the price of both is being established at the same time: the price (physical quantity) of a delivered economic good is determined relative to the price of the economic good received in exchange; the two economic goods determine a

price for each relative to other, as a totality, expressed in physical units of the other interpersonally exchanged good; that is why prices only have a meaning in this relative sense; there is no such thing as an absolute price, a concept so dear to scientific theory. In other words, the physical quantity of each exchanged species is a component part of the exchanged economic good; so when we say we exchange ten units of the economic good J, we are saying that we refer to the economic good ‘ten units of J’; this does not imply we cannot relate this, through mathematical calculation, to the ‘implicit’ price of a unit of the good J, with the simple step of dividing the price of the total good by the amount of units that compose it. As an example we can say exchanging three kilograms of potatoes for one kilogram of apples means the price of three kilograms of potatoes, for that specific spatiotemporal unique transaction, is one kilogram of apples; the unit price can be expressed to the effect of future calculations –for the economic agents involved in the interpersonal exchange and for others for whom this unit price can be useful as information-, but the price is for the totality of the interpersonal exchange carried out. So we can say a kilogram of potatoes in an interpersonal exchange had the ‘market’ price of 0.33 kilograms of apples, and that the price of the kilogram of apples, in said unique spatiotemporal interpersonal exchange, was three kilograms of potatoes.

This concept of price clarifies many things but, though it is easy to understand, forgetting it leads to many mistakes in economic theory and practice, as follows:

1) The *interpersonal* price owes its existence to interpersonal exchange: otherwise it does not exist, it does not arise, it does not appear as an economic entity, and this is the reason for including it in this chapter focused on interpersonal exchange. In other words, the price springs from a triunal relation at a spatiotemporal point: ‘economic goods-owners-interpersonal exchange’. What does exist with no need of an interpersonal exchange is the subjective use value economic agents ordinally award a good relative to the different goods they possess, and the subjective exchange value economic agents award it, insofar as they consider it merchandise, that is, they have it for trading. Then, when those merchandises are traded or exchanged for others in interpersonal exchange, the price of exchanged goods appears, but it is only valid for that specific unrepeatable interpersonal exchange carried out at a unique point in space and time. In other words, without interpersonal exchange there are no prices, and given an interpersonal exchange the resulting prices correspond only to that exchange and are always expressed in terms of an economic good; they are never ‘virtual’, even though theory seems to consider money, the economic good in which interpersonal exchanges are generally carried out and expressed, is of that nature. I repeat my previous concept: I believe Mises refers to this aspect in his comment in the sense of prices not existing where there is no private property, because we cannot speak of a price system where there is no private property, since there is no interpersonal exchange and without it there are no prices: that is the causality in economics.

Here it is important to establish the following exceptions:

a) Saying it makes no sense to speak of prices in the case of Robinson Crusoe, as in collectivism and tribal societies is, to my understanding, inadequate, because if we define the price of an economic good as the quantity in which it is exchanged for other economic goods, we must agree that where there is exchange there are prices. So in the intertemporal or intrapersonal exchanges I dealt with in the previous chapter, there are prices, because an only agent carries out an exchange of economic goods in the course of time. In other words, we can theoretically say there are prices even in intrapersonal or intertemporal exchange, without there being interpersonal exchange, and we will have the opportunity to corroborate this when we speak of credit and its price (so called interest, that is ‘explicated’ solely when economic time is interpersonally exchanged), but economic time also exists in the case of intrapersonal exchange, equivalent to intertemporal exchange of economic goods by one economic agent – there is no other intrapersonal exchange- and we already know it is an economic good, though not the economic good par excellence.

b) In the case of an only economic agent but composed of many individuals, such as a society in which there is extreme collectivism, a family or a tribe, I also consider you can speak of prices since, by the fact that there is division of labor –though explicit private property does not ‘exist’-, there is always -in tacit or explicit form (vouchers, purchase orders, etc.)- a way of ascribing a result to economic activities, which is a way of appropriating economic goods, of assigning them an owner, and this is what I am referring to when I say there is always a biunivocal relation ‘economic good-owner’, which I have extended to the triunal relation ‘economic good-owner-possession’. In other words, the way property is assigned produces better or worse results in economic efficiency for the community; but there is no doubt there is always ownership of economic goods, and that this is distributed in some way among the human beings that make up a society; there should be no doubt that even in cases of ‘extreme’ collectivism there is private property. The question is the amplitude (freedom) with which it is exercised, a key factor in the development of interpersonal exchange that derives in an individual being able or not to freely express his or her ‘economic calling’; this is no more than the validity of David Ricardo’s comparative advantage, which is wrongly interpreted as only valid for international trade, not realizing it has greater significance for private property in particular.

I believe these exceptions are very important, especially since we must judge Mises’ very interesting stance, firmly stating there are no prices in collectivism; my theory says what I already referred: prices always exist, more or less tacitly, with more or less freedom. Where there is a division of labor –where a human being produces an economic good or a part of one for another person- there is interpersonal exchange, and where this exists there are prices. I completely agree with the spirit of what Mises says in the sense that prices generated with the greatest resource to comparative advantages are better for man.

But to the effect of what we are interested in here, we must stress we are referring to prices derived from interpersonal exchange between economic agents acting within a private property regime, and since this exists as long as there is a division of labor, even in pure collectivism, they are always present. Nonetheless, in this book I will refer always to prices derived from interpersonal exchange, in an environment governed by comparative advantage with individual freedom.

2) Prices for economic calculation: the specific prices derived from interpersonal exchange are used by economic agents to guide their economic life, for estimating amounts in prices (i.e. calculating the amounts of their economic goods in quantities of other economic goods) of the economic goods they own, and for any other economic aspect (forecasting, etc.). But to say ‘estimating in prices the amount of certain economic goods’ is no more than using the prices derived from interpersonal exchanges (which is the only place they are formed) for economic calculation. So we see prices formed in interpersonal exchanges are used as the measure of all economic goods.

3) Prices, as information, are economic goods: because prices satisfy human needs for calculus, as data or information, they are goods, and because they are scarce, they are also economic goods. And the best way to see they are economic goods is considering how economic agents keep limited information about prices to themselves, and though with interpersonal exchange they become almost public, not having information about them is a disadvantage for economic agents. So there is no doubt they are an economic good. In short, the information about interpersonal exchanges prices give undoubtedly is an economic good, since it allows us to identify quickly what we could call the ‘economic level’ of an economic good relative to others, economic level simply being what allows us to arrange economic goods in a progressive order from high to low, to satisfy the ordinal aspect of subjective value, considering the impossibility of a cardinal measure. In short, as useful and scarce information, prices are economic goods, and compulsive regulations that demand publication limit freedom.

4) Relative price: it is also important to emphasize something that produced complications and fruitless intellectual efforts in economic theory: opposing relative prices (expressing quantities of each good relative to quantities of another economic good it can be exchanged

for) to absolute prices that refer to the price of a good without interpersonal exchange or comparison with other goods, which is visibly inconsistent with the concept of price itself. I will focus specifically on the scientific inconsistency of the concept of absolute value in the chapter on money, which is where by mistake the unfortunate concept of absolute price arises. It is important to remind ourselves again the ‘limited’ price considered here is always relative to a specific interpersonal exchange, arising in a unique spatiotemporal point and unrepeatable as to the qualities and quantities of the exchanged economic goods, and to the agents involved; this is the complete expression of the relativity of the prices I am referring to. In other words, the price is valid for an infinitesimal period of time for a specific act, not for a previous or a future act. Here again the irreversible continuity of time appears.

There is no such thing as the price of an only economic good or, in other words, no price can exist that is not related to another economic good. We can only express x amounts of the economic good X are exchanged interpersonally for c amounts of the economic good C , in a specific spatiotemporal point between specific economic agents.

But we cannot put aside the topic of the relativity of the price of an economic good without remembering economic time is also relative to another economic good; but this relativity is different, as we already had the opportunity to see when I referred to the theory of economic relativity, stating economic time is not only relative to an economic good but that it materializes in it, to the point that if this is not so, economic time does not exist.

5) Causality and the level of economic goods and prices: These aspects must be retained, since the relative level of the subjective values economic agents assign to one economic good, compared to others, will affect the prices it will attain in interpersonal exchanges. That is the causality of prices: the price level will depend on the ‘level of an economic good’ relative to ‘subjectively’ offered and demanded amounts, compared to other economic goods, and not the other way around, price defining the level of the economic good. In other words, the price is an indicator or sign of what goes on in the exchange, arising from the subjective valuations of the agents involved, establishing different value levels for the economic goods.

The aspects of prices emphasized here are of extreme importance for clearing up the mistakes of economic theory. But I do not believe it convenient to use Mises expression, that economics could be defined as the science that studies prices, which could be so if we adopt the expanded concept of prices defined here (when we included exceptions 1-a and 1-b); this involves all types of exchanges, including intrapersonal, and exchange implicit in collectivism, that is, where there are vestiges of a division of labor, since in my theory division of labor is closely linked to property, so in this way the incidence of the degree of freedom is correctly isolated theoretically and this will possibly allow us to appreciate better what its most convenient level will be. In this manner we can calculate more precisely the incidence of the greater or lesser presence of free expression of the economic calling of human beings, related to the number of people in a certain economic activity for a certain period, in relation to the product obtained, with more or less freedom; obviously the result will not only be determined by this factor, but it should guide our research.

In short we can say every economic good exchanged interpersonally has an economic price, expressed in the amount of the other specific economic good it is exchanged for, which I have analyzed up to a limited point, leaving further extension and specification of the concept of price for chapter XIV, as I have said at the beginning of this section.

Variation of prices in time

The subject of the alleged permanence of prices is invalidated from the moment the problem is presented since, by definition, prices as we know originate in a *unique and unrepeatable* spatiotemporal point. In other words, *to speak of permanence and/or variation of prices is to refer purely and exclusively to their usefulness in economic calculation*. Prices have operate as data or information for the economic agent.

Once we understand what prices are in the economy -their meaning and origins- we can see their variations are subject to an infinite number of circumstances: the infinite subjective valuations of the agents that intervene in the interpersonal exchange (the only spatiotemporal point where *interpersonal* prices appear as real entities); the infinite economic goods in which

any specific one can be expressed; the infinite spatiotemporal points were transactions can be carried out; in short, the qualities and quantities of the entities that can combine to form one specific price are infinite. Thus for fallible man *the mere idea* of the permanence of the price of an economic good relative to another/other economic good/goods in time is impossible, more so in the case of more than one economic good. In short, since what we have is a unique and unrepeatable spatiotemporal point, it is easy to conclude that the invariability of prices formed in interpersonal exchange is almost equivalent to time not passing, which does not imply obviously that the price of an economic good relative to others cannot remain unchanged for short lapses, or that it cannot vary within more or less restricted bands; these circumstances depend on structural economic factors that act upon subjective valuations, on technological and scientific discoveries, on accidents, and other factors that influence demand and supply. Concretely: there is null or zero probability of the price of an economic good remaining constant, even for a few seconds, relative to each and every other economic good, to which it owes its relativity.

Considering valid this concept of the –physical and philosophical- impossibility of prices remaining constant, sheds much light on the permanent debate on this topic, and essentially on the two economic schools that have an opinion on the matter: one says prices cannot fall (they must remain constant or rise) if there is to be a business profit, and the other postulates that one sign of economic progress is precisely if prices fall, which would indicate greater efficiency in the economy. My concept embraces both these possibilities; it is more general than each of them individually and both together. This consideration is essential, because having scientific concepts that are more general avoids many of the particular debates that appear.

Menger pointed to this temporal aspect of prices, and later, Hayek, in his paper ‘The intertemporality of prices’, expanded the idea; here he emphasized that just as the spatial element is important in price formation, so is the temporal aspect; but I repeat: I believe my analysis is much more general, since it allows me to express what experience has corroborated: the passage niche-differentiation-cost that today defines business administration, indicating that every economic good goes from being very expensive at the beginning of its life cycle to being very cheap; this is how we express synthetically Hayek’s price theory, which can be considered similar to so called classic adjustment that says competition eliminates margins; this is a special case of my more general theory, which presents the antithesis of Hayek’s theory: that *competition promotes higher profits*, not their disappearance.

The most general aspect of our price theory is also reflected in it contemplating what supposedly is an economic paradox, such as the formation of prices of inferior goods or Giffen goods –of which there is less demand when their prices fall- which, economics explains this well, does not go against the law of supply and demand and is explained by the effect of earnings: when the price of the referred good falls the economic agent’s earnings grow, and he can acquire a higher priced economic good.

Finally, I wish to reiterate that the subjective value of an economic good grows as a result of it being able to satisfy more human needs, which leads us to believe that the prices that will appear in the interpersonal exchange of that economic good will be higher because of there being greater demand for them; with the same quantity of that good delivered in the interpersonal exchange now a greater quantity of other economic goods will be obtained, which is equivalent to a rise in its exchange price. As an example, let us suppose bread is only consumed as food, but someone discovers it has special healing properties; this will determine that it be demanded for new purposes in its utility as an economic good; this will cause its subjective value to rise, which will determine higher interpersonal exchange prices of bread (supposing no change in supply). This will be essential for clearing up mistakes in economics, particularly in the theory of money.

Present and future prices

Variations of prices in time clearly show why economic agents have discovered the need to agree in the present on prices for a specific future. We must understand that agreeing in the

present prices that are valid for a specific future means remaining within the framework of interpersonal exchange: its essential requisites must be complied with, the only thing being added here is the term for which the agreement is valid, but the act is always carried out in the present time.

In short, the existence of forward prices is the simple recognition of the importance of time in economic affairs, with the possibility of the term being the present (lapse of time zero) or a future time (lapse of time greater than zero). What must be clear is that any price always derives from an interpersonal exchange carried out in the present, be it valid for the precise moment of the interpersonal exchange or for a future date.

Thus, we speak of present prices when the date of the interpersonal exchange coincides with the term of validity of the exchange price, and of forward price, when the valid term is in the future, subsequent to the interpersonal exchange.

ECONOMIC CALCULATION

Though we have already mentioned this concept, it is important to fully recognize its importance.

For a more in depth analysis of the matter, I recommend Mises' section on it in the third part of his 'Human Action', where I believe the essence of his discussion is that there can only be calculus where monetary prices exist: '*... only through monetary prices is economic calculation possible...*' (p. 313). We can observe that compared to my criterion, the difference is I consider much more efficient the institutional system where there is more private property, that allows for a better development of the economic good interpersonal exchange; where there is less private property there is also less possibility for this economic good to develop.

I will simply begin by stating the importance of calculus in economics derives from a simple logical deduction that relates economics with aspects such as quality and quantity, both of needs and economic goods that satisfy them, and calculus refers to these entities; thus, if there is economics there inevitably must be calculus.

Man, being fallible and having needs related to economic goods that can satisfy them, has the necessity of a specific economic good originating in his human essence: to calculate time, quantities and qualities of all circumstances that may appear in the constant game of satisfying needs by means of economic goods.

It is important, then, to admit economic calculation as an economic good, since it coexists with man from the moment a need appears and it goes along with it until it is satisfied; and since that game is permanent in human life, this results in man always calculating economically, even if sometimes we are not conscious of it.

In this human activity of calculating economically, above all in things related to his life in a society that leads him to interpersonal exchange, man uses the economic good *price* I have already explained and the discipline or science of accounting, along with mathematics, finance, and others.

And so we can see that, not by chance, the part of the world that has established a greater preponderance of private -rather than collective- property, has seen a more vigorous economic progress. We can say calculus and price establish constant and mutual feedback, making human needs easier to satisfy in their constant change. In other words the satisfaction sought in economic calculation leads to interpersonal exchanges that generate prices that are useful in subsequent economic calculation. I follow this logic when considering the relevance Mises gives economic calculation, based on prices in general and monetary prices in particular, which we will have the opportunity to see when we study the economic unit of account.

From this we see that the interpersonal exchange informs the economic agent through prices, which are what can be measured quantitatively; then –as in any science- we find that to measure we need a unit of measure. In economics this is a very special topic, I will expand on later, but it is very prudent to anticipate something here to continue with the chain of causality –ordered set- of the elements we are including in the economic theory.

Since it is impossible to refer to economic calculation without mentioning Mises, it is important to reiterate my attitude towards him, before we continue with other topics. It is said Mises proved there is no calculus in socialist economies because, as a result of there not being ‘markets’ –i.e. interpersonal exchanges-, there is no price formation and without prices economic calculation is not practicable. From all I have I derive that the most precise way of scientifically approaching this subject is as follows: where there is a society of human beings there is a form of property and possession; as a result of what I have said on the triunal relation ‘economic good-property-possession’, and as long as there is more than one exclusive owner of all economic goods, interpersonal exchange from where prices derive is feasible, and where there are prices there is economic calculation. All this economic causality we have established begs the question: is it possible in a human society where there is a division of labor, for there not to be any expression of individual property based on that subdivision? In search of an answer, we can say the highest expression of that situation is slavery, where the slave does not have the property of the economic good *labor* he offers. But having taken theory to that extreme case, we can say the slave ends up ‘offering’ his labor, even if for a minimal subsistence quota under oppression; in other words, prices have always existed where there is a human society with a division of labor (implying the economic good a human being helped to obtain will have the purpose of satisfying the need of another human being), since interpersonal exchange is present even in slavery. It would be different if there were no interpersonal exchange, which would imply there is no slavery in the case we are studying; it would be Robinson Crusoe’s case, in which as we saw we can also speak of prices (that derive from intertemporal exchange). Then, we can conclude Mises is referring to the fact that a system with greater human freedom expressed through the presence of the institution of private property is more efficient than the one inspired in denying it, as in one of collectivist preeminence.

I believed it was interesting to include this commentary, even though I have referred to it before, because I wished to reiterate that, though I agree with Mises’ logical deductive line of thought on the subject –the importance of prices for economic calculation-, I do not agree with his position on the theoretical impossibility of economic calculation in collectivism; in other words, I agree with the central idea that that the possibility of a greater development of the economic good interpersonal exchange, as a consequence of a greater freedom expressed through the institution of greater private property, is conducive to a better economic situation, as is any rise in the supply of any economic good. The world has seen a greater economic welfare where there is a greater dominance of private property, even if there still are economies where slavery is present or extreme totalitarianisms, situations that condemn human beings to extreme wants, due to the limitation of private property, which only corroborates that more freedom expressed through private property means more economic welfare. The theoretical difference I stress may give the impression of splitting hairs, but it leads to greater scientific precision, with huge consequences for human life, and we see this daily: the countries in which private property is very scarce are those where there are greater financial difficulties.

I believe very convenient to repeat here an excerpt from Mises, in line with my theory that if there is division of labor there is private property or, in other words, if there is division of labor there is interpersonal exchange, which cannot be conceived of without private property. Then, in one way or another, we conclude division of labor means property, and we know this means interpersonal exchange and prices and so on with the whole chain of economic causality. Mises tells us in ‘The theory of money and credit’, (page 76):

‘It cannot be denied that in the current economic system, based on the division of labor [...] human valuations of goods are based on their exchange value. It is not use value but exchange value that governs the modern economic order’ (emphasis added).

This clearly shows us a contradiction between what Mises tells us here and his concept that in socialist economies there are no prices, because interpersonal exchange does not exist. In short, I believe comparing Mises’ confused ideas with mine on price formation derived from

interpersonal exchange –which exists where there is division of labor, as he expresses in the paragraph quoted above- indicates that there was simply a formal confusion in him relative to the way private property can appear.

QUALITY AND QUANTITY IN ECONOMICS

First, we must state clearly that before we can refer to the quantity of something we must specify as best we can, and to the point that our need for quantifying requires, the quality of the thing that must be quantified; that is why we speak first of the quality of an economic good and then of its quantity.

Based on the economy being the interplay of needs and their satisfaction, and since these include qualitative and quantitative components, from here we derive the concepts of quality and quantity of economic goods:

- 1) The economic quality of an economic good is defined by the qualitative relation between the quality of the need and the quality of the economic good that must satisfy it.
- 2) The economic quantity is defined by the intensity of the need of the economic good to satisfy the intensity of the need. This ratifies that before quantifying we must qualify.
- 3) The qualitative and quantitative relations between needs and the economic goods that satisfy them are, in turn, temporal; depending on the variations that both present in biunivocal temporal form at each spatiotemporal instant, which transforms the situation in a triunal relation of quality and quantity composed of these three elements: joint quality and quantity of need and satisfaction in time, which in other terms is what Gossen's laws express.

Summarizing all these points, in economics it is impossible to speak of quantity and quality independently from each temporal instant, which says all three variables are dependent, that we must speak in terms of quantity and quality at every instant, which put economics in line with the relativity of all human aspects, and allows us to ratify definitively the concept of economic relativity in the entities economics deals with: needs, economic goods and quantities and qualities of both.

On the other hand, we saw the economy has a very special entity, price; a key element that represent at each instant the synthesis of the joint level of quality and quantity that each economic good has for the economic agents living in a society. But we also saw price is an entity that is also relevant for the individual human being alone, as in the case of Robinson Crusoe. We note that this aspect, along with its influence on economic goods in general, has extreme relevance for the possibility of controlling prices and/or the amounts of money and credit.

In general terms –and this has a lot to do with the errors of economic theory- we can conclude that when speaking of the quality and quantity of economic goods, we are referring inevitably to prices and, vice versa, to speak of prices of economic goods means referring to their quality and quantity, which defines an economic equation:

$$\text{Quality of the exchanged economic good} + \text{quantity of the exchange economic good} = \text{Price of the economic good}$$

equation that refers with precision to aspects we already studied:

- 1) Prices are totality obtained in each interpersonal exchange; that is why they are formed with the quality of the economic goods, plus the quantity of them exchanged. The 'unit price' is a datum that orients economic calculation.
- 2) The price equation I presented here is a consequence of the chain of economic causality I have established, in the sense that quality identifies the quality of the economic good relative to the quality of the need it must satisfy (ordinal), and the quantity relates the intensities of those qualities (cardinal).

3) The exchange mentioned in the equation includes both intra and interpersonal exchanges.

Chapter VII

CASH

A reminder, to begin with, that there are two types of interpersonal exchanges between economic agents: 1) cash exchanges (interpersonal exchange of present economic goods), and 2) credit exchanges (interpersonal exchange of present economic goods for future economic goods).

Keeping this classification in mind is essential because in this chapter I only refer to cash interpersonal exchanges. We saw that, according to the unnecessary categorization established in economics, it can have two forms: a) direct interpersonal exchange or barter, and b) indirect interpersonal exchange, the difference being that in the indirect form we use a means of exchange, called money, that is not present in the first form.

Nonetheless, I must say in this chapter we will also have the opportunity to observe the errors of economic theory that confuses credit with cash when it assimilates money to credit, and postulates the alleged existence of money that is not a present economic good –without which there is no cash-, and other aspects that show weaknesses in economic theory in general.

The need for liquidity

Economic agents sometimes have the need to carry out interpersonal exchanges urgently; they want to satisfy their needs by this means in a short period, but the economic goods they can deliver are not easy to interpersonally exchange, they are not easy to sell. To solve the problem created by the need for a speedy interpersonal exchange, the economic agents have decided to accept other economic goods in exchange for the one they offer, as an intermediate step towards obtaining the final required one. In other words, they carry out an additional exchange with an economic good that allows them to receive the final economic good that is their motive for an interpersonal exchange; an economic good is used as a *means* to facilitate the interpersonal exchange. This interpersonal exchange mode has been called indirect exchange, as opposed to direct exchange or barter, as we have already seen. In turn, we also said the occurrence of direct exchange is practically impossible in a society with a broad and deep division of labor.

We immediately deduce the need for an economic good with fast marketability, the need for *liquidity*, is no more than one of the many needs of economic agents. In other words, this need is included in the chain of economic causality, as any other would be, from what we infer the thing that satisfies it must be a good (a useful thing) or an economic good (something useful and scarce).

To corroborate this we can resort to Mises once again in his 'Theory of money and credit', where he says in page 5: 'Individuals have recourse to indirect exchange only when they profit by it; i.e. only when the goods they acquire are more marketable than those which they surrender' (p.31-32). Mises stresses that the "more marketable" means of exchange are economic goods, and he does so in two aspects: when he says they "profit by it" and "when the goods they acquire are more marketable". When they receive a means of exchange, they are receiving economic goods, which is different from those they gave in exchange only in that it is more negotiable or marketable.

We can say then that the necessary and sufficient conditions for there to be the need 'liquidity' are the following:

- 1) **Interpersonal exchange:** without it, its existence has no meaning.
- 2) **Economic time,** since more marketability implies scarcity or need of time. We saw economic time transcends the whole economy, but in the case of liquidity, we can say it is more essential than for other commodities. ***But this more temporal nature of the economic good that satisfies liquidity, compared to other commodities in general, must not lead us to assimilate it to the need for interpersonal and intertemporal exchange, which originates***

credit and is completely and purely economic time. The reader will fully understand the need to emphasize this when we complete the theory. In other words, in cash exchanges there are no future goods; here the economic time of the interpersonal exchange is zero, as opposed to credit, where future economic goods are exchanged and, therefore, economic time greater than zero is preeminent.

3) Marketability, i.e. the possibility of a rapid interpersonal exchange for any other good, without a considerable loss. In other words, a means of exchange is nothing more than “a commodity that can be marketed rapidly”, that allows us not to incur in any cost due to the time elapsed between the moment it is received and the moment it is delivered in interpersonal exchange.

From 1), 2) and 3) (together or separately) we deduce, in turn, liquidity must be satisfied by an economic good.

The economic goods that satisfy it in full or partially appeared because of liquidity (as a need); it required certain characteristics derived from its essence (once again, we see the objective characteristics of an economic good derive from the human need it satisfies), which in this case are the following:

- 1) It must be, above all things, an economic good in the lapse of time between the moment it is received and when it is delivered; if not, we are in the presence of a defective interpersonal exchange, be it robbery, fraud or loss of any nature, as in the case of it becoming a good or a thing. We must bear in mind that the concept of liquidity makes no sense without the temporal component, which is the implicit reason for its existence in the concept of ‘easy marketability’, where rapid is inconceivable without relating it to time.
- 2) It must be accepted by the economic agents with whom it is exchanged, the economic community. In other words, being of common use, it can be marketed with ease and without additional costs; this characteristic is implicit in the idea of easy marketability.

These were the original characteristics of the economic good that satisfies the need for liquidity, and with the expansion of interpersonal exchange others were required for reasons of practicality –undoubtedly, these are related to economic activity-, but in turn, they gave rise to immoral practices that are often based on errors in economic theory, as we shall see. Menger offers an excellent analysis of the spontaneous and unconventional or extra-legal (mint) origin of the good that satisfies the need for liquidity, and the economic reasons that originated it.

Liquidity and economic unit of measure

We have already referred to the importance of economic calculation; now we must refer to the fundamental tool used by science in general and economics in particular: a unit of measure, an essential element for calculus. Here we come back to the causality chain we referred to in connection to economic calculation.

We will see if the characteristics of the units of measure used by science in general are applicable to economics. In this sense, we wish to stress that the essential requisite for all units of measure is that they be rigid in time: their physical qualities should remain as constant as possible for them to serve as a unit of comparison common to many objects of different intrinsic characteristics, but that share a quality by means of which they can be compared (weight, volume, etc.) We can call this trait of rigidity *homogeneity*, in the sense that, when we refer to any good in the units of measure used, all measurements obtained in this way express exactly the same thing, relative to the unit of measure. In other words, this expression allows us to express the comparatively homogeneous within a heterogeneous comparative universe; e.g., we say a kilogram of bread is equal to a kilogram of steel relative to their weight.

Another general feature of units of measure is their acceptance and use by all or almost all human beings is. All persons using a common unit of measure know the attributes that make it useful as such.

As to the economic unit in economics, and bearing in mind all I have said relative to subjective values not being cardinally measurable, we can conclude it makes no sense to speak of a cardinal unit of measure for something we do not need to measure cardinally. However, I have also said economic calculation is necessary as a guide for the agent's actions, especially with the emergence of interpersonal exchange in all its complexity, and with its infinite prices, which are unique to each exchange but that all agents consider for their calculus. Prices are the most important information in an economy based on interpersonal exchange; we saw the feedback that links these to calculus, and the relation between the level of the subjective value of the economic good and the causal influence of these on the level of economic prices. It is important to stress that, with causality going from subjective values to the prices of economic goods, we are relating entities measured ordinally with others measured cardinally, and this is one of economic theory's findings.

Therefore, we see prices are quantified cardinally, and from this we infer a unit of measure is very useful for economics, which leads us to study this topic, so as to provide an adequate theory.

Thus, economics takes its cue from physical sciences and goes in search of units of measure for prices arising in interpersonal exchange, not for subjective values that we measure ordinally.

Continuing with the features of units of measure in other sciences, we see the general requisites for units of measure apply to economics:

- a) **Temporal rigidity** in its physical characteristics, what we call homogeneity in time. Fully applies to economics.
- b) **Common use**, known and used by all. It is one of the essential motives for their being chosen to satisfy the need to measure, because this feature allows different individuals to measure different things in different places, referring to the same unit of measure. Also applies fully to economics.

This shows the two characteristics of the general unit of measure, and of the physical unit in particular, apply to economics, concerning measurement of the prices that appear in interpersonal exchange. In other words, we corroborate that adding the second characteristic – ‘common use’ - to the first –‘temporal rigidity’ in its physical features (allowing us to relate economic goods cardinally in time)-, the two properties define essential elements of the unit of economic measure used for economic calculation.

If we relate the features required by a general unit of measure, with the ones required by an economic good that satisfies liquidity, we see there are common elements: these are temporal rigidity for measuring things at different times –we have already seen the transcendence of economic time- and common use originated in the need to measure prices, arising from infinite interpersonal exchanges in different spatiotemporal points. Then the essential feature of common use of ‘easy marketability’, essential for a means of exchange to be accepted by the community, fully satisfies the required conditions for a unit of measure.

The big question in economics is: does the unit of measure in economic science have to satisfy more requisites, other than being an economic good, different from those of temporal physical homogeneity and common acceptance? My theory says the unit of economic measure does not need to satisfy any other requisites.

The central error of economic theory, in the first place, is that it wants to include a price in the economic unit of measurement, and that the price be constant in time. Which clearly says the temporal physical rigidity of the economic good used as a unit of measure –condition satisfied in economics by adopting a fungible good as a unit of measure- is confused with rigidity of the price of the good chosen as a unit of measure. In other words, the error is double.

Abscribing a price to the unit of measure is like ascribing a price to a meter, a yard, a kilogram, etc. On the other hand, though the economic unit of measure in economics must be an economic good and it will form prices in interpersonal exchanges, just as in any other case, its price will not be constant in time. I have already stressed how utopian it is to even think of prices in general being constant; in other words, defining the prices of economic goods will have

in future interpersonal exchanges is determinism at its most extreme, it is the Lamarckian genius that foresees everything exactly. The existence of forward contracts with anticipated prices corroborates the human need to attain the highest possible certitude on the future, precisely because man knows it is naturally unpredictable for him. Therefore, the economic good used as an economic unit of account does not escape the condition of prices in general, that by their very essence are inconstant.

We also see many of the errors of economic theory derive from not understanding the essence of the concept of price, which is not the value man assigns to goods. On the contrary, the subjective value man ordinally assigns to economic goods influences or determines the prices they acquire only and exclusively in interpersonal exchanges that are unique, exclusive and unrepeatable in a spatiotemporal point. We should bear in mind the economic chain of causality flows only in one direction: from values to prices, subjective values are not constant in time either.

We must clarify this aspect of great theoretical relevance: what the economic agent, more specifically, man that calculates economically, needs, is a unit of account for prices, something that can act as a measure of prices, not subjective values. Therefore, the economic good chosen by humans for the function of measuring the prices of interpersonal exchanges will be “the economic good used to measure prices”, not subjective values, which can only be arranged ordinally. Again, we find a brilliant explanation in Menger, when he refers to the means of exchange –money- as a measure of prices.

We conclude that the good satisfying the need for liquidity has the essential characteristics required for a unit of measure in economics; from this, we derive that the good that satisfies the need for liquidity can be used as the ‘unit of measure of prices’.

Thus, we see that one good satisfies two different needs, for liquidity and for a unit of account. This should not surprise us, since economic goods in general have different utilities, and as we know this allows them to rise in the economic scale. The more useful a good is - both in terms of quantity and diversity-, the higher the subjective value it will be assigned, and this will be reflected in the higher prices it reaches in interpersonal exchanges.

Before leaving the topic of the economic unit of measure, I wish to reiterate the concept that reveals one of the central errors of economic theory: that it makes no sense to speak of the price of the economic unit of measure or the economic unit of account. What happens here is that in economics an economic good must be used as a unit of measure –this is the causal chain-, and this economic good does acquire prices in interpersonal exchanges, and has the general characteristics of prices, including that it is inconstant in time. We will reach a clearer understanding of this when we refer to the price of economic time. Which brings us back to the theory of economic relativity, that tells us that we must deal with time in economics through economic elements, economic goods. Just as in the theory of physical relativity, physical time is dealt with using physical elements known as bodies. In both sciences, the elements are subject to time and this originates movements and changes, except in the case of units of measure that theoretically must be physically rigid and fungible, especially in economics.

MONEY

We have concluded that man needs a good that can satisfy his need for liquidity, and that it is an economic good; in turn, that same good can satisfy the human need to measure prices originated in interpersonal exchanges, which are a source of information for economic calculation.

The present economic good that satisfies the need for liquidity and at the same time, subsidiarily, can serve as a unit of measure, is called money. If we wish to understand the epistemology of this term, again Menger offers the solution.

All this shows what the specific and central aspects for understanding the theory of money in economics are and which are accessory. Thus, the central aspects of money are:

1) Money is a present economic good, not an abstraction; in other words, there is no such thing as “virtual money”, “sign-money”, “symbolic-money”. Though there are no substitutes for money, there can be many economic goods that fulfill the function of money, that is, that satisfy the need for money, or that are useful as money; in that case, we will have “present economic goods that satisfy the needs for liquidity and unit of account at the same time”. It is as saying there are many motor lubricants, when what is correct is to say there is the generic good motor lubricant, which, in turn, is what allows different brands and/or “models” of motor lubricants to exist, each with its price, according to how it satisfies the corresponding needs.

2) Its specific function is to satisfy liquidity, in the first place, and to be a common unit of account, useful for economic calculation, in the second. We must not forget, when speaking of the unit of account in economics that it is for measuring prices. Money is often used for other functions it can fulfill, but which I believe are not specific of it; as we shall see, they have created unnecessary complications in economic theory.

Those are the two central functions –which include the feature of common use (if not, it would not be apt for either of them) - and the rest do not have the same specific importance. In other words, when I deal with the subject of the functions of money we will see the only particular ones are those two, which is why the present economic good that satisfies both those needs is designated as money. We could debate if satisfying the need for liquidity is sufficient for it to be considered money; that would not be a problem, since we could say we call money the present economic good that satisfies the need for liquidity, and unit of account or currency of accounts the one that satisfies the need to measure. Considering the huge importance of prices, it is always key to define with great precision what economic good we are referring to as a unit of measure; this also explains the importance of the function of unit of measure we assign to money, and what it means, especially considering possible adulterations.

In short, we can summarize the topic of money as follows:

- Money is any present economic good that satisfies the need for liquidity or means of exchange; what defines money is its marketability, allowing us to solve the problem of liquidity or means of exchange. In this definition, we observe the need for that means of exchange to be of common use is not explicit, but it is implicit both in the aspect of liquidity – representing easy marketability without cost- and of a unit of account, which we saw when dealing with both topics.
- We also saw the human need for economic calculation requires an economic good we call unit of measure that allows us to calculate, and money typically is accepted as such. Money originates as a means of exchange to satisfy liquidity; and then it is adopted as a unit of measure to satisfy another need: calculus.
- *The essential –though not explicit- debate for the economic theory of money is if any economic good that solves the need for liquidity is money.* Current economic theory has explained the need we call liquidity and that money satisfies; but from there on everything monetary theory tries to build is hazy. In chapter IX, I will have the opportunity to give a more satisfactory answer to this question.

In short, we see the concept of money derives causally from what I emphasized when referring to liquidity as a need that is satisfied with a means of exchange, and the need for a unit of measure to calculate in economics with prices; so –though it seems strange- very little more can be said about money. As with any economic good, once the need it satisfies is established, everything else derives from it; the problem in economics often is that we do not know what need is being satisfied.

Here we can review all the central aspects of the theory of money; as we shall see it follows the same chain of economic causality as any economic good relative to the need it satisfies:

1) Originating in a human need: the human need for liquidity, i.e. to have a good of easy marketability, useful as a means of exchange to obtain the economic good we really need, and –just as any need- it generates the quality of the good or economic good that has what can satisfy it.

2) Economic good: the good that satisfies liquidity is economic when supply is less than demand. Relative to that situation, we infer that since money appears because of exchange among economic agents, the good that satisfies the need for liquidity is an economic good as long as exchange is so, or as long as exchange finds no way of existing without liquidity.

3) Money: we call the present economic good that satisfies the need for liquidity by this name.

4) Common use: We could think money will not necessarily have this characteristic, but it derives from the condition of satisfying the need for liquidity, since it means easy marketability without loosing too much value in the act of buying and selling, which means it is of common use. However, the basic concept is money must satisfy liquidity –as Menger says, a high degree of marketability-, and from it derives the trait of common use.

The functions of money

Economic theory assigns money several different functions and when we speak of functions, we know we are referring to the needs it satisfies, since in economics it is the only function a good can have: to be useful for satisfying human needs. In our case, we already know that money is not only a good, it is also an economic one, i.e. supply is less than demand.

The way it analyzes money's functions is the origin of economic theory's mistakes relative to it. This should not surprise us, since we know every economic good is conditioned by the need it satisfies; and, since speaking of functions is the same as speaking of "functions of economic goods", I consider it essential to see all the theoretical aspects related to money and to sift through them with all the tools I have been displaying. Thus, we find it is not that difficult to solve all the theoretical errors, following the deductive logical chain of economic causality beginning with the primitive terms we have adopted.

The functions assigned to money are:

1) Means of exchange: known as a means to make exchange easier, it is what we have already expressed when saying that, to obtain the economic good an economic agent needs and cannot exchange for directly, an economic good with a high level of marketability is used as an "intermediary", that allows the agent to reach his goal immediately. This shows us the difference between indirect and direct exchange, classification I have already considered irrelevant for economics, not so in finance. Thus, indirect exchange arises from liquidity. I have stated more precisely that the limitations of the economic service direct exchange offers, brought about the need for liquidity, which, in turn, brought about the emergence of money. This is the order of causality, an aspect that will motivate Menger from the beginning of his book: '*...All things are subject to the law of cause and effect...*'. Possibly anticipating Einstein's postulate: '*God does not play dice*'. In short, speaking of the need for a higher degree of marketability satisfied by a means of exchange is the same as to speak of the need of liquidity satisfied by money, the exact expression of the biunivocal relation "need-economic good".

2) Unit of account: I have already referred to it, but it is very important to repeat this concept: when money is used as a unit of account, it satisfies the need for economic calculation, derived from prices that appear in interpersonal exchange.

3) Means of payment: It can refer to two types: i) as cash payment –when money is given to receive a present economic good-, but since we know money is by definition a present economic good, we are talking of a simple interpersonal exchange of present economic goods, a situation valid for any economic good of that characteristic, not only money; and 2) as a means of canceling credit or an obligation; since credit is an interpersonal exchange transaction by which a present economic good was exchanged for a future economic good, when the liability matures what will then be a present economic good must be delivered in

exchange of an economic good received in the past (be it the economic good money or others); but we see any present economic good can cancel a credit so, in this sense, there is no difference between money and other present economic goods, except that it is the most used contractually to cancel debts; but this is implicit in the feature of “greatest marketability” or “common use” of money, not in the fact that it is used in a cash or credit transaction.

Therefore, this adds nothing to the functions I have considered basic for money, no matter what concept we adopt of “means of payment”: a cash transaction or cancellation of debt.

4) Value conservation: as I have already said, the concept of economic goods implies their value, that changes permanently, and if they lose all value, it is a symptom of their no longer being economic goods. Then, money being an economic good, when supply is no longer less than demand, money goes back to being a good. In other words, conservation of assigned value for money is no different from any other good. It is important to bear in mind I am referring to an economic good (species) that fulfills the role of money (genre).

5) Storage of wealth: generally, storage is understood as keeping money, i.e. not assigning it other functions (consumption or capital). But we see once again that storing wealth is valid not only for money, which implies we are again in the presence of a function that gives money no special trait, since any durable economic good can fulfill it, if it has that category as long as it is kept in storage.

6) Buying power or purchasing power: it refers to money’s capacity to be exchanged for other goods, but the same can be said of any economic good subject to interpersonal exchange. What’s more, interpersonal exchange is intrinsically that: no economic good that does not have that “power” (buying or purchasing power) can be exchanged, not being an economic good that has exceeded its use value, and commodities in general.

I cannot leave the topic of money without emphasizing Carl Menger gave it scientific precision in the works I have already referred to (“Principles of political economy” and his document “Money”). He clearly established the concepts presented here. Unfortunately, I believe the erroneous development of his ideas by his followers (Mises, Hayek, and others) led to debates with other theoretical schools, not realizing all of them had deviated from Menger’s path, while thinking they were on opposite sides. Obviously, we will see they were so in other aspects. However, in the specific case of money, his disciples got tangled up in a series of *ad hoc* theoretical alternatives, trying to “return” to Menger (attempts to explain the application of the subjective theory of money value, regression theorem, money substitutes, etc.), the easiest thing being not to deviate from its simple and conclusive origin.

I include this comment here as a preview, since we will be able to compare the theory presented here with those developed up to the present. This must be so because epistemology clearly shows a theory is useful when it can explain previous ones which it pretends to replace, and include them as limit cases of the new theory. Let us also be reminded that of two theories that explain the same event, the simplest is preferable. I believe my theory covers both aspects: it says more and in a simpler way.

Money in interpersonal exchange

We are going to use the “chain of economic causality” to corroborate the existence of a mistake in the theory of money.

I already explained the unnecessary economic (not the financial) classification of indirect exchange –that uses money as a means of exchange- by opposition to direct exchange or barter –that does not use money as a means of exchange-. However, we must not only stress the sterility of said categorization, but also the need for an in depth analysis of another aspect I already referred to, but I specially reserved for the section on money. I am specifically speaking of the division of the act of interpersonal exchange, when money intervenes, into two separate parts or acts called buying and selling. This would bring no problem with it if it only referred to simple abstract categories; but as I have stressed opportunely, intertemporal exchange in economics is one act, and one only. Thus, the terms “selling” and “buying” are very useful for analyzing the financial statements of each economic agent, but in their consolidation by economics, these categories disappear. When we talk of macroeconomics,

we are referring to the economy of society as a whole, and in it, what each economic agent buys and sells cancels out. This is the same as saying interpersonal exchange is a unique act between economic agents from the point of view that interests us in economic theory, without meaning by this that the act of interpersonal exchange -which, as we know, being an economic good, satisfies human needs- should not be recorded.

However, when abstract appearance is not considered as such, because of the temporal aspect, it misleads economic theory into mistakenly speaking of “the distance that exists between the act of buying and the act of selling” (when referring to intertemporal exchange with money), as if present and future economic goods appear in every interpersonal exchange where money “mediates”. We have already seen this refers to the case classified as credit. However, there is also cash interpersonal exchange, where only present economic goods are exchanged. So in every interpersonal exchange in which money is involved it must be considered as a present economic good, which is precisely what happens in practice: when economic agents exchange an economic good for money they say they are exchanging –“buying” or “selling”- cash.

In other words, there is no intervening time that could allow us to say that when we use money we are talking of future goods, because money is a present economic good, never a future economic good; in that case, it would be credit, but never money. The error is that there is a reference here to the lapse between the moment in which the economic agent delivers the economic good he has and the instant in which he receives the economic good he really wants in the last instance, for which he “uses” an exchange economic good in the intervening period –that is why it is unnecessarily called indirect exchange. However, with that reasoning we could say all commodities are money.

When an economic agent delivers a present economic good he owns in exchange for the economic good money, there is an interpersonal exchange of present economic goods. He has delivered a good that satisfies certain human needs for another that satisfies the human need for liquidity, and he receives it because, at the time, he had the need for liquidity and satisfied it. When that liquidity he now disposes of has for him a subjective value inferior to that of another economic good he does not possess, he will be motivated to exchange interpersonally that money for the other economic good; i.e. he will carry out the inverse transaction.

We must bear in mind the need for liquidity is satisfied by the economic good money, which is always a present economic good. This ratifies differentiating direct exchange, or barter, –in which money is not involved- from indirect exchange, where money is involved, is unnecessary. This is very useful, though, for financial analysis, which includes the study of the degree of satisfaction of the need for liquidity. Economics is interested in separating cash interpersonal exchanges –barter or with money- from credit.

The interpersonal exchange that is not cash is credit, and since cash can be barter or money, it is practically impossible not to know if we’re speaking of cash or credit, which seems an obscurantist topic in economic theory and gives rise to enormous mistakes.

On the other hand, since money is a present economic good –because it owes its existence to a need (liquidity) and its supply is less than demand, both conditions in present time- it makes no sense to treat it differently from other economic goods in its temporal aspect, mistakenly considering it a future economic good, because in that case it is credit and not money we are speaking of.

We already saw human needs are relative to the space and time of each economic agent, that the degree of a need varies in time according to its level of satisfaction and that the goods that satisfy it also have that feature; but confusing this concept with past, present and future economic goods is a very different thing.

Therefore, once we have accepted money is a present economic good, we can say that for the economic agent receiving it in exchange for another economic good is a similar transaction to barter, if we understand barter as the exchange of present goods. However, since we have included the category of mediacy, we call this operation cash exchange, and make a distinction between barter, as direct exchange, and indirect exchange, that uses a good as an intermediary in the exchange process. This means nothing more than recognizing mediacy attends to the need of liquidity, making this classification useful for finance.

In other words, what economic science is interested in is not confusing cash with credit, and, in this sense, receiving money in interpersonal exchange is related to satisfying the need for liquidity. Considering this a real need, arising from interpersonal exchange –without which it cannot exist- we can say that an individual receiving money in interpersonal exchange for a present economic good is carrying out a barter transaction, since he or she is satisfying an immediate need: possessing liquidity. This state of need for liquidity is temporal, just as any other.

Another way to express this idea is as follows: storing an economic good can be the result of uncertainty about the future, the result being that an economic agent can store money. That situation can last a long time –and for a “minimum” of money, we can say it is permanent. In this case, that amount of money never fulfills its function –it will never be exchanged- so we are speaking of money that satisfies the final need of the agent, which transforms the interpersonal exchange in which he or she received the money into a barter transaction. This consideration is no small thing, especially for those who have studied economic theories that say barter transactions are different from the ones involving money; they do not consider separating cash from credit essential and separating barter from money accessory.

Somebody could say money is a means for obtaining another economic good; I refute this saying, if so, commodities are not present economic goods; you could answer they are, but they satisfy the economic agent’s present need for commerce, and my final answer will be: money satisfies the agent’s present need for liquidity.

In short, what is useful in economics is separating cash from credit, not money from barter, conducive to the error in economic theory of dividing the act of interpersonal exchange in buying and selling. The feature of mediacy or satisfaction of liquidity is present in money by the very fact of being an economic good. There is no need to recognize any other feature –all other categories of economic goods are included in the types already defined. The only other thing we can do is give it a special title, as accounting does, calling it *liquid assets*, as it does with commodities, under the title of *exchange goods*, and capital goods under *investments*.

Money is a present economic good and as such has all the corresponding features, mainly that it can be interpersonally exchanged and its prices are determined in specific spatiotemporal interpersonal exchanges between economic agents, and that its value is subjective, as with all economic goods and subject to all this implies. This shows Mises regression theorem is unnecessary; it only means he implicitly admits to straying from Menger’s concept of money. Therefore, he was not who included money in subjective value theory. Except if money is not considered a present economic good, an error post-Menger economic theory incurred in (we could say, starting with Wicksell).

The most frequent cause of errors in the theory of money –related to its quantity (if it is determined exogenously or endogenously), permanence of its price in time, its circulation speed, etc- derives from confusing money that satisfies the need for calculating and is used as a unit of measure with money that satisfies the need for liquidity. It is the same as having a yardstick made of gold and confusing the need for measuring it satisfies with the value it has as gold; the yardstick need not be made of gold to be useful for measuring and as gold, it need not be useful for measuring. The key here is to bear in mind liquidity and measuring are different needs; everything else derives from this.

In short, if we believe money has a temporal aspect because it is an exchange good, i.e. because it allows indirect exchange, there are infinite economic goods –almost all economic goods with the current division of labor- that are money, and are not acquired to satisfy final needs. But not all have its characteristic of easy marketability, which leads us to assign it the biunivocal condition “need-economic good” we call liquidity; but because of this “special” function it is subjectively valued, which in turn has direct influence on the prices it acquires in interpersonal exchange. Once we admit its feature of easy marketability in time, i.e. it satisfies the need for liquidity, it already has the subjective value and temporal nature of money, as other economic goods have to a greater or lesser degree. However, satisfying that need is what confers it liquidity. In other words, the need for liquidity already has the temporal aspect it requires of the economic good that will satisfy it. That is why it has all the features of Gossen’s laws. We can observe that, as all economic goods, it also is part of the chain of

economic causality, and it is so as a present, not a future economic good. This last aspect is crucial also for ratifying a correct dissertation by Hayek, when he says Gresham's law only works with forced currency. However, my theory is at once more general and simple, and we will see that, just as it does not need Mises regression theorem, it does not require Gresham's law either. Another expression of this is that the existence of coercion implies the validity of Gresham's law for all goods, not only money.

We observe that, with this conception, it should not be difficult to differentiate what is from what is not money. And, in the case where this cannot be established, there are two possibilities: 1) we are confusing the function of means of exchange with that of unit of measure, and here we repeat: "*it makes no sense to speak of the price of the unit of economic measure or the unit of economic account; the fact is in economics an economic good must be used as a unit of measure –this is the causal chain-, and it acquires prices in interpersonal exchanges*", or 2) we are confusing it with credit, which is another economic entity. This is the essence of most errors in economic theory: not bearing in mind money is always a present economic good and that it is not credit, which is a completely different entity.

This last conclusion –confusing money with credit or viceversa- is no small thing, and it acquires greater importance in a subsequent mistake: considering interest as the price of money (more on this later).

Money is only one thing

As I said relative to interpersonal exchange, money is only one thing, if we consider it is the present economic good that satisfies liquidity and incidentally can be used as a common unit of account. We can say, then, there are moneys of different quality, the same as for lubricants. This initial consideration immediately leads to the debate on the convenience of there being an only economic good that fulfills the role of money for all human beings. And here again we need to know if we are referring to money as a means of exchange or as a unit of measure. We can see using one or several of these is of an economical-practical order for economic agents; it is just another question of "costs" in the day-to-day economy.

When speaking of different types of money we are interested mainly in the instrumental or practical aspect of its daily use by economic agents. With the use of cattle, rice, cocoa, tea, gold, etc., as a present economic good that satisfies the human need for liquidity, humanity has found solutions to practical problems, especially concerning transport and manipulation of money involved in interpersonal exchange. As a result, minted metal replaced crude metal, i.e. the same metal but subject to a design that would avoid adulteration. In time, people saw that a deposit certificate on the metal, what was called paper currency (PC), could be exchanged in place of the physical metal; but that paper could be converted into the physical metal at any time; in other words, in the beginning PC was a deposit certificate.

There is bibliography that analyzes in much greater depth what I am saying here, but to the effect of what interests us here, it is sufficient to bear in mind this general process of practical progress and considerations of cost led to the inclusion of technological developments in the economic goods that are money.

Relative to the concept of deposit certificate and the legal aspects of the different types of deposits, which are no more than an institutionalization of custom and usage, I consider Huerta de Soto's approach in his work 'Dinero, crédito bancario y ciclos económicos' (Money, bank credit, and economic cycles, Unión Editorial) very appropriate, when he explains the characteristics of deposits of fungible goods compared to other goods (see my definition of fungible goods). I recommend studying the chapters that refer to the difference between regular deposits, on non-fungible goods –for example, registrable goods, such as a car-, and "**irregular deposits**", which is the deposit of fungible goods, e.g.: a deposit of a ton of wheat which at the time it is returned to the depositary will surely not be composed of the same physical units of wheat, instead it will be "another wheat" equivalent to what was deposited, with the same intrinsic qualities.

We can clearly see that in the case of the paper currency we are speaking of up to here, we are in the presence of an "irregular deposit", expressed by means of a certificate. Nevertheless and for reasons we will immediately see, from here on I will speak of a CID when I refer to

money in the form of a Certificate of Irregular Deposit, and I will also be referring to what I call "***rigid materialization***".

In other words, the CID is no more than recognition that its holder is the real owner of the precious metal –when this is used as money- that is in a deposit belonging to another owner, who is not the owner of the gold –a metal I take as typical for brevity's sake- but a mere depositary.

Another feature of an irregular deposit is it has no expiration date; it is the same as saying the depositary always has to have the fungible good in *stock*, since it is not its own property, and the true owner can retrieve it whenever he wishes, i.e. exchange the CID for the precious metal.

The CID appeared as a means to avoid the costs of the physical transport of the precious metal –which it represents-, but this criterion allowed the certificate to be involved in interpersonal exchange (*circulate*) as if the precious metal were doing so. This derived in "endorsement": economic agents signed on the back of the certificate and exchanged it for other economic goods; this signature also made the agent transferring the CID responsible for the veritable existence of the precious metal referred to by the deposit. I will not extend on the legal requisites of the certificate, but it must at least have the description of the precious metal it is equivalent to (quality and quantity), and the data of the depositary and the place of deposit. What interests us here is that, though the holder can present him or herself at any time and exchange it for gold, the endorsement makes it appear as if it had no expiration. The "circulation" of the CID in interpersonal exchange seems to give it an infinite expiration date; it seems to transform the present good "CID" into a credit. I believe monetary illusion in economics is based on thinking money in the form of a CID is a credit and not a present economic good. This led to many mistakes in economic theory, and its origin is in the role time plays in the biunivocal relation liquidity-money. In other words, it concerns the temporal aspect of money, i.e. relating the temporality of the need it satisfies with the lapse of time in which it satisfies it.

This endorsement of the CID among agents in interpersonal exchanges can be seen to show the CID is something that has "no maturity", or has an infinite maturity or, at least, until the last holder exchanges the CID for precious metal. However, this is completely absurd, because we say a present economic good serves for many interpersonal exchanges and, being fungible, is useful in time. But if this is so, we are only referring to the fungibility of a good and not liquidity; instead, fungibility is a concept derived from comparing characteristics that are completely different from those of liquidity, that are not only present in the economic good fulfilling the function of money. In other words, we are speaking of two different types of categories: those that classify economic goods according to their temporal existence relative to the economic agent –past, present, and future- and those relative to the moment in which an economic good changes owners. Speaking of the classification of economic goods, we can say, since it satisfies the condition of liquidity, it is obvious money can change owners or be involved in interpersonal exchanges a greater number of times per unit of time than other economic goods that do not satisfy that need.

Since money is such because it satisfies the need for liquidity, it must have all the characteristics scarcity requires, specifically easy marketability, which implies –by definition- that money will have a high rotation speed.

We can better express money's relation to time by saying that for the duration of the period money remains in the hands of an economic agent it is being stored, but we can also say it is being used to satisfy his need for liquidity. in other words, we are concluding storage –of money or any other economic good- is no more than a new expression of the concept of "a good for own use", since storing implies not interpersonally exchanging, the same as the good for own use. In this manner we can delimit the classification of economic goods according to the purpose their owner assigns them, and conclude economic goods can be assigned to own use or interpersonal exchange, and, and the same time, both types can be consumer or capital goods.

Types of money

There is no doubt of the existence of different forms of materialization of the concept of money, which is a generic definition, but what must be made clear is that, no matter what form money acquires –*non durables*: rice, salt; or *durables*: gold, silver- it is always a present economic good; that its reason to exist is the need for liquidity, which derives from interpersonal exchange; and that it shares the principles pertaining to value, price, rotation, etc. Once again, we must stress there are only two types of interpersonal exchanges: cash and credit; and that money, as such, is always a present economic good. Its presence, by itself, does not define the existence of economic time in interpersonal exchange, as with any other present good interpersonally exchanged. In other words, when we speak of the other type of interpersonal exchange, where present economic goods are exchanged for future economic goods, we speak of a loan or credit, not money. Money can be involved in the transaction, but just as any other present economic good exchanged for a future economic good, different from other economic goods only because of its “financial” feature of satisfying better the need for liquidity.

I reiterate that money, when involved in an interpersonal exchange, is a present economic good, just like goods interpersonally exchanged in barter. When money is exchanged for any present economic good, we are in the presence of a cash interpersonal exchange. However, money, just like any other present economic good, can be loaned; it can be part of a credit. We can reiterate “generically” there is only one “money” that is a present economic good that satisfies the need for liquidity. This leads us to say it can materialize “specifically” in different forms, according to practice and use and the different types of economic goods that fulfilled the role of money. For the specific case of metal, this was as follows: first metal, then minted metal, and finally paper currency, that functioned as a CID, that could be traded at any time for the metal it referred to.

The following phase was “adulteration” of the CID, on which I will not expand, since there is abundant bibliography. I will stress what interests us in this work.

Governments soon realized economic agents made paper currency circulate without the need for the endorsement, which stood out as an advantage of the CID. Three immediate consequences derived from this situation: a) the authorization of only one issuer of paper currency, which required forbidding anyone but the state to issue money, since any economic agent owning the good adopted as money can issue a CID; b) the holders of paper currency could be cheated if it didn't expressly state its equivalence in the units of the specific metal it represented, and c) consequently, paper currency is no longer a CID, becoming only paper currency, which is only relatively so because, though the amount governments circulate is not directly related to the amount of money going in or coming out of its deposits (100% materialization), there will always be a proportion between the amount of nominal units of paper currency issued and the physical *stock* of gold at any given instant, disposable for responding to those that pretend to exchange a certain amount of paper currency. Things being what they are, paper currency does not represent a precise amount of any metal. In the extreme case of there not existing a physical *stock* in the “deposits” of the “only depositary” (the State), we have a paper currency or money that is not a present economic good, which goes against the whole chain of economic causality described here.

It is important to show why it is possible to come to the extreme situation described above, or to intermediates ones that are also prejudicial, and this is the result of adulterated paper currency being compulsively supported by the State, so that it will be accepted as a means of exchange in interpersonal exchanges, forbidding at the same time other agents to issue PC.

The existence of paper currency that has been issued means it is not necessary for the deposits to be wholly empty for there to be a serious problem, since simply altering the relation of the amount of paper currency –which does not state how many physical units of metal it represents- that can be adulterated at a given instant, the essential requisite of any unit of measure is distorted: I am referring to its feature of physical rigidity in time that, in the case of the economy, as we saw, can be correctly supplied by a fungible economic good.

I will now use a simple division to show how the physical rigidity of the unit of measure, so essential for any science –including economics, as we saw-, is adulterated, which is where the

physical adulteration circuit begins, bearing in mind we are not speaking of the intertemporal variations of the price of the economic good metal. The following table shows the ratio of the physical units of paper currency circulating at any time to the gold held in the deposit by the depositary, to be able to respond to requests for swap or conversion, which governments also forbid in difficult situations:

Denomination of paper currency	P.C. stock in units	Gold stock Kilograms	PC/ gold Rate
L (1)	100	100	1
L (2)	150	100	1.50
L (3)	200	160	1.25
L (n)	(q)n x \$	(r)n x Gold	(q)n x \$ / (r)n x Gold

In the first column of the table we have the denomination of the paper currency I call L, with its sub index, which refers to the different rates of the units relative to gold; in the second column we see the number of units of paper currency (PC) at each point in time where the rate changes; in the third column is the amount of gold existing at each point in time in which the rate changes; and in the last column is the simple calculus of the exchange rate of PC to gold, expressed by the division PC/gold. In the last line I generalize the rate with (n); the number of units of paper currency circulating, represented by the sign \$; the number of units of gold in the depositary's deposit –presupposing the State-, which I call gold, considering it always of the same carats, so I am always referring to the same unit of the same metal. I add a row, and consequently an L(n), each time the rate PC/gold changes, which happens when the *stock* of PC is altered without a proportional variation of the quantity of gold, and viceversa, which in general terms means altering the physical rigidity that should exist if we were speaking of a CID, here “crudely” represented by L(n).

As we can observe, if we analyze it from the point of view of physics or mathematics, this table is very elementary, but surprisingly it is just as crude for economics. This begs the question: why has the topic of conversion of paper currency to metal been so complicated for economic theory? This is so because economics has always tried to explain the value of paper currency and its variations confusing the physical rigidity of the unit of measure with the rigidity or variability of prices, seeking to find the typical rigidity of the unit of measure in subjective value, where prices originate, and not in the unit of measure's intrinsic physical characteristics.

As a consequence of not maintaining a rigid physical rate of PC to the metal it represents –as would be the case with a CID- economic theory is unnecessarily mired in an abstract terrain, when all we need to know is what that physical relation is at each point in time, and not its value, exclusively dependent on the subjective value of the economic agent, which is not cardinally quantifiable.

But given the legal –or illegal- possibility of altering the constant material relation of the amount of paper currency to the quantity of physical gold, that relation is continuously modified; and each time this rate changes, we have a different paper currency. We suppose we are speaking of the same currency, when in truth there are different ones: L(1) is different from L(2) and both are different from L(n). We are under the false impression of speaking of one and the same dollar, when we are really speaking of different dollars at different points in time.

It is important to stress the different types of money I am referring to here appear when the rate of materialization is altered, which is different form using one or another economic good as physical backing of that convertibility: gold and silver or different types of money.

However, this is not the classification we are speaking of here, which refers to the adulteration of the PC/gold rate. To differentiate them, we can speak of “different types of money that can be adulterated”.

From what we have seen we can immediately deduce it is wrong to speak of the economic fungibility of money that constantly changes its rate of materialization, with L(1) being

different from L(2) and L(n). This makes things even more complicated, since this unit of economic measure does not present the only rigidity units of measure have in all sciences: physical rigidity. In short, to the logical variation of subjective value that produces the variation of prices, we add now the physical variation of the unit of measure, which is the same as saying yesterday's centimeter is the same as 1.50 centimeters today.

Therefore, we must emphasize that though supposedly a society only uses one type of currency, because this is established by law, we are in the presence of different currencies as a result of changes in the PC materialization rate. This conclusion is not as strange as it may seem. It ratifies Menger's concept of money, in the sense that money is not established by law but appears spontaneously, arising from economic agents' need for interpersonal exchange. At the same time, this conclusion is giving us the answer to the question of what quantity of money a community needs, and if its variations refer to endogenous and/or exogenous factors of the economy, which I will reveal later.

Economic theory has analyzed the economic consequences of altering the materialization rate of paper currency, and the most important topic for this is who –which economic agents– bears the costs of this divergence and how. I believe those saying costs and benefits are neither proportional nor homogeneous won this debate. To this I add the causality here is much simpler and direct than what current theory holds, basically expressed in the theory of the “transmission mechanism”.

My explanation consists of comparing the economic causality established up to here, with that for paper currency in particular, presenting the following causally arranged points.

1) Causality of paper currency as money: this derives from the fact it represents the disposability of the economic good allegedly being an irregular deposit. In other words, there is an economic good, the PC being its certificate of ownership, its CID. Not considering this causality -i.e. paper currency does not appear as a certificate of an irregular deposit, with the right to exchange it for a present economic good it represents, “it is not a certificate of deposit of an economic good”-, leads to a theoretical extreme I call “virtual money”, which I will refer to later.

2) The different materialization rates of PC show we are in the presence of different types of currencies and not of an only currency established by law –legal tender. This circumstance reminds us that there is only one generic money that admits different economic goods that can satisfy liquidity, each L(n) being one of these in each instant in which its materialization rate varies. There are different types of present economic goods that can fulfill the generic role of money (silver, a basket of economic goods, etc.). However, we are in the presence of different types of money from another point of view, not those that result from altering the exchange rate, something that can happen with any of these types of money (gold, silver, etc.).

3) We can also observe the two previous aspects if we consider the amount of gold in deposit does not vary, but the number of units of paper currency issued with the guarantee of convertibility for that constant amount of physical gold. In these conditions it is easy to see that what fulfills the function of money, the gold, has not varied in its physical units, which implies that if there was a variation in the PC/gold rate, it is exclusively the result of a variation of the quantity of units of PC. But all economic goods are subject to the biunivocal relation “economic good-owner”, which leads us to conclude that two things can happen when there is a variation of PC without a variation in gold: a) that the amount of money varies or, 2) that the biunivocal relation “economic good-owner, or, more precisely, “money-owner” varies. And this is easy to see, since the deposited gold is the money, the PC being merely its certificate of ownership, which varies without any change in the amount of money. Therefore, what altered along with the PC/gold quotient is the biunivocal relation “money-owner”. In other words, *when the rate of convertibility is altered there is an interpersonal exchange of present economic goods between economic agents and the biunivocal relation economic goods-owner is altered*. For those interested in mathematics and accounting I can say all we have referred to can be easily understood if we equate PC = Property = Net Worth; and Gold = economic good = asset; we can clearly see that, if the numerator varies without varying the denominator, the change in the result is solely imputable to the numerator. The bottom line in

this analysis does not change if we suppose the amount of gold in deposit varies and the amount of PC remains unchanged. Finally it is important to stress two things in this reasoning: a) I am only referring to the gold in the deposit of the depositary of PC, and not all the rest of gold in existence –Locke’s problem- on which no CID or PC was issued and, b) this analysis has nothing to do with the quantitative theory of money, which I will study further on. As a preview I will only say what I am dealing with here is the relation of physical quantities of PC and gold and that this is the basis for explaining the errors in Locke’s problem and in quantitative theory.

Here we come to the conclusion that the variation of relation of physical units of PC and gold is always proportional and implies a variation in property, which is also proportional as long as by law it is established that all the PC in *stock*, at any given time, can be transformed into the economic goods that are in the hands of the depositary as warranty, or as a backing physically convertible to them. If this is not so we have “virtual-money”, this is not a present economic good, an essential feature of money involved in cash interpersonal exchanges, as opposed to credit. This proportionality does not appear in day-to-day life because we normally do not have a situation in which all the holders of PC present themselves at the same time, demanding the reserves be distributed among them; that situation implies the concept of the quotient or ratio PC/gold. Economic authorities take advantage of this circumstance seeking to control the fate of their “monetary subjects”, “speculating” with adulterated *stocks* of paper currency. They control these stocks following the statistical indices of price levels, supposing their remaining constant is the economic panacea, not realizing they are altering the essence of economic welfare.

This proportionality is a physical question, not even economic, since we are speaking of the force exercised on a body, which we can assimilate here, saying the *stock* of metal in the deposit is the body, and the forces are the rights of the owners of PC.

Before we continue, I must alert the reader my discourse up to this point has followed in a certain sense current theory, as to what is known as paper currency (PC). From here, there will be a visible divergence with my theory, which presents this as credit, with special characteristics that differentiate it from what we have understood by this word up to now. I will call it “irregular credit”.

MONEY SUBSTITUTES

Possibly the reader was surprised seeing I consider another type of money apart from the one deriving from the historical sequence, which began with the direct use of the good adopted as money (cattle, rice, cocoa, tea, gold,...), continued with minted metal in coins (gold, silver, bronze and nickel), and ending in paper currency (PC) with the characteristic of possibly altering constant materialization or the certificate of irregular deposit (CID) with constant materialization.

Bear in mind I do not consider paper currency or any other document that does not mention the possibility of conversion to a specific quality and quantity of a certain good as money. There is no such thing as money that is not a present economic good and an instrument and/or document of any nature is not money if it is not a CID or metal. It must be a present economic good, manifested by the same economic good chosen as money or a CID on the real existence of said present economic good. Going against this implies renouncing the central concept that money is a present economic good. In other words, money in the form of a present economic good that satisfies liquidity and can be expressed in a CID must not be confused with an instrument payable in money, which is a commitment to pay money, and this is credit.

I ratify once again interpersonal exchanges can have only two forms, cash and credit and that, when we speak of exchanging the economic good money for another present economic good, we are within the boundaries of what we call cash interpersonal exchange.

From here on, I will focus on the errors current economic theory makes in dealing with money, and basically we shall see I sustain my theory comparing it with those of the author I

believe has investigated and systematized money more than anyone else, Ludwig von Mises, specifically in his two monumental works: ‘The theory of money and credit’ and ‘Human Action’. His ideas –by action or omission- to a greater or lesser degree, are accepted by all other theoreticians, including so-called Keynesians and Quantitativists (ancient and modern), at least in the topics I am interested in here.

Mises introduces the concept of monetary substitutes in ‘The theory of money and credit’, when he says (p. 25):

It is considerations such as these that have led the present writer to give the name of money-substitutes and not that of money to those objects that are employed like money in commerce but consist in perfectly secure and immediately convertible claims to money. Claims are not goods; they are means of obtaining disposal over goods. This determines their whole nature and economic significance.

They themselves are not valued directly, but indirectly; their value is derived from that of the economic goods to which they refer... (p. 52)

Which is a preview of the insinuated error of assimilating things that have the formal aspect of money to money, because of their functions, though he does not call them money, trying to “differentiate” them from it, instead calling them “substitutes of money”, not realizing these are credit. This erroneously leads to assimilating credit to money, only because of its aspect of “zero maturity”. In other words, he assimilates papers to money because of the fact that both have zero maturity, but it does not have the central element of money: that it must be a present economic good and for this reason needs no maturity date, which is not present in what he calls “monetary substitutes”, which only express the commitment of being payable in money when they are presented or the holder demands it. This only indicates that whoever is responsible for honoring the commitment will have to have the money to fulfill it, but does not have it. If it were otherwise he would have issued a CID. In ‘Human Action’, he continues his theory, specifically in chapter XVII, section 11, ‘Monetary substitutes’. Only here he already mentions them as “credits”, but this treatment that is “difficult to see, because it seems to be of small importance”, is what has validated the error that later appears in all his theory, which becomes similar to the one he believes he is fighting against -especially when “everyone” speaks with the same “equivocal indefiniteness” about “money and/or bank credit” alternatively, as if they were the same thing. We quote:

Claims to a definite amount of money, payable and redeemable on demand, against a debtor about whose solvency and willingness to pay there does not prevail the slightest doubt, render to the individual all the services money can render, provided that all parties with whom he could possibly transact business are perfectly familiar with these essential qualities of the claims concerned: daily maturity as well as undoubted solvency and willingness to pay on the part of the debtor. We may call such claims money substitutes, as they can fully replace money in an individual's or a firm's cash holding. [...] What counts is the fact that these tokens can be really converted free of expense and without delay. [...] If the debtor—the government or a bank—keeps against the whole amount of money-substitutes a 100% reserve of money proper, we call the money-substitute a money-certificate. The individual money-certificate is—not necessarily in a legal sense, but always in the catallactic sense—a representative of a corresponding amount of money kept in the reserve. The issuing of money-certificates does not increase the quantity of things suitable to satisfy the demand for money for cash holding. Changes in the quantity of money-certificates therefore do not alter the supply of money and the money relation. They do not play any role in the determination of the purchasing power of money. (p. 432-433)

We are evidently corroborating Mises’ confusion, since in this paragraph he says: ‘*If the debtor—the government or a bank—keeps against the whole amount of money-substitutes a 100% reserve of money proper, we call the money-substitute a money-certificate. The individual money-certificate is—not necessarily in a legal sense, but always in the*

cata姚tactic sense—a representative of a corresponding amount of money dept in the reserve’. That is no more than our CID, but if this is so it is not a substitute, it is money; and the same is true when he says: ‘*The issuing of money-certificates does not increase the quantity of things suitable to satisfy the demand for money for cash holding. Changes in the quantity of money-certificates therefore do not alter the supply of money and the money relation. They do not play any role in the determination of the purchasing power of money...*’ This ratifies that if the reserves exist in a ratio of 100% to the “monetary substitutes”, they are money in the form of CID, and not money substitutes. Consequently, in that case, money substitutes do not alter the amount or value of buying power, and this is so because they are money, present economic goods. In this analysis we find Mises’ error, who speaks of money as if it were a money substitute, when the reserve (100%) is of rigid materialization (our CID) and not variable, as PC. Inversely, we can only speak of changes in the amount of currency stock and its monetary relation (PC/gold) when we are not in the presence of rigid materialization, since we are referring to PC (money that can be adulterated) and/or credit on money, which is what he refers to when he calls it monetary substitutes. However, the part of these that conserves rigid materialization is money in the form of CID.

As far as I know, Mises is the economist that introduced the concept of money substitutes, considering as such any instrument that satisfies liquidity as money does, which could be used as a means of exchange without loss, from the act of buying to that of selling. He tries to retain Menger’s marketability concept, and adds it is valid when the use of these deeds does not give the right to collect interest, or interest is very close to zero. He always adds the expression “on money”, which I understand means they can be converted to money without cost, that they will be exchangeable or payable in money without cost, which is in consonance with not paying interest, being payable at sight.

I consider this is the precise moment in which Mises diverts from Menger, deviation that, because it is inconsistent with his theory, makes him take a curve later to return to Menger, which he does with *ad hoc* theories; for example, his money regression theorem.

Let us see why it is untenable to consider the instruments that have the features Mises emphasizes as money substitutes:

1) Payable with money: as I said, this implies that when it matures the instrument will be canceled in money. You can have an agreement to cancel any credit transaction with money, no matter if this or another economic good was its origin, but what is important is that the concept of “payable on money or with money” –which says the indebted economic agent that took a loan must obtain money to cancel it-, must not be confused with money itself, which is a present economic good; not so credit, that can be payable “with or on” any present economic good, or compensated for with another credit.

2) Payable on maturity: as I already pointed out, there is no impediment to stating a future liability in money. However, as I already said, if the commitment is to pay money in the future, it is a credit agreed to be canceled in money, but it is not money (which is always present and not future, even in the form of a CID). If the obligation is at sight –i.e. maturity is zero time- we have two alternatives: either it is a real CID, which is money and not credit, and also not a money substitute but money itself expressed through a CID (which only represents the legal commitment of custody in deposit of a present economic good), or it is credit payable in money, so it is irrelevant if the debtor has or not the money, a matter only for financial analysis. I consider it of great importance to reiterate paragraphs from Mises and my own concepts on this topic, since this is the central mistake of the theory, and I repeat Mises admits this when he stresses: ‘*If the debtor —the government or a bank— keeps against the whole amount of money-substitutes a 100% reserve of money proper, we call the money-substitute a money-certificate. The individual money-certificate is —not necessarily in a legal sense, but always in the cata姚tactic sense—a representative of a corresponding amount of money dept in the reserve.*’ Which in other words means recognizing they are credits if they exceed reserves; if not they are our CIDs. And he ratifies this when saying: ‘*The issuing of money-certificates does not increase the quantity of things suitable to satisfy the demand for money for cash holding. Changes in the quantity of money-certificates therefore do not alter*

the supply of money and the money relation. They do not play any role in the determination of the purchasing power of money...' This is in line with what I expressed before, when saying that issuing CIDs without varying the amount of gold in stock in the deposits of the depositary does not alter at all the conditions of gold-money but rather the biunivocal relation "money-owner". We can see Mises tries to remain true to Menger when he considers as money what is previously an economic good, which cannot appear from nowhere; that is why what he calls a money substitute is really a credit; if not, it is a certificate (money), which falls in line with my theory. But now Mises incurs in a grave error that will affect all his theory from here on, when he says the monetary substitute is a credit at sight, i.e. without term, which is in line with my theory, which says it is credit and not money, not being a present economic good, even if its maturity is zero time. Considering it money because of its term is in complete contradiction with the most important aspect of money, which is that it is a present economic good. Then Mises tries to come out of his confusion saying that if there are reserves equivalent to the credits, we have a certificate –one of our CID-, which is no more than an *ad hoc* escape route to return to the correct theoretical path. We observe a similar attempt when he speaks of the value of money, which does not change if the number of certificates varies with no alteration in the amount of reserve money. This is a complete contradiction, because before he said there are reserves equivalent to the "substitute credits", that are really certificates (while that equivalence holds), which implies that what exceeds reserves is credit, so there is no need to refer to the value of money, since that excess of liabilities over money is credit, not money. Mises' problem can be summarized saying he knows money does not appear from nowhere, that before being money it was an economic good (my theory offers a more general solution: it is a present economic good that satisfies the need for liquidity and must retain that quality). Then he sustains his posture with the "demand for a level of reserves, at least in the part equivalent to the credits that substitute for the money issued" to consider them CIDs, i.e. what I call money. He correctly frames this in the macroeconomic aspect, in the sense that as a whole there is no more money than the real disposable good-money, but the issuer of credit –Mises' money substitute- can obtain it to cover the certificate that exceeds reserves through a loan from a third party. Which shows that in the macroeconomic sense the only way out in this case is credit –which is no surprise because it was credit from the start. The confusion results from trying to convert it into money substitutes. This is an interpersonal exchange of present economic goods for future economic goods by economic agents: the depositary (public or private) obtains a present economic good –gold from a third party- in exchange for future economic goods –credit-, to fulfill the present commitment to refund the CID for the part that has no coverage. In short, he tries to explain what needs no explanation: that when there is a term of maturity it is the result of a previous credit, and if the debtor does not have the present goods he needs to pay off the credit when it matures, it is uncollectible or the debtor obtains a new loan from the same creditor or another agent.

No less important is my discrepancy with what underlies Mises' following expression: '[...in this case] we call the money-substitute a money-certificate. The individual money-certificate is — not necessarily in a legal sense, but always in the catallactic sense— a representative of a corresponding amount of money dept in the reserve.' Here he establishes there can be a contradiction between catallactics and law or the legal order, a theory I do not agree with, because law is a part of catallactics, and the aspect we are interested in and the reserve that can be assimilated to a certificate he refers to is the same as my CID. This is the aspect Huerta de Soto explains so well and I believe it is the synthesis of his valuable work: identifying "that" reserve, equivalent in Mises to money certificates, with what in legal jargon is called CID.

I wish to emphasize there is something Mises intuitively sees correctly. Underlying his theory is the idea that any owner of gold can issue a commitment to deliver gold to the point his reserves allow; anyone that has gold can issue CID-gold; but there was no need to take such a long detour to say what appears clear and direct with my theory. This makes me think Mises was not wrong in his theoretical intuition but, I insist, he tries to come back to the bearings he lost.

Not only is Mises' deviation transferred to Hayek –who admits he finds no way out for the theory of money, though intuitively he does- but it leads both of them to share the mistakes of those who consider money as virtual, those who reject the concept of money as a present economic good, those who do confuse credit with money in all aspects. This gives greater entity to Mises error of considering credit with zero maturity or at sight (money substitutes) directly as money. Mises was wrong in the theoretical road he took but not in his basic ideas. This is different from Keynesians who made more mistakes. Yet we can compare and apply “scientific reduction” to both schools, enabling their assimilation if we apply my theory: if we take Mises’ *substitutes* and Keynes’ *moneys* as credit, then both theories of money can be considered similar. If you wish to test this proposition I suggest you reread Keynes, substituting his term “money” with “credit”, and you will see he comes very near to the Austrian school. I will specify these comparisons later on.

In short, a credit with zero term is not assimilable to money, the main difference being that one is a present economic good and the other is a future economic good. Since I am speaking of what makes cash different from credit is the existence or not of economic time, it will be no surprise that I have expanded on this subject in the section “payable at maturity” of monetary substitutes.

3) Neither does the fact that money substitutes do not produce interest or costs in their conversion to money convince us that they substitute for money, because interest has to do with time –as we will see in detail-, which has to do with credit and not money. It could be that at some moment the cost (price) of time is very low, but this would still not mean money must be assimilated to credit, since it would only indicate the economic good credit is close to losing its condition of economic, in turn an indication that we are close to the disappearance of economic time; which would be similar to saying man is very close to the paradise he seeks, or that he no longer seeks for a paradise.

In short, that a commitment stated in an instrument or document be payable in money does not imply it is money, since any credit can be expressed in money, and the fact that it is payable at sight does not make it the same as a CID, since the latter need not even state that condition (it is of its essence that the restitution of the economic good left in deposit and not in property always be fulfilled on sight) and, on the other hand, the concept of interest is linked to time, which in economics means credit when there is interpersonal exchange, and not money.

Mises also says the following in “Human Action”:

Earlier economists applied a different terminology. Many were prepared to call the money-substitutes simply money, as they are fit to render the services money renders. However, this terminology is not expedient. The first purpose of a scientific terminology is to facilitate the analysis of the problems involved. (p. 434)

Here Mises expresses his complete doubt: on the one hand, he correctly says money cannot be assimilated to everything that offers its same services; but he is not equally conclusive or concrete when saying it ‘is not wholly satisfactory’. We can see he is not fully convinced of his basic theoretical ideas. His lack of consistency leads him to go back on his own words in the following paragraph in “The theory of money and credit”:

Of course it would be in no way incorrect if we attempted to include in our concept of money those absolutely secure and immediately convertible claims to money that we have preferred to call money-substitutes. (p. 52)

This observation is of great importance because it expresses with precision the mistake he makes: allowing credit payable at sight in money to be included as money.

Types of money substitutes

In this section I will also basically follow Mises because of what I have already said (he systematized or summarized better than anyone else all the ideas on the theory of money and credit). Though in a way I am anticipating the concept of credit I will explain specifically further on, this is essential because the focus of my theory is elucidating the error in confusing or assimilating credit with money; but the reader need not worry about it being further explained later on in this work, because what has been expressed is sufficient to understand its role here.

The object of this section is to analyze each of the terms most commonly used in economics that are assimilable to money, erroneously so in most cases.

a) Fiduciary media (FM)

Following Mises in the section in “Human Action” when he refers to monetary substitutes, he says of “fiduciary media”:

If the money reserve kept by the debtor against the money-substitutes issued is less than the total amount of such substitutes, we call that amount of substitutes which exceeds the reserve fiduciary media. As a rule it is not possible to ascertain whether a concrete specimen of money-substitutes is a money-certificate or a fiduciary medium. A part of the total amount of money-substitutes issued is usually covered by a money reserve held. (p. 433)

This passage, a continuation of those presented before, should not surprise us, since it follows the same line of thought as the error pointed out in the previous section, only here he is speaking of credit, of “money substitutes”; which configures a “payable at sight” commitment or credit that is not backed by an equivalent reserve; what “exceeds” the reserve kept by the depositary, which is credit obtained from who has accepted the “money substitute” –as we shall see in the case of the credit expansion of a bank with accounting entries-, which he calls fiduciary media (FM from now on in this text). Here Mises adds: (p. 647) ‘*But this fact can only be recognized by those familiar with the bank’s balance sheets.*’ This does not satisfy me, because a depositary should not emit certificates of deposit for more than what he really keeps. But if any human being lies about the existence of the economic good he keeps in deposit to be able to fulfill the commitment he made as depositary, he should be punished for this action. This is not so because it is validated by law. And this validation is the result of an error subsisting in economic theory, on which economic laws are based. Therefore, what Mises states is the theoretical road to validating the lie that is not punished. This lie means the depositary can say he keeps in his deposits the economic goods he is responsible for, when he really does not have them. In other words, FM are the expression of a credit received that is accepted as money when expressed in the form of CID. But this goes against catallactics and the law, because the inexistence of corresponding reserves in deposit means lying about economic reality and rights. What really happens here is the agent appearing as depositary, with the issue of FM –the excess issue with no backing in reserves- *really* functions as an intermediary credit agent, no matter if he thinks otherwise and an unfortunately mistaken theory validates it, when saying the bank is a “generator of credit”, as we shall see. This aspect is very important, because it validates the essence of the economic theory expressed in this text, which states that, just as money does not appear from nowhere, neither does credit. There has to be some economic present good given as a loan for a period of time in exchange for a future economic good –with interest-, which will be a present economic good at maturing, or better said, when the commitment is fulfilled. If not, it will be uncollectible, a voluntarily or involuntarily non-fulfilled commitment.

For further corroboration of the criterion that FM (conceptually derived from monetary substitutes by Mises) are credit and not money both in the semantic sense and its economic consequences, it is important to bear in mind how Mises begins his section on FM: ‘*Claims to a definite amount of money, payable and redeemable on demand, against a debtor about whose solvency and willingness to pay there does not prevail the slightest doubt, render to the individual all the services money can render...*’ (p. 432) From the beginning he treats them as

credit, which they are, but later he loses his way, assimilating them to money because they render the same services, but never can a *non-present* economic good (credit) be the same as a present economic good (money).

b) Commodity credit

Immediately Mises states:

The issue of money-certificates does not increase the funds which the bank can employ in the conduct to its lending business. A bank which does not issue fiduciary media can only grant commodity credit, i.e., it can only lend its own funds and the amount of money which its customers have entrusted to it. (p. 434)

Evidently here Mises is right, when he refers to the name commodity-credit which I allude to when saying what does not exist cannot be loaned, that credit cannot come from nowhere, which implies a present economic good must be loaned in exchange for a future one, which can be done with present economic goods that belongs to the lender or those received in loan from a third party that allows us to “re-loan” (a specific function of banks). [Authors note: In the Spanish version in the preceding text the word “for a term”, which defines the concept Mises refers to (term deposits) an aspect that, in our view should be underlined, as in the Spanish version, since it is an important question (if not, there is no credit).] In short, we can say what Mises calls commodity-credit is what I call credit, which arises in the interpersonal exchange of a present economic good for a future one, and does not appear from nowhere just as credit originated in FM, as I will show.

c) Circulation credit

Mises immediately says:

‘The issue of fiduciary media enlarges the bank's funds available for lending beyond these limits. It can now not only grant commodity credit, but also circulation credit, i.e., credit granted out of the issue of fiduciary media.’ (p. 434) (we shall see this is due to its acceptance in interpersonal exchange and not to issuance)

Here is where Mises error is validated, since it is not the bank that grants the credit in the case of FM, instead it accepts the FM and interpersonally exchanges it for present economic goods. This mistake is what originates many erroneous ideas about banks in money and credit theory, and also those that confuse both economic categories. Here we see a Mises that contradicts previous terms, since here he openly recognizes that FM are credit and expresses no doubt whatsoever, as he does when he deals with monetary substitutes. But I reiterate that though here he is right in this aspect (admitting FM is credit), he erroneously states the bank is who grants credit; I will have the opportunity to show this is not so. We will see Mises speaks of credit “without sacrifice”.

I will extend my comments on this matter when I refer to bank credit or bank money.

d) Commodity-money

According to Mises in “The Theory of money and credit”:

*‘We may give the name of commodity money (*sachgeld*) to that sort of money that is at the same time a commercial commodity [...] The decisive characteristic of commodity money is the employment for monetary purposes of a commodity in the technological sense. For the present investigation, it is a matter of complete indifference what particular commodity this is; the important thing is that it is the commodity in question that constitutes the money, and that the money is merely this commodity.’* (p. 61-62)

Here lies Mises idea that money can be a non-present economic good; nonetheless, in Mises terms it is what comes closest to my concept of present economic good that satisfies the need for liquidity –which I generically call money-, admitting its expression as metal and/or CID. In “Human Action”, he ratifies this definition when saying:

‘Under the gold standard gold is money and money is gold. [...] We may call such a sort of money *commodity money*.’ (p. 428)

Where he makes the mistake of supposing all gold is money (...*gold is money*...), the same that is present in Locke’s problem.

e) Token money (token-money, Zeichengeld in German version):

According to Mises in “The theory of money and credit”:

‘[...] and that of fiat money to money that comprises things with a special legal qualification. [...] Here the deciding factor is the stamp, and it is not the material bearing the stamp that constitutes the money, but the stamp itself. The nature of the material that bears the stamp is a matter of quite minor importance.’ (pp. 61-62)

If by this we interpret legal tender that does not constitute a CID on present economic goods of any species, with rigid or variable materialization in some economic good, then we are referring to what I will call virtual money or, in the best case, what is irregular credit.

f) Credit money

According to Mises in “The Theory of money and credit”:

‘A third category may be called credit money, this being that sort of money which constitutes a claim against any physical or legal person. But these claims must not be both payable on demand and absolutely secure; if they were, there could be no difference between their value and that of the sum of money to which they referred, and they could not be subjected to an independent process of valuation on the part of those who dealt with them. In some way or other the maturity of these claims must be postponed to some future time. [...] it is a claim falling due in the future that is used as a general medium of exchange.’ (pp 61-62)

We can observe it is credit and not money, but it is also clear that Mises considers as money everything that acts as a general medium of exchange (something we saw he criticized in other authors), not defining the difference between cash and credit, to the point of mixing terms (as in this case, ‘credit-money’). Mises emphasizes this general criterion on money in “Human Action” when he says:

‘The theory of money was and is always the theory of indirect exchange and of the medial of exchange.’ (p. 418)

This has already been refuted by my theory, when I stress the irrelevance for economics of the classification in indirect exchange (with money) and direct (barter) that is relevant for finance. Proof that he confuses or identifies “at sight” credit with money can be found in “Human Action” when he defines credit-money:

‘A second sort of money is credit money. Credit money evolved out of the use of money-substitutes. It was customary to use claims, payable on demand and absolutely secure, as substitutes for the sum of money to which they gave a claim.’ (p. 429)

It is clear I do not share this expression that is the synthesis of why Mises assimilates “credit at sight” to money. What is important is that this is based on the same theoretical foundations as the arguments of the economists he believes he is confronting, who say: there are stored

savings that do not produce wealth because they are not interpersonally exchanged, let us use them without the consent of the owners; a theory he accepts when saying the issuance of FM can be controlled. This clearly shows the theoretical foundations on which all current theories of money and credit rest, be they Austrian, Keynesian, or Quantitativist. I can say that there are only differences of degree among them, in the sense that they favor a greater or lesser expansion of FM.

g) Fiat money

Mises continues, saying in “Human Action”

‘... credit-money... [...] . Their exchange value was equal to their face value; it was this perfect equivalence which assigned to them the character of money-substitutes. [...] One can fairly assume that such credit money could remain in use as a medium of exchange even if it were to lose its character as a claim against a bank or a treasury, and thus would become fiat money. Fiat money is a money consisting of mere tokens which can neither be employed for any industrial purposes nor convey a claim against anybody.’ (p. 429)

I believe this statement by Mises synthesizes the whole disparity of my ideas and his, since he ratifies that money that is not money –which he calls monetary substitute, because it has the same function as money but is not so- is also not credit, because the debtor vanished or disappeared (which is the origin of my concept of the *syndrome of the unknown debtor*). So, what is it? I can only answer that this shows Mises confusion, of which this is its highest expression; in the extreme, his error led him to virtual money, which does not exist as a present economic good. I have already stressed the different aspects that make me think this hazy path Mises and monetary theory in general take is dangerous. Finally, he says, suggestively:

‘...The only thing that catallactics has to establish is that the possibility of the existence of fiat money must be admitted.’ (p. 429)

A reflection that could indicate Mises considers the occurrence of this “fiat-money” is impossible, but that it is “theoretically admissible”. With this he is recognizing that the passage from FM to fiat-money is the extreme manifestation of his error in the theory of money and credit, which should not surprise us because it is the end of the erroneous road of considering as money what is actually credit. His *ad hoc* approach is manifest when he recognizes the theoretical existence of “fiat-money”.

In other words, we see here the version of Mises that realizes that something distances him from Menger, and we shall see the *ad hoc* theoretical paths he takes trying to find his way back. This was represented by his desperate attempt to explain that the theory of subjective value is still valid for money –which is unnecessary since it is an economic good and also present-; but his theory needs it precisely because his mistake leads him to conceive virtual money, and I believe his reflection at the end of the road relative to fiat money shows us he needs to go back on his steps and say money is a “present” economic good (with his regression theorem); he never specifically saw this mistake, but at the same time intuitively he always followed Menger’s correct ideas.

h) Metallic money

This is money represented by metal, which would be something similar to commodity-money, in which the commodity is metal.

i) Paper currency (PC)

As we saw when studying the history of money, PC is what allowed “money” with a flexible or variable materialization to appear on the scene, giving rise to the different types of money –L(1) ... L(n)- which in day-to-day life are considered one and the same (dollar, pound, euro, etc.).

The most important thing we must emphasize about PC is precisely this feature of flexible or variable materialization; if that materialization were rigid we would be in the presence of money, which shows us in turn that when we have a case of variable materialization, we are speaking of credit and not money.

The essential argument for categorizing PC as credit is that it is not representing in quality or quantity a present economic good, instead the composition of the economic goods that appear as present for them to be considered as money is not a rigid physical relation for the duration of the credit, which makes it a commitment of a future economic good, not a present one, since it will acquire the quality of present at the moment of its conversion –cancellation of the credit-, and this will be done according to the relation valid at the time. In other words, the condition of being a present good for PC will be defined in the future at the time it is converted into a present economic good, which today is not known in terms of the quality and quantity of the economic good it represents. As we can see, the difference between PC and a CID is none other than the difference between cash and credit.

Everything explained in this section is what gives us a final and clearer explanation of the confusion in Mises' theory, with his concept of money substitutes, since here we have clarified that the credit nature of PC, and not money, is not a result of the issuer being the only one who knows the monetary relation it refers to, i.e. the amount of PC relative to the economic goods that are its backing as reserves.

When I corroborate my theory from the point of view of accounting, I will refer to this in greater detail, analyzing PC both from the erroneous point of view that sees it as money, and from the correct one that correctly considers it credit.

In short, we can conclude by relating FM and PC and saying they are both credit in so far as they are not present economic goods. They are similar in that they are credit, not money, and they are different in that FM are payable in or on money, but when that money in which the FM are payable is PC, they only continue the circuit of transporting the credit or renewing it. Nevertheless, the chain of credit continues, because what is considered a present economic good really is a future economic good (PC).

As a result of the difference I have just established between FM and PC, economic authorities have validated the perverse circuit of allowing the banks to irresponsibly expand credit (granted by those who accept the FM) with FM payable in PC, and they take the place of "lenders of last resort", which does nothing more than open the door to emission of PC without the correlative increase in the reserves of the present economic good acting as money and allowing the perverse practice of flexible materialization, which is a fraud in the form of a redistribution or extraction of property. This practice is carried out in the grossest way when governments take on bank liabilities and "cancel" them with PC.

j) Accounting money

With this concept, I refer to money used in accounting records. I will not extend this because it is the equivalent of what I defined as unit of measure or account. In other words, it is using money as a unit of account for accounting records.

k) Bank money

There is certain amount of confusion on this point, since FM are generally considered bank money, but if this is so, we already know they are credit. Even so, when I deal with bank credit I will clarify this topic, and the doubts current economic theory has on this matter. Especially related to the creation of credit by banks that, as I have said, is erroneously considered monetary expansion. On the other hand, the present economic goods allowing credit to exist are contributed, not by the bank, but by those accepting the FM.

Relative to the types of monetary substitutes, we conclude that they all are either credit or money, but the category of money substitutes does not exist. The use of this category tends to confuse the real economic categories –especially relative to the different types of interpersonal exchange, cash and credit- and this leads to a confusion of what we are dealing

with in each operation. This has very important derivations, such as not knowing if interest is the price of money or credit, when it really is the price of the economic good economic time in interpersonal exchanges. To see this it is essential to differentiate present from future economic goods (which in this case means knowing the difference between cash and credit interpersonal exchanges).

OTHER ASPECTS OF MONEY

Quantity of money – money in a restricted and general sense

Following what we have quoted above from Mises' "Human Action", relative to monetary substitutes, in the same chapter he states:

'While the quantity of money-certificates is indifferent, the quantity of fiduciary media is not. The fiduciary media affect the market phenomena in the same way as money does. Changes in their quantity influence the determination of money's purchasing power and of prices and—temporarily—also of the rate of interest.' (p. 434)

I believe we can consider this expression the synthesis of Mises mistake, since:

- a) The quantity of money and credit arise directly from economic reality; neither appears from nowhere. In other words, just as the total quantity of money or CID issued is indifferent, in the sense Mises I believe correctly states (quantity that appears naturally and endogenously in the economy), the same is true for credit. Unless Mises believes, as he seems to express through his confused arguments, that "at some point" credit appears from nowhere, specifically the credit created by FM, which contradicts his ideas in spirit, even though he doesn't see it. I have already said it can appear as if the bank is granting the credit, when in truth it is the economic agent, who interpersonally exchanges his present goods for future goods represented by the FM he receives. The error consists in assimilating FM (credit) to a CID (money), which exists against the economic goods, erroneously called reserves, in the deposit of the depositary issuing said certificates, and this allows wrongly toying with the level of reserves, fractional reserves, etc. In short: the economic goods represented by the CID exist or do not exist; there is fraud with the issuance of fraudulent credit that constantly changes the ratio of 100% materialization with its corresponding fraudulent interpersonal exchange of property; or there is credit, even if at sight, because there is no present economic good despite zero maturity.
- b) In the final part of the transcribed text, Mises says the FM produce the same effect as money, which is not so, since, not being money, it would really be a miracle if it did. The truth is Mises says this as a consequence of assimilating FM and PC to money, to the point of calling them substitutes. However, apart from this mistake, evidently Mises thinks the presence (appearance) or expansion of the economic good credit, and its extinction or contraction (elimination), are the same as the presence and extinction of money, which can only be understood if both concepts are considered to be the same. However, we know they are two different things: credit is the interpersonal exchange of present economic goods for future economic goods –something Mises explicitly recognizes as we shall see-, and this is not money, which is a present economic good. So the implications of variations in the quantity of FM, just as of credit in general, are different from those resulting from the variations of money, and this by virtue of certain economic goods being present, and others future. Relative to the incidence of the quantity of FM on the buying power of money, price levels and interest rates, at the appropriate time we will see the errors of current economic theory on each topic. This last subject is very important, above all when Mises says:

'The task of the catallactic theory of money—as differentiated from the legal theory and from the technical disciplines of bank management and accountancy—is the study of the problems

of the determination of prices and interest rates. This task requires a sharp distinction between money-certificates and fiduciary media.' (p. 434)

We can see Mises intention is good; in other words, that his intuition is well oriented, but not his theory, since he is seeking to differentiate things that are different in nature; his effort implies he is not clear on this essential difference, and he is only seeking to differentiate that which seems similar to him. We could express this by saying Mises here admits FM are not money and so they must be differentiated.

Having established money is not credit –and vice versa- I focus on a topic very dear to the theory of money, and that is its quantity.

We have already seen the amount of a good (the qualitative aspect having been previously defined), is the key factor allowing us to consider a good economic, since this results from the quantity available being less than the quantity demanded, difference that, on the other hand, indicates the level of prices formed in interpersonal exchange. As to the importance of speaking of the economic good money, it is under the purview of the general laws of economic theory and economic causality.

Speaking of the amount of physical units of the economic good that fulfills the role of money implies, first, defining which good it is, since we can only refer to quantities after defining quality; in other words, speaking of quantities is referring to a set that has qualities already defined; we cannot do the same for generics. Thus, we can speak of quantities of gold, but not of money.

The preceding paragraph shows why it is important to differentiate what is money from what is not, a subject I have and will go into many times, especially relative to confusing money with credit, since we could be talking of the amount of things that are heterogeneous, and that makes no sense. In other words, if we are not specific there's the danger of counting quantities of credit when it is money, which is no more and no less than confusing economic goods; we would be dealing with the solution of a need with what does not satisfy it; this would be the worst possible economic praxis.

Let us suppose we chose gold as money, which is not strange, because it has fulfilled that function for many years. In that case, we would be speaking of a precise amount of gold, and from there we could know how much of that amount is used as money to satisfy liquidity, how much for jewelry, how much for medicine, how much for industry, etc, which only shows gold satisfies many needs and the amount destined for each one; contrary to that, if we cannot differentiate one economic good from another, we would not know the specific amounts necessary to satisfy a specific need.

Because we can clearly see, the amount of any economic good we are interested in is the quantity used to satisfy a specific need. I have already said it is not enough to identify the good that makes the biunivocal relation “need-good” possible, but it is also essential for man to be able to dispose of it and satisfy his need, which leads us to the triunial relation “need-economic good-owner”. We also saw the concept of disposing of a good was more specific than that of being the owner; later we concluded economic causality clarifies all this, showing the owner can dispose of the good or loan it to another economic agent; this is the origin of credit.

With this recapitulation of economic causality –which we must always bear in mind and this is why it will be reiterated in this book- we conclude the disposable amount of gold (as money; i.e. to satisfy liquidity) is no different from what we see in any economic good. What sometimes confuses economic theory is separating the gold used as metal, from what is used as an exchange good; this is a very coarse mistake leading to huge theoretical deviations, especially in the case of Menger’s “followers”. Indeed, gold is intrinsically the same metal that, as any economic good, can satisfy diverse needs, which will only affect its subjective value and consequently its price in interpersonal exchanges by economic agents. But we must understand there is no gold-metal different from gold-money: it is only one economic good that can see the value human beings assign it affected by the discovery of new uses for the

satisfaction of other needs, which will derive in variations in interpersonal exchange prices. The same is true for every economic good and this does not change them intrinsically. What I have said means the person that has gold can issue CID on it. When we say the person that has gold can issue CID or money in the form of a CID, does not imply gold becomes money only from the moment a CID was issued, but that gold itself, in its metal form, can also be money, can be interpersonally exchanged the same as the CID-gold. Thus, of the amount of gold in existence we compute as money what is destined for this purpose. There is no “theory of the amount” of gold different from that for any economic good.

In short, any *stock* of gold available can be used as money, in its metal state (currency) or as a CID issued on it. This means we need nothing more than the ownership or disposal of a certain amount of gold to issue a CID on it, which is no more than a different expression of what we call commodity-money or metal-money, which we can call CID-money; we have already shown it is completely different from PC (paper currency). It is hard to believe, but that is all this means; this ratifies Menger when he says money has its origin in the spontaneity of human action and not in a convention or a legal aspect, which in turn allows us to clarify another mystery, of the endogenous or exogenous nature of money.

Evidently, this logical deduction creates the need to understand why economic entities such as central banks, exchange rates, etc., exist, which I will eventually explain; what we have here is the question: why are governments so insistent on manipulating the amount of money, deriving in their attempt to manipulate its price? We will see Menger's disciples were right intuitively, but their economic theory is inconsistent; that is why they gave the right scientific answer but had to find *ad hoc* practical responses.

Following the causality defined up to this point we can understand this easily: the amount of the economic good used as money is what is disposable at any time to satisfy the human need for liquidity, inferior in quantity to demand, and the “intensity” of that distance is what acts on the price levels at which said economic good will be exchanged, and variations of that intensity will also influence price variations.

As we can see, the answer to what amount of money a community must have, has no difference with that corresponding to any economic good, apart from the specific nature of the need it satisfies and the economic good in itself (elasticity of supply and demand). Therefore, attempts to modify the amounts of money in a community have nothing to do with economic theory; they are related instead to the legal institutions adopted, and money is no exception. In other words, if people are not allowed to exercise private property of the economic good that has the function of money, we have another case of state intervention, deriving in the consequences economic theory has already studied for other cases and that are not exclusive of money, such as monopoly –expressed here by legal tender and it produces the redistributions already referred to when the PC/gold ratio is altered- and, in general, any attempt to control supply and demand of an economic good (quotas, maximum and minimum prices, etc.).

The error of economic theory is that, assimilating credit (in its PC and/or FM alternatives) to money, it seems that its amount can be made to vary at will or within “certain limits”, as Mises himself says. But credit, as we shall see, does not appear from nowhere, nor is it subject to greater discretionality than any other good limited by supply and demand –any unique and unrepeatable interpersonal spatiotemporal exchange originates real prices, monetary or otherwise- explained, as we already know, by subjective value theory.

This shows economic theory loses its bearings when it analyzes money in a restricted or general sense, trying to understand in the first case money proper, and in the second what it calls money substitutes. However, this separation is not conceivable in theory, since it implies an addition of heterogeneous entities, when what we have to do first is define qualities and then proceed to add units. Coming from the opposite side, we can say once qualities are defined, quantities appear spontaneously, which shows once again that quality is most difficult for human knowledge, because it is generally related to what is smaller or deeper in analysis; this situation is not exclusive of economic science, and this is the result of all sciences being created by humans.

There is no need to explain the implications of this topic for economic theory and the economic policy actions erroneously derived from it.

Endogenous and exogenous money

Economic theory has always debated if the amount of money is endogenous, when it is the result of economic causes, or exogenous, when it results from non-economic causes.

All that has been said clearly shows all economic goods –not only money- obey purely and exclusively economic causes, relative to their appearance, modification, and disappearance as autonomous goods, which is a tautology, considering the definition of economic good.

We must bear in mind catastrophic accidents –droughts, storms, floods, fires, etc- affect human economy within the framework of the economic causality we are defining; this is what we refer to when saying in economics everything is endogenous to the economy, including restriction to freedom of private property. The institutional organization a community adopts for the economy, no matter how bad, must be considered endogenous for economic science, and the same for the accidents we mentioned; man must also try to avoid the damage his lack of knowledge and foresight can produce. In other words, just as damage from natural causes can be prevented, economic science contributes theories that allow us to avoid economic damage from institutional mistakes.

The question arises: Why could we consider money exogenous? We will find the answer in the errors emphasized here.

- 1) It is confused with credit, in its most common expression (as FM), and there is the idea that it can be dealt with leaving economic rules aside (which is also false for credit);
- 2) We are in the presence of credit (PC), as a result of changing the rigid materialization rate (PC/gold), which, as we saw, has nothing to do with changing the amount of the economic good fulfilling the role of money, but is rather a credit connected to the alternative of producing the redistribution of wealth implied by said alteration.

This conclusion is very important, since it sterilizes the debate about the government and its capacity to influence the amount of money, which it has, the same as with any state intervention, but there is nothing special in the case of money (considering elasticity). And this is so because, as we saw, government intervention to change the PC/gold ratio does not produce any variation of the amount of gold, something Mises agrees with. As we saw, his error is not there but in what we already showed –redistribution of private property of the stocks that must back the stock of PC issued- and what economics admits, the damage and benefits for owners of amounts due and debts expressed by that credit which is adulterated with the relaxation of the materialization ratio.

Internal and external money

In Menger's time, there was already an attempt to separate the money circulating in one country from that circulating in others. What I wish to stress in this section is that in general terms, external money is considered to be that which is subject to 100% materialization, international trade would be what respects that ratio, and internal money is what I have said has flexible materialization, but which is better known as PC or “fraudulent credit”.

These topics, that have no entity in my theory, are important because there is a whole chapter in current economic theory on international trade, including concepts such as exchange rates, balance of payments, etc, which as we shall see, add nothing to the theory of interpersonal exchange between two economic agents, except for the usual interference by governments and the damage it causes. We could call this one more of the “endogenous accidents” I referred to in the previous section, i.e. the legal structures that give rise to new sets or economic agents; in this case related to the monetary monopoly of the government of a country.

THE VALUE OF MONEY

I believe it is important to continue comparing my theory with those that, to my knowledge, are currently dominant or more consistent. Continuing with Mises in his "Theory of money and credit" he says:

THE central element in the economic problem of money is the objective exchange-value of money, popularly called its purchasing power. This is the necessary starting-point of all discussion; for it is only in connection with its objective exchange-value that those peculiar properties of money that have differentiated it from commodities are conspicuous. This must not be understood to imply that subjective value is of less importance in the theory of money than elsewhere. The subjective estimates of individuals are the basis of the economic valuation of money just as of that of other goods. And these subjective estimates are ultimately derived, in the case of money as in the case of other economic goods, from the significance attaching to a good or complex of goods as the recognized necessary condition for the existence of a utility, given certain ultimate aims on the part of some individual.
Nevertheless, while the utility of other goods depends on certain external facts (the objective use-value of the commodity) and certain internal facts (the hierarchy of human needs), i.e., on conditions that do not belong to the category of the economic at all but are partly of a technological and partly of a psychological nature, the subjective value of money is conditioned by its objective exchange-value, i.e., by a characteristic that falls within the scope of economics.

In the case of money, subjective use-value and subjective exchange value coincide. Both are derived from objective exchange-value, for money has no utility other than that arising from the possibility of obtaining other economic goods in exchange for it. [...] The subjective value of money always depends on the subjective value of the other economic goods that can be obtained in exchange for it. Its subjective value is in fact a derived concept. [...] Whenever money is valued by anybody it is because he supposes it to have a certain purchasing power. (Pp. 97-99)

I believe these passages clearly show the indirect and useless resource of trying to explain the subjective value of money based on its "special condition of being an economic good that satisfies the need for exchange media", based on the following inconsistencies, starting from where he says "Nevertheless...":

- 1) The utility of all goods is precisely what makes things goods, and their economic nature arises from a quantitative relation between available and demanded goods, belonging to the category of the economic it is not an exclusive trait of money. What has been said of external and internal facts can be applied to money as well as to all other economic goods and interpersonal exchange. As we saw, it is what generates the need for the existence of a good of easy marketability. Therefore, said need is just another among all those that originate the appearance of goods –useful for satisfying a need- that may or may not become economic (according to the quantitative rate of supply to demand). Personally I disagree with considering internal or psychological facts non-economic, because economy begins in the instant a human need arises. Denying the psychological aspect is the same as denying the enormous importance of subjective value. If we say it only allows ordinal and not cardinal quantification, this is due precisely to the fact psychological aspects appear at that level, as Maslow's categories show.
- 2) The trait that puts money within the realm of the economic is that is useful for interpersonal exchange, but this exchange is a human need as so many others; it is an economic good in itself, as we already saw. Also, commodities in general are interpersonally exchanged, not only money, which is only different in its greater marketability.
- 3) Mises says: '*In the case of money, subjective use-value and subjective exchange value coincide. Both are derived from objective exchange-value, for money has no utility other than*

that arising from the possibility of obtaining other economic goods in exchange for it...’

According to what we just have seen, money is an economic good “derived” from another economic good, so that an economic good is chosen as money, according to Menger (a concept Mises adheres to). This places us in the presence of an economic good fulfilling multiple functions or satisfying many needs, which influences its valuation and affects the prices it can reach in the market. Nevertheless, as we have already seen, the fact that it satisfies a need, be it liquidity or another, places it within the category of economic goods, just like any other. We only need to remind ourselves here that, with Menger’s criterion on commodities in general –that are destined to be exchanged for other economic goods and not for own final use- they would participate in that special situation of being “exchange goods”. In other words, in any commodity –as such- subjective use value and subjective exchange value coincide, since the use the individual has for said economic goods is interpersonal exchange. This merits a special remark on my part relative to money previously being an economic good, as Menger and Mises emphasize. Nonetheless in my theory, it is perfectly possible for an economic good to “appear” directly and from the start as money, and to see this we only need to mention “the basket of goods proposed by Hayek as money”, which can be included in my theory with no need for an *ad hoc* corset, which prevented Hayek from being satisfied with his proposal, since he knew, I believe, he had no solid theory to back it. His intuition told him there were unsolved problems in his theory of money. It is worthwhile to point out that this basket of goods is an economic good composed of economic goods with a previous existence, which we can say is what underlies Menger’s concept when he speaks of money as an economic good preexisting its being considered money for curing the need for liquidity. I reiterate, money is a present economic good with the purpose of satisfying liquidity.

4) Finally, relative to the final paragraph ‘*The subjective value of money always depends on the subjective value of the other economic goods that can be obtained in exchange for it. Its subjective value is in fact a derived concept. [...] Whenever money is valued by anybody it is because he supposes it to have a certain purchasing power.*’ I only add this situation is the same as with any good destined for or subject to interpersonal exchange; its price is always relative to the amounts of it that are exchanged for the quantities of the economic goods received. In other words, any good destined to interpersonal exchanged is *valued [...] because it is supposed to posses certain purchasing power*, an aspect I have already emphasized when I referred to the function of purchasing power assigned to money.

Further on Mises says:

It follows from what has been said that there can be no discussion of the problem of the value of money without consideration of its objective exchange-value [...] objective exchange-value [...] is the most important kind of value, because it governs the social and not merely the individual aspect of economic life. (p. 100)

This obviously means giving interpersonal exchange the importance it has in the economy, though not especially to money but to everything interpersonally exchanged.

Further on Mises emphasizes:

By ‘the objective exchange-value of money’ we are accordingly to understand the possibility of obtaining a certain quantity of other economic goods in exchange for a given quantity of money (p. 101)

Once again we see that what Mises calls objective exchange value of money is what we have already shown to be a secondary function of it, identified as “purchasing power”, which we also saw was not exclusive of money, but was present in every economic good interpersonally exchanged, and more specifically that it is the essence in interpersonal exchange of “all” economic goods taking part in it. It is important to emphasize how Mises reveals his theoretical inconsistency relative to what money is, when saying: *obtaining a certain quantity*

of other economic goods in exchange for a given quantity of money, as if money were not a present economic good.

The distance between Mises' theory and the one expounded here is even more precisely visible when we refer to the following passage of said author, under the title *The Problems Involved in the Theory of the Value of Money* in "The theory of money and credit"

The theory of money must take account of the fundamental difference between the principles which govern the value of money and those which govern the value of commodities. In the theory of the value of commodities it is not necessary at first to pay any attention to objective exchange-value. In this theory, all phenomena of value- and price-determination can be explained with subjective use-value as the starting point. It is otherwise in the theory of the value of money; for since money, in contrast to other goods, can fulfill its economic function only if it possesses objective exchange-value, an investigation into its subjective value demands an investigation first into this objective exchange-value. In other words, the theory of the value of money leads us back through subjective exchange-value to objective exchange-value. (p. 102)

Evidently, we are at the centre of our differences with Mises, but the answer is what I have already expressed (with two aspects), to which I add:

- 1) The definition of commodity establishes that from the moment the economic agent adds it to his patrimony it has an objective exchange value, since he acquires it for this purpose; if not it would have from the beginning a subjective use value, which Mises ratifies in other passages, when he says that in the theory of subjective value of commodities, al the phenomenon determining its value and price can be explained starting from its subjective use value. The error here is taking Menger literally when he says interpersonal exchange value appears when it is greater than its use value and this drives the agent to exchange it interpersonally. Menger correctly emphasizes the concept of commodities when saying it is destined for interpersonal exchange from the moment the agent acquires or produces them. In other words, Mises expression '*In the theory of the value of commodities it is not necessary at first to pay any attention to objective exchange-value*', is not clear, considering most economic goods are added to the patrimony of an economic agent as commodities, which, by definition, are intended for interpersonal exchange. Finally I wish to stress, adding to his patrimony economic goods he would never use but supposes his clients would, is a specific activity of the economic agent.
- 2) Money itself, in an amount I have called "minimum indispensable liquidity stock" for the economic agent is not destined specifically for interpersonal exchange, but for precaution and/or security, a role that any economic good can play.
- 3) The third point of disagreement with Mises appears when he says '*for since money, in contrast to other goods, can fulfill its economic function only if it possesses objective exchange-value, an investigation into its subjective value demands an investigation first into this objective exchange-value. In other words, the theory of the value of money leads us back through subjective exchange-value to objective exchange-value*, with which what he does is to corroborate this holds for commodities in general, coming dangerously close to the old theory of objective value. This is no small thing, and when he sees that developing his theory of money from there makes him incur in this dangerous error, he resorts to *ad hoc* arguments, as is his theory of money regression, trying to escape from the abyss.
- 4) A last aspect and of no little importance is that Mises' expressions studied here could erroneously imply that interpersonal exchange is not an economic good in itself, which contradicts his expression that no-one exchanges an economic good if not to obtain a benefit. (See "utility".) This appears precisely in his expression '*In the theory of the value of commodities it is not necessary at first to pay any attention to objective exchange-value. In this theory, all phenomena of value- and price-determination can be explained with subjective use-value as the starting point. It is otherwise in the theory of the value of money.*', as if the

subjective value of money did not derive directly from the fact it satisfies a human need, as is liquidity.

Then we see Mises showing his doubts:

Under the present economic system, which is founded on the division of labor [...] it cannot be denied that human valuations of goods are based upon their exchange-value. It is not use-value, but exchange-value, that appears to govern the modern economic order.

Here he seems to see his error in having taken Menger literally and accepting that, with the progress of interpersonal exchange, most economic goods exchanged are taken by the agent as commodities; nevertheless, he persists in his mistake when adding:

Nevertheless, if we trace to its deepest springs, first the subjective and then the objective exchange-value of commodities, we find that in the last resort it is still the subjective use-value of things that determines the esteem in which they are held. For, quite apart from the fact that the commodities acquired in exchange for the products are always valued according to their subjective use-value, the only valuations that are of final importance in the determination of prices and objective exchange-value are those based on the subjective use-value that the products have for those persons who are the last to acquire them through the channels of commerce and who acquire them for their own consumption. (102-103)

Evidently, in this passage we can clearly see Mises resorts to Menger's concepts of goods of lower order (consumer) and higher order (capital), trying to find a way out of the crossroad he brought himself to, but this has nothing to do with what we are discussing, since this categorization is very useful for Menger's explanation on how the prices of goods of higher order are established, which derive from those of lower order. But once that has been established, the prices formed for all economic goods in general –of higher and lower order– arise from unique and unrepeatable spatiotemporal interpersonal exchanges between agents. In the specific case of higher order goods, the prices formed for them in the market are indisputably determined based on that intentionality of their being such and it is possible for them not to materialize in lower goods, because in the process they can stop being economic goods. In other words, we come to the situation where an economic good appears as a consequence of it satisfying a human need, no matter in what stage that need is located, relative to it satisfying a need of the lower or higher order. As soon as a capital instrument that allows higher productivity is discovered, the need to use it is already present. Its nature as an economic good derives from this and its prices will be formed with the incidence of subjective valuations. It is the same with money: its nature as an economic good arises from the fact it satisfies the need for liquidity, which derives from the need to obtain the benefits of the economic good interpersonal exchange. Thus, interpersonal exchange would be the final purpose money is used for, but, in turn, interpersonal exchange is used for another purpose and so on.

Nevertheless, and leaving aside the paragraph transcribed, Mises is in line with my theory when he recognizes that if we "trace to the deepest spring", his theory is inconsistent.

Mises gives an adequate title to the section on this crucial problem of the theory of money, in his work 'The Theory of money and credit', calling it '*The Problems Involved in the Theory of the Value of Money*'. Precisely because of his initial error of deviating from the simplicity of Menger's theory, he finds real problems, which are avoided reorienting everything from the beginning. Continuing with that section, he introduces concepts such as the durability of the goods historically chosen as money, alluding to the fact that they were not durable –rice, oxen, etc–, which precisely drove humanity to take up other goods such as gold to replace those less practical perishable goods, but without deviating from the essence of its origin, which was the satisfaction of liquidity, which required the feature of fungibility, among others. Further on he tries to sustain his approach with the idea that the theory of money must explain the different types of money, such as commodity-money, credit-money and token-

money, and since, according to his opinion, today it cannot be denied they are money, they must be explained by the theory of money; the theory that does not do so cannot consider itself to be economic. Here, though I have already answered each concept, we need to compare his theory with mine, point by point:

Not only have we to explain the possibility of fiat money, the material of which has a far lower value without the official stamp than with it; we must also answer the question, whether the possibility of a monetary employment of the commodity-money material affects its utility and consequently its value, and if so to what extent. The same problem arises in the case of credit money. (p. 104)

This clearly shows that he includes “those moneys” I have discarded as such in my theory; nevertheless, I firmly believe mine is also a monetary theory, only different from his. Apart from this small precision, that has to do with the topic of monetary substitutes we have already dealt with, what interests me here is the topic of value and on this Mises adds:

Investigations into the foundations of the value of money must eliminate those determinants that arise from the properties of the monetary material as a commodity, since these present no peculiarity that could distinguish the value of money from that of other commodities. The value of commodity money is of importance for monetary theory only as far as it depends on the peculiar economic position of money, on its function as common medium of exchange. Changes in the value of the monetary material that arise from its characteristics as a commodity are consequently to be considered only so far as they seem likely to make it more or less suitable for performing the function of money. Apart from this, monetary theory must take the value of the monetary material that arises from its industrial usefulness as given. (p. 104)

We can see Mises’ attempt to separate the value of metal as such, different from what value being chosen as a medium of exchange gives it, which is the same as trying to separate the value of wood from its use for making furniture and as fuel. This should interest us, but not with the “special” relevance he assigns to it. And this because of two aspects: a) it is chosen as money precisely because of the features metal had before being chosen as a common exchange medium, and b) because it is not only in the present economic good that has the role of money that new properties are discovered, and this alters the subjective value and the prices economic goods bring in interpersonal exchanges. If Mises does not see this, then he is in contradiction with Menger’s view of the origin of money –which he also accepts in the chapter following this, and he highlights it as “the element of continuity in the objective exchange value of money” - when saying money previously is an economic good (a condition my theory does not consider necessary), that is chosen as money because of its features that make it easily salable; i.e. it previously has the properties that money should; if not, he cannot explain his regression theorem. Nevertheless, we must consider the idea underlying the whole of Mises thinking as correct: that the satisfaction of liquidity by metal or another commodity determines that it has value; but this is what my theory says, and it is not an exclusive feature of money but of all goods that satisfy more than one need.

Then Mises continues with his *ad hoc* explanations, trying to clarify his confusion:

The material of which commodity money is made must have the same value whether it is used as money or otherwise. Whether a change in the value of gold originates in its employment as money or in its employment as a commodity, in either case the value of the whole stock changes uniformly. (pp. 104-105)

I have to agree with this because it is precisely what my theory says: an economic good that acquires new “utilities”, in which new features are discovered that satisfy other needs, and so has greater value for human beings, is still the same good. In other words, it altered its condition as an economic good, but not as a thing; yet in economic terms the alteration is

integral. In these paragraphs, we see a Mises that is correct, when he ratifies money is a present economic good.

However, he immediately expresses the original mistake in his theory when saying:

It is otherwise with credit money and fiat money. With these, the substance that bears the impression is essentially insignificant in the determination of the value of the money. In some circumstances it may have a relatively high exchange-value comprising a considerable fraction of the total exchange-value of the individual coin or note. But this value, which is not based on the monetary properties of the coin or note, only becomes of practical importance at the moment when the value based on the monetary property vanishes, i.e., at the moment when the individuals participating in commerce cease to use the coin or note in question as a common medium of exchange. When this is not the case, the coins or notes bearing the monetary impression must have a higher exchange-value than other pieces of the same material so long as these are not marked out by any special characteristics. (p. 105)

Here Mises confusion is clearly expressed, since he is presenting us with the “possibility of virtual-money”, which is not a present economic good, since in other words he says: when a good satisfies two needs, its “total” value as an economic good arises from the combination of these two faculties; if it loses one of these then the economic value of the one remaining decreases. In the case of money this adds nothing special, since the “impression” gives the same piece of metal greater value, which cannot go beyond what is relative to the trait of fidelity added by the impression (without it there would be the complicated task of weighing and treating the metal to verify its quality). He then produces a whole series of arguments to explain things that need no explanation, apart from assimilating credit-money and fiat-money to money, which we have already dealt with. Nevertheless, we can take advantage of Mises’ previous expression if we see it from this point of view, which possibly was the main one, i.e. that in the case of credit-money and fiat-money, if its quality as money disappears we have no other quality left for them to keep on being an economic good, which is no more than an indirect acknowledgement that they are not money from the start, but credit payable in or on money. This possibly is the best expression of Mises’ confusion, clearly expressing the unnecessary detour resulting from the original error of equating money with credit.

Then he continues:

Again, in the case of credit money the claims used as money have similarly a different exchange-value from other claims of the same kind that are not used as money. (p. 105)

Which we need not consider, except for Mises’ intentionality of using this as an *ad hoc* way out: in the first place, we know we are talking of credit, not money, and in the second, the value of any economic good is subjective, which means goods supposedly satisfying the same need can have different values, as in the case of gold and silver –that were used as money but with different values-, the same as the credit of one agent is valued more or less than the credit of another, and both are included in the generic concept of credit. The case of the different value (and price) of economic goods that satisfy the same need can only be explained by the fact that the rest of needs satisfied are different for each economic good being compared.

Then Mises tells us what we already know:

Until gold was used as money it was valued merely on account of the possibility of using it for ornamental purposes. [...] Nowadays the value of gold, our principal modern monetary material, is based on both possibilities of employment, on that for monetary purposes and on that for industrial purposes. It is impossible to say how far the present value of money depends on its monetary employment and how far on its industrial employment. [...] the monetary employment has become more and more important.

It is certain that nowadays the value of gold is largely supported by its monetary employment, and that its demonetization would affect its price in an overwhelming fashion. [...] The value

of the materials that are used for the manufacture of fiat money and credit money is also influenced by their use as money as well as by all their other uses. (pp. 105-106)

The essence of this passage is in line with what I have been saying, only adding how difficult it is to know how much of the price of wood (gold) is due to its use as fuel (money) and how much to its use for making furniture (metal); but this is not a great difficulty, theoretically or in day-to-day life, since no-one would think of using very expensive wood (for furniture) for wood, if there is cheaper wood; in other words, one would use the more expensive wood (for furniture) as fuel if there were an extreme situation for surviving cold; in that case, the wood would have a greater value as fuel than as furniture; the same is true for anyone that has money (be it gold or otherwise) and exchanges it for another economic good. Relative to gold being the main monetary material, evidently we must understand it in the temporal context (we shall see how my theory deals with this in chapter IX).

Immediately Mises continues in his error:

The task of the theory of the value of money is to expound the laws which regulate the determination of the objective exchange value of money. It is not its business to concern itself with the determination of the value of the material from which commodity-money is made so far as this value does not depend on the monetary but on the other employment of this material. Neither is it its task to concern itself with the determination of the value of those materials that are used for making the concrete embodiments of fiat money. It discusses the objective exchange-value of money only in so far as this depends on its monetary function. (p. 107)

A section that reiterates aspects we have already highlighted: he seems to disbelieve that the origin of money is in its being a present economic good that satisfies the condition of marketability. He adds nothing new to economic theory when saying new properties discovered in an economic good alter its value. Finally, there is the risk we have already pointed out of introducing “objective” value as opposed to the theory of subjective value. Wanting to stress that, having the property of transforming into an exchange-good, the “material” in question acquires greater value (which is true for all economic goods), we run the risk of going back to seeking for the value of money in its past. This is the essence of the theory of objective value, which has been displaced in economic theory by the theory of subjective value, which always values the past from the present looking to the future. Nevertheless, at the end of this section that Mises very correctly identifies with the title *The Problems Involved in the Theory of the Value of Money* he states what he believes to be correct in the theory of money, when he says:

The other forms of value present no special problems for the theory of the value of money. There is nothing to be said about the subjective value of money that differs in any way from what economics teaches of the subjective value of other economic goods. And all that it is important to know about the objective use-value of money may be summed up in the one statement that it depends on the objective exchange-value of money. (p. 107)

In this final passage, Mises tries to tell us that the whole theory was written before his contribution, something I agree with, only he lost his way, without realizing it, and had to find *ad hoc* ways out, such as the one he presents in this paragraph, when he tries to explain the subjective value of money on the basis of its “objective” use value. However, since the objective use value is that it satisfies a need, once liquidity is recognized as a need, money is nothing more than an economic good that satisfies a need.

I wish to emphasize Mises remains faithful in all his work on money to the errors shown here, especially relative to the alleged “very special” theoretical framework for money. To confirm this I refer to another passage in chapter VIII of this book, apart from his regression theorem that synthesizes his whole error:

The subjective use-value of money, which coincides with its subjective exchange-value, is nothing but the anticipated use-value of the things that are to be bought with it. (pag. 107-108) (In a previous note he relates this idea to Wieser and B. Bawerk).

I have already refuted these considerations, including their different aspects: for any commodity its subjective use value is the same as its subjective exchange-value, insofar as the use the economic agent gives it is exchange; i.e. they already appear in the patrimony of the agent with the purpose of being exchanged –as commodities-, they are “used” for exchange. This is related to the second aspect I wish to emphasize: any economic good destined for exchange will see the materialization of its purchasing power when the quality and quantity of the economic goods the economic agent will receive is determined in the precise instant of the interpersonal exchange, but this is true for any commodity, not only money. What I am stressing here is similar to what I expressed when referring to the function of purchasing power in money.

VIRTUAL MONEY

I believe Mises basic confusion materializes when he says in “The Theory of money and credit”:

Since there is no direct connection between money as such and any human want, individuals can obtain an idea of its utility and consequently of its value only by assuming a definite purchasing-power. (p. 109)

If there is something we can consider a synthesis of Mises’ deviation from Menger it is this phrase, which is in complete contradiction with this other expression from Mises himself: ‘*Man only proceeds to indirect exchange when he benefits from it; only if the goods he obtains are more negotiable than those he already has*’, being that money only appears in interpersonal exchange, which derives from Mises definition of exchange. In other words, this unfortunate expression by Mises is what shows us why he deviates from the theory Menger correctly develops. Here is where Mises loses his way, not recognizing marketability or liquidity directly as just another need. Instead he builds a labyrinth, which is the attempt to give money a mystical and extra-economic significance. This should not be so, because money derives form the human need of interpersonal exchange, the same that is true for all commodities, to the point that today all human beings labor to produce commodities; i.e. almost no-one works to produce goods for their own final use. This passage is also the best expression of the theoretical aspect that brings him close or completely assimilates him to those he believes have different theories, such as the Keynesians, who had the same idea as his school (an idea I call the theory of “virtual-money”). By what we see in this passage, we can include Mises there, though this is no more than corroborating all I have been saying in this book. I believe here you can see why I decided to compare my theory with Mises’: I believe that, of all those I consider wrong because they hold the concept of “virtual-money”, Mises’ is the one that goes deeper and is more elaborate, and, thus, his is much more consistent than other supposedly different theories.

It is useful to reiterate here the main reflection that shows Mises is wrong and that is the reason for my calling his a theory of “virtual-money”. Basically his theory –though in a confused manner- does not deal with liquidity –Menger’s marketability- as a human need, and thus does not even see the economic good that satisfies it, money, as a good, much less as an economic good. Consequently, it has no economic value for human beings, which is the reason it is forced to “find it in other economic goods for which it can be exchanged – purchasing power- that are economic goods”, meaning that in the intervening time money is a human abstraction, appearing as “virtual” in economic terms. This only ratifies Mises has lost his way in economic theory, just like those that supposedly think differently from him, who are always worried about “finding the value” of money in its purchasing power, i.e. in the

quantity of economic goods it can be exchanged for interpersonally. With this I reiterate, then, that we must ascribe purchasing power to all commodities.

In short, all the errors of economic theory, due to the path it has chosen, can be corrected adopting the theory presented here, which recognizes money as a present economic good that satisfies a specific human need and its supply is less than demand. There is no need to go any further: no need for economic categories such as money substitutes; no need to assimilate credit to money; to return to objective value; to search for the value of money someplace else, or in the past, as we shall see in the regression theorem, or in the future, when speaking of purchasing power, because in both cases we add nothing to the temporal aspect of man or to goods in general, since that condition is present in everything, not only money. There is no need for the quantitative theory of money; or to separate the act of selling from the act of buying; to differentiate between barter and money exchanges; etc. In other words, if we need specific theories to explain new needs man confronts and the economic goods that satisfy them, this says existing theories are not sufficiently general to be considered such, or that they still are in a very elementary phase in their development.

In short, we can say that, as a consequence of Mises (and also his rivals) saying “there is no direct relation between money as such and human needs”, he does not consider interpersonal exchange, from which money is derived, as an economic good in itself –which he validates saying no-one exchanges if not to obtain a benefit. Saying its condition of being an economic good is derived adds nothing, it is the nature of any commodity, but what does add complications is confusedly analyzing that derived nature as an economic good, when the only thing special is that money is a commodity with greater marketability, easier to interpersonally exchange, which is only a financial topic.

This proposition puts Mises concept of money outside the economic world and leads him to such a degree of abstraction –of which the greatest expression I believe is at the end of his “Chain of substitutes of money”, what he calls “fiat money”, and that makes him wonder if it will ever exist- that he conceives a money that is not a present economic good. He is speaking here of what I call “virtual-money”, which can be conceived as an economic entity without being an economic good –material or immaterial-, which will be present when it is exchanged for an economic good. This gives us two options: 1) an interpersonal exchange of non-economic goods, something that cannot happen in the economy (if so, interpersonal exchange would not be an economic good) or 2) that at certain “instants” there can be the huge contradiction of the **“existence of money that does not exist”**. This confusion produces concepts that are foreign to economics, such as “monetary veil” or “monetary illusion” and others I will refer to.

We can express all this as follows: virtual money is something like conceiving that during certain period of time money is not a present economic good but that it will be when an economic good can be acquired with it, what is called purchasing power. We must see we are referring in a veiled manner to credit, which includes a future economic good in interpersonal exchange, a good that does not exist in concomitance with the economic agent that exchanges, but who commits to make that economic good exist in the future. This is another way of expressing the difference between money and credit or, more precisely, between cash and credit.

Finally, I wish to reiterate why I cannot accept that money does not have value in itself, in spite of its nature as an “indirect medium”; with that criterion we should not accept value or price in economic goods of the higher order or commodities. Also, no economic good can have a price if not relative to other economic goods, no matter what these are, which, in turn, is the essence of the concept of the relativity of value and prices. To think otherwise would be rejecting relativity in general.

THE MONEY REGRESSION THEOREM

After mentioning so many times my rejection of Mises’ money regression theorem, the time has come to speak specifically of the subject.

Mises says in “The Theory of money and credit” (p. 85):

The earliest value of money links up with the commodity-value of the monetary material. (p. 110)

We are in the presence of Mises’ road back to Menger. While in the first sections he showed us all his arguments for separating the metal that was “transformed” into money, now he tells us we must not forget that money was first metal. However, his acknowledgement that he is lost leads him to try to reconcile what is right in his intuition with what is wrong in his theory (p. 85):

But the value of money since then has been influenced not merely by the factors dependent on its 'industrial' uses, which determine the value of the material of which the commodity-money is made, but also by those which result from its use as money. Not only its supply and demand for industrial purposes, but also its supply and demand for use as a medium of exchange, have influenced the value of gold from that point of time onwards when it was first used as money. (p. 110)

Evidently his implicit thought on the species and genus of money is in line with my position, along with the idea that alternative uses of an economic good increase its subjective value, which has an impact on the prices obtained in interpersonal exchanges. But immediately Mises introduces us directly to his theory of regression and does so under the title ***The Necessity for a Value Independent of the Monetary Function before an Object can serve as Money***, which is the same as defining money as a present economic good.

We need to bear in mind once again that in my theory it is not indispensable for an economic good that satisfies the need for liquidity to previously have been an economic good satisfying other needs, though this would appear to be implicit in Menger’s concept of “greater marketability”. But reality has shown new economic goods can have greater marketability than those preexisting, and this is so because they have the qualities necessary for being money. This aspect is very important, and not understanding it is what made Hayek think of baskets of goods to keep “the value of money constant” and that, along with his great intuition, finally made him say he did not know which was the correct theory of money and could only say “the road goes in that direction”, which to me means not deviating from the theory of subjective value to explain money. But he had the intuition that Mises’ proposition, that he accepted, did not lead him to a solid stance.

Mises begins this section correctly stating (P. 85):

...It follows that an object cannot be used as money unless, at the moment when its use as money begins, it already possesses an objective exchange-value based on some other use. This provides both a refutation of those theories which derive the origin of money from a general agreement to impute fictitious value to things intrinsically valueless and a confirmation of Menger's hypothesis concerning the origin of the use of money.

We must agree with what Mises says here, but bearing in mind that in the rest of his theory he validates the existence of virtual money. Nevertheless, I wish to stress he mentions Menger trying to give his theory a solid foundation, specifically when he mentions his concept relative to the origin of money. But I believe Menger mentions this wanting to preserve his principal thought that money is a present economic good that satisfies the need for liquidity, derived from the need for interpersonal exchange. I do not believe Menger would reject the possibility of an economic good appearing exclusively to satisfy liquidity, which he calls marketability, with no need for it to exist previously to satisfy other needs. In other words, there is no need for rigid plastic to previously have been steel to replace it.

Bear in mind my concept of money being a *present* economic good is more general than Menger’s, and at the same time more precise, since it does not revert to the past, and it does

not do so for two reasons: first, it is not necessary and, second, it could have a past as an economic good and even as money, and this not be so in the present.

Mises continues on the same mistaken path, assimilating credit-money and fiat money to commodity-money:

This link with a pre-existing exchange-value is necessary not only for commodity money, but equally for credit money and fiat money. No fiat money could ever come into existence if it did not satisfy this condition. (p. 110)

I will not continue with this topic. I have already said enough when I stressed the categories Mises mentions here are credit and not money, except for commodity-money. But he does not refer to it in his account, which once again shows his error, not realizing those are credit and not money, and that he is uncomfortable with his own theory from which he tries to find a way out, pretending what is credit is a preexisting economic good, when credit is the opposite: it is formalized as a future economic good in a present interpersonal exchange. He then mentions more “money alternatives”, such as “pure-fiat money”, which is nothing more than a new and unnecessary attempt to return to Menger.

In the following section, which Mises calls ***The Significance of Pre-existing Prices in the determination of Market Exchange-Ratios***, (p. 111) we again see what he tries to present as features specific to money are traits of all economic goods that for an economic agent have originated as commodities: ‘*In this there is a contrast between the determination of the exchange-value of money and that of the exchange-value of other economic goods. All pre-existing exchange ratios are quite irrelevant so far as the actual levels of the reciprocal exchange-ratios of other economic goods are concerned.*’ (p. 111-112). This is inconsistent with everything said here and, specifically, with the definition accepted by Mises of Menger’s concept of commodity.

In the following section (p.101) he tells us of “The Applicability of the Marginal-Utility Theory to Money” (p. 114), which is an attempt to return to the path he should never have left, and in this sense says:

Demonstration of the fact that search for the determinants of the objective exchange-value of money always leads us back to a point where the value of money is not determined in any way by its use as a medium of exchange, but solely by its other functions, prepares the way for developing a complete theory of the value of money on the basis of the subjective theory of value and its peculiar doctrine of marginal utility.

We see this is no more than an attempt by Mises to “justify” his theory, referring to the subjective theory of value, which he considers a pillar of economics. This is very positive in him, in spite of his not seeing his theory of money estranges him from it, and this is one more expression of the attempt to reconcile his two opposite postures, acceptance of subjective value theory in general, and rejection of objective value theory, which he nevertheless, unconsciously, reverts to when seeking the origins of the subjective value of money in its ancestors. This regression to the past to seek the genetic origins of money’s subjective value is as contradictory as seeking its subjective value in its future purchasing power. Apart from that, I only wish to reiterate this retrospective task is the same we can carry out for an economic good that has incorporated another property to those it had, to satisfy some new human economic need.

Subsequently, Mises stresses there are two theories of the value of money: an objective one, perfectly capable of dealing with “commodity money” but incapable of dealing with “credit-money” and “fiat-money” (not realizing he showed the same incapacity but from another angle: considering money what is credit, and his error derives from this, since he tried to explain with the theory of money what is really credit); and the other referring, in general, to the different versions of the quantitative theory of money (I will comment more extensively on it later, because it is very important for the current economic theory of money). I again remind readers all doubts on this will be clarified in chapter IX.

Mises introduces us to his regression theorem, when he says:

The theory of the value of money as such can trace back the objective exchange-value of money only to that point where it ceases to be the value of money and becomes merely the value of a commodity. (p. 120)

I have already referred to the mistakes I believe are contained in this theory –such as the concept of objective-, and I do not consider essential to go back in time in search of the origins of value, except to understand the reasons why an economic good becomes such, which on the other hand is not exclusive to money. I do wish to stress I consider Mises' answer to criticisms of his theorem that accuse it of being a vicious circle that regresses to infinity –in the sense of epistemological definitions- to be fully acceptable, when in "Human Action" he says (pp 612/613):

What these critics fail to see is that the regression does not go back endlessly. It reaches a point at which the explanation is completed and no further question remains unanswered. If we trace the purchasing power of money back step by step, we finally arrive at the point at which the service of the good concerned as a medium of exchange begins. At this point yesterday's exchange value is exclusively determined by the non-monetary—industrial—demand which is displayed only by those who want to use this good for other employments than that of a medium of exchange. (p. 409)

Here Mises explicitly admits that any economic good interpersonally exchanged has purchasing power and that this is not exclusive of money, as he stated before. He admits it when saying: "...If we trace the purchasing power of money back step by step, we finally arrive at the point at which the service of the good concerned as a medium of exchange begins. At this point yesterday's exchange value is exclusively determined by the non-monetary—industrial—demand..." In other words, he accepts here (though only implicitly) commodities have purchasing power, which he confusedly admits only for money.
Mises continues:

The relation between the demand for money and the supply of money, which may be called the money relation, determines the height of purchasing power. Today's money relation, as it is shaped on the ground of yesterday's purchasing power, determines today's purchasing power. (p. 411)

Once again we see Mises' attempt to assign a "special" role to the "continuity" time adds to money, as if this were different from other commodities.

What there is no doubt of is that Mises considered the law of marginal utility applied to money in the same way as with other economic goods. The error I emphasize is that which arises in his theory, not in his intentions or his "final intention". In other words, he tries to explain what would be unnecessary if he had not lost his way, since if he had always considered money as a present economic good and not virtual, all economic goods (present and future) would be subject to the subjective theory of value.

VARIATION OF THE VALUE OF MONEY

In light of all that has been said, I believe it is necessary to return to the value of money to reiterate it is clear the variations of the value of money, referring to the specific money materialized in a present economic good, are no different from the variations of value of all economic goods. These variations are subjective and subject to the changes implied by the fact an economic good has one or more "economic functions". Its economic reach grows when it acquires new properties to satisfy new human needs, because then its value for

economic agents increases, and it will materialize in higher prices in future interpersonal exchanges.

One of the main problems generated by the theory of the value of money and, in consequence, its variations, derives from the concept that the present economic good fulfilling the role of money –exchange medium for Mises, satisfaction of the need for “financial” liquidity in my case- was first an economic good that satisfied other needs and later added the role of money. With this scheme, there is an attempt to separate the value that economic good had before and the one assigned to it by its new function. In other words, it seems as if the theory of money must allow a precise separation of the value of the good as money –its monetary function– from that derived from other uses.

I believe I have already explained clearly how a new economic quality discovered in a good affects it, but that the economic good intrinsically remains the same. My theory also admits the possibility of an economic good that had no prior existence as such fulfilling the role of money, as would be the case of the basket of economic goods Hayek proposes –to stabilize its price-, which recognizes the existence of preexisting economic goods concurring to form a new composite economic good. We are in this case in the presence of a new economic good, composite or not. In short, what is essential is that money materializes in a specific present economic good.

I do not think it convenient to end this section without showing Mises understood many of the aspects I point to, even if he confuses them in several passages. A place where he clearly expresses this correct theoretical notion is in page 111 of “The theory of money and credit”:

It is not a peculiarity of money that its value (Wieser obviously means its objective exchange-value) is determined in the process of exchange; the same is true of all other economic goods. (p. 136)

He adds the indication he is referring to the price of money (objective exchange value) and not its subjective value.

THE PRICE OF MONEY

Mises says in page 75 of “The theory of money and credit”:

If the objective exchange-value of a good is its power to command a certain quantity of other goods in exchange, its price is this actual quantity of other goods. It follows that the concepts of price and objective exchange-value are by no means identical. (p. 101)

Which is not something exclusively pertaining to money but as we saw, the subjective value and the price of an economic good are two completely different economic entities for all economic goods. It follows that the same categories exist for the present economic good that satisfies the need for liquidity –exchange good; the subjective valuation –ordinal and not cardinal- of economic agents has an influence on the determination of the price said economic good will have in each interpersonal exchange in a unique and unrepeatable spatiotemporal point.

Then Mises says (p. 75):

By 'the objective exchange-value of money' we are accordingly to understand the possibility of obtaining a certain quantity of other economic goods in exchange for a given quantity of money; and by 'the price of money' this actual quantity of other goods. It is possible to express the exchange-value of a unit of money in units of any other commodity and speak of the commodity-price of money. [...] For nowadays money is the sole indicator of prices. (p. 101)

But this only ratifies what I have been saying, that the price in itself is the relation of economic goods interpersonally exchanged, and that generally what is used is the amount of economic goods interpersonally exchanged for the present economic good that has the role of money, because it is the “medium of common use in interpersonal exchanges”. This is the same as speaking of the function of measuring prices that, as we have seen, makes –prices- an economic good inasmuch as it is information useful for economic calculation, which is a human need.

Obviously, this results in everything that has been said on the variations of the value of money: this materializes in a present economic good that has the quality of satisfying liquidity and so has a higher price in interpersonal exchanges, just as any other economic good that adds a new utility for human beings.

Relative to the final phrase “...*For nowadays money is the sole indicator of prices*”, my theory is more general and refers (as we saw and I will later ratify) to the fact that the economic good that satisfies liquidity is in general used as a unit of measure for all prices.

Real (relative) and monetary (absolute) prices

When economists speak of absolute prices they refer to prices denominated in money, as if this were not a present economic good or as if it were a non-economic object. In other words, we can say the concept of absolute prices can allude to:

- 1) The specific quantities of an economic good that satisfies a precise spatiotemporal need. In this case, we can say we are assimilating the concept of economic good to price.
- 2) The concept that money is not a present economic good and so prices in money (so called monetary prices) are not prices of economic goods in interpersonal exchange. We obviously cannot agree with this criterion, in light of the economic causality we are following and the concepts of price and money.
- 3) The concept that we are referring to prices as tools for economic calculation, the mathematical operation of expressing the quantities of economic goods multiplied by their monetary prices in interpersonal exchange transactions. In this case, we are speaking of money as a unit of account, which has nothing to do with the concept of monetary prices *versus* real prices.

In short, prices defined as the entity arising from interpersonal exchange are real and relative to the same act of interpersonal exchange, without which its existence is inconceivable.

Looking at this from another point of view, I say prices are comparisons of quantities of economic goods that are interpersonally exchanged in a unique and unrepeatable spatiotemporal point, which makes them relative to all the elements that give birth to them, among them, the exchange of economic goods, that exist as such; this has to do with the impossibility of conceiving a price of things that are not economic goods.

Thus, it makes no epistemological sense to speak of absolute or monetary prices as against real or relative prices. Prices are “real and relative”, and not one thing without the other; prices are real if and only if they are relative and viceversa; it is a biunivocal condition by definition of the entity economic price.

I reiterate that just as I have been explaining, it makes no sense to speak of absolute prices, since we saw there is one only axiomatic origin of prices that, by definition, owes its existence to other elements it in turn makes relative, coming together in interpersonal exchange, i.e. replacing biunivocal “economic good-owner” relations previously existent with others through interpersonal exchange. The prices of exchanged economic goods appear there; because of this, each economic good’s price is relative at least to one other economic good, the presence of two economic agents and of interpersonal exchange in a unique and unrepeatable spatiotemporal point. Another way to express the relativity of prices refers to the temporal relativity of everything human, and prices are relative to the precise spatiotemporal instant of interpersonal exchange expressed in economic goods, as is everything relative to economic time. My theory of economic relativity is also the basis for expressing the relativity

of prices, since these are formed in a place in time, even if it is an instantaneous spatiotemporal point.

We must not resort to a different economic theory “because of the alleged difference between real and monetary prices”, changing from one theory to another because of different realities. This erroneous aspect of economic theory is closely connected to the mistake, already referred to, of dividing interpersonal exchange into two abstract entities, such as buying and selling, and introducing in “that time” –inexistent for economics- an abstract entity such as ether in physics. This abstract entity is none other than virtual-money, which I reject in this section too, because monetary prices are those measured in terms of the economic exchange-good of common use. Since it is an economic good, monetary prices are real and relative to that economic good. It follows we could only think of monetary prices as different from real ones if we accept the “virtual” economic good that is not an economic good or does not exist. Another thing that led to confusion was separating direct interpersonal exchange or barter from indirect exchange with the use of money, instead of considering the very useful classification of cash and credit interpersonal exchange.

In short, it makes no sense to approach this topic from the alleged *dichotomy* of the concepts of absolute and relative prices, and monetary and real prices. This shows the inconsistency of that separation, because it is the same as saying monetary prices are not real, and since they are a result of the existence of the exchange economic good of common use, we would be validating the existence of an nonexistent or virtual economic good.

Finally, I wish to express all this from another point of view, or we could say from a more comprehensive and simpler one, which allows us to stress the logical and theoretical inconsistency of posing that difference. Prices are always of economic goods, there are no prices of goods that are not economic. The entities that are real in the economy are needs, the economic goods that satisfy them and economic time. Currency is an economic good, it has real economic entity. Monetary prices are economic goods, very useful as information for economic calculation, which is also an economic good. It is impossible to understand the categorization or differentiation of real from monetary prices, when this explicitly states some are real and others are not.

I will have the opportunity to show the enormous implications of the error of the *dichotomy of prices* (a concept ascribed to by Patinkin), when we refer to the search –sterile from my point of view- of current economic theory for an “equilibrium” between those two worlds implied by the dichotomy, the real and the monetary, where this last obviously is not real –i.e. it is “virtual”. If not, there is no need to “balance” anything.

NEUTRALITY OF MONEY

I consider convenient to deal with this topic referring to Hayek, since he not only synthesizes what this concept means, but also the confusion he himself is immersed in as a result of changing his ideas on what “monetary policy” authorities should adopt. At the end of his career—and in contradiction with his previous posture (although he had doubts)—he suggests it is convenient to maintain a certain stability or permanency in the price of money. But let us see what he says in “Essays on monetary theory I”, from page 318 on:

“The concept of neutral money was created to be used as an instrument for theoretical analysis, and in no way must it be utilized, at least in the first instance, as a criterion for monetary policy.”

I must disagree with this unfortunate expression from Hayek, since the conclusions of the theory of money affect both all of economic theory and humanity’s monetary praxis. I believe that behind this lies virtual money; if not, Hayek’s conclusion is unacceptable, since the only thing that can make us think money and any economic good in general has a neutral nature in the economy is that it does not exist as an economic entity, which must be rejected up front also theoretically.

He continues (p. 318):

It was an attempt to isolate the impact of money on the economic process and establish the conditions in which the economic process of a monetary economy, and especially relative prices, are not affected by any determinant that is not “real”, i.e. referring to the theory of equilibrium developed under the assumption of barter. More specifically, what was intended here is to clarify the meaning of the assumptions normally used in the theory of economic equilibrium: i.e. that money, though present to allow indirect exchange, can be ignored as a factor with an impact on the relative level of prices.

Though I have already given my point of view on the error in these lines, I wish to emphasize some aspects specifically:

- 1) Prices are all relative and real: he presupposes a difference between absolute and relative prices, since he does not deal emphatically with economic neutrality, rejecting its existence. Axiomatically, no economic good is economically neutral.
- 2) Even though he puts it between inverted commas, he does distance himself from the “difference” between monetary and non-monetary economics; he affirms the usefulness of separating direct from indirect exchange.
- 3) He does not distance himself here (he later doubted) from the concept of economic equilibrium, which I already pointed to as nonexistent as a real and also as a theoretical category; I will come back to this.
- 4) Not rejecting the useless differentiation of a monetary from a barter economy, he accepts the erroneous condition of “extra-economic” or “virtual” for money, and that money has no impact or can have no impact “in theory, at least” on relative prices, as if money were not an economic good.

Then (p. 318/9), as could be expected, he upholds all the other errors of economic theory we have already referred to:

“The solution to the theoretical problem of neutral money begins by realizing that the basic identity of supply and demand that must exist in each and every market in a barter economy, is disturbed by the interference of money. So it is necessary to analyze the unilateral effects of money [...] phenomenon that appears when, as a consequence of the separation of barter in two independent acts, one of the two can happen without its corresponding complementary. In this sense, we can see there can be demands without the corresponding supply or viceversa, especially when money is taken from reserves (monetary reserves are reduced), when money received is not spent immediately, when newly created money appears in the market or when there is destruction of currency. The problem this poses is directly conducive to adopting the hypothesis that the flow of money is constant, with the exception I refer to in passing in Prices and Production [...] so, for all the trends towards equilibrium described in general economic theory to remain valid, all the conditions neutral money has the mission to establish must be present. Nevertheless, it is not only perfectly possible, but even probable that this should not be achieved in practice [...] The result is there are very important “frictional restrictions” to reach a “neutral” monetary supply, that are of the greatest importance when creating a practical norm to guide monetary policy. In this situation it is at least possible that monetary polity should have to try to reach a compromise between two goals, each of which can only be reached at the expense of the other; between allowing the trends conducive to equilibrium to develop and avoiding excessive frictional restrictions.”

We can clearly see Hayek is imbued of the error of not considering money as just another present economic good that satisfies a need, which leads him to the trap of not considering it has economic entity. He reiterates the division of interpersonal exchange in two acts, as if money were not a present economic good in itself, subject to supply and demand as all economic goods that satisfy a need. Finally, though it seems impossible for Hayek, he

promotes the use of monetary policies. And in the theoretical sense he accepts the concept of a constant quantity of money, which brings him closer to the positions he rejects.

Relative to my theories, I must stress in this paragraph Hayek adheres to the partial wealth equation (*...there can be demands without the corresponding supply or viceversa, especially when money is taken from reserves (monetary reserves are reduced), when money received is not spent immediately, when newly created money appears in the market or when there is destruction of currency...*) instead of the total or complete wealth equation, a topic I deal with extensively in other parts of this work.

Then, in page 320 he states:

It is perfectly conceivable for monetary influences to lead to a “falsification” of relative prices and an erroneous orientation of production if certain conditions are not fully complimented; e.g.: 1) that the flow of money remain constant, 2) all prices be perfectly flexible and 3) the movement of future prices being approximately anticipated in long term contract agreements. But the consequence then is if conditions (2) and (3) are not met, there is absolutely no way the ideal can be reached with any monetary policy. Basically, the theoretical concept of neutral money, referring to the impact of money on price relations (simultaneous and intertemporal) determined by real factors, can have no relation whatsoever with the idea of a price-level [...] On the contrary, I believe the stabilization of a certain price-average of the original production prices probably is the most practical criterion for a conscious regulation of the quantity of money. [...] Nevertheless, based on the previous reasons, I would consider it a deplorable confusion of two different problems if this question of monetary policy were to be dealt with in the context of neutral money. (Emphasis added.)

Evidently, underlying Hayek ideas is the possibility of extra economic or virtual money, since if not, the first part of this passage would be inconceivable, when he speaks of the *falsification* of prices (except in the conditions he points to); he obviously forgets that money affects all relative prices considering its relative place in economic life, just as with any economic good. He then expresses an implicit concept of virtual or extra economic money, when speaking of separating real relative prices from price-levels, as if money were not an economic good; and it not only is so, but it is often used as a reference for the prices of all the rest of economic goods as a unit of measure. Lastly, he states we should not associate, link or deal with the topic of neutral money –the way the quantity of money affects or not real relative prices- with the monetary policy of stabilizing a certain price-average. With these two expressions he obviously reintroduces virtual or extra economic money, since the only way to avoid associating real relative price-levels with monetary price-levels when these are used as a unit of measure, is that one be considered in the sphere of the economic world and the other not. This last aspects shows very clearly Hayek's confusion relative to the theory of money, which he will accept at the end of his life, and is the result of following Mises uncritically, not realizing the latter had distanced himself from Menger.

Proof of Hayek's error can even be found in a footnote (p. 320), where he says:

I believe price-levels (or a value of money in the usual sense) must not have any important role in the research on this problem (referring to neutral money). If it did, the concept of variations in the value of money should be substituted by deviations from the problematic intertemporal equilibrium of prices. Though I cannot sustain everything I wrote on that occasion..."

If we approach the topic of the neutrality of money in Mises, we find the following in his work "Human Action"

A serious blunder [...] the assumption that the medium of exchange is a neutral factor only. According to this opinion the only difference between direct and indirect exchange was that only in the latter was a medium of exchange used. [...] They tacitly assumed that changes in

purchasing power occur with regard to all goods and services at the same time and to the same extent. This is, of course, what the fable of money's neutrality implies. (p. 202)

We can observe Mises stresses, on the one hand, that money appeared because of the human need to evolve beyond barter, and, on the other, it is wrong to suppose the only difference between direct and indirect exchange is only the use of money as a medium of exchange. The literal expression tells us Mises was wrong in one the two ideas implicit here: that the difference between direct and indirect exchange is the use of money, which I have considered is not a useful economic entity; and the other, when he says money affects humans neither proportionally nor homogeneously relative to its price and quantity. I believe we can agree with the second proposition, but in that since there is no neutral economic good, since all are subject to the same consequences; there is no variation of quantity and price for any economic good that is neutral in this sense; so it is irrelevant to speak of neutrality of money just as it can be irrelevant (or not) for any economic good. In another passage of "Human Action (pp. 596/7) Mises tells us:

There is first of all the spurious idea of the supposed neutrality of money. An outgrowth of this doctrine was the notion of the "level" of prices that rises or falls proportionately with the increase or decrease in the quantity of money in circulation. It was not realized that changes in the quantity of money can never affect the prices of all goods and services at the same time and to the same extent. (p. 398-399)

Evidently, the concept that money is not neutral is correct, though I disagree with the theoretical explanation, since the key here is that we need not speak of money, especially of the temporal proportionality caused by the variations of the quantity of money, and the relative prices produced in interpersonal exchanges in one specific spatiotemporal point. There are two things wrong with this method: 1) the belief that this is an exclusive trait of money and 2) the idea of a temporal proportionality of actions that are discontinuous in space and time, as in the case of the formation of relative prices; i.e. dealing with prices as if they were a good in stock, something which they are when they are considered information for decision-making. Nevertheless, in these pages Mises' intention is to attack the quantitative theory of money, though with what I believe to be an inefficient theory.

Finally, Mises deals in the following way with the topic of neutral money:

Is it possible to think of a state of affairs in which changes in the purchasing power of money occur at the same time and to the same extent with regard to all commodities and services and in proportion to the change affected in either the demand for or the supply of money? (p. 416) [...] *The notion of a neutral money is no less contradictory than that of a money of stable purchasing power. (...) It is a popular fallacy to believe that perfect money should be neutral and endowed with unchanging purchasing power, and that the goal of monetary policy should be to realize this perfect money.* (p. 418)

Apart from the difference with Hayek in his latter days –when he proposed this as a monetary policy- I still consider Mises theoretical critique wrong in its approach, since it confuses the topic of neutrality of the variations of the quantities of money with the intertemporal variation of prices. As seen from this point of view, considering the opposite to be dealing with neutrality of money keeping its quantity or its price constant in time, we can only conclude what I have expressed when dealing with both topics, the quantity and the variability of prices in time of all economic goods, which is also valid for money.

In short, relative to the concept of neutral money there are three options we must reject:

- 1) Because then it does not exist as an economic entity, which seems to be what theory refers to when it refers to real prices *versus* monetary prices, and relative prices *versus* absolute prices. This would be the case of it not being an entity that affects economic matters, and for economics that is as neutral as a thing or a good that is not an economic entity.

2) Because no economic good can be “indifferent for economic life”; if it were not so, it would not be an economic good, a category money belongs to just as any other economic good. From the moment an economic good becomes such, it cannot be neutral in human economy, and the “non-proportional and non-homogenous interference” produced by its presence and its variation and disappearance, derives from two key intrinsic aspects of an economic good, its quality and its quantity, which together satisfy to a greater or lesser degree a human need, within time that transcends them.

3) Another option is considering neutral money as money in the role of a unit of account, which we must also reject, since, as we already saw, it is essential for human beings when calculating, using monetary prices for this need, which is satisfied specifically by the economic good monetary price supplied by money when used as a unit of measure, that is not neutral here either.

I wish to stress this topic of neutral money is closely related to the quantitative theory of money; I will refer to it further on.

Finally, another way of dealing with the neutrality of money is determining if it is neutral for the short or long term, which I also reject because of what has already been said; I do not even consider it necessary to debate what the limit is between short and long term in the debate on money being or not neutral. This must be seen only in this context, specifically referring to the debate on money being or not the only category in which the question of “economic neutrality” is posed.

I will return to the topic of the neutrality of money in chapter IX, and there we will see that underlying it is the fact that certain types of credit are wrongly considered money.

TRUST IN MONEY – MONETARY DEVALUATION

There is no such thing as trust in money, only in credit. It is absurd to say people stop trusting money; it is credit that wins or loses peoples trust, and that is why there is such a thing as paying a risk premium.

To speak of trust is to speak of credit: when we say we distrust money, we are confusing it with credit, as is the case of paper currency. This same concept leads us to conclude money is subject to the intertemporal variations of prices just like any other economic good, but it does not devalue, except if by devaluation we mean a change in the physical ratio PC/reserves (we know this is credit, not money).

To be more precise, and, at the same time, more inclusive, I must say credit cannot be devalued either, since saying a credit is devalued is referring to the part of a credit that can become non-collectable; we should not speak of devaluation of a credit, but instead of how much of it is collectable.

In conclusion, we have then these economic entities relative to the quality and quantity of economic goods in time:

- 1) Prices vary intertemporally (including money).
- 2) The economic good credit can become partially or totally non-collectable, of which the most typical expression is allowing flexibility in the materialization of bonds at sight with zero term, which here I have generically called PC.

These conclusions should come as no surprise, since they derive from the key concept of separating present economic goods, such as money, from future economic goods, such as that which originates with credit. General causality derives from the fact economic goods cannot be devalued, but can rather have a change in price in time; which is true for money –as a present economic good- and for credit, which will be transformed into a present economic good on maturity; if not, it is non-collectable, as a whole or in part; but this is never a devaluation, since credit is only a temporal game of the coming into existence of present economic goods in time. In other words, the process of credit is: a) it appears as an economic good for interpersonal exchange of a present economic good for a future economic good, b) it

disappears on maturity and there is the opposite interpersonal exchange from the original one (a past economic good is exchanged for a present one). If we eliminate the temporal aspect of the future economic good from the origin and of the past economic good at its ending, we have an exchange that is identical to cash; at the end of the process we should be left, if there is no interference of non-collectables, an interpersonal exchange of present economic goods, which is just another way of saying that the only difference between cash and credit is time. This allows us to conveniently separate money from credit. I wish to stress that in credit transactions, along with its appearance and disappearance, there can be endorsement, refinancing, interpersonal exchange of credits, etc, which do not affect the basic contents of my theory, and that have more to do with finance, except non-collectability, which has to do with the non-compliance I already referred to. I will come back to this in the following chapter, focused on credit.

Readers will have noticed I used here the meaning established above for the term “monetary devaluation”, not the concept of subjective value.

QUALITY AND QUANTITY OF MONEY

It will not be very difficult to deal with the qualitative and quantitative aspects of money if we continue the chain of reasoning we have been following.
In the first place, we must bear in mind that before speaking of quantities of something we must determine its quality, to the point required by our need for quantifying; that is why I will refer first to quality and then to quantity of money.

Quality of money

This section, even if it seems to be in some remote and hidden part of the book, is possibly one of the most important, because it acts as something of a synthesis of my theory and it possibly is one of the topics that best shows the differences with current economic theories, proposing an improvement of Menger’s theory on money.

Menger clearly stated money must first be an economic good, something that is not essential in my theory, but we can reconcile the two proposals saying it is an economic good with the specificity of having the greatest marketability, which we call the need for liquidity. We can define money as the economic good that satisfies liquidity.

However, if we accept this “improved” version of Menger’s definition, we still do not have a final definition of money, and this is so because there is credit, which we know is not money; so we must improve the definition and this leads us to the following:

Money is the present economic good that satisfies the need for liquidity.

With this definition of money, we are making it more specific, preserving at the same time an adequate level of generality, to explain why all through history humanity has used different present economic goods as money, according to what satisfied liquidity better in each epoch.

Quantity of money

I have already dealt with the topic of the quantity of money –specifically, if we must control it or not-, and come to the conclusion that interferences, in the style of Lamarckian genius, cause damage just as the attempt to reduce the freedom of property and disposal of any economic good, notwithstanding the particular elasticity of each.

Quality and quantity of money

Now I will make a short synthesis of quality and quantity of money, having established we can analyze quantity after we have defined quality; and money is no different as far as quality and quantity goes from all other economic goods.

On the theoretical debates referring to the convenience of controlling the quality and/or quantity of money, this evidently underlies the concepts of neutrality of money and economic equilibrium, and on this topic we refer the reader to what we said on the subject; considering money just another present economic good means it is not different in this aspect either, and shows my theory on the subject of quantity and quality in economic is more general than current ones, and that it is useless to give the manipulation of the quantity and/or price of money a special and mysterious nature, in the sense of it having a mind of its own, in the style of Lamarckian genius.

On the other hand, we already saw economics has a very special entity –price- that is the key element representing in each instant the synthesis of the set quality-quantity of each economic good for economic agents in a society. However, we also saw *prices* are an entity also comprising solitary human being (Robinson Crusoe). I will come back to these definitions of prices.

Chapter VIII

CREDIT

“...In fact, credit transactions are no more than the exchange of present goods for future goods”

Ludwig von Mises

“Credit is interpersonal exchange of present economic goods for future economic goods”

Carlos A. Bondone

We have already seen there are two types of interpersonal exchange, cash and credit. I have said the following about them: *Credit: is the interpersonal exchange of present economic goods for future economic goods. It is essential to stress credit establishes a commitment for the future, and that it will be fulfilled when the party assuming the commitment delivers a present economic good in exchange for a past economic good, the opposite of the act the credit began with. Therefore, when the credit matures there can be one of the following situations: 1) fulfillment of the commitment, delivering present economic goods for past economic goods, plus interest; 2) a renewal of the term, what is commonly called refinancing a credit; 3) non-fulfillment of the commitment, and the credit is considered non-collectable; 4) a combination of some of the preceding alternatives; and 5) what is generally called endorsement or transfer of “money substitutes” that are credits “at sight”, simulating cash interpersonal exchanges, though they are really credits. I will present this last concept as a new theory, with its corroboration.*

I have already explained the difference between Mises' and my concept of credit, which is more general, explaining credit as a sub-classification of interpersonal exchanges.

It is very important to bear in mind the intertemporal aspect of credit, which tells us precisely what type of economic entity we are referring to and the essential elements that compose it:

- a) *Economic time*: we have already referred to it; in this case, economic time is interpersonally exchanged, differing from time in intrapersonal exchange, the economic time of a solitary economic agent.
- b) *Interpersonal exchange*: emphasizes the previous concept (we are speaking of an exchange of economic time between persons or economic agents).
- c) *Economic good*: we already know all interpersonal exchanges have this characteristic; if not, there would be none, and since we are speaking of a special case of interpersonal exchange, it is an economic good.

Another way of expressing the concept of credit and how it works is what I explained at the end of the previous chapter, when I said:

In other words, the process of credit is: a) it appears as an economic good for interpersonal exchange of a present economic good for a future economic good, b) it disappears on maturity and there is the opposite interpersonal exchange from the original one (a past economic good is exchanged for a present one). If we eliminate the temporal aspect of the future economic good from the origin and of the past economic good at its ending, we have an exchange that is identical to cash; at the end of the process we should be left, if there is no interference of non-collectables, with an interpersonal exchange of present economic goods, which is just another way of saying that the only difference between cash and credit is time.

This allows us to conveniently separate money from credit. I wish to stress that in credit transactions, along with its appearing and disappearing, there can be endorsement, refinancing, interpersonal exchange of credits, etc, which do not affect the basic contents of my theory, and that have more to do with finance, except non-collectability, which has to do with the non-compliance I already referred to.

Now I will deal with all the topics economics refers to, as I did when analyzing economic goods, including, value, price, and its variations in time.

THE VALUE OF CREDIT

Just as with all other economic goods, the value of credit is subjective. It is important to stress that when referring to credit we are unavoidably speaking of economic time, different from cash interpersonal exchange. Therefore, it is essential to bear in mind all that has been said on economic time. This takes us back to the theory of economic relativity, which simply tells us economic time always materializes in a present economic good; in economics we can only refer to economic time in economic entities (economic needs and goods).

This question of economic time that always materializes in a present economic good, is a key concept for understanding economic time in general, and especially the time that is interpersonally exchanged. Its misinterpretation has led to one of the worst mistakes in economic theory, deriving in inadequate practices. Having established that the value of credit is subjective and that, being essentially economic time, it is governed by the TER, there is nothing more we can say on the value of credit that is not included in the subjective theory of value for economic goods in general.

THE PRICE OF CREDIT –“INTEREST”

We have referred repeatedly to the difference between the subjective value (ordinal) and price (cardinal) of economic goods. As a result, we have concluded prices only appear in interpersonal exchange (I am referring to interpersonal prices) and they reflect the amounts of specific economic goods interpersonally exchanged (between specific economic agents) at a certain spatiotemporal point, which makes it unique and unrepeatable. This last consideration applies to credit more than any other economic good insofar as a unique and unrepeatable intertemporal exchange owes this condition especially to the continuous and irreversible nature of time, an essential element for the existence of credit.

We also saw one of the types of interpersonal exchanges is what we call credit, which I qualified as “intertemporal interpersonal exchange”, in which at least one of the exchanged economic goods is future. On the other hand, I defined future economic goods as those that will be in possession of the economic agent in the future, and will then become present for that economic agent who will be its owner.

From here we conclude a credit transaction is that in which an economic agent delivers a present economic good to another economic agent, and this last will reinstate an economic good –the same or another- at the end of a period of time. This is nothing more than an interpersonal exchange similar to cash –relative to the exchange of economic goods-, except for the fact one of the parts does not physically deliver one or more economic goods in the present, but instead will do so after a period of time. So what is precisely the difference between a cash and a credit interpersonal exchange? The only difference is “the period of time” in which one of the parts must deliver interpersonally exchanged economic goods. That period is economic time; when it is interpersonally exchanged it is called credit, and its price is *interest*.

Relating everything said, we conclude:

- 1) The interest is the price of economic time, which is subjected to the TER and when interpersonally exchanged forms the credit. Out of this causality is how the interest is commonly known as the price of credit.
- 2) Credit is economic time interpersonally exchanged.
- 3) Interest always materializes in other economic goods, because of it being economic time, applying the theory of economic relativity.

In other words, an economic agent must deliver at the end of an x amount of time economic goods of a specific quality –i.e., they must not necessarily be the same- in interpersonal exchange for those received in the present, plus an additional amount of economic goods of a specific quality, in payment for the time elapsed. We call “interest” this “additional sum” exclusively derived from a lapse of economic time and materialized in economic goods; in other words, the price of economic time –that appears, just like any other price, in an interpersonal exchange at a unique and unrepeatable spatiotemporal point- is called interest. Therefore, we conclude interest is the price of economic time, and just as any interpersonal price, it appears in intertemporal interpersonal exchange; the general theory of prices is valid for all other aspects, relative to the intertemporal variations of interest.

We can conclude that we call interest the amounts of specific present economic goods obtained from the interpersonal exchange of economic time, which is the same as saying that interest always materializes in other economic goods, because it is “economic time”, and because of this it is subject to the law of economic relativity.

OTHER ASPECTS OF CREDIT

The inconsistency of speaking of different types of interest according to each economic good

Economic theory has defined different types of interest according to the economic good in which it is expressed. Knut Wicksell began this debate, followed by Keynes and, in one way or another, the Austrians and all economic theory after that.

We clearly see the theory of economic relativity solves the problem much better, adopting a more general criterion that does not even pose the problem of infinite interest types; everything is much simpler defining interest as the price the economic good economic time has in interpersonal exchanges, which in other words means interest is the price of credit. The inclusion of the infinite economic goods economic time can materialize in derives from the theory of the relativity of economic time; there is no need for anything else, being able to explain this with such a simple theory.

The inconsistency of speaking of real and monetary interest

Some people refer to an alleged difference between real and monetary interest. On this, I will only repeat what I said when referring to real and monetary prices in general, and the inconsistency of these categories.

I reiterate what I said when referring to real and monetary prices; we especially want ... to stress the logical and theoretical inconsistency of posing that difference. Prices are always of economic goods, there are no prices of goods that are not economic. The entities that are real in the economy are needs, the economic goods that satisfy them and economic time. Currency is an economic good; it has real economic entity. Monetary prices are economic goods, very useful as information for economic calculation, which is also an economic good. It is impossible to understand the categorization or differentiation of real from monetary prices, when this explicitly states some are real and others are not.

Interest is the price of credit, not of money

Based on the whole chain of economic causality developed, interest is the price of credit, not of money.

Why is interest believed to be the price of money?

The answer is that this derives from several theoretical mistakes, but I believe the essential one is the one I refer to immediately below, and all others derive from it:

- 1) *Confusing money with credit*: if we accept interest is the price of economic time and therefore the price of credit, the confusion appears transitively when money is assimilated to credit. I wish to stress once again all economic theory in general after Menger has this confusion; it is not exclusive of Keynesians, Austrians and Quantitativists have it to. The best expression of this is the doubt all of them have when defining what is and what is not money, broad and restricted monetary base, etc., theoretical aspects that present no difficulty with my theory. In eminently financial measurements, credit should not be considered “disposable” money; it is credit “payable in money”, which impose on the debtor the need to obtain “disposable” money at maturity, which affects the price of money and, consequently, all prices having money as its reference.
- 2) Another similitude that can be confusing for theory is that money and interest –the price of economic time- are always expressed in the exchange good of common use. However, it is essential to understand what I have already said: economic time always materializes in other present economic goods, but money is an economic good in itself, it does not transform according to its “purchasing power” (a power that any economic good interpersonally exchanged has). In other words, since a majority of credit transactions is expressed in money and money must be obtained to cancel it on maturity, interest seems to be the price of money, precisely because it must be obtained in a majority of cases to cancel credits. However, it is essential to observe the need is not to obtain money but to cancel the credit materialized in money. We can express all this saying interest exists independently from money, since a credit can be agreed in exchange for any economic good; but money by itself gives no right to perceive interest if it is not loaned for a period of economic time.
- 3) Another alternative possibly leading us to confusion is that, because this simplifies economic calculation, money is used as a common unit of measure, i.e. money-unit-of-account. It is very convenient to mention this today because of the famous error committed when speaking of plastic money or credit cards, which is nothing more than credit expressed in money, as so many others; but because everything is expressed “in”, “on” or “payable in money”, there is confusion. The most serious problem here is that theoreticians and specialists, along with policy makers with high responsibilities, act as if this false concept were true. And things get worse because everything is measured in paper currency, flexible materialization, which is credit, not money. I emphasize this in the following point.
- 4) In daily practice, possibly the greatest confusion is the result of taking paper currency (PC) with flexible materialization as money instead of credit, as we have seen and as I will corroborate in accounting terms. The credit system between companies and the bank system work with the criterion of giving and taking credit in PC or on PC, which is nothing more than pretending to cancel a credit with another. Obviously, this has to do with the first case referred to here (confusing credit for money). Nevertheless, I will refer especially to this point when I speak of the specific characteristics of PC or “irregular credit”.

Credit is trust

The concept of credit itself, which mentions the postponement of the commitment of one of the economic agents participating in this intertemporal interpersonal exchange, shows that the agent that gives present economic goods trusts that he will receive economic goods that will become present in the future.

We have referred to the importance of economic agents complying with what they have committed to in interpersonal exchange when we spoke of “non-compliance in interpersonal exchange”, and the terrible consequences this has for the economy, since the economic good interpersonal exchange become an economic wrong.

The fact that credit is trust or, better said, that behind credit there is always more or less implicit trust, is not of lesser importance; it helps define or specify simply and clearly a topic that is very dear to economic theory, explaining the different interest rates –the price of credit-

appearing in different intertemporal interpersonal exchanges. This is the subject of the following section.

The different “levels” (rates) of the price of credit (interest)

Repeating what we have said up to here, we have the following panorama:

- 1) Credit is the economic good economic time exchanged between economic agents.
- 2) Interest is the price of credit, which appears, just as any other price, in interpersonal exchange.
- 3) The prices of all economic goods always refer to an interpersonal exchange in a unique and unrepeatable spatiotemporal point.
- 4) The theory of economic relativity says economic time (credit and its price, interest) always materializes in another present economic good, which tells us there can be infinite interest “rates” and economic goods in which it materializes.

From all the above we derive that, just as there are no constant prices, the interest rates agreed in the different spatiotemporal exchanges are not constant either, each one being unique and unrepeatable.

For interest rates, the fact that they are not constant is related with the concept of the level of trust. The higher the trust, the lower the cost of the economic time loaned.

We can express this criterion from another point of view: why are there different interest rates –prices of credit- at the same time in different spatial interpersonal exchanges? The answer shows us that once the type of economic good that will be used to cancel the credit on maturity is defined –a subject I have dealt with sufficiently in the theory of economic relativity- a key factor affecting this is the greater or lesser trust in the quality of the debtor. In other words, all other things being equal, the different interest rate in interpersonal exchanges can only be explained by the difference in trust and the different capacity and information of the contracting parties.

We must emphasize another factor affecting interest, or the “rate” of interest (numeric expression of interest), is the lapse of economic time interpersonally exchanged. Another factor affecting interest rates is the level of wealth in terms of present economic goods that can be lent, relative to the demand for them.

In short, I agree with the economic theory of the influence of the degree of confidence on interest rates; what I have tried to do here is clarify that, all other things being constant –information, similar market, identical term, same instant of occurrence of the rates being compared, etc- it is logical to admit there are different rates of interest as a result of greater or lesser trust.

What is important is to consider trust as an essential part of the rate of interest, and that it is impossible to think there is the same trust in two acts of intertemporal interpersonal exchange, because what we find here is unique and unrepeatable.

Interest is a generic concept, like money or oil, and there will be different prices according to each unique and unrepeatable intertemporal interpersonal exchange in which it appears, thus having different levels according to quality, quantity and the conditions present in the negotiation, and the fact that it can materialize in any type of economic goods. Bear in mind quantity has great incidence in prices and the price is what is obtained for the total quantities negotiated in each act of interpersonal exchange; in other words, the fact that it is the same physical product does not imply you will have the same unitary price.

CREDIT TYPES

I will now classify credit in two stages, those categories responding to formal stages in the first place, and those derived from more profound questions second. In the first group, we find the following types of credit:

- According to the term of maturity: they can be fixed term or indeterminate term
- According to their duration: they can be short or long term
- According to the guarantee: They can have a personal or real guarantee
- According to nominativity: they can be issued to the bearer or nominative
- According to transferability: they can be endorsable or non-endorsable

There can obviously be other classifications, along with greater precision on those simply named here, but I reiterate this is not the object of study in this work; instead, the typology I deal with more in depth from this point on is our object, because I believe it has been the “open door” that led to many errors relative to the concept of credit. Once again I resort to Mises because of his merit as an illustrated summarizer of economic theory. I will refer to the classification of credits in two categories he stresses in his work “The Theory of money and credit”:

*Credit transactions fall into two groups, the separation of which must form the starting point for every theory of credit and especially for every investigation into the connection between money and credit and into the influence of credit on the money-prices of goods. On the one hand are those credit transactions which are characterized by the fact that they impose a sacrifice on that party who performs his part of the bargain before the other does [...] The second group of credit transactions is characterized by the fact that in them the gain of the party who receives before he pays is balanced by no sacrifice on the part of the other party. Thus the difference in time between fulfillment and counter-fulfillment, which is just as much the essence of this kind of transaction as of the other, has an influence merely on the valuations of the one party, while the other is able to treat it as insignificant. This fact at first seems puzzling, even inexplicable; it constitutes a rock on which many economic theories have come to grief. Nevertheless, the explanation is not very difficult if we take into account the peculiarity of the goods involved in the transaction. In the first kind of credit transaction, what is surrendered consists of money or goods, disposal over which is a source of satisfaction and renunciation of which a source of dissatisfaction. In the credit transactions of the second group, the grantor of the credit renounces for the time being the ownership of a sum of money, but this renunciation (given certain assumptions that in this case are justifiable) results for him in no reduction of satisfaction. If a creditor is able to confer a loan by issuing claims which are payable on demand, then the granting of the credit is bound up with no economic sacrifice for him. He could confer credit in this form free of charge. [...] For the first group the name Commodity Credit (*Sachkredit*) is suggested, for the second the name Circulation Credit (*Zirkulationskredit*). (p. 264-265)*

Following Mises own story, I will now consider the transcendental deviations of his theory relative to what Menger developed less extensively, and that, as we will see, configure in my view the moment of the grand deviation of the theory of money and credit in general –not only in Mises, since it is also shared by Keynesians and Quantitativists- and the relations between these two it tries to explain.

- 1) If the separation Mises proposes is invalid, so is his theory on money and credit (this, which is what actually happens here, is one of the central points of my new theory): *Credit transactions fall into two groups, the separation of which must be the starting point for every theory of credit and especially for every investigation into the connection between money and credit and into the influence of credit on the money-prices of goods.*
- 2) The separation Mises proposes between credit that does and credit that does not suppose any sacrifice by the party renouncing the present goods contains two great contradictions:
 - a) Renouncing present goods in exchange for future goods is a sacrifice, which contradicts his postulate that an interpersonal exchange of economic goods is carried out if this produces a profit, and credit is no more than an interpersonal exchange of economic time. However,

Mises could have been referring to the simple concept that one “sacrifices” today and the other “will sacrifice tomorrow when canceling”. In short, it is a minor observation.

b) But what is a huge contradiction is supposing the existence in real life of the second case: “*...the gain of the party who receives before he pays is balanced by no sacrifice on the part of the other party.*” Evidently Mises is inducing us to think there exists a magical credit, arising from nothing, credit in which no-one renounces a present economic good. But this does not end here: “*...In the credit transactions of the second group, the granter of the credit renounces for the time being the ownership of a sum of money, but this renunciation (given certain assumptions that in this case are justifiable) results for him in no reduction of satisfaction. If a creditor is able to confer a loan by issuing claims which are payable on demand* (credit is not perfected with the “issue” of claims, but on delivery of present economic goods in exchange for it), *then the granting of the credit is bound up with no economic sacrifice for him.* (He is indirectly saying that another economic agent issues the credit, the one contributing the present economic goods, without which the credit is not complete.) *He could confer credit in this form free of charge...*” Evidently, Mises is not only saying this; rather, he is saying there are “*certain assumptions that in this case are justifiable*”. It is obvious Mises is preparing us for the explanation and “justification” of the existence of so called bank money and/or credit and fiduciary media in general, what he calls circulation credit and that I have already referred to; I will not only reiterate the theoretical fallacies found here but add arguments arranged in an order specific to credit, since I did so before from the point of view of money.

3) Finally, again I stress the background of confusion in Mises, when he implicitly accepts the possibility of “virtual-money”, saying: “*...consists of money or goods...*” as if money were not a good, and then expresses “*...In the credit transactions of the second group, the granter of the credit renounces for the time being the ownership of a sum of money, but this renunciation (given certain assumptions that in this case are justifiable) results for him in no reduction of satisfaction...*”, underlying which is the same idea of virtual money, though in this second case my critique is focused on what I have already said.

This paragraph by Mises is a perfect introduction to the classification of credit I propose, which will allow us to show all the errors underlying current theories of money and credit; together with what I have explained relative to money, it will allow us to discover all the theoretical consequences deriving from this central error, as in the case of bank credit or, more generally, circulation credit, as Mises calls it, in not considering paper currency as credit but as money, in different aspects related to monetary prices, interest, monetary and credit expansion and contraction, and in others.

As we can see, the idea that there is such a thing as virtual money and credit underlies current theories on money and credit, of which Mises is an example. I have already presented my theory on virtual money; now we must focus on virtual credit, which Mises already presented to us in the preceding paragraph.

Before we continue with the classification of credits we are interested in, I believe it is convenient to introduce here the concept of materialization of credits that is essential to my purpose.

Materialization of credits

I simply wish to say it is the aspect of the concept of credit referring to the present economic goods that must be delivered on maturity; that “executing” a credit means simply fulfilling the material aspect of the liability implied by the credit. It is the event that concretizes the theory of economic relativity; economic time materializes in a present economic good at the moment the obligation is fulfilled; the other part of the materialization of the TER is the moment the credit originates, when the debtor receives the present economic goods with the commitment to return present economic goods in the future. Therefore, we can speak of:

- a) **Initial materialization of the credit:** which originates the transfer of present economic goods at the time the credit originates.
- b) **Final materialization of the credit:** which finalizes the credit with the transfer of present economic goods at the time the credit matures.

This classification was essential for me to be able to introduce the sub-classifications that especially interest me, and which are those related to materialization, both initial and final, and to maturity of the obligation. I will also deal with the irregularity that is present when the economic agents involved in the credit are not adequately identified.

Now I will proceed to deal specifically with the classification of credits I am interested in, and so we have the following types of credit:

- 1) **Real credit:** has initial materialization.
- 2) **Virtual credit:** does not have initial materialization; therefore, there is no credit. We are in the case of non-existence of “Mises’ sacrifice”.

I will now break down each category

I) Real credit

It is the credit that complies with the general definition: interpersonal exchange of present economic goods for future economic goods.

According to the characteristics I defined relative to a greater or lesser specificity of the quality and quantity of the future economic good (final conversion) with which the debtor will fulfill the obligation, and to the term of maturity of the obligation and the greater or lesser specificity in identifying the economic agents involved, we can sub-categorize as follows:

I-a) Regular credit (RC)

It is the credit in which quality and quantity of the present economic goods for fulfillment of the obligation, the term of maturity and a specific identification of the parts involved, are defined with complete precision. In other words, the initial and final materialization are well defined, along with maturity and debtors and creditors. It is the most legitimate, considering the essence of credit.

I-b) Irregular credit (IC)

It lacks at least one of the characteristics of the regular credit; i.e., the quality and quantity of the present economic goods with which it is initiated and/or will conclude, the specific date of maturity, or the specific parts involved. Note the classification is established based on the commitment at the time the credit originates, which does not include the case where there is a clear definition of the material and temporal aspects of the obligation at its origin, but nonfulfillment on maturity, which originates complete or partial non-collectability.

I-b-1) IC with final flexible materialization: this is the case in which *when the credit originates*, the final materialization (quality and quantity of the present economic goods with the transfer of which the credit will end) is **not** clearly specified. This derives in two types of IC with flexible convertibility.

I-b-1-a) IC with final flexible materialization and specific term: it is the case of a credit with flexible final materialization in which the term of maturity (greater than zero) is specified.

I-b-1-b) IC with flexible final materialization and indeterminate time: this is the case with flexible final materialization in which the date of maturity is **not** established; therefore, the presumption is that it does not have a term of maturity, that it is at sight or at any time after

the present. We could say that, if that situation is clarified in the original act of credit, it would not constitute an irregularity.

Then we have:

I-b-2) IC with final rigid materialization and indeterminate maturity: this is the case in which *at the moment of the origin of the credit* final materialization is specifically established (the quality and quantity of the present economic goods with which the credit will end). This produces only one type of IC with final rigid materialization, that in which time is indeterminate (since if this were otherwise, we would have regular credit). I reiterate the final commentary for the previous section.

Finally we can sub-categorize the irregular credit relative to the establishment of the economic agents involved and so we can call them:

I-b-3) IC with lack of identification of economic agents: as I just said, this is the credit in which the economic agents involved are not clearly defined or, if they are, their responsibilities are not clear. As we can see, this form can be combined with any of the real credits described, which will give rise to an irregular credit chain with high instability and risk for the legal order and property. This aspect is essential, since it will originate what I will call the *syndrome of unknown debtor* (chapter XIX), with its terrible consequences, possibly creating situations of extreme poverty, being a totalitarian tool that subsists in democracy.

II) Virtual credit

It is the credit where there is no present economic good in its origin (there is no initial materialization); it cannot exist as an economic entity or, at least, as credit. It is similar to defining credit as an interpersonal exchange of present economic goods for future economic goods, where the present economic goods do not exist.

This allows us to see that Mises' case –which he calls circulation credit-, in which there is no “sacrifice” by the agent that must renounce present economic goods, is an example of virtual credit. Nevertheless, I will analyze Mises error saying there is no such thing as “non-existence of sacrifice”, and this shows the distance separating him from Menger. Mises partially clarifies this when saying the bank does not sacrifice; but he does not develop his theory, another proof of the inconsistency of his theoretical base.

In virtual credit the date of maturity of the credit is not an important topic, because it does not even appear as credit.

We must see that in the case of virtual money with no maturity we are in the presence of PC with no backing, the extreme case of fraud when there is PC with zero reserves. Having established this categorization, I will deal with the more common forms of current irregular credit.

IC – Paper currency (PC)

This is a case in which, when the credit originates, the quality and/or quantity of the present economic good with which the debtor will honor his commitment is not specified and neither is the maturity. In other words, it is the case of an **“IC with flexible final materialization and indeterminate time”**.

In the title I included PC (paper currency) because it is the typical expression of this credit, to which the *status* of money is erroneously assigned because it is at sight, having zero maturity. When I referred to PC I said:

The essential argument for categorizing PC as credit is that it is not representing in quality or quantity a present economic good, instead the composition of the economic goods that appear as present for them to be considered as money is not a rigid physical relation for the duration

of the credit, which makes it a commitment of a future economic good, not a present one, since it will acquire the quality of present at the moment of its conversion –cancellation of the credit-, and this will be done according to the relation valid at the time. In other words, the condition of being a present good for PC will be defined in the future at the time it is converted into a present economic good, which is not known at the present time in terms of the quality and quantity of the economic good it represents. As we can see, the difference between PC and a CID is none other than the difference between cash and credit.

I call this type of credit irregular, not so much because of the characteristic it generally has in real life of a zero at sight maturity, but because of the fact it does refer specifically to the quality and/or quantity of the present economic good with which the credit will end. But I must immediately clarify I am referring to the specific qualities of paper currency, which are precisely what allow said characteristics to appear, and which can be expressed in terms of what I have called at sight flexible materialization.

Before we leave the topic of PC, I must reiterate that, because of its special characteristic of having zero maturity and there generally being only one legal issuer –deriving in its being legal tender or its mandatory use, the same as with the monopoly of any economic good- in practice this credit circulates with “automatic endorsement, transfer or refinancing”. This gives it the sense of being money, since it circulates in interpersonal exchange for other economic goods as if it were money that has zero maturity, being a present economic good. People do not realize it is a credit being endorsed (in tacit form) precisely because it has no maturity; if not, on the date of maturity everybody would exchange it for the economic good it represents. In other words, as long as people believe it has zero maturity, its rationale is based precisely on the fact that economic reality takes it to be the opposite, that it has no maturity, which makes it the longest of terms, in credit par excellence; once again reality surpasses legal impositions. Nevertheless, reality can also cut that term short, and this happens when economic agents, loosing their trust in credit, collectively decree its maturity (what is called a “run on the banks” and hyperinflation).

It is essential to stress PC becomes credit when there is the first interpersonal exchange, where it is exchanged for a present economic good (issue by itself does not make it credit, as Mises erroneously said); if not we are only in the presence of a simple piece of paper, which is not even credit. It returns to this condition when it comes back to the hands of the issuer, who cancels it. Obviously, this aspect is essential, especially for analyzing the quantity of PC in the economy. All this confirms credit, in this case in the form of PC, appears in interpersonal exchange.

Finally, we must bear in mind alterations in materialization, allowed by flexible materialization, produce a redistribution of wealth or improper “**direct appropriation**” of present economic goods.

IC – Circulating or bank credit (FM)

Coinciding with my classification of credits, FM are part of what I have called **IC because of the identification of economic agents**.

Because of what I previously said, in the sense that the way Mises “circulation credit” generally materializes is through intervention of banking institutions, and that it is known by that name, I analyze it under *bank credit*.

Here I will have the opportunity to show so-called “bank or circulation credit” is the typical form in which credit materializes, being irregular because of the defective identification of the economic agents involved in the credit.

Before we continue with the topic of bank or circulation credit I wish to stress how Mises’ confusion is expressed, which I have referred to when dealing with money and that can be observed in the last paragraph I quoted. On this opportunity, referring to credit, he says circulation credit implies no sacrifice for the agent renouncing the present economic good, resulting from the fact he is not renouncing a present economic good but an at sight security. This expression only offers contradictions:

- 1) Inconsistency when considering circulating or bank credit as money: if at sight it is money; but since there is no present sacrifice, there is no present economic good, then, there is no money.
- 2) Inconsistency when he considers there is no “sacrifice”, no renouncing a present economic good, in circulation or bank credit: if there is no sacrifice, credit is not configured. Therefore, as long as it is “shelved”, i.e. as long as it is not exchanged for a present good, it is neither money nor credit.
- 3) The conclusion of both inconsistencies: we can only think of the possibility of another economic agent, not the bank, renouncing a present economic good, since if the bank renounces it, we are in the simple presence of regular credit. And this is the reality that explains the dilemma of virtual credit in current theory in general, not only in Mises; in other words, I will prove we are in the presence of IC because of a defective identification of economic agents involved in bank credit (that is not money), and more specifically the lack of a precise identification of the economic agent renouncing present economic goods, which is what originates any credit.

Bearing all this in mind, and considering that my theory postulates “virtual credit” and “virtual money” do not exist, I will focus on proving this inexistence and clarifying the error consisting simply in not identifying who “sacrifices” the present economic good implied by credit, in exchange for a future economic good. In other words, there is confusion as to who renounces a present economic good in the case of circulation, fiduciary or bank credit, with the idea that no-one renounces present economic goods, what Mises calls absence of “sacrifice”.

Though there will be a clear demonstration of my theory when I corroborate it in accounting terms, here I will present the theoretical hypothesis.

The whole process begins with a simple money deposit in a bank, taking as such what I referred to in my theory of money, the deposit of specific units of a present economic good, corresponding to the generic concept of money that satisfies the need for liquidity. In other words, we have deposited “at sight” –i.e. with no maturity or zero maturity- x ounces of gold or a CID representing same, a certificate of irregular deposit, being fungible present economic goods. The same that is done by all those that own money and do not wish to have it on hand. But the skillful banker observes that for every \$ 100 deposit, \$ 20 are never withdrawn; this means that here we are supposing 20% of the money deposited at sight in the bank vaults remains there. The final calculus, any student can see in the text-books on the subject, establishes the banker can “lend” this money that “was not lent to him” –it was left in custody- equivalent to 20% of what was deposited. In turn, the same percentage of what he lent will be left in the bank, and so on, until we arrive at the theoretical case that for every \$ 100 initially deposited in banks, these will transform them into \$ 500 in credit. Obviously this is so in this simple example with its assumptions, but my theory requires nothing more.

In light of my theory of money and credit, to the point it has been developed up to now, we have the following questions:

- 1) What does the bank generate: money, credit or nothing at all?
- 2) If something *is* generated, who generates it?

Analyzing the numbers in this exercise, we see that for every \$ 100 left in deposit at the bank, if the bank lends it out as credit, with a term of maturity, what it does is to lend money left to it in deposit for a term, which is simply a “temporary” appropriation of present economic goods that do not belong to it. It would be a different thing if someone left \$ 100 for a fixed term. This would configure a credit to the bank, on which it in turn offered a credit to another economic agent, representing a simple financial or credit intermediation, in which it would only have to attend to maturity terms and guarantees, as in any credit. The other type of credit we are not analyzing here is when the bank lends on its own patrimony, which would be regular credit.

The most important question that interests us here is relative to the \$ 400 the bank lends to economic agents without renouncing any present economic goods, nor making any sacrifice, as Mises says. We are studying circulation credit from this angle. The answer is those \$ 400 are not money or credit, since there are no present economic goods involved, which up to this point makes it virtual money or credit, things that do not exist in economics. But we alert the reader, those \$ 400 are papers someone can receive in interpersonal exchange for present economic goods, and we can have no doubt we are in the presence of a credit for the amount interpersonally exchanged, since the receptor of the papers has renounced present economic goods in exchange for future economic goods committed by the party giving him the papers. There is no doubt that the “papers” representing circulation or bank credit –which from here on I will call fiduciary media (FM)- is not a present economic good, a situation configuring the future economic good, because of it being or not in the future a present economic good is not the determining factor for there to be credit; in the worst scenario, it will become non-recoverable.

In short, the FM interpersonally exchanged for present economic goods are credit. While not exchanged, they are mere paper, neither money nor credit.

On the other hand, in the credit arising from interpersonal exchange of FM, the present economic goods are contributed by the economic agent receiving those FM in interpersonal exchange who, because they circulate as if endorsed, is always identified as their last holder. In other words, the “sacrifice”, apparently non-existent for economic theory, is made by the last holder of the FM.

What we here call FM is generally expressed in daily practice as balance in hand in a bank current account.

I reiterate the explanation in other terms, so there are no doubts relative to the theory presented here, though I will come back to this topic when corroborating my theory in accounting terms. At this point we can say we have answered the first question: the bank generates credit based on a present economic good called money, our CID. It lends \$ 100 that are present economic goods (we have no doubt on this because that is how the circuit began), on which a felony was committed when third parties’ present economic goods merely deposited in its vaults were considered as belonging to the bank; this constitutes an improper “temporary” appropriation of present economic goods. But relative to the other \$ 400 in credit, where did the present economic goods to be exchanged for future economic goods come from? Because if there are no present economic goods involved, we would have the “marvel of virtual credit requiring no sacrifice”. We reiterate then the answer to the second question, relative to who transfers the present economic goods for the sum of \$ 400 generated apart from the initial \$ 100 in CID. This is easy to explain, because what happens is:

- a) The bank offers FM that are no more than “papers” (call it what you will: bank bills, balance in hand in a bank current account, etc) payable in money or on money (our CID). We will see the dangerous credit chain that appears when FM are “payable” with another credit, more specifically with PC.
- b) Those papers for the sum of \$ 400 are obviously not money, but “papers” payable with or in money. But what is the present economic good that transforms those “papers” into credit? The answer is simple: while those papers are *on the bankers’ shelf* they are nothing more than paper, not money or credit, because for this to exist, there must be an intertemporal interpersonal exchange of present economic goods for future economic goods, and this appears only when a third party accepts the banks papers in exchange for present economic goods. In this way, we solve the mystery of who contributed the present economic goods for the \$ 400 to become credit: the last holder of those papers is the agent granting the credit for the same import “on his shelf”; in other words the credit of the FM is granted at each instant by the holder of the papers (or balance on hand in a current account in a bank). On the other hand, with this answer we also complete the first question, since the “papers” that are still in a drawer in the bank, those that have not been intertemporally and interpersonally exchanged are neither money nor credit, they are only papers; and this is so because no-one must comply with the commitment to a credit that does not exist, because there were no present economic

goods interpersonally exchanged for those “papers”. But these will always be ready to transform into notes as soon as they are accepted in an interpersonal exchange for present economic goods. On the other hand, the “papers”, not being representative of present economic goods, are representative of future economic goods; credit when interpersonally exchanged.

In short, in neither of the two cases studied does the bank contribute the present economic goods for the full credit granted, which directly shows us the economic goods it appropriated to lend economic time (credit) are not its property, according to the economic theory presented here.

As we can see, this simple theory eliminates many of the worries of economics, which I will consider further on.

Before concluding the section on FM, I wish to reiterate what they have in common with PC, considering this also becomes credit when the first interpersonal exchange takes place, in which it is exchanged for a present economic good; if not, we are in the presence of a simple paper, that is not even credit, a characteristic it acquires again when it returns to the hands of the issuer to remain on a shelf (not due to indebtedness, but because it is no longer credit, as a result of final materialization, its cancellation as credit). Obviously this is essential, especially relative to the quantity of FM existing in the economy.

Finally, we must bear in mind the irregularity of FM is a temporary appropriation of present economic goods, which, seen from TER, becomes an improper **“indirect appropriation”** of present economic goods.

ACCOUNTING CONSOLIDATION AS CORROBORATION OF THE THEORY OF CREDIT

With accounting as the more adequate model for economic theory, I have the opportunity to show or corroborate the theory presented here. In the particular case of credit I will do so based on the exceptional discovery of the consolidation of accounting statements, which allows us to know the accounting status of a group of economic agents, based on their individual statements. The highest expression of this would be the accounting statement of a community. This is the methodology that should be employed when speaking of social accounting or macroeconomics.

Consolidation consists of the summation of the numbers corresponding to the same titles and eliminating those arising from buying and selling among the economic agents whose statements are being consolidated, along with credits and reciprocal debt. The methodology of accounting consolidation presents the case of a set composed of all the agents included in it – as in the case of a society- we take as a new economic agent owner of all the wealth. This is so because eliminating buying and selling transactions, and credits and debts outstanding produces such a situation, ratifying the concept that interpersonal exchange is a single operation, where buying and selling disappear. As a result of consolidation, we can say we come back to the extreme case of an intrapersonal exchange (intertemporal), since everything is reduced to only one economic agent.

Notwithstanding what was expressed in the previous section, we must bear in mind accounting consolidation is only an exercise for analysis, since from an economic point of view, things are very different if there is interpersonal exchange.

In the accounting model I will adopt I must only consolidate the debts and credits outstanding at the end of an accounting period, and this is so because interpersonal exchanges will be dealt with as “economic good-owner” biunivocal relations, replaced in their totality by new ones; I will not work with net or partial numbers, but instead with total replacements. I will do so to be consistent with my theory, that interpersonal exchange is unique and unrepeatable in spatiotemporal terms.

This exceptional accounting tool will allow me to corroborate with scientific and technical precision all that has been said up to now, not only relative to money but also to credit, in the

three expressions with real existence: regular and irregular credit, this last in its two versions, PC and FM.

Nevertheless, it is essential to consider the share of credit in the wealth of a community; accounting consolidation should not make us forget the importance of the economic good credit, which is related to the level of intertemporal interpersonal exchange in a community. Adding to all this that there are different prices of credit –its interest- in different economies, which means the price of lending that wealth is lower where there is more of it: all economic goods are worth less and obtain lower prices where there is greater abundance, which clearly means poor countries should open their doors, so that communicating vessels –the classic adjustment- can level wealth, which would be expressed in this case by an equalization of the price of credit, i.e. interest. In other words, the process of consolidation I propose is a technique for corroborating economic theories, but we should not lose sight of the importance of measuring the share of the economic good credit in an economy.

I am referring to this same aspect when saying purchases and sales cancel out in accounting consolidation, and from the point of view of the economy as a whole it makes no sense to separate purchases from sales, since there is only a unique interpersonal exchange. Register of this interpersonal exchange (which I will carry out completely replacing the old biunivocal relations “economic good-owner” with the new ones) is essential, because it is related to the amount of interpersonal exchange existing in a community, which, in turn, reflects, the importance of private property existing in it and the wealth deriving from this institutional structure.

Finally I wish to stress I have included here a preview of the concept of accounting consolidation because I am speaking of credit, one of the key aspects of this accounting operation; however, I will extend further on the subject of accounting consolidation when corroborating my theories.

IS MANIPULATING CIRCULATION, VIRTUAL, OR BANK CREDIT NECESSARY?

The arguments in favor of this kind of manipulating: that it is a way to render productive the huge amount of economic goods that could be lent, i.e. transformed into the economic good credit, and are not lent. That is why governments believe they can “decide” that those economic goods “that are not being useful or only for a few persons” have to be put to good use serving humanity, if necessary with compulsive laws.

Obviously this reasoning is of no use to economic theory, since the fact that those economic goods are not being used as such –completely or partially-, which is the true underlying concept, cannot be considered because both their condition as economic goods and their level, depend on their satisfying human needs; if not they would not be economic goods or, at least, at the level achieved by them. In short, credit is just another economic good subject to the consequences of the existence of more or less human freedom. The concept of total demand I include in this work is a very useful tool for explaining this topic of the “manipulation” of credit, which is nothing more than an alteration in the distribution of existing wealth, composed of consumer, capital, storage, on hand, exchange, or other types of present economic goods.

As we can see we are in the presence of the approach that seeks to determine which of the current schemes of private property is best; from these lines I ask that economic theory not be made responsible for the lack of scientific resources to determine which road is best, something I humbly believe the theories presented here can help elucidate.

In other words, we must differentiate the political purposes of greater or lesser authoritarianism, paternalism, interventionism, etc –whatever the psychological or pathological needs driving the governing authorities to those alternatives- from the economic aspect. I must stress that this is one among many others, and the people of each country choose a better or worse economy, more or less suffering, etc.

In the next section I will specifically refer to quality and quantity of credit, a topic evidently including the one seen here.

QUALITY AND QUANTITY OF CREDIT

Before specifically referring to the topic of control of the quality and/or quantity of credit, it is essential to bear in mind that, when speaking of expansion or contraction of credit, i.e. the attempt to manipulate the amount and/or quality of the economic good credit in keeping with the prevalent economic theory, we are referring to the equivalent of manipulating the quantity and/or quality of money, and this is so because theory assimilates certain manifestations of credit to money. Consequently, we observe the current theoretical and practical attempt to manipulate the quantity and/or quality of credit is coincident in many aspects with the same objective of trying to manipulate the quantity and quality of money. And these interferences or confusions derive exclusively from two main aspects: confusing FM with money and confusing PC with money, when both being credit, the only thing differentiating them is what I specified above. Having reiterated this essential theoretical aspect, I continue with the analysis of quantity and/or quality of circulation or bank credit that I have referred to here as a fiduciary medium (FM) and of the credit appearing as paper currency (PC) with flexible materialization.

As I said when referring to money, it will not be very difficult to deal with the qualitative and quantitative aspects of credit if we continue with our chain of reasoning. And so I reiterate here that *“in the first place, we have to clearly bear in mind that before we can speak of the quantity of something we must specify as best we can, and to the point where our need to quantify requires it, the quality of the thing we wish to quantify; that is why I will refer first to the quality of credit and then to its quantity.”*

Quality of credit

We have already seen credit is the interpersonal exchange of present economic goods for future economic goods; also that the difference with cash is that in credit there are future economic goods. On the other hand, there is the error of confusing money with credit, when they are two entities in totally different economic spheres: money is a present economic good and credit is an economic good within the category of the economic good interpersonal exchange, the same as cash; so it only makes sense to compare credit with cash, since both are interpersonal exchanges, but not credit with money, which belongs only to the category of present economic goods that can be interpersonally exchanged.

The qualitative aspect of credit is essential, the same as with money, since, I reiterate once again, confusing this is the cause of many mistakes in economic theory and practice, to the point that the study of the quality and quantity of both are confused as if they were the same thing. This obviously leads to confusing the price of one with that of the other; and this is an even more serious mistake considering price is the synthesis of quality and quantity in economics.

Quantity of credit

The quantity of credit an economy needs is endogenous to it, as is the need for any economic good; if this were not so, credit would not be in the sphere of economic goods and would not belong, therefore, to the economy. I reiterate that the social institutions affecting economic life, i.e. those influencing human needs and the economic goods that satisfy them, are economic entities.

Quality and quantity of credit

The attempt to regulate or control the quality and/or quantity of credit, specifically in the case of circulating or bank credit or FM, is what Mises studies when he refers to the limits that must be observed for issuing FM. In other words the only difference between Mises and his

school with Keynesians is the degree of discretionality and, on the other hand, modern Quantitativists such as Friedman advise the use of an expansive inflationary scheme. In accordance with my hypothesis, this theoretical concept of manipulation of the quantity and/or quality of credit is inconsistent, and this is so because of two aspects: 1) the error of considering certain forms of credit as money, and 2) because the intertemporal interpersonal exchanges of present for future economic goods between economic agents –as shown here– are what determine the limits of quality and quantity of credit institutionalized by means of FM (banks are not the ones sacrificing present economic goods in credit). Obviously here we have the government intervention as just another economic agent. Relative to government involvement, I will take the opportunity to say it makes no sense to approach economics as if government were extra-human or extra-economic. The only useful qualification is of a government being more or less efficient in economic terms, not what usually appears in textbooks, where the State is a separate sector, as if it were an exogenous agent to the economy.

I reiterate that when I say intertemporal interpersonal exchanges are what define the quantity and/or quality of credit “supposedly” granted by banks with their FM, I am trying to express, in the first place, that there is no credit without present economic goods being delivered in exchange and that, in truth, the agent holding the “paper” in the last instance is the one granting the credit, except in the case where the bank is the holder, because it never left its premises or because it returned to it at the time of cancellation, in which case it is a simple piece of paper, neither money nor credit.

Finally, the same concepts are valid for analyzing the limits of quality and quantity of credit expressed in the form of PC, where economic agents are the ones that make a “sacrifice”, according to the degree of deviation from the principle of rigid materialization that would hold if what they received were money and not credit. Nevertheless, government can have an influence in this case, altering directly the biunivocal relations “economic good-owner”, affecting the heart of the institutional property system, which we know is the pillar upholding creation of wealth derived from interpersonal exchange.

We must remember manipulation or alteration of the materialization of PC *directly* constitutes an appropriation of present economic goods, different from improper “temporary” appropriation of present economic goods with FM, which, within the framework of TER, *indirectly* becomes improper appropriation of present economic goods. We can reiterate PC produces improper **“direct” appropriation** of present economic goods and that FM produce improper **“indirect” appropriation** of present economic goods.

Specifically relative to circulation credit or FM, we can see that when banking theory and practice say “monetary authorities” must control its quality and/or quantity, this only alludes to establishing the amount of credit banks should grant based on third parties’ “misan sacrifice”. That is why we refer to temporal appropriation of economic goods (that in the frame of TER become present economic goods).

We must bear in mind a common characteristic of PC and FM: they become credit when there is the first interpersonal exchange for a present economic good; if not, we only have simple pieces of paper –neither money nor credit-, which they are again when they return to the hands of the issuer and remain in his power, not as the result of a debt but of final materialization. This aspect is obviously essential, especially relative to the quantity and/or quality of PC and FM in the economy.

I will simply reiterate here what I said when referring to the quality and quantity of money and economic goods in general:

On the theoretical debates referring to the convenience of controlling the quality and/or quantity of money, this evidently underlies the concepts of neutrality of money and economic equilibrium, and on this topic we refer the reader to what we said on the subject; considering money just another present economic good means it is not different in this aspect either, and shows my theory on the subject of quantity and quality in economic is more general than current ones, and that it is useless to give the manipulation of the quantity and/or price of

money a special and mysterious nature, in the sense of it having a mind of its own, in the style of Lamarckian genius.

THE DANGEROUS CREDIT CHAIN

I cannot end this chapter on credit without pointing to the huge danger for economic life in society represented by the fatal error of confusing money with credit, expressed in FM and PC.

When I speak of the chain of credit, I am referring to the fact that many or most of the credits in a community are expressed as payable “in” or “on” money, and FM payable in PC and PC itself are considered in this way. Therefore, a credit would be cancelled when PC and/or FM payable in PC are delivered, when this only means a renewal, an endorsement, or a replacement of one credit with another.

The typical form the dangerous credit chain acquires is what comes from erroneously pretending to institutionalize PC (flexible materialization) as CID or money, ascribing to it the power of canceling credits, which can only be done with a present economic good, something PC is not. The chain continues when any other credit “payable” in PC, especially FM, is considered cancelled with a transfer of PC, because this is thought to be money (a present economic good). This is like believing a live human being to be dead.

The synthesis of this huge danger derived from confusing what is credit with cash and viceversa is of no small importance in the life of a society, especially considering this mistake is committed with complete self-assurance due to human ignorance; therefore I must clearly state the deviations of economic theory, which I humbly point out here, are centrally responsible for this danger.

In the most educated countries, even if they do not have the scientific knowledge, intuition and historical experience have led them to act cautiously (relative to expansion and contraction of PC and FM), but in countries where institutions and/or their political leaders harbor authoritarian ideologies, the outrages committed by them have destroyed economic life. The reference to authoritarianism comes as a result of there not being any other explanation for such a state of things, a situation typically originating in leaders only seeking power and not having the least intention of governing for the good of the people.

In short, not realizing the chain of credit continues and believing it has ended –cancelled with a present economic good- is what leads to economic and financial destabilization of countries, producing a generalized confusion, as if sinking in quicksand, and this is the result of ignoring the theoretical foundations we are here trying to present and corroborate. In other words, the presence of these states of economic and financial uncertainty is no surprise, they appear due to our lack of knowledge of the theory that explains those economic phenomenon.

I wish to reiterate the central error is confusing money with credit, economic entities at different levels, since the second appears in interpersonal exchange the same as cash – therefore cash and credit are comparable- but money (a present economic good) is not so: it may or may not be interpersonally exchanged. The confusion results from taking as a starting point the concept that money’s use in interpersonal exchange is the reason for its existence, which we have seen is a characteristic not only of money but of all commodities in general.

At the same time and on certain levels, such as the aspect of security, money acquires for human beings the features of a use-value and not those present in interpersonal exchange.

At the end of the next chapter, and after we see some other essential aspects there, I will come back to this essential point in economic life.

CAUSALITY OF CREDIT

We will now review what we saw on credit.

Is credit wealth?

It is wealth because it is an economic good that satisfies the need for interpersonal exchange of economic time. However, we must stress that if we consider wealth is exclusively composed of present economic goods, credit is not a part of it, being a future economic good, and present economic goods are already considered in what in accounting terms we have called assets, credit canceling out in consolidated accounting statements with debt. In other words, accounting statements clearly show who the owners of the assets are, and the situations of credits outstanding.

Thus, credit resulting from the interpersonal exchange of present economic goods for future economic goods is a way of “allocating possession” of “wealth” (present economic goods) to different economic agents. This implies greater or lesser freedom for the occurrence of credit is another factor for economic progress, relative to the greater or lesser free disposal of present economic goods.

Thus credit has to do with the possibility of exchanging present wealth (present economic goods) for future wealth (future economic goods), but it should not be considered wealth insofar as it represents the *stock* of present economic goods at a given spatiotemporal point for one economic agent or a group of economic agents.

Causality of credit

We can summarize the chain of economic causality as follows:

- Credit is interpersonal exchange of present economic goods for future economic goods.
- Present economic goods are subject to the biunivocal relation “economic good-owner”, which inevitably implies that for an economic agent to grant a present economic good as credit to another agent, he must have first the present economic good at his disposal.
- The institutional order must establish clearly and in concordance with best uses the property system governing the biunivocal relation “economic good-owner”, and its application (justice), because no-one can lend what he or she does not legitimately own. Obviously, the economic situation of a society derives from the greater or lesser freedom in its property regime.
- Finally, we also know the effects produced by irregular credits in their two versions: flexible materialization (the improper direct appropriation of present economic goods) and zero maturity (PC), and the temporal disposal of third parties’ present economic goods to grant them as loans (FM, configuring an improper indirect appropriation of present economic goods).

In short, the way credit is managed allows different forms of “distribution of the disposal of present wealth”; the economic results a community obtains are conditioned by the greater or lesser freedom and/ or greater or lesser irregularity (PC and FM).

I will come back to the consequences of the causality of credit at the end of chapter IX, after adding more aspects of economic theory related to it.

Chapter IX

“Irregular credits are a totalitarian tool infiltrated in democracy”

Carlos A. Bondone

CREDIT AND LIQUIDITY

We could say this chapter is the answer to what I said when dealing with the topic of money, “*The essential –though not explicit- debate for the economic theory of money is if any economic good that solves the need for liquidity is money.*”

If I had to give this chapter a different heading, it would be “surprise” or “treasure”, in the sense we will discover the final and possibly unexpected –though elementary- conclusion my theory of economic relativity leads us to. Though many economists have intuitively approached the topic of this chapter correctly, I humbly believe they lack the scientific rigor to clarify the chain of economic theories that derive in what I call the theory of economic relativity. The theory of economic relativity I am trying to present would be incomplete without this chapter, from two points of view: first, because it completes the topic of economic time, giving the solution in my theory’s greater generality, and, second, because it is a simplified summary of the theory. This will be very useful in the final comparison of my theory with current ones.

In light of the theory presented in this work, it is simple to find the links among the entities in economic science, i.e. relations among money, credit, price-levels, the link between interest rates and price-levels, etc. All these legitimate concerns have the most adequate and simple answer if we accept the chain of economic causality and the theory of economic relativity presented here.

We need an additional step in my hypotheses to make them more general and simple. That is the purpose of this chapter. I have rejected the theory that credit can be assimilated to money, which does not imply other economic goods that are not money cannot satisfy the human need for liquidity. To show this, we only need to prove that an economic good that satisfies liquidity and is not present, is an economic good that satisfies the need for liquidity and is not money; and since something that is not a present economic good is a future economic good, then the only thing that can have that role is credit.

The demonstration of this theory is very simple and only requires a very elementary deductive analysis, deriving from the chain of economic causality and the theory of economic relativity described here.

We saw money is an easily marketable present economic good, which is the reason why it is mainly used for interpersonal exchanges between economic agents. This is also the origin of its role as unit of measure in the economy. This begs the question if credit, an economic good representing economic time, can fulfill the role of money, not because it is a present economic good, but because of its easy marketability. This, subsidiarily, would allow it to be used as a unit of measure. The answer is affirmative, since this is the role of PC in practice. Being a credit, it circulates as the economic good with the easiest marketability.

I believe not understanding this is the chain of economic causality -which perfectly explains credit can satisfy the need for liquidity but will never be money, because it is not a present economic good-, is what has generated all the confusion in economic theory, the sterile debates where interest is considered the price of money, and not understanding how price-levels affect interest-rates and viceversa. In other words, Menger said money first had to be an economic good; i.e. he limited the satisfaction of liquidity (marketability) to its being a present economic good, a circumstance that created confusion in economic theory, simply because he did not realize this need could also be satisfied by a future economic good. I

believe we have here the essence of the problem Mises did not understand, leading to all his intricate theoretical construction, with its highest expression in his regression theory, and the search for the subjective value of money in the wrong places (purchasing power).

If we start from the original concept, that liquidity is what allows us to obtain the “final” present economic good (satisfying the final or immediate need) in the hands of another economic agent, liquidity can be satisfied in one of the following ways:

- 1) Barter:** possessing the present economic good the other person needs and interpersonally exchanging it for a “final” economic good.
- 2) Money:** possessing money (present economic good of easy marketability) and interpersonally exchange it for the economic good I need finally.
- 3) Credit:** the other person gives me the “final” present economic good she has in exchange for a present economic good in a specified period of time (plus its price, interest).
- 4) Credit plus money:** I can also ask a third party for a loan in money and then do the exchange with her, which configures a credit prior to a cash transaction with the agent that has the “final” present economic good I want. In other words, we can combine means of exchange.

From this we have what we already saw, that the essence of feasible interpersonal exchanges described here determines the most important categories for classifying economic interpersonal exchanges are cash and credit. In this manner, we assimilate barter to money and both have the same characteristics as cash exchanges (interpersonal exchange of present economic goods), the other alternative being credit (interpersonal exchange of present economic goods for future economic goods).

We see credit can also satisfy the need for liquidity. Mises emphasized this correctly when he referred to money substitutes –which I have made ample reference to-, assimilating them to money because they had its same function; they served as a means of exchange and when the debtor was very trustworthy, they had the same value as money. I have already said enough on this, relative to the difference between money and credit and the value and price of the different types of credit.

We can summarize, saying that credit can satisfy the economic need for liquidity, which means Mises was right when saying his money substitutes could act as money; this is so in the sense that both satisfy the need for liquidity, but they are not money, because they lack its essential trait of being a present economic good. In short, they are different economic goods, competing to solve the same problem: liquidity.

Going back in our analysis to the beginning of monetary theory, we can quote Menger in a passage of his document “The origin of Money”:

“The theory of Money necessarily presupposes a theory of the saleableness of goods.”

I adopt this principle but in a more general form; that is why I substitute money by currency in Menger’s expression, which also allows credit to satisfy liquidity. At the same time, we do not accept economic time only has to do with liquidity.

This conclusion should come as no surprise, since it is not the first case in which an economic good satisfies different needs, and a need can be satisfied by different economic goods.

It is essential for economic theory to follow the chain of reasoning relative to the way money relates to credit. Moreover, understand that the categories that interest economics are cash and credit (interpersonally exchanged economic time and intrapersonal economic time).

Understanding this order of causality will allow us to avoid a great number of mistakes and confusions in economic theory. I will reiterate some of them, only now including the idea that credit can satisfy liquidity, just as money. This does not mean we should confuse money with credit or believe we can sum or subtract one from the other as if they were homogeneous. One is future and the other present, and they both become present when credit ends with its cancellation by a present economic good. Let us review these concepts:

1) Unit of measure and economic relativity: we know the economic good that satisfies liquidity typically used in interpersonal exchanges is also used generally as a unit of measure for all prices. When credit reaches that level, prices are measured relative to it; i.e. the most general theory shows the most liquid economic good is used as a unit of measure, and it can be credit and/or money; therefore it is not inconvenient for a credit to be the unit of measure. When using credit as a unit of measure it is essential to remember the risks this implies, relative to its different features: flexible materialization, recoverability, and the possible consequences of entering into the risky credit chain.

We conclude that credit can be used as a unit of economic measure or unit of account; this means we can include credit among the “currencies of account” allowing us to determine monetary prices. However, we also know credit is economic time (interpersonally exchanged) and it must always materialize in another economic good, which must be a present economic good, since the only non-present economic good is time (interest being its price).

This is just another way of understanding the theory of economic relativity, in this case in terms of adopting economic time as the unit of economic measure. Another very important aspect to bear in mind is that we assign money the quality of being subsidiarily a unit of measure; here we clearly see why: credit can also have that subsidiary condition of being used for measuring, in the same way any economic good can be used as a reference to that end.

With my theory we can perfectly understand that if we use credit to satisfy liquidity and as a unit of economic measure, the prices of all economic goods will be expressed in the economic good credit; and since interest is its price, the price of all economic goods is linked to interest, which is the price of credit. We must understand, monetary prices refer to the economic good used as a unit of account; therefore, if the economic good credit is used as such, and interest being the price of credit, it is obvious monetary prices will refer to interest, as they would to any economic good. In other words, there is no need to appeal to the theoretical arsenal called “direct and/or indirect transmission mechanism” that supposedly explains how the variations of currencies relate to interest and prices.

2) The theory of economic relativity: we must bear in mind credit is economic time (interpersonally exchanged) that always materializes in present economic goods, which makes it completely different from all other economic goods. We already saw that in the case of money, its value does not derive from or is not relative to its condition as an exchange value, in the sense that this is not specific of money. However, the theory of relativity is purely and exclusively a characteristic of time (economic time in economics and physical time in physics). **Economic time:** if we wish to develop the theory further, we can investigate the smallest things to infinity, realizing credit is liquidity because it is time. Since economic time transcends everything and liquidity is economic time, then credit is liquidity, which was believed to be an exclusive feature of money. It is another way of expressing my theory of economic relativity, and I could say economic time is a need that includes liquidity or easier marketability. Therefore, the economic good that satisfies the need for economic time also satisfies liquidity. In other words, credit is the economic good that satisfies liquidity more than any other, since it implies economic time and the only non-present economic good is economic time, which is subject to TER, and when it is interpersonally exchanged, this configures credit, the price of which is interest.

3) Interest and prices: We can clearly see that if the economic good typically used for interpersonal exchange is a type of credit, this fulfills the role of unit of account, being the reference for all prices (generally called monetary, because they are expressed in the currency of account). This is why variations of price levels are generally associated with interest levels (the price of credit), and supposedly it is necessary to avoid a wide divergence between them or variations in time. All this leads us to the following conclusions:

- a) Pretending to control price levels and interest rates implies supposing, in the first place, that they are two different things; but if credit is used as a unit of measure, there is the confusion of believing we control different things when they are the same.
- b) We know it is impossible to avoid price variations; the same is true for interest, the price of economic time. Pretending to control the amount of credit so that it will have a special price is

possibly worse than trying to influence any other economic good, since this is the good most used in interpersonal exchanges and at the same time as a unit of economic measure, and it is the only one subject to TER. On the other hand, we must not forget that quality and quantity together with price are inseparable components of a set. We cannot analyze them separately when referring to interpersonal exchanges.

c) The extreme theoretical case of zero –or negative- interest is inconceivable, since it would not be an economic good. In other words, wanting the price of credit to be zero implies the non-existence of the economic good economic time, and the impossibility for it to materialize in present economic goods. These would not even exist, which implies the inexistence of human beings or that humans be infallible. In either of these cases, there would be no economic theory. Just as in physics, where time is measured in physical entities, and has no physical existence if it does not materialize in physical entities. If there are no physical entities, there is no physics.

We see that if credit is the economic good adopted as a unit of measure and interest is the price of credit, then we will express all monetary prices in terms of interest. This simple explanation solves what has been called the debate of the direct or indirect mechanisms of influence between prices and interest rates. This dispute is not even possible in my theory, simplifying statistical research and the solution of common economic problems.

In other words, this is the final synthesis of my theory, relative to the articulation of interest and prices: there is no such mechanism as indirect transmission, and that is why IS and LM curves have not been adequate for measuring this aspect of the economy, because they result from the theoretical error this theory pretends to remedy. This is mainly because scientific knowledge is essentially causal (an ordered set of theories), which does not mean we know all the chains in the form of total and absolute truths, a reasoning leading us to clarify the concepts of determinism and indeterminism in science in general.

4) Comparative advantages and the universe: it is obvious that if credit is the interpersonal exchange of economic time, which always materializes in present economic goods, institutionalization of property, executed in the most efficient way in economic terms, is essential for economic agents, guarantying the highest possible development of the potential each economic agent has, relative to the other economic agents with whom they coexist. In addition, it is essentially important to extend permanently the framework of interpersonal exchanges with new economic agents. The more, the better.

5) Quality and quantity of money and credit: we have seen that we must first specify quality and then determine quantity, and that price is a synthesis of both. Having defined cash (present) with money as its highest expression, and credit (future), we must no longer try to add them up. Instead, we must see them as substitutes for each other, as economic goods competing to satisfy the need for liquidity, which have different forms and intensities, and depending on these, one or the other will be more convenient. It is not difficult to discover which is better in economic terms, because this is defined by prices, and one or the other will be used according to which is most convenient. We stress once again the importance of not adding money and credit. They are different economic goods that in certain circumstances can satisfy the same need.

6) Interest versus productivity of capital and durable consumer goods: with my theory, we solve in a more general manner the problems studied here relative to equating productivity of capital with interest rates, which were thought to be determined by money markets (especially Keynes). My theory also clarifies this question, saying we were looking in the wrong place, since productivity of capital, liquidity, and the influence of the economic time of economic durable consumer goods, etc., are all part of economic time; and all these different expressions of the economic need for economic time are satisfied by economic time, materialized in present economic goods. This allows greater or lesser satisfaction of needs in time, with the constitution of reserves and/or wealth. When an economic agent does not possess wealth, he must obtain it from another economic agent as credit.

7) Wealth and savings: everything said clearly shows that accumulating wealth relative to needs is the way to deal with economic time. In other words, since economic time always

materializes in wealth (present economic goods), it is obvious that the greater the wealth, the less its subjective value and price will be.

8) Value and price of credit that satisfies liquidity: continuing with the chain of economic causality, we can say the fact that credit can satisfy the need for liquidity, adds another component that increases its value and price. However, since we have proven that the essential role of credit is providing liquidity –solving an essential problem of economic time-, it would not be correct to say credit has additional value because it satisfies liquidity. Thus, we see the essential aspects for determining the value and price of credit are its period of maturity and the guaranty or recoverability, along with its wealth level. This shows why the credit at sight of a very trustworthy person can have the same value as the money with which it will be cancelled (a very important problem for Mises theory). This only tells us that if the period of maturity is zero and the payer is so trustworthy, we have the same trust as in the case of a depositary of CID. What we cannot admit is that the money used to cancel a credit will have less value than the credit payable at sight on that money, except if this reflects the practical costs of transporting money or something similar.

9) Micro and macro liquidity: all this allows us to see that when we say there can be liquidity in one economic agent and not in another, and that liquidity cannot be greater than for the whole of society, we are not referring to anything special in terms of money and/or credit, in the sense that there is nothing different from what we see in other economic goods. The degree of freedom for interpersonal exchange is essential, because both money and credit exist according to this degree of permissibility. When the actions of economic agents are constrained, interpersonal exchange is limited. Economic time exists as long as there is at least one economic agent, but if exchange is not possible, money and credit cannot exist. Macro- and micro-economics make sense in terms of money and credit if there is interpersonal exchange. If not, micro- and macro-economics have no reason to exist, and not only relative to money and credit. However, we must bear in mind that, according to my theory, where there is division of labor there is property distribution, which is essential for interpersonal exchange to exist. Therefore, I reiterate that the economic progress of a society is in direct relation to a greater or lesser permissibility of distribution of economic wealth, which allows individual comparative advantages to express, which includes the different ways of generating economic agents.

10) Money and credit: in short, money and credit are different economic goods, competing to satisfy liquidity. The more general theory would be then that credit is the economic good that satisfies the need for liquidity, and that at certain points in time there is a present economic good that can substitute for it. However, if we consider liquidity is of a temporal nature, we can have no doubt economic time is the economic good that will best satisfy it, which in turn configures credit when interpersonally exchanged.

11) The price of satisfying liquidity: considering Menger's idea, that money is an economic good easily exchanged for other economic goods –to the point that it can fulfill this function without loosing value comparing the prices at which it is bought and sold- I must say this is no obstacle to seeing credit as the economic good that satisfies liquidity. This is so because the difference in price between a credit and a present economic good is the intervening period of time, and precisely because of this, a price must be paid. However, every economic good has its value and its price (when exchanged). In other words, the fact that a credit is bought at one price and sold at another depends on many factors, as with any economic good. On the other hand, since the price of credit (interest) is the price of economic time, when it tends to zero it tends to have the same value and price as the present economic good it materializes in; in other words, the price of credit will tend towards the price of the present economic good it materializes in when the economic time which originated it tends to zero. This is the simple and more general solution to Mises dilemma on why a credit (future) can have the same value and price as money (present).

I believe this shows in synthesis that in economics it is essential to differentiate cash from credit, not barter from money, and that we should not confuse money with credit. This key difference is the origin of time as an economic good, interest being its price, materializing in other present economic goods. In turn, the economic good time can be the most easily

marketable economic good, and because of this, it can have the function of exchange currency.

The theory presented here shows money and/or credit are never economically virtual: they are both economic goods. Not understanding this is the result of an economic theory that is erroneous as a whole, as an ordered set of theories. Confusing money with credit results from this, because that theory has not been able to explain consistently that credit can be the most marketable economic good but it cannot be money, because money is a present economic good and credit is not. In other words, credit can have the role of being an easily marketable economic good, but it cannot be a present economic good, since it is the representation of economic time, which though a continuum, must materialize in a present economic good at each instant (as in physics). This is because if it does not appear in other economic categories it is not economic time, in the same way time is nothing if not for some entity referring to it in some specific way, a concept we could take to express the general theory of relativity.

We must clearly understand I am not speaking of credit as a substitute for money, as current economic theory contends. Instead, I am referring specifically to the fact that credit, being different from money, can also satisfy the economic need for liquidity.

We can also express this theory saying: anything allowing an economic agent to obtain a present economic good easily is an economic good that satisfies liquidity; then, a future economic good that allows me to do so also satisfies liquidity. Mises emphasized this aspect as an essential feature of money, which is why he confused credit that satisfies liquidity with money or with a substitute for money. With this he showed the confusion neither he nor Hayek were able to solve, i.e. understand that the essential thing is to differentiate cash from credit, and, more specifically, present from future, which allows us not to assimilate money to credit.

In short, I conclude that the concept of economic time -and TER derived from it- include the concept of liquidity, which becomes a category in the theory of economic time.

THE ECONOMY WITHOUT MONEY

Evidently, if credit can satisfy the need for liquidity and measuring -acting as a unit of measure of economic account- it is perfectly possible to think that in economies where trust prevails, supported by culture and institutions that protect it, money will lose its preponderance in interpersonal exchanges, and be replaced by credit.

Based on my theory, it is perfectly possible to think of an economy without money since, though there is the need for liquidity and measuring, another economic good can satisfy it. In other words, based on my theory, an economy without money is perfectly possible.

It would seem that according to my theory, one of the reasons for economic growth is the expansion of credit in detriment of money. This would lead us to believe there is a close statistical relation between economic development and expansion of credit –in terms of quality, quantity and maturity-, which in itself is economic growth, since it is an economic good. In other words, the expansion of credit must be one of the main factors for economic welfare. This explains the fast deterioration (and recovery) of economies where PC collapses. This explains why credit has a different significance for different countries. Just like any other entity, its presence and growth depend on the existence of adequate conditions. The lack of expansion of credit or trust in certain communities is due to the lack of socio-cultural conditions that lead to the existence of institutions that promote and protect trust among human beings. For this to be so it is not enough for laws to exist, they must be efficiently applied. This requires some essential and elementary principles: legality must be based on a few and easily understandable enunciations (if not, we are in the presence of excess quantity in detriment of quality). Penalties must obey the same criterion. There must be an excellent balance between quality and quantity relative to speed and efficiency in the administration of justice. There must be no loss of time with unimportant matters. In other words, distrust is the driving force of totalitarianism, of which the best expression is having excessive control of the lives of individuals. Based on this, it is easy to understand bureaucracy is the best

expression of totalitarianism, manifest in controls applied with intricate and abundant norms, going hand in hand with lack of efficiency in their application, deriving in inefficiency in the economy and justice in general. The quality and intensity of controls show the degree of trust in a society.

Everything we have said up to here leads us to the conclusion that the essential categories in economics are cash and credit interpersonal exchanges, i.e. the time difference between economic goods in the theory of economic relativity: referring to economic time with economic entities, which are economic needs and goods linked together at each spatiotemporal point.

We conclude that, though an economy without money is very unlikely, it is not strange for money to be less relevant than credit in satisfying the need for liquidity and as a unit of economic measure.

That is the theoretical explanation of an economy without money or with a relatively decreasing presence of it. This leads us to reiterate that what is important here is differentiating cash and credit, or, to be more specific, present and future economic goods, as economic entities. Differentiating economic goods relative to their temporal relation, and the need they satisfy, as expressed in the theory of economic relativity.

Finally, my theories show Keynes' concept of gold as a "barbarous relic" has no theoretical substance, because with just a little money (gold) we can multiply interpersonal exchanges through credit payable in money.

ECONOMIC RELATIVITY REVISITED

Because the theory of economic relativity has been the center of my whole theory, and since we are at the end of this exposition, I will summarize its general implications for economics in general.

I reiterate that economic time always materializes in present economic goods, be it time in intrapersonal (intertemporal) exchange of an individual opting between present and future economic goods, or interpersonally exchanged economic time, credit, with its price, interest. We can clearly see economic time always refers to present economic goods *versus* future economic goods, and it can be interpersonally exchanged just like any other economic good. The only difference with other economic goods is that it has no entity of its own. It always materializes in other present economic goods. This is not so for any other economic good, including money, as Mises confusedly expressed when saying money has no life if not derived from other economic goods (a feature, as we already saw, not exclusive of money, something different from economic relativity).

We must bear in mind money is not the economic good representing economic time, except for the aspect of liquidity or greater marketability, which is a subcategory. In other words, credit, as genuine representative of economic time (interpersonally exchanged) is more appropriate for satisfying the temporal needs of economic agents, liquidity among them. The most appropriate way for money to replace credit in interpersonal exchanges is that in which credit becomes more onerous than money, when there is a risk of non-recoverability (distrust). This is just another way of saying the price of credit cannot be higher than the price of the present economic good in which it materializes (except for administration costs), and the price of credit tends toward the price of the present economic good it materializes in when its maturity tends to zero.

We saw credit is economic time (interpersonally exchanged) which must materialize always in a present economic good. That is why every credit must specify in what present economic good it will materialize (in terms of quality and quantity, along with maturity), and who is the debtor. If not, the present economic good in which it materializes is not specified.

In other words, the economic good time can be for own final use or it can be exchanged with other economic agents. In this second case, it is called credit and its price in interpersonal exchanges is called interest. The only thing different about economic time is that it always materializes, instead of only being expressed by present economic goods, which is not true for

all other economic goods that can be expressed, compared or measured, relative to other economic goods, in terms of relative prices, but they are always the same present economic goods in themselves.

The reader can now see why I called credit with a flexible materialization (PC) irregular credit. First we defined it precisely as a credit, because it is not a present economic good, and then as irregular, because of the lack of a definition of the specific quality and amount of the goods it would be cancelled with in the future, along with its at sight but “indefinite” maturity, and the fact that the economic agents involved are not specified.

I can conclude my theory of economic relativity saying from the moment a fallible entity (human or not) appears, its economic time begins, which only materializes in needs that are satisfied completely or partially in space and time, with present economic goods. I wish to add that economics in its generality includes organic and inorganic, animated and inanimate, material and immaterial entities, and physical and corporate individuals, etc., i.e. all entities in general (but for some, time seems to have less influence).

Deriving from this, we could say economic science studies qualities and quantities of economic goods of fallible entities, considering economic goods include in their definition the fact that they are fallible entities, with needs and time. Obviously, this is just a general orientation, because we know we can go back to infinity if we pretend to have an exact definition.

THE THEORY OF LIQUIDITY AND ECONOMIC MEASURE

Once we have understood liquidity is a temporal aspect within a more general theory of economic time, I can continue.

Liquidity can be satisfied both by a present economic good we call money and by a future economic good we call credit, and both must be goods of common use, which makes them useful also as units of measure. From this, we conclude not all economic goods, present or future, can satisfy the requisites for an exchange good and a unit of measure of common use. From this conclusion we derive that the theory of exchange goods and units of measure of common use must focus on the needs involved (liquidity and measure) and the fact that they can be satisfied by present or future economic goods. In addition, since both are of common use, we conclude economic theory must focus on the temporal aspect of present economic goods. Relative to liquidity, theory must focus on how the economy works when the common means of exchange is a present economic good (money) and when it is a future economic good (credit). In this last case, we must differentiate regular from irregular credit.

We can see this is what economic science has studied. Only it has done so in a confused framework, because it did not understand the essential difference between cash and credit, and specifically between money and credit when referring to a means of exchange of common use.

In short, we can conclude my theories referred to exchange goods and units of measure of common use clarify our research, once we eliminate the confusion between money and credit, present and future. We also saw how the error of not differentiating present from future in economic theory was even more serious when analyzing the need for liquidity and a unit of measure.

In this manner, we see there can be many present and future goods that satisfy the needs for liquidity and measure, and that these will act as competitors and substitutes, as do all economic goods in general. I hope the reader can see the huge importance of this, one of the simplest conclusions of the theory of economic relativity. It tells us that many of the economic theories exclusively created to explain the conduct of economic goods that satisfy the need for liquidity and measure had special features that could not be explained within the framework of the general theories that explain other economic goods. My theories tell us we must include the economic goods that satisfy these needs in the same category as the rest. We will see this more clearly when we compare my theories with current ones.

I can conclude this work saying my theories are more general than current ones, because they tell us that, when dealing with exchange economic goods and units of measure of common use, we must use the same economic laws as with all other economic goods.

THE DANGEROUS CREDIT CHAIN (CONTINUED)

As I said in the preceding chapter and under the same heading, there are economic dangers in the credit chain. With this chapter's conclusions we can see the credit chain originating in loans of FM –“payable” in or on PC- is even more risky when the economy adopts (compulsively) PC as an economic good essential for satisfying the need for liquidity, and, accessorially, the need to measure. When a community adopts PC, which we have analyzed specifically, we find the risk implicit in the credit chain grows worse. This appears mainly in the following aspects:

- 1) FM alter the economic rules of economic time of the owners of present economic goods, because these are interpersonally exchanged in the belief that they are carrying out cash transactions and the bank transforms them, without their consent, into credit (indirect appropriation).
- 2) To this alteration of economic time derived from FM, we must add that they are “payable” in PC (direct appropriation), which we already saw as a risk in the previous chapter. Now we have that PC is used as an economic good satisfying liquidity, and because of this it becomes a unit of measure for economic calculation.

Therefore, we can see the economic good used as unit of measure ends up being what destabilizes monetary life. This is so because we are adopting a monetary unit with flexible materialization, ignoring one of the essential requisites for units of measure in all sciences and specifically in economics.

We can see the chain of IC is the summation of improper direct and indirect appropriation of economic goods.

We will see the consequences of using a unit of measure that violates one of the essential principles for units of measure in the following section.

Finally, I will refer to the credit chain where there is direct (PC) but not indirect (FM) appropriation, as in commercial current accounts, promissory notes, credits “payable” in or on PC, and future income in PC (which generally needs a re-composition period).

CONSEQUENCES OF THE CAUSALITY OF CREDIT

I come back to this topic presented in the previous chapter under the heading “The causality of credit”, including here the theoretical aspects seen in this chapter.

The economic categories we must consider, relative to the links between money, credit, interest and prices, are those deriving from these simple conclusions, in light of the theory of economic relativity:

- There is no such thing as inflation; there is partial or complete non-recoverability of the irregular credit of flexible materialization (PC), which I have called “*direct appropriation*” of present economic goods.
- There is non-recoverability of the price of irregular credits (interest), by temporal appropriation of present economic goods belonging to third parties (FM) subject to TER, which is what I have called “*indirect appropriation*” of present economic goods.
- The risks of the credit chain explained above.
- The non-recoverable part of a regular credit.

- The intertemporal exchange of prices, which is presented as inflation and/or deflation. Credit, just like any other economic good, is subject to intertemporal changes of prices; i.e. there are only real relative prices. Monetary prices are real relative prices expressed in an economic good of common use as a means of exchange. For economic calculation we can use the price variations of one or several economic goods relative to price variations of an economic good used as unit of measure.
- A future economic good such as credit has the ideal features to satisfy the need for liquidity, which is essentially economic time. Credit is its interpersonal exchange.

I will explain, under a special heading, why it is not necessary that an economic good chosen to satisfy liquidity be at the same time the unit of measure.

LIQUIDITY AND ECONOMIC CYCLES

One of the most debated topics in economic science in recent times is how monetary expansions and contractions affect economic cycles. Notorious among these debates, is the discussion between Austrians and non-Austrians.

My theories produce the following conclusions:

- 1) We have clarified the error of not establishing the relevant differences between different types of interpersonal exchanges, a mistake common to other theories but not mine, since I have pointed them out, particularly the difference between cash and credit. My theory specifically states cash is an interpersonal exchange of present economic goods, and credit is the interpersonal exchange of present economic goods for future economic goods. These are key aspects for the theoretical topics analyzed here.
- 2) The need for liquidity (a category that is part of a more general entity, economic time) can be satisfied by both money and credit, and the economic good satisfying liquidity is generally used, as well, as a unit of economic measure, essential for economic calculation.
- 3) We have seen one of the economic requisites of a unit of measure is its physical rigidity in time, and that economic time always materializes in another present economic good.
- 4) Then, if the unit of measure is not a physically rigid entity, as is the case with PC, it is obvious we have the risks we pointed to when analyzing the chain of credit.

In short, my hypotheses are more general than current ones relative to the way currency (an economic good that, because it satisfies liquidity, is adopted as a unit of economic measure) affects economic calculation in general, not only for investors.

The error comes from not understanding money is not credit and viceversa, and from the fact that both can satisfy liquidity and the need to measure, essential for economic calculation.

This destabilizes when the unit of measure is not physically rigid in time. All calculus is affected, not only in the case of investment.

Another approach is to consider the topic of economic cycles as related to economic time as a more general economic category (from where the concept of cycle derives), rather than to liquidity specifically. However, both money and credit can satisfy liquidity, depending on which is less costly for the economic agent at the spatiotemporal point of interpersonal exchange. At the same time, liquidity is essentially economic time, and the same is true of the concept of economic cycle; then, it should be no surprise that we arrive at the chain of economic causality expressed in these lines.

So we see, arranging the entities or the economic categories presented here better, we can shed some more light on their real performance and avoid conducts that damage human economy.

We can conclude so-called economic cycles of monetary origin are financial crisis, with different consequences, depending on there being regular (CID and regular credit) or irregular (IC) monetary systems.

THE NEEDS FOR LIQUIDITY AND MEASURE

In this section, we will explain the role of the two needs indicated in the heading, liquidity and measure, considering, as always, that currency –an economic good satisfying liquidity, mainly because it is of common use- is the unit of measure of choice in economics, facilitating economic calculation derived from interpersonal exchange.

On the other hand, we have concluded credit is the economic good of preference for satisfying liquidity and as unit of measure. However, and at the same time, credit is economic time and we know it always materializes in a present economic good.

Because of the two aspects emphasized in the preceding paragraphs, we conclude there can be different economic goods satisfying the need for liquidity and the need to measure; they do not necessarily need to be the same. Because of this analysis, we come to the following:

- 1) Credit is the best economic good for satisfying liquidity, insofar as it expresses a higher stadium of the development of human culture.
- 2) Credit, being an economic good, always materializes in a present economic good
- 3) The economic good acting as a unit of measure has the features of being an economic good of common use and physical rigidity in time.
- 4) We define money (present) and credit (future), which satisfy liquidity, as economic goods of common use.
- 5) Then, following this deductive chain, the preferable use of credit as an economic good to satisfy liquidity, and the use of money as unit of measure, because it is the present economic good in which credit materializes, should be no surprise.

Here we have a very consistent theory to understand how we solve both needs, which may or may not be satisfied by the same economic good; so we conclude money should never lose its place as unit of measure, and that economic progress should progressively replace it with credit to satisfy the need for liquidity.

From this, we can deduce why credit should replace money in satisfying liquidity, and money should regain its role as unit of economic measure; i.e. credits should always be expressed in money with rigid, not flexible, materialization, an essential feature for any unit of measure. Thus, the theory presented here explains why money and credit alternate in their relative importance for interpersonal exchanges, according to the needs for liquidity and measure. I consider this to be a key factor representing economic progress, indicating the adequate “limits” for managing economic time in interpersonal exchanges, allowing greater freedom in dealing with time, with a strong dose of “self-control” within the credit system, always endogenously regulated. This is essential, especially considering credit means risk, subject to the law of large numbers, which relates to diversification and not concentration, as is characteristic of the chain of irregular credits already described. In other words, in an economy with a great amount of interpersonal exchanges it is hard to find anything more related to danger or risk than credit, especially being irregular. On the other hand, we know the best tool to confront risks is the law of large numbers, which leads to atomization and diversification, according to the circumstances.

NEUTRALITY OF CREDIT

In light of all that has been said, we need to come back to the topic of monetary neutrality I referred to under the heading “Neutrality of money”.

Evidently, what current economic theory refers to under this heading of neutrality of money is the discussion on the neutrality of monetary theory in general, and of real and absolute prices, all of which definitively disappears when considering the present theory.

Nevertheless, I believe we can present the following as a synthesis of what we have said on neutrality of money:

- Hiding behind this topic in current economic theory, we find the confusion of money (present economic good) with some manifestation of credit that tends to satisfy liquidity, specifically manifestations of irregular credit in its two versions, PC and FM. This helps us conclude that monetary neutrality (credit can also be currency) is a more general term than neutrality of money, and at the same time it makes no sense to speak of any neutrality, as I have already said.
- Deriving from the previous point, we must answer if irregular credits, in their two versions, are neutral, and if they are so in the same measure. I have already answered these two questions, and I summarize as follows:

- a) PC: produces *direct* appropriation of present economic goods.
- b) FM: produce *indirect* appropriation of present economic goods.
- c) Risk of the irregular credit chain: we have already seen the double risk represented by the combination of both types of irregular credit, where they substitute for each other (FM payable in PC) based on the idea that they are cancelled as a cash exchange with present goods.

Evidently, the conclusions of my theories include the answers to many other questions that, just like these, have been considered theoretical problems that must be solved, but that would not exist if the original theoretical mistakes exposed here were corrected, including the alleged problem of exchange rates, international currencies (if one or several), etc. This explains what has been called “the surprises” of the last years in national and international monetary systems. All this can be easily explained because it is nothing more than the presence of real events anticipated by the theory of the risks in the chain of irregular credit presented here.

PARADOX OF INTEREST

There are economic theories that sustain the need to raise the price of an economic good to solve economic problems. The general idea is that you can “balance markets” with state intervention.

The paradox here is in the incongruence of pretending to solve the economic problem of scarcity promoting more scarcity, i.e. trying to put out fire adding fuel. I call these theories the “paradox of interest”, because the most common practical expression is their application to interest. Central banks manipulate interest rates, “raising” them when they observe the presence of the phenomenon known as “inflation”.

It is obvious this paradox has no place in my theory, since it originates because of IC and the chain built on it. From the theories presented here, we see the paradox derives in an improper appropriation of wealth, always hurting the poor –the uninformed- and benefiting those close to government and financial activities.

Part III

CORROBORATION OF THE ECONOMIC THEORY ACCOUNTING

Chapter X

ACCOUNTING AS AN ECONOMIC MODEL

Just as I have included economic concepts in this work, explaining what the definitions mean from a philosophical point of view, I will now include accounting concepts, reiterating in the next section the explanation of why I refer to accounting when speaking of economics. I can say again that the relation is biunivocal: referring to accounting inevitably implies speaking of economics and viceversa. Even though you might think non-profit agents' accounting is unrelated to economics, I consider this is not so from the moment they need an accounting system.

Whoever should wish to examine in greater depth the possibilities for developing accounting combined with computer science and set theory—notwithstanding talk of its obsolescence-, can read my book “Knowledge Accounting”.

There have been many debates on which is the best model for interpreting different economic theories; personally I stress the best model for interpreting and corroborating them is accounting, a discipline or science with economic motivations.

The origins of accounting principles, in Brother Luca Pacioli's works, point to the need of an agent to register economic operations. Humanity seems to have discovered at that time the biunivocal relation “economic good-owner”, because that was the reason for the appearance of the double entry system, where one side records the existence of economic goods, and the other identifies their owner. Considering this event a “discovery” and not an invention is very interesting, since the biunivocal relation existed before accounting. What we can call an invention is the way we record that reality, i.e. accounting as a discipline, which appeared precisely because of the acknowledgement –conscious or not– of that preexistent biunivocal relation. We will see that, because of this, it is not very difficult to deal with the mathematical equations characteristic of economic theory using accounting's general and profits and loss (or economic results) equations.

In this third part, I will corroborate my economic theory using what I consider the best “model”: accounting. We will see accounting is the best model for economics and I will corroborate my economic theory with it.

I believe we have the first central point of corroboration of the existence of a link between economics and accounting when we relate economic equations with the central accounting equation, in which assets at all times equal liabilities, liabilities being the holders of credits (liabilities with third parties plus your own liabilities or net worth). Here we see the equation is no more than an expression of the biunivocal relation “economic good-owner”. This should not surprise us, because it is the essence of double entry accounting, where you find an economic agent's assets (debit), on the one hand, and their owners (credit), on the other. This shows accounting dealt with the economic biunivocal relation (economic good-owner) before economics did.

So we have that financial statements are nothing more than the numerical expression of the biunivocal relation “economic good-owner”. However, something very relevant for accounting –which I will adopt to corroborate my theory- is that the biunivocal relation can be expressed both in physical and monetary units of economic goods. The latter are the prices in currencies of account of economic goods in interpersonal exchange, established by the economic agent him or herself or taken as reference from exchanges by third parties. In both cases, these prices are the key to economic calculation by the economic agent.

In the present work, I consider the reader has a basic knowledge of accounting. This is all you need to understand the economic theory I present here. Though, obviously, the greater your accounting knowledge, the more you will learn from this presentation.

This chapter will follow the same path defined in the presentation of my economic theory: beginning with concepts, definitions or basic primitive terms, required by this work, and continuing the same sequence of the chain of economic causality I have developed. This begins with the appearance of an economic good, followed by cash interpersonal exchange in

its two expressions, barter and money (expressed in the form of certificates of irregular deposit – CID), representing rigid materialization, continuing with intertemporal interpersonal exchange or credit, also in its three manifestations, as regular credit, as PC (flexible materialization) and ending with circulating or bank credit which we will call FM (fiduciary media).

Finally, I reiterate we will use double entry accounting in its two versions, with physical and monetary units of economic goods, a key method that will allow us to show in a clear and simple manner why we say interpersonally exchanged PC is credit and not money. In addition, in the case of FM, when they are circulated, they are credits in which those contributing the present economic goods are the owners of these goods at each instant. Also, that PC and FM not circulated, i.e. which have not been used in interpersonal exchanges, are only paper and not money or credit. On the other hand, I wish to stress I will use the criterion adopted in our theory, of considering interpersonal exchanges as unique and unrepeatable in space and time. I will do so replacing completely each biunivocal relation “economic-good-owner” with a new one in the accounts of each economic agent involved, thus avoiding the traditional methodology of using the accounting (non-economic) categories of purchase and sale.

The biunivocal relation “economic good-owner” in accounting

With the economic equation I developed for inventories, we can introduce accounting as “the best mathematical model for economics”, observing that things are not different in accounting, only the terms change. I believe this is the result of accounting appearing before economics. When economics appeared, it did not realize accounting had already tiled part of its terrain. Economics initially did not see very clearly the relevant aspect that there is no economic good without an owner and viceversa, which generates the corresponding biunivocal relation. Continuing with the transitive condition of mathematics, we have:

$$\begin{aligned} \text{Stock of saved economic goods (S*)} &= \text{Economic wealth} = \text{Accounting Assets (A)} \\ \text{Economic owner (Pr*)} &= \text{Capital or net worth (NW)} \end{aligned}$$

Then we have the following expression:

$$S^* = A = C^* + K^* = Pr^* = NW$$

And if we only consider the accounting terms, we have:

$$A = NW$$

Which is what we know as the net worth equation (bear in mind we have not introduced credit, which is responsible for the existence of debtors and creditors and for different balance sheets for different agents. But in the aggregate for the whole community this expression is correct, since those debits and credits are not expressed in combined balance sheets, because they cancel out). The difference here is we do not use the * because accounting defines them as *stock* items, inventory, different from profits and loss items, that are flows.

In short, the “inventory economic equation” is nothing more than the “equity” or “net worth equation”. Though this can seem irrelevant, it is essential for discovering errors in economic theory, which I ascribe to economists loosing their way in the search for economic models that try to express theoretical ideas in a simple graphical or mathematical form, not realizing accounting is the model par excellence. To the point that it preceded it and from its origins in the time of Luca Pacioli, it already had incorporated the biunivocal relation “economic good-owner”, that is simply the economic expression of double entry accounting. Inventory by definition is equal to assets (economic goods in existence) and liabilities (owners, which can be the same or third party creditors). Accounting specifically perceived the existence of the biunivocal relation, something economics has not included yet in its theory. This explains many errors in economic theory we have pointed out in this book. In other words, double

entry accounting is no more than the accounting expression of the biunivocal relation; if not, it would be simple entry.

Therefore, what we call the wealth of an economic agent in economics is the equivalent of his assets in accounting. If the economic agent has no debt with other economic agents, his assets are the same as his net worth. When speaking of the wealth of society as a whole, assets always equal net worth, since debts and credits cancel out through the process of combining financial statements.

Another aspect that we should clarify is that, while in economics capital means superior order economic goods (intermediate economic goods used to obtain final or consumer economic goods, or goods of the first order), in accounting the concept of capital is associated with net worth. This implies a wider concept, since “combined net worth” (i.e. social accounting, if we wish to assimilate it to economic concepts) or net worth in accounting terms, includes all the economic goods considered assets, not only capital goods in the economic sense.

Combined financial statements

I recommend reading on this topic we have already studied (analyzed from a very special point of view, such as credit, and taking buying and selling as an only act, interpersonal exchange; now we will see it from the accounting point of view to reflect economics).

Starting from the fact that in economics we speak of wealth and property, equivalent to assets and net worth in accounting, we can summarize all other concepts when defining the key aspects of combining financial statements, as a model for economics:

- 1) Combined financial statements allow us to have a financial statement that is the summation of those of the different economic agents. If we combine the statements of all the economic agents in a society, we have what in economics is called social accounting, except for the fact that, here, we do it with accounting techniques, and not in the manner of social accounting in economics.
- 2) From the above we deduce the process of combining balance sheets is the best tool for going from microeconomic concepts to the macroeconomic concepts economic science deals with, but doing it, I reiterate, from the more precise point of view of accounting.
- 3) The process of combining means adding the similar items in the different individual financial statements, and then “eliminating” from that sum all the movements in the period analyzed arising from interpersonal exchanges between the economic agents whose statements we are combining. In this way, we eliminate purchase and sale transactions –we know they are part of the same act of interpersonal exchange in economics -, and compensation of the debits and credits that exist among the agents at the end of the period. With these two operations, we eliminate all interpersonal exchange transactions. This is in complete agreement with my theory, since the process of combining is simply considering what was disperse among many economic agents as belonging to only one agent. In other words, I am considering a society that has many economic agents as if it were a Robinson Crusoe style economy. This metaphor notwithstanding, we know things are not like that. The results would have been different if society developed from the beginning with only one economic agent. This observation is very important, since considering the incidence of interpersonal exchanges is essential to economics. And determining the proportion of combined movements –buying and selling, along with credits and debts- in initial and final wealth can be very adequate for measuring how cash and credit exchanges influence a community’s economic progress.
- 4) In the accounting method I will use, it will not be necessary to balance purchases and sales in the combined statements, because I will record interpersonal exchanges as a unique entity, replacing each old biunivocal relation “economic good-owner” with a new one. Therefore, in our combined financial statements we will only need to balance the credits and debts outstanding at the end of the period.

A guide for the corroboration of economic theory through accounting

To corroborate the economic theory in this work, and trying to keep things consistently simple, I will base the accounting exercises I will now present on the following criteria:

- 1) I will use double entry accounting, both in terms of physical and monetary units, according to what is best for the theory.
- 2) I will produce the individual financial statements for each economic agent, and the combined statement for all the agents as a group, both in physical and monetary terms, as I introduce interpersonal exchange.
- 3) I will follow the same order of the theory: beginning with the appearance of an economic good, continuing with barter interpersonal exchange considered as identical to cash, and ending with credit in its three expressions, as PC (paper currency), regular and, finally, FM (fiduciary media or bank or circulating credit).
- 4) Together with what I described in the preceding point, I will show the influence of interpersonal exchange as an economic good. I will express this, creating different prices for the same economic goods. I will also show the process of “diluting” the subjective value and the price of paper currency with its circulation (interpersonal exchange for economic goods), altering rigid materialization “PC/gold”, and its influence on credits existing at the time of this alteration, payable based on that altered relation.
- 5) I reiterate the method of recording interpersonal exchanges as the complete replacement of biunivocal relations. This is consistent with my theory that interpersonal exchanges exist as unique and unrepeatable acts, and that the categories of purchase and sale simply do not exist.

In short, as I proceed with the accounting process, I will explain how the results corroborate the whole theory I presented, and I will have the opportunity to extend and enrich it, which truly is a theoretical-practical exercise.

Incorporated economic goods

Continuing with the equivalences between economic and accounting terms –wealth is equivalent to assets and property to net worth-, when we are in the presence of what I have called an “incorporated economic good”, which establishes the biunivocal relation “economic good-owner” (not derived from interpersonal exchanges), I am clearly referring to the simultaneous “primary” appearance of the economic good and the owner. (In case of doubt, reread the section on “incorporated economic goods”). Accounting registers this economic situation in the owner-economic-agent’s records with the following entry (we assume here the accounting entry in the daybook and its corresponding entry in the general ledger already exist, so I only show the final state):

Date: xx/xx/xx

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	1 _a			
Equity owner A (a)		1 _a		

Here I refer to the economic good (a), in a specific amount of 1, as the property of the owner A. I am expressing the presence of a good, incorporated as an economic good with double entry accounting, and I do this based on an only and biunivocal relation “economic good-owner”, which is the essence of double entry accounting from its origins.

In short: the terms used here will be economic wealth as equivalent to accounting assets, which, according to the net worth equation, is equal to net worth. In both cases, I refer to the *stock* of economic goods belonging to an owner, i.e. the existence of an economic good as the property of an economic agent in a specific period.

Wealth variation equivalent to economic results in accounting

Just as I have referred to wealth in terms of an economic equation of inventory, I have also referred to wealth as a flow. With it, I expressed the variations of this inventory in a specific period and I called them savings or dis-savings, according to their increase or decrease in the period.

It is easy to understand that, what accounting calls “economic results of a period” is no more than the quantitative and qualitative variations in the wealth of an economic agent in a specific period. The terms “savings” and “dis-savings” refer to the same thing as “profits and loss” or “economic results of a period” in accounting. If the balance is positive it is equivalent to savings in economics, and if negative, to dis-savings.

It is clear, then, that the variation of economic wealth for an economic agent in a certain period (net savings) is similar to variations (profits or economic results) in accounting terms. With this more precise concept of profits (economic results) in accounting, and its similar in economics, net savings, I will determine the how and the why, and identify the necessary and sufficient conditions for profits to appear. Obviously, we will not have any result not anticipated by accounting theory. This is simply recording the variations of inventory or economic goods.

As I said, profits are a flow, resulting from variations in the inventory of economic goods in a certain period. Considering this, an economic agent at the beginning of a period may or may not have had economic goods; what matters is the initial situation of the period, so we can compare the end situation with it.

We can see how accounting registers the initial state in the case where an agent-owner has no economic goods at the beginning of a period:

Date: xx/xx/xx

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)				
Equity owner A (a)				

I can now suppose the economic agent finds himself in the situation described in the case of “incorporated economic goods”; in that instance, I have the following record:

Date: xx/xx/xx

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	1 _a			
Equity owner A (a)		1 _a		

Evidently, comparing present net worth with the initial situation, there has been an increase in wealth, since this net worth is greater in 1_a, i.e. in 1 unit of the economic good (a), than the initial one.

Now I will suppose the addition of 1_b units of the economic good (b), which produces the following entry:

Date: xx/xx/xx

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (b)	1 _b			
Equity owner A (b)		1 _b		

Which allows me to obtain the final net worth of the owner A:

Date: xx/xx/xx

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	1 _a			
Asset (b)	1 _b			
Equity owner A (a)		1 _a		
Equity owner A (b)		1 _b		

In this manner, at the end of the period and comparing with its initial state, the wealth of owner A increased, as expressed by the balance of the net worth account of owner A, which leads us to the summation of 1_a units of economic good (a) and 1_b units of economic good (b). The fact that the units in the credit column are the same as in the debit column is the result of our dealing with physical units. They are not the object of a mathematical sum, because in economics and accounting alike, you only add homogeneous things. We will eventually deal with monetary units, which, applied to heterogeneous physical units, have the huge advantage of homogenizing heterogeneous things, and this expresses the “common use” of the economic and accounting unit of measure in accounting.

Later I will show, just as economic theory indicates, that there are other factors, such as interpersonal exchange, producing variations of wealth or profits. However, I started from this very elementary stage so we could understand the relation between economics and accounting. In other words, to show accounting is the best “model” for economics and the best way to understand real and physical units and monetary expressions, since accounting also refers to both. This could not be otherwise, because accounting inevitably implies the existence of economics, and economics inevitably implies the existence of accounting (even when there is no record).

I reiterate that in accounting, more specifically in double entry, the numbers can refer to physical or monetary units; in this last case, they are expressed in whatever has been adopted as the economic unit of measure. Because the common use of monetary units allows us to have homogeneity in calculus, as opposed to the heterogeneity of the different economic goods, accounting always refers to the currency of common account; I will refer to both types of units of measure (physical and monetary) as I consider useful for our purposes here.

This form of registering is also used at the beginning of an economic agent’s economic life, when he or she contributes economic goods derived from his or her previous existence as an economic agent (in the case of the creation of a legal entity). In this case, we can say the new economic agent finds himself confronting the situation of having an incorporated economic good.

Chapter XI

CASH

We have seen interpersonal exchange can be cash or credit. Now I will refer to cash, in which present economic goods are interpersonally exchanged. Cash exchanges are classified – unnecessarily for economics, from my point of view, but very usefully for finance- as direct or barter, and indirect (with money).

Given the great usefulness of this classification for economic agents in their efforts to satisfy liquidity –called finance-, accounting has special categories for money *stocks* –cash and bank holdings-, and for credits and debts that must be cancelled with that economic good. All this allows them to do the calculus they need for their business.

Bearing this in mind, I will separate the two different types of interpersonal exchanges –direct or barter and indirect- in accounting terms, which will allow us to show the accessory role this classification has for economics.

DIRECT INTERPERSONAL EXCHANGE –“BARTER”

The most common way to generate wealth variations is through cash and credit interpersonal exchange. Bear in mind it generates economic value even if there is no variation in the intrinsic qualities of the exchanged objects. Wealth variations arising from interpersonal exchange are recorded in accounting as economic results and appear in financial statements, so they are called period results, which are essentially variations of net worth. However, to allow for a more detailed analysis of the numbers, they are recorded separately during the economic period.

In this manner, I can summarize the accounting record of wealth variations derived from interpersonal exchanges. Let us suppose the financial statements of economic agents A and B are as follows:

Date: 00/00/01

“Physical” initial balance sheet company A

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	10 _a			
Asset (b)	20 _b			
Equity owner A (a)		10 _a		
Equity owner A (b)		20 _b		

Date: 00/00/01
“Physical” initial balance sheet company B

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (c)	8 _c			
Asset (d)	15 _d			
Equity owner B (c)		8 _c		
Equity owner B (d)		15 _d		

The combined balance sheet of the economy as a whole, before interpersonal exchange, is the following:

Date: 00/00/01
“Physical” initial combined balance sheet companies A and B before exchange

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	10 _a			
Asset (b)	20 _b			
Asset (c)	8 _c			
Asset (d)	15 _d			
Equity owner A (a)		10 _a		
Equity owner (b)		20 _b		
Equity owner B (c)		8 _c		
Equity owner B (d)		15 _d		

Supposing that A gives B 4 units of the economic good (a), in exchange for 2 units of the economic good (c), the interpersonal exchanges will be recorded in the following manner, applying the methodology of the complete replacement of the old biunivocal relations “economic good-owner” with the new ones:

Date: 01/01/01
“Physical” exchange in company A

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)		4 _a		
Asset (c)	2 _c			
Equity owner A (a)	4 _a			
Equity owner A (c)		2 _c		

When this registry is included in the general ledger of company A, its balance is:

Date: 01/01/01

“Physical” balance sheet of company A after the exchange

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	6 _a			
Asset (b)	20 _b			
Asset (c)	2 _c			
Equity owner A (a)		6 _a		
Equity owner A (b)		20 _b		
Equity owner A (c)		2 _c		

Now I record the interpersonal exchange transaction and the final balance of company B:

Date: 01/01/01

“Physical” exchange in company B

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	4 _a			
Asset (c)		2 _c		
Equity owner B (a)		4 _a		
Equity owner B (c)	2 _c			

Thus incorporating this registry in the larger one corresponding to the accounting of company A, its final state is this:

“Physical” balance sheet of company B after the exchange

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	4 _a			
Asset (c)	6 _c			
Asset (d)	15 _d			
Equity owner B (a)		4 _a		
Equity owner B (c)		6 _c		
Equity owner B (d)		15 _d		

Now I must present the combined balance sheet of companies A and B after the interpersonal exchange

Date: 01/01/01

Combined “Physical” balance sheet of companies A and B after the exchange

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	10 _a			
Asset (b)	20 _b			
Asset (c)	8 _c			
Asset (d)	15 _d			
Equity owner A (a)		6 _a		
Equity owner A (b)		20 _b		
Equity owner A (c)		2 _c		
Equity owner B (a)		4 _a		
Equity owner B (c)		6 _c		
Equity owner B (d)		15 _d		

Evidently, the assets of the combined balance sheets before and after the interpersonal exchange are identical; the only thing varying is the composition of the net worth of each company. But this is precisely what my economic theory says: what interpersonal exchange produces is changes in the biunivocal relations “economic good-owner”.

Another very important thing I must emphasize is that these records represent the theory very well; on one hand, interpersonal exchanges are an economic good by themselves, and on the other hand, economic agents exchange goods to be in a better situation. I cannot observe this in the records, which confirms subjective value cannot be measured cardinally. When I introduce the concept of means of exchange of common use, the interpersonal exchange carried out with them and the specific use of the unit of common account for economic calculation, we will see a “monetary expression” of the increased value obtained with interpersonal exchanges.

Another theoretical aspect I have already emphasized refers to the classification of direct interpersonal exchange or barter, in which money has no part, and indirect, in which it does. Evidently, the exercise expressed here is an example of barter. I will now present the case of indirect exchange, in which money is involved, and we will see this classification only makes sense for financial analysis, which is not meant to be derogatory of finance. I wish to stress this example and all others clearly show how the purchase and sale transactions each economic agent traditionally records when carrying out an interpersonal exchange, are registered here as a complete replacement of the old biunivocal relation “economic good-owner” with a new one.

INDIRECT INTERPERSONAL EXCHANGE – “MONEY”

The other type of cash interpersonal exchange is with a “means of exchange”. I will not extend on this, because I already analyzed it in depth in the sections on theory. I only reiterate money is the generic name of the present economic good that satisfies the need for liquidity, and currencies are the specific economic goods in which money materializes. That is why we have gold currencies, silver currencies, and others. What I wish to emphasize in my theory, and in this accounting corroboration of it, is the difference between the currency presented as a CID and what we know as paper currency (PC), which is “credit”, because there is no rigid

materialization between the economic good used as money and the quantity of PC in circulation. Since in my theory I defined PC as “irregular credit”, I will present its accounting corroboration when referring to credit.

The first step I must take relative to the use of accounting records, as a model for economic theory, is to include money in our analysis of the economy, and more specifically CID.

Here I am referring to paper currency with rigid materialization, money as it was in the origins of economic life, before it was subject to manipulation of the rigid PM/gold rate, which produced an irregular credit and not money. Because CID, not PC, represent rigid materialization.

What we will see now is precisely the corroboration of my economic theory of money and credit, dealing with cash interpersonal exchange in its monetary expression or form, so we can compare with what we analyzed in “barter”. In the next chapter, I will focus on the corroboration of my theory relative to credit in general and irregular credit represented by PC, ending with regular and “banking or circulating” credit.

As I did in theory, I will call CID (certificate of irregular deposit) the species belonging to the genre money that refers to rigid materialization, appearing in the form of a paper that specifically identifies the quantity and quality of the economic good fulfilling the role of money. Leaving the term PC (paper currency) to represent “irregular credit”, present when there is no rigid materialization. The paper representing PC has no written commitment relative to its conversion into specific units of a specific present economic good. I must say paper currency is numbered only to the effect that the authorities can control the quantity of “papers” issued. This helps authorities “control” the amount of bills or PC in circulation, comparing it with the reserves “backing” the stock of papers. They try to maintain a “certain proportion of convertibility” of the PC /reserves coefficient –equivalent to PC/gold- that in recent decades has been changed according to the variations in inflation indicators.

But first I must introduce monetary accounting, which is used to record interpersonal exchange transactions with CID or PC. I will then show how they appear in these institutionalized forms of interpersonal exchange. This method will allow us to use accounting to corroborate my theory that when speaking of CID we are referring to money, which intervenes in cash interpersonal exchanges. And when we refer to PC, we are speaking of (irregular) credit, which is one of the configurations of interpersonal exchanges of current irregular credits.

We will corroborate my theory in the following manner: first, I will refer to the case of money with rigid materialization. I will do so using CID and I will show its economic similitude to barter. In the next chapter, I will refer to the case of credit, using PC with “flexible or variable” materialization, and I will derive the possible consequences.

RIGID MATERIALIZATION (CID, similar to “barter”)

The first problem we face with CID (certificates of irregular deposit) is how to record them in accounting terms, since our entries should only show the holder of CID does not have in his or her deposits the economic good they represent, which is in a deposit belonging to a third party, called depositary.

This is of no small importance, since it solves the problem posed by Locke, referring to the incidence of the *stock* of gold that is not destined to be money but only metal. In other words, how should we consider the gold that is not a CID. My theory, and this accounting exercise is no more than its demonstration, tells us it is exactly the contrary, and that Locke’s problem does not even exist. Because the gold used as a means of exchange is expressed in a CID, which satisfies the need “not to transport physical gold-money” because of the cost, plus the gold in the form of coins. It would not be a problem either as raw non-minted gold. In other words, not all gold has the role of money in a gold-standard system (which confirms my theory). This eliminates the need to know how much gold is metal and how much is money, because the gold that is money is what is expressed as CID, plus what is minted, which has lost all practical use.

This explanation is essential to understand that, when a CID is interpersonally exchanged, this is precisely what we have, an interpersonal exchange. Though we know this is one economic transaction, in the records of the economic agents involved it appears divided into purchase and sale, so when an economic agent receives a CID in an interpersonal exchange he is buying it, and when he gives a CID to someone else he is selling it. There must be no doubt relative to this aspect, because it is the essence of every interpersonal exchange –exchanging present economic goods- and a CID is no exception to this principle. Here I interpret the act of “purchasing” as representing the acquisition of the property of an economic good through interpersonal exchange; and the act of “selling” as the opposite.

We will have the opportunity to also observe how accounting has the adequate tools for recording all these movements or economic acts originated in the appearance of money –in this case, under the legal form of CID-, and that it does so with its suspense accounts. It is one more expression of the fact that the economic model par excellence is accounting.

So I proceed to record the economic operations in the accounts of the economic agents involved and their combined statements.

Continuing with the previous entries, I will suppose the good (a) is used as money and economic agents approve the issuance on it of CID that will be accepted in interpersonal exchange. I also suppose they are issued based on the physical units of the economic good (a) they represent; i.e. one (1) CID represents one unit of (a). And the CID have that rigid materialization relation inscribed. This says the relation is 1 to 1, 1 to 2, etc; just like the relation between yard and meter, this is only relevant for calculus.

MONETARY ACCOUNTING

Here I begin to record in the column of monetary units, and for this, I simply use the prices obtained by other economic agents in interpersonal exchanges of the economic goods I must deal with in monetary terms, since in the exercise I have been presenting I have not used prices yet. There is no complication in this, since it is what we do in reality when estimating economic goods in monetary terms. Accounting has its method for recording variations in estimated prices of economic goods in financial statements and those they have in real interpersonal exchanges. This allows us to report on those variations, guiding economic decisions.

But the appearance of a monetary unit also makes accounting adapt to it; I will now record the corresponding amounts, considering current market prices, in the columns of monetary units, which allows us to carry out economic calculation. The only thing I do is include monetary information: I multiply the physical units that represent our wealth by the monetary prices the goods obtain in interpersonal exchanges. Because of the daily dynamic of interpersonal exchanges and accounting, those prices are directly recorded at the same time those economic goods are physically added to a company's inventory. This is so because a great majority of goods is obtained through interpersonal exchange, and in the case of an incorporated economic good, its price is estimated.

Supposing the unit prices (a) \$ 1, (b) \$ 0,25, (c) \$ 0,50 and (d) \$ 0,25, we have the following table of economic goods valued with monetary prices:

Concept	(a)	(b)	(c)	(d)
Physical stock	10	20	8	15
Prices	\$ 1	\$ 0,25	\$ 0,50	\$ 0,25
Monetary stock	\$ 10	\$ 5	\$ 4	\$ 3,75

This table reflects the equivalent of the previous combined financial statements. This is what the assets in any balance sheet show. In other words, if we take out the second row –monetary prices- from the balance sheets we are used to seeing, it all comes down to the first row, of physical units. I believe what we can refer to with the term “monetary illusion” is this simple

arithmetic operation, clearly expressed in the economic good (b), which shows the greater quantity in physical units but not in monetary units, arising from the price each good has in interpersonal exchanges. I believe there is no simple or clearer expression to show the difference between quantity and quality, and the economic level each good acquires in society with interpersonal exchange. This is another virtue of accounting, when it expresses the “real” and the monetary economy (I put real between inverted commas because the monetary economy is also real).

In this manner, recording the monetary expressions, I would have the following balance sheets for each economic agent:

Date: 01/01/01

“Physical and monetary” balance sheet of company A

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	6 _a		6	
Asset (b)	20 _b		5	
Asset (c)	2 _c		1	
Equity owner A (a)		6 _a		6
Equity owner A (b)		20 _b		5
Equity owner A (c)		2 _c		1

Date: 01/01/01

“Physical and monetary” balance sheet of company B

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	4 _a		4	
Asset (c)	6 _c		3	
Asset (d)	15 _d		3,75	
Equity owner B (a)		4 _a		4
Equity owner B (c)		6 _c		3
Equity owner B (d)		15 _d		3,75

Date: 01/01/01

Combined “physical and monetary” balance sheet of companies A and B after the exchange

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	10 _a		10	
Asset (b)	20 _b		5	
Asset (c)	8 _c		4	
Asset (d)	15 _d		3,75	
Equity owner A (a)		6 _a		6
Equity owner A (b)		20 _b		5
Equity owner A (c)		2 _c		1
Equity owner B (a)		4 _a		4
Equity owner B (c)		6 _c		3
Equity owner B (d)		15 _d		3,75

I will record now an interpersonal exchange in which the economic good (a) is exchanged, but it is not physically transferred to the new owner. Instead, it remains in the deposits of the one transferring its property, who acts as its depositary. With this simple transaction, an economic good –preexistent, in this case, as Menger would have it- is chosen as money. This is recorded in accounting in the following manner: company A exchanges 1 unit of (a) of its property but keeps it physically in its deposits, only as a depositary, and issues a CID for 4 units of good (d), property of company B.

Date: 01/02/01

“Physical and monetary” exchange in company A

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)		1 _a		1
Asset (b)	4 _d		1	
Equity owner A (a)	1 _a		1	
Equity owner A (b)		4 _d		1
Good (a) belonging to third party in deposit (A)	1 _a		1	
Creditors of good (a) in deposit CID_{a-(A)}		1 _a		1

We observe the following aspects:

- 1) I proceeded to withdraw the physical units of good (a), as I did with the barter transaction; the property was transferred, a requisite of interpersonal exchange. This is reflected by

accrediting 1 in the Asset (a) account, and its compensation in the account equity owner A (a) with a similar amount.

2) If I had not done the previous exercise of monetizing the balance sheets, multiplying physical units by estimated prices of the economic goods, the first monetary entry would have been this one –which undoubtedly was the first monetary entry in human history- because it is the first act of interpersonal exchange recorded in the “Monetary units” column. This is the first appearance of money in interpersonal exchange. This, in turn, results in monetary prices. And so we have numbers in the account for the chosen good (a). This implies 1 unit of good (a) was exchanged for 4 units of good (b), defining the simple mathematical exercise in which each unit of the good (a) is exchanged in this specific interpersonal exchange for 4 units of the good (b). We know that the prices arising in interpersonal exchange are useful for economic calculation, but each interpersonal exchange is unique. Here we can only say 1 unit of the good (a) was exchanged for 4 units of the economic good (b) between economic agents A and B, on day 01/02/01.

3) The last two lines represent the entry expressing that company A has in deposit 1 unit of good (a) that is not of its property; so it cannot dispose of it other than to deliver it to the holder of the CID_a. I used bold type for CID_a to show it represents the commitment to keep assets equivalent to it, which is the reason why we enter it in the credit column, representing all depositaries' commitments.

Date 01/02/01

“Physical and monetary” exchange in company B

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset CID _a	1 _a			1
Asset (d)		4 _d		1
Equity owner B (CID _a)		1 _a		1
Equity owner B (d)	4 _d		1	
Good (a) in third party's deposit (B)	1 _a		1	
Debtors for deposit of good (a) (B)		1 _a		1

We can clearly see that what company B received as an asset –added to its *stock* of economic wealth- was a CID_a for the physical units it represents and the quantity of monetary units it also represents. With this entry, we can see CID_a is what in accounting we call “cash and banks”, the title under which money is entered. We show that under that title we have CID_a (here expressed with suspense accounts, being a certain amount of the economic good (a) a third party has in deposit). In economics it should be considered in the same way, i.e. what is in “cash and banks”, in the case money adopts the form of a CID_a, is in some deposit. If this is not so, we are in the presence of fraud. Again we see accounting is the model for economics. Now I will proceed to obtain the final balance sheets of each agent after the interpersonal exchange, first, and then the combined balance sheet:

Date: 01/02/01

“Physical and monetary” balance sheet of company A after the exchange

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	5 _a		5	
Asset (b)	20 _b		5	
Asset (c)	2 _c		1	
Asset (d)	4 _d		1	
Equity owner A (a)		5 _a		5
Equity owner A (b)		20 _b		5
Equity owner A (c)		2 _c		1
Equity owner A (d)		4 _d		1
Good (a) belonging to third party in deposit (A)	1 _a		1	
Creditors of good (a) in deposit CID _a - (B)		1 _a		1

Date: 01/02/01

“Physical and monetary” balance sheet of company B after the exchange

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	4 _a		4	
Asset (CID _a)	1 _a		1	
Asset (c)	6 _c		3	
Asset (d)	11 _d		2,75	
Equity owner B (a)		4 _a		4
Equity owner B (CID _a)		1 _a		1
Equity owner B (c)		6 _c		3
Equity owner B (d)		11 _d		2,75
Good (a) in third party’s deposit (A)	1 _a		1	
Debtors for deposit of good (a)		1 _a		1

I now proceed to obtain the combined balance sheet of economic agents A and B, in which I will balance the movements originated by the interpersonal exchange; as a result we have the following entries:

Date 01/02/01

Combined “physical and monetary” balance sheet of companies A and B after the exchange

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	9 _a		9	
Asset (CID _a)	1 _a		1	
Asset (b)	20 _b		5	
Asset (c)	8 _c		4	
Asset (d)	15 _d		3,75	
Equity owner A (a)		5 _a		5
Equity owner A (b)		20 _b		5
Equity owner A (c)		2 _c		1
Equity owner A (d)		4 _d		1
Equity owner B (a)		4 _a		4
Equity owner B (CID _a)		1 _a		1
Equity owner B (c)		6 _c		3
Equity owner B (d)		11 _d		2,75
Good (a) belonging to third party in deposit (A)	1 _a		1	
Creditors of good (a) in deposit CID _{a-} (A)		1 _a		1
Good (a) in third party's deposit (B)	1 _a		1	
Debtors for deposit of good (a) (B)		1 _a		1

Now we only need to compare direct exchanges or barter with indirect exchanges in which money is used, what I have called here CID_a. To do this, I will show how this operation would have been recorded with the use of CID_a, with the method I used in the case of barter, i.e. only registering physical units. Then I will compare both situations, with barter and money (supposedly different from barter, as if money were not a present economic good):

Date: 01/02/01
“Physical” exchange in company A

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)		1 _a		
Asset (d)	4 _d			
Equity owner A (a)	1 _a			
Equity owner A (d)		4 _d		

Date: 01/02/01
“Physical” exchange in company B

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	1 _a			
Asset (d)		4 _d		
Equity owner B (a)		1 _a		
Equity owner B (d)	4 _d			

Date: 01/02/01
“Physical” balance sheet of company A after the exchange

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	5 _a			
Asset (b)	20 _b			
Asset (c)	2 _c			
Asset (d)	4 _d			
Equity owner A (a)		5 _a		
Equity owner A (b)		20 _b		
Equity owner A (c)		2 _c		
Equity owner A (d)		4 _d		

Date: 01/02/01

“Physical” balance sheet of company B after the exchange

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	5 _a			
Asset (c)	6 _c			
Asset (d)	11 _d			
Equity owner B (a)		5 _a		
Equity owner B (c)		6 _c		
Equity owner B (d)		11 _d		

Date: 01/02/01

Combined “Physical” balance sheet of companies A and B after the exchange

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	10 _a			
Asset (b)	20 _b			
Asset (c)	8 _c			
Asset (d)	15 _d			
Equity owner A (a)		5 _a		
Equity owner A (b)		20 _b		
Equity owner A (c)		2 _c		
Equity owner A (d)		4 _d		
Equity owner B (a)		5 _a		
Equity owner B (c)		6 _c		
Equity owner B (d)		11 _d		

Then, I proceed to show the differences between the “physical” and “physical and monetary” combined balance sheets. If you want to, you can compare the differences between the balance sheets of each company, and relate them to the theory presented in this book. I will now observe how the facts shown up to here corroborate it and the differences that will appear now, aside from the title, expressing one as purely “physical” and the other one as “physical and monetary”

Date 01/02/01
Differences between “barter” and “money”

(As in mathematics, the difference is shown with a subtraction: I subtract the quantities appearing in the “physical and monetary” balance sheet, from the quantities in the “physical” or “barter” balance sheet)

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)		1 _a	9	
Asset (CID _a)	1 _a		1	
Asset (b)			5	
Asset (c)			4	
Asset (d)			3,75	
Equity owner A (a)				5
Equity owner A (b)				5
Equity owner A (c)				1
Equity owner A (d)				1
Equity owner B (a)	1 _a			4
Equity owner B (CID _a)		1 _a		1
Equity owner B (c)				3
Equity owner B (d)				2,75
Good (a) belonging to third party in deposit (A)	1 _a		1	
Creditors of good (a) in deposit CID _a - (A)		1 _a		1
Good (a) in third party's deposit (B)	1 _a		1	
Debtors for deposit of good (a) (B)		1 _a		1

Seeking to focus exclusively on the topics that interest us here, I will eliminate the four final lines, of suspense accounts, because, though they reflect conditionings created by the assets and liabilities they express, i.e. the condition of depositary and depositor, this is subsidiary information relative to our intentions here. I do the same with the accounts reflecting the *stock* of economic goods not used as money in this exercise, preserving only what interests us here: the performance of the economic good used as money and its corresponding CID_a. Consequently, I eliminate the three accounts that represent those economic goods and their equivalents in the balance sheet:

Movements eliminated for the analysis

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (b)			5	
Asset (c)			4	
Asset (d)			3,75	
Equity owner A (b)				5
Equity owner A (c)				1
Equity owner A (d)				1
Equity owner B (c)				3
Equity owner B (d)				2,75
Good (a) belonging to third party in deposit (A)	1 _a		1	
Creditors of good (a) in deposit: CID _a - (A)		1 _a		1
Good (a) in third party's deposit (B)	1 _a		1	
Debtors for deposit of good (a) (B)		1 _a		1

Then, we have only the quantities we wish to analyze

Quantities exclusively resulting from interpersonal exchange of CID_a

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)		1 _a	9	
Asset (CID _a)	1 _a		1	
Equity owner A (a)				5
Equity owner B (a)	1 _a			4
Equity owner B (CID _a)		1 _a		1

This account statement corroborates my theory. I will separate the explanation in two parts, referring to “physical” and “monetary” statements.

“Physical” balance sheet:

- 1) We observe the change produced, when presenting the *stock* of the economic good, of 1 unit (a) for 1 unit of “CID_a”, which is what really happened. It is the way accounting plainly expresses the quantity of the economic good (a), now used as money. This shows that, once the units of a certain economic good that can satisfy different needs are assigned to a certain purpose they cannot have another use in a specific spatiotemporal point. In other words, an

economic good can be used for different needs but not all of them at the same time; a specific amount of flour used for bread cannot be used at the same time for pastry. We see this in the case presented here: the economic good used as money when serving as a means of exchange, does not appear as "metal", and this is adequately recorded, stating it is in deposit as a means of exchange and not metal. But the gold is still both things. We can see there is no confusion in separating the "money" from the "metal".

- 2) The biunivocal relation "economic good-owner" has changed.
- 3) The combination of both changes shows we went from the biunivocal relation in which the owner A had 1 unit more of (a) to the relation in which the owner B now has 1 unit more of CID_a . This implies the existence of both changes mentioned before, from (a) to CID_a , and the change of owners of the unit exchanged.

"Monetary" balance sheet:

1) In the credit column we see the total *stock* of the economic good used as money is the same as before the interpersonal exchange, which could not be otherwise, since there was only a change in the biunivocal relation "economic good-owner" and the economic good was exchanged with the monetary values that were recorded previous to the exchange. If not there would be discrepancies, as we shall see. But doing it this way had the precise intention of separating other monetary components that could alter our objective, an assumption that does not alter the theory and makes our presentation simpler. In other words, in the monetary values we also see there are \$ 10 of the economic good (a) represented by \$ 9 in units of (a) and \$ 1 in money in the form of a CID_a .

2) What we do need to emphasize is that monetary accounting also expresses the consequences of the interpersonal exchange. We have a good reflection of the biunivocal relation "economic good-owner", which we can see analyzing where these relations are expressed:

- a) On one hand, we have the biunivocal relation "economic good-owner" relative to the *stock* of wealth represented by the economic good (a), with \$ 9 in the credit column, \$ 5 belonging to owner A and \$ 4 to owner B.
- b) On the other hand, the biunivocal relation that includes the economic good money expressed as CID_a in the sum of \$ 1 in the credit column, company B being its owner, with \$ 1 in his balance.

In general terms, what this accounting exercise shows is that the credit recorded in the item representing the economic good used as money – CID_a - and in the corresponding amount is precisely showing us what part of this economic good has the role of money and what part is used as an economic good (a). In accounting, as I already said, the item cash and banks records the money holdings I have called CID_a , and as asset (a) I have recorded the *stock* of economic good (a).

When presenting my theory I have stressed the importance of this classification for an economic agent to produce an adequate analysis of his or her financial situation, of the money in his possession, relative to his liabilities in money. From the point of view of the rest of the economic aspects, we are in the presence of operations that have no difference with barter. In this manner, we corroborate what I said in my theory: there is no reason for us to separate the analysis in barter economics and indirect exchange economics with money, except for financial needs, which, I have already stressed, only expresses the amount of the economic good used as money (to satisfy the need for liquidity), an act recorded with that simple separation in accounting items. In other words, it is just like separating the flour we will use for bread from what we will use for pastry.

Chapter XII

CREDIT

In this chapter we will continue to corroborate our theory, specifically related to interpersonal exchange with PC (paper currency), and circulating or bank credit, both irregular credits that cannot be equated to money. In bank credit, the present economic good is not provided by the bank but instead by a third party that always is the last holder of the FM, and in no case do we have Mises “absence of sacrifice”.

We will also refer, as we did with money, to the different types of credit we saw in the theory; here we will begin with irregular credit represented by PC (flexible materialization), followed by “common” credit and ending with circulating or bank credit or FM (fiduciary media).

FLEXIBLE MATERIALIZATION – Irregular Credit (PC)

We reiterate that when referring to PC, we are speaking of “irregular credit” in the form of paper currency, which allows altering of the rigid materialization ratio that is typical of CID. As we saw in the theoretical sections of this work, the PC/gold coefficient is altered.

Continuing with the exercise in the previous chapter, we are going to suppose a third economic agent appears, agent C, who issues PC payable in the same economic good (a) we used for issuing CID_a.

However, we will present this situation in two stages. First, we will present economic agent C, who introduces in the economy 1 unit of the economic good (a), in the same way other economic goods were introduced. Only, now, we will use monetary values, considering we already have previous interpersonal exchange prices. Once this is done, we will have company C issue PC in the same relation of 1 unit of (a) for each unit of PC, the same convertibility rate we have for the CID_a issued up to now. Finally, we will have company C issue 3 additional units of PC without a corresponding increase of 3 units in its stock –assets-of economic good (a), which places us squarely in our theory of the passage from L(1) to L(n). We will have the opportunity to see the consequences, but previously we will carry out an interpersonal exchange with a partial use of the new PC.

With this exercise, we have the opportunity to corroborate what our theory says relative to fraud with the use of PC, when there is a breach of the physical rigidity of the unit of exchange, being the only rigidity all units of measure can have, including economic ones. If the reader has any doubt relative to what we are corroborating, we recommend rereading the corresponding theoretical sections. However, given the simplicity of the exercise we are proposing, the conclusions will be easy to understand.

From here on we will eliminate the reference “physical and monetary” from the heading of the statements, since the relation between barter and money cash exchanges will have been clearly understood by now.

Date: 01/03/01

Introduction of economic good company C

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	1 _a		1	
Equity owner C (a)		1 _a		1

We will now proceed to issue PC “payable” on the economic good (a), which we know we will alter later, but for now, we will do so in the proportion of one unit of (a) equivalent to one unit of PC.

We will now record the issue of the PC_a (subindex _a tells us the reserves that back the PC are in units of economic good [a]), without any need for them to be interpersonally exchange. Then we will circulate only a part of the PC_a, which will allow us to corroborate our theory: the irrelevance of the PC_a issued without backing remaining on the issuer's shelves.

Date: 01/04/01

PC issued by company C

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (PC _a)			1	
Equity owner C (PC _a)				1

We can see we indicated no physical units, because that is precisely the essential difference between PC and CID. These instruments express (when they do) that they will be payable in the economic good (a) – a situation reflected in the title of the account included here as “Asset (PC_a)”- but they are not representative of the existence in deposit of the economic good (a). We did not say so, but we know the issuer of the instrument payable in the economic good (a) is company C.

We also observe we have not included suspense entries and this is due to the fact we are not in the presence of the legal figure of a deposit, as in the case of CID_a.

If the reader wishes to have a combined statement for all the companies, based on the previous one, we would only add: 1 more unit of the economic good (a), increasing from 9 to 10, an “Equity owner C (a)” entry for the same amount, and the two accounts added in the last entry.

Now we suppose company C issues 3 more units of PC_a, but does not have 3 units of (a), as it previously had 1 unit of economic good (a) when issuing PC_a in an equal amount. We only have to record an entry similar to the previous one, with different figures:

Date: 01/05/01

Issue of PC by company C

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (PC _a)			3	
Equity owner C (PC _a)				3

Now we do consider convenient to introduce a combined statement, so we can observe the economic reality, before proceeding to record the next interpersonal exchange:

Date 01/04/01
Combined balance sheet companies A, B, and C

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	10 _a		10	
Asset (CID _a)	1 _a		1	
Asset (b)	20 _b		5	
Asset (c)	8 _c		4	
Asset (d)	15 _d		3,75	
Asset (PC _a)			4	
Equity owner A (a)		5 _a		5
Equity owner A (b)		20 _b		5
Equity owner A (c)		2 _c		1
Equity owner A (d)		4 _d		1
Equity owner B (a)		4 _a		4
Equity owner B (CID _a)		1 _a		1
Equity owner B (c)		6 _c		3
Equity owner B (d)		11 _d		2,75
Equity owner C (a)		1 _a		1
Equity owner C (PC _a)				4
Third party's good (a) in deposit (A)	1 _a		1	
Creditors of good (a) in deposit CID _{a-} (B)		1 _a		1
Good (a) in third party's deposit (B)	1 _a		1	
Debtors for deposit of good (a) (B)		1 _a		1

We proceed to record an interpersonal exchange in which company B gives company C 3 units of economic good (c) in exchange for 3 units of PC_a.

Date 01/05/01
Exchange company B

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (PC _a)				3
Asset (c)		3 _c		1,50
Equity owner B (c)	3 _c		1,50	
Equity owner B (PC _a)				3

Recording the exchange in this manner we cannot see company B has obtained a monetary benefit of \$ 1.50, because the 3 units of good (c) he sold were valued in his balance sheet at \$ 1.50. This is no contradiction. It reflects that the benefits obtained in exchange, both interpersonal and intrapersonal, are of a subjective and not quantitative nature. Nevertheless, we will see how monetary economics expresses this \$ 1.50 benefit –which is only a monetary benefit- in prices that, as we know, only appear in interpersonal exchange, but are not subjective values (bear in mind in our general theory prices also appear as the result of a simple intrapersonal exchange). In short, here we have demonstrated in accounting terms that value is an ordinal subjective entity and not a cardinal one, and prices help us record benefits from interpersonal exchange in monetary terms. We hope the reader can appreciate the corroboration produced by this simple accounting operation.

To show in accounting terms what we have just said, we will now introduce what would be the “traditional” accounting entry for company B.

Date 01/05/01
Exchange Company B – “Traditional” method

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (PC _a)				3
Asset (c)				1,50
Profit of exchange				1,50

Here we observe that no physical units are recorded and the result obtained from the exchange is \$ 1.50, entered in the account “profit of exchange”. If we see it with the methodology adopted, this profit is reflected considering the two entries:

Equity owner B (c): \$ 1.50
 Equity owner B (PC_a): \$ (3.00)

Profit of interpersonal exchange: \$ 1.50

The differences between our way of recording entries and the traditional way is that we use physical units and identify all movements of economic goods with their corresponding withdrawal from the assets accounts, represented by the subindex of the physical economic good we identify it with. The transactions are recorded in our case as a change of the biunivocal relation “economic good-owner”. Traditional accounting deals instead with monetary and not physical values. That is why it reflects the monetary “nets” and does not identify the biunivocal relations that disappear or substitute them with the new ones that appear in each interpersonal exchange transaction. We show the same result but analyzing things further. In our accounting, the balance of company B has benefited because it had 3

units of good c before, that were exchanged for \$ 1.50, and now it has 3 units of the economic good PC_a, with an estimative value of \$ 3.

In other words, we disaggregate in two operations what accounting expresses in only one. While our registration eliminates the old biunivocal relation "economic good-owner" and introduces the new one –also in its complete form-, traditional accounting reflects net variations, which in addition are monetary, and do not include physical variations, that are generally adjusted at the end of the period.

This is essential, because we have shown how the benefit resulting from interpersonal exchange is expressed in monetary terms. In physical units, it appears to be a "zero sum", but in monetary terms, with the profit obtained due to the fact that it is a real and not an abstract entity, the sum is not zero.

Nevertheless, we must remember our method follows the precepts of accounting more analytically than what is common. We do this to show that accounting is not only the model for economics, but that it has much more potential than what is typically recognized and put to use. This was shown in our work, "Knowledge Accounting", to which we now add this very relevant aspect of how this science and/or discipline can be used to corroborate economic theory and show its errors.

We hope this way of seeing accounting will help to promote its use with the detailed analysis used here. This would not only give us better economic information. It would be a blow against crime.

Continuing with the accounting method adopted:

Date 01/05/01

Exchange company C

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (PC _a)				3
Asset (c)	3 _c		3	
Equity owner C (c)		3 _c		3
Equity owner C (PC _a)			3	

Now we observe that there was no accounting result whatsoever in company C, there was no loss or benefit. It will appear when the company interpersonally exchanges the economic goods it added. There cannot be profit from economic goods that have not been interpersonally exchanged.

Another very important aspect corroborated with this exercise is that, with our accounting method, we clearly see the categories of purchase and sale do not exist, instead there is an only act: interpersonal exchange. This is another corroboration of our theory with accounting. Now we will produce the statements of the companies involved after the interpersonal exchange:

Date 01/05/01
Balance Sheet of company B after exchange

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	4 _a			4
Asset (CID _a)	1 _a			1
Asset (c)	3 _c			1.50
Asset (d)	11 _d			2,75
Asset (PC _a)				4
Equity owner B (a)			4 _a	
Equity owner B (CID _a)			1 _a	
Equity owner B (c)			3 _c	
Equity owner B (d)			11 _d	
Equity owner B (PC _a)				3
Good (a) in third party's deposit (B)	1 _a			1
Debtors for deposit of good (a) (B)		1 _a		
				1

Date 01/05/01
Balance Sheet of company C after exchange

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	1 _a			1
Asset (PC _a)				1
Asset (c)	3 _c			3
Equity owner C (a)			1 _a	
Equity owner C (c)			3 _c	
Equity owner C (PC _a)				1

Now we present the combined statement for the three companies:

Date 01/05/01
Combined balance sheet companies A, B and C

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	10 _a			10
Asset (CID _a)	1 _a			1
Asset (b)	20 _b			5
Asset (c)	8 _c			5.50
Asset (d)	15 _d			3.75
Asset (PC _a)				4
Equity owner A (a)		5 _a		5
Equity owner A (b)		20 _b		5
Equity owner A (c)		2 _c		1
Equity owner A (d)		4 _d		1
Equity owner B (a)		4 _a		4
Equity owner B (CID _a)		1 _a		1
Equity owner B (c)		3 _c		1.50
Equity owner B (d)		11 _d		2,75
Equity owner B (PC _a)				3
Equity owner C (a)		1 _a		1
Equity owner C (c)		3 _c		3
Equity owner C (PC _a)				1
Third party's good (a) in deposit (C)	1 _a			1
Creditors of good (a) in deposit CID _a - (A)		1 _a		1
Good (a) in third party's deposit (B)	1 _a			1
Debtors for deposit of good (a) (B)		1 _a		1

We are now going to compare the combined statement before and after the transaction, and see the differences and then study and compare them with our theory, to see if it is corroborated:

Date 01/05/01

Difference combined balance sheet of companies A, B and C resulting from interpersonal exchange

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (c)			1.50	
Equity owner B (c)	3 _c		1.50	
Equity owner B (PC _a)				3
Equity owner C (c)		3 _c		3
Equity owner C (PC _a)			3	

The reader versed in accounting will have noticed that to get to this result, we did not need to show the statements of companies B and C. Neither did we have to show the combined statements before and after the intertemporal interpersonal exchange, to measure precisely its effects. We would have had the same result recording and combining only the movements of the entries of the interpersonal exchange (you can try it). This is so because the differences between one combined statement and the other are in the entries that reflect the interpersonal exchange.

Analyzing the figures, we immediately see what has happened.

1) Asset (c): increased its monetary value in \$ 1.50, while the physical stock has not been altered. This shows us the higher price the new interpersonal exchange has given economic good (c) relative to the previous price. This shows prices offer adequate information in terms of the higher (or lower) price economic goods have in successive interpersonal exchanges. And how accounting records the intertemporal variability of prices, which are reflected precisely in monetary accounting –not physical- that refers to monetary prices. Here the reader should note the great importance of recording physical units –where they are involved–separately from monetary units –where they appear. This is what allows us to record the two aspects of the real economy: the physical and the monetary (note that we consider monetary prices as part of the real economy, since we know they are economic entities or, better, economic goods).

2) Equity owner B (c): physical units decreased by 3 units that were interpersonally exchanged by the company for \$ 1.50, which is the monetary value recorded at the time of the exchange.

3) Equity owner B (PC_a): records an increase in wealth equal to the monetary value of 3 units of PC_a issued by company C, payable in economic good (a). We are supposing the economic good (a) is equivalent to one monetary dollar per unit. We can see there is no entry in the physical units' column, precisely because, not being a CID, there is no equivalent of 3 physical units of economic good (a) in company C's deposit. If you wish to enter physical units, they must be designated with a new symbol, different from 3_a. Since they are not physical units of economic good (a), you can identify them, for example, as 3_(a). We do not do so here, because that situation is identified with the acronym PC_a in both the assets and equity accounts. This shows physical accounting can be handled as a matrix, without account names, which would be represented by subindex of the amounts.

4) Equity owner C (c): records the increase in equity of company C in 3 physical units of economic good (c), with a monetary value of \$ 3, its import in the interpersonal exchange. There obviously was movement of physical and monetary units.

5) Equity owner C (PC_a): there is a decrease in 3 monetary units, which is what company C exchanged for the physical units of good (c) it received. Again, we do not enter any physical units, based on the same criterion used with the equity owner B (PC_a) account.

We have corroborated many aspects of the economic theory presented in this text:

- a) Prices, both physical and monetary, appear in interpersonal exchange, and both are real.
- b) Monetary prices appear when a common economic good is used in interpersonal exchange, originating monetary values. These are real economic entities, because using monetary units means expressing values in terms of physical units of one economic good instead of several different ones.
- c) Subjective value has an underlying influence on the variations of prices (physical and monetary); if not there would be no explanation for the variations of monetary prices.
- d) Accounting reflects the economic situation arising from the variations of intertemporal prices perfectly. This shows once again, from another point of view, that it is the best economic “model”.
- e) Interpersonal exchange is unique and allows a sub-classification with the categories of purchase and sale, useful for measuring its relevance.
- f) This reflects that the best accounting method to understand how the economy works and develop theories with greater precision, is replacing old “economic good-owner” biunivocal relations with new ones, which is what really happens in interpersonal exchange. “Replacing” whole biunivocal relations allows us to have an integral view of the process of interpersonal exchange and its economic consequences. Recording only the net result of a transaction, as accounting typically does, creates a veil –the “monetary veil”- that confuses economists. This disappears with a more in depth analysis, penetrating to the smallest infinitesimal.
- g) It shows the importance of using a unit of measure in economics, because it orients economic calculation, as we will see in the next section, when we reevaluate physical economic goods in terms of their new monetary prices in interpersonal exchange.

MONETARY REVALUATION OF ECONOMIC GOODS

Here we leave the study of PC for a moment, and use the accounting exercise to refer to a very important aspect in which accounting again corroborates our economic theory: the monetary revaluation of equity to make economic calculation possible.

To express the value of the economic goods owner B has as components of his equity –in terms of their monetary prices in the last interpersonal exchanges, and seeking to have a better understanding of his economic calculation and, consequently, a better estimation of the monetary prices at which he could interpersonally exchange his economic goods (his assets)- we proceed to reevaluate the 3 units of economic good (c), which are recorded in his books at a price of \$ 0.50 per unit, while he sold other units of the economic good (c) at \$ 1.00 each. Here we have another form of equity variation, produced by changes in the monetary valuation of economic goods. In other words, even if the quantitative composition of the economic goods that make up an economic agent’s wealth does not vary in a certain period, their market prices, used as a reference for the monetary quantification of those goods in his economic calculation, can vary. (This would not show a change in quality of the economic goods, because intrinsically they are the same physical goods or things.) And the agent can express the final financial statement with those referential prices. In this case, and supposing they increased, we present an accounting expression of that situation:

Date 01/06/01

Difference of financial statement of company B due to monetary revaluation of assets

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (c)			1.50	
Equity owner C (c)				1.50

For reasons of simplicity, we will only add this entry in the combined statement we will need later. But we already know the present combined statement has varied relative to the preceding revaluation entry. This makes it easy to understand the change, effective only in monetary and not physical units, because that was precisely the economic purpose of the entry: adjusting monetary prices, even though there was no physical change in the economic goods.

Company A could do the same, having 2 units of economic good (c) and supposedly knowing its higher monetary price in the interpersonal exchange between B and C.

However, instead of making this entry we again focus on PC. Returning to the combined statement, we observe there are two possibilities: erroneously taking it for money or correctly analyzing it as credit. And being credit, we can erroneously want it to be money. To understand this, we must introduce “flexible materialization”.

ANALYSIS OF PC AS CREDIT

We will now analyze PC from the same angle as when we studied CID, and this will clearly show it is credit in legal and economic terms. The figure of “money” is later attached to it with the “legal maneuver” of modifying or “violating” the concept of rigid materialization of a unit of measure, which in our case was represented by CID. In the following section, we will explain the “legal maneuver” that leads to flexible materialization.

We begin with the new combined statement for the three companies and we focus on the consequences of the issuance of “PC_a” by company C, without the corresponding backing of 3 units of economic good (a). And we observe how our theory is corroborated relative to PC being simply a credit payable in units of economic good (a).

We did not eliminate the accounts expressing that situation where we have credit –as is typically done when consolidating financial statements- to analyze them and proceed in consequence. This shows that this operation can be balanced because it is a credit. We consolidate credit transactions, expressing future -not present- goods.

We must still analyze what happens with the remaining unit of PC_a issued by company C and still on its shelves; i.e. that which was not interpersonally exchanged for another economic good.

And so we have the new combined financial statement:

Date 01/06/01
Combined statement companies A, B and C

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	10 _a			10
Asset (CID _a)	1 _a			1
Asset (b)	20 _b			5
Asset (c)	8 _c			7
Asset (d)	15 _d			3,75
Asset (PC _a)				4
Equity owner A (a)		5 _a		5
Equity owner A (b)		20 _b		5
Equity owner A (c)		2 _c		1
Equity owner A (d)		4 _d		1
Equity owner B (a)		4 _a		4
Equity owner B (CID _a)		1 _a		1
Equity owner B (c)		3 _c		3
Equity owner B (d)		11 _d		2,75
Equity owner B (PC _a)				3
Equity owner C (a)		1 _a		1
Equity owner C (c)		3 _c		3
Equity owner C (PC _a)				1
Third party's good (a) in deposit (A)	1 _a			1
Creditors of good (a) in deposit CID _a - (A)		1 _a		1
Good (a) in third party's deposit (B)	1 _a			1
Debtors for deposit of good (a) (B)		1 _a		1

Thanks to the accounting procedure we have been developing, based on recording “economic good-owner” biunivocal relations as a whole, we were able to show how we added and eliminated them. And this allowed me to identify the physical units of each economic good and the corresponding owner. We will see the importance of this method when studying the

use given to economic goods by their owners. This will also allow us to identify what is and what is not money.

We will now proceed to extract in a simple manner the parts that are significant for each of the aspects we wish to emphasize, always based on the double entry system, which is very easy once we have the financial statements previously presented.

Economic good (a):

When observing the accounts referring to the biunivocal relations of economic good (a) we see:

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	10 _a		10	
Equity owner A (a)		5 _a		5
Equity owner B (a)		4 _a		4
Equity owner C (a)		1 _a		1

This shows in a very simple form that there are 10_a units (10 units of economic good [a]), which are the property of economic agents A, B and C, as indicated (5, 4, and 1). The same relation is established with the monetary figures. We are clearly referring to economic good (a) before it is chosen as a unit of exchange or money.

Economic good CID_a

When we observe the accounts referring to the biunivocal relations of economic good “CID_a”, we see:

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (CID _a)	1 _a		1	
Equity owner B (CID _a)		1 _a		1

We see the issue as CID_a, i.e. “money”, of the equivalent of one unit of economic good (a), to be used in interpersonal exchanges. The owner of that physical unit of CID_a, equivalent to the existence in deposit of 1_a, is company B. The records in the suspense accounts appearing in the final four rows of the combined statement, tell us the owner is B and company A is the depository of one unit of the economic good (a).

Again, we must emphasize that though in the economy there is a total of 11_a (11 units of [a]), 10 are units of the economic good (a) and 1 unit is “money”. So there can be no confusion as to what is money and what is “metal”, as we already said in the theoretical sections and in previous explanations during this exercise.

Economic goods “b, c and d”:

When observing the accounts referring to the biunivocal relations of the economic goods “b, c and d” we see:

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (b)	20 _b			5
Asset (c)	8 _c			7
Asset (d)	15 _d			3.75
Equity owner A (b)		20 _b		5
Equity owner A (c)		2 _c		1
Equity owner A (d)		4 _d		1
Equity owner B (c)		3 _c		3
Equity owner B (d)		11 _d		2,75
Equity owner C (c)		3 _c		3

We have presented the rest of the economic goods only to the effect of showing the same aspects of the biunivocal relations “economic good-owner”.

Economic good PC_a

When observing the accounts referring to the biunivocal relations of economic good (PC_a) we see:

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (PC _a)				4
Equity owner B (PC _a)				3
Equity owner C (PC _a)				1

We can clearly see the aspects emphasized in our theory relative to the role of paper currency (PC):

- 1) They do not represent any physical units at all, if they did, they would be CID_a.
- 2) It was established they were payable in (a), because this economic good was chosen as money.
- 3) We have supposed only one issuing agent, company C, so we would know who must respond for the credit, as in practice the State does.
- 4) We supposed, as in daily practice, that it is at sight.
- 5) Of the four units issued, only 3 were interpersonally exchanged (circulated), the other remaining on the issuer's -company C- “shelf”.

Now we will analyze the economic reality resulting from the issuance of PC_a by the issuing company, to “cancel in money or on money” the at sight commitment it made. To do this we reiterate the statement of company C:

Date: 01/05/01
Balance sheet of Company C after exchange

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	1 _a		1	
Asset (PC _a)			1	
Asset (c)	3 _c		3	
Equity owner C (a)		1 _a		1
Equity owner C (c)		3 _c		3
Equity owner C (PC _a)				1

If we eliminate the accounts not representing any economic good, i.e. the PC_a, that are on the shelf, because they were not circulated, company C only has 1 unit of economic good (a) backing the 3 other units of PC_a, now in the hands of company B. This situation shows us that PC is credit, and it is so for the totality of units issued and circulated (interpersonally exchanged). In economic terms, the only expense incurred relative to the unit of PC_a left on the “shelf” is the cost of printing it.

What we must bear in mind is that the unit of PC_a “backed” by economic good (a) is also a credit: company C could have interpersonally exchanged that unit in stock –asset-, since it had no legal restriction. If the intention of company C were to issue a CID_a, it would have done so, using that legal form. We again see economics must be in harmony with legality. Given this situation, company C has different alternatives for honoring the “credit” issued in the form of PC_a to its holder:

- 1) We suppose it will exchange the unit of economic good (a) in its possession for a unit of PC_a.
- 2) With the two remaining units of PC_a, it has the following options:
 - a) Exchange the rest of its assets for CID_a or (a).
 - b) Request a credit in (a) from company B or another company.
 - c) Combine alternatives a) and b).
 - d) Combine the previous alternatives, and declare total or partial insolvency.

Evidently, the PC_a are credit, payable “on” or “in” money.

A small detail we wish to emphasize is that in company C’s books the 3 units of PC_a it owes B do not appear as liabilities. It was recorded in this manner –they could have been included as liabilities with another set of accounts- to reflect the situation in the most “realistic” way possible, since the authorities control “flexible materialization currency” monopolistically in this spirit. As we said, they are only interested in the numeric amount of PC issued, to regulate convertibility with disposable reserves, in the spirit of the supreme Lamarckian genius, who supposedly knows at each instant what the most adequate rate of materialization for its subjects is, which constitutes the best expression of economic totalitarianism.

FLEXIBLE MATERIALIZATION – PC

Now we will refer to PC as “money” with flexible materialization, i.e. the “ultimate money” discovered by man, which does not respect the rigidity of the unit of measure, infringing on the basic principle of measurement valid for all science.

The exercise we have been developing here has intentionally followed the historical path of money.

Continuing with the same sequence, we formally introduce something that was implicit up to here: we now consider company C that issued PC_a to be the government, having the indispensable institutional framework to act in consequence (as the only issuer).

In this manner, the sovereign has an excellent opportunity to “cancel” the debt it incurred issuing PC_a. To do this it only needs to establish a new PC_a/(a) rate. It does so considering the units of PC_a in the hands of third parties –not those left in its deposit- relative to the quantities of the units of good (a) it owns, changing the rate, from 1 unit of PC_a for each unit of (a), to 3 units of PC_a for each unit of (a). If we call the first relation L(1) and the second L(2), we can see this is what we stressed in the theoretical section, relative to the issuance of PC being a fraud because it is based on mobile and not rigid materialization, as in the case of CID.

We will not comment on the benefits obtained by the economic agents that cancel credits with “flexible or mobile currency” in the example, and the damage suffered by their creditors. You do not need to know economics to understand what the consequences are. In our example, company B suffers the consequences.

This simple conclusion allows us to clarify much confusion in economic theory, especially relative to the price of money. We clearly see here there is no variation in the price of money (CID_a in the example) or in its quantity, which is still one unit. The rest of the units of economic good (a) (10) are not money and, since the PC_a are credit (payable in money), we see the quantity of money was not altered. Therefore, the variations in its price in this case are not due to a variation of the quantity of money, which only has the form of CID or metal currency, as was the first expression of money.

This process of flexible materialization is typically called monetary “devaluation” (revaluation), which is unfounded, since what depreciates (devalues) is credit, which never reaches the category of money. *Except when it is compulsively institutionalized*, as in this example, *when credit becomes “physically flexible money”*. This is so because it is represented by a future (not present) economic good, the only kind that can “devalue”, as opposed to the intertemporal variation of prices. In other words, we must not confuse compulsive expropriation through flexible materialization in the form of PC, with intertemporal variation of prices.

It is important to emphasize the intertemporal variation of prices also influences credits. In other words, interest varies in time but “devaluation” only occurs with “irregular” credit, because it is subject to flexible materialization; regular credit does not devalue; at most, it can become totally or partially uncollectible. We can also say flexible materialization is an expression of a credit being partially uncollectible, but the reader surely grasped in the theoretical section the difference between regular and irregular credit.

We hope the great importance of this corroboration through accounting is acknowledged, since it ends the sterile debate on the monetary and real influences of prices, and the useless distinction between direct and indirect mechanisms of influence of prices on interest rates and viceversa.

In short, the corroboration of our theory puts an end to all these theoretical debates.

Nevertheless, the reader will have the opportunity to see, in the fourth part of this book, the topics in current theory altered by these ideas.

We can clearly see then that money can only have the form of a present economic good –that legally and scientifically can be represented by a CID- or of a physical economic good (for example, metal).

On the other hand, anything in the form of “paper currency” or having flexible or mobile materialization is credit. In practice, according to the “degree of flexibility” established for the materialization rate, we speak of a good or bad currency. In practice, PC (credit) is typically “devalued” following an inflationary index, when in fact the inflationary index is a result of the “devaluation”. In recent years, the more scrupulous countries have decided to reduce the harm done to economic agents, so there is relatively less “devaluation” of credit, compared with other periods and governments. It would seem that there are no extreme

situations and that “a little fraud supported by everyone” is a good thing. Finally, we have also shown that:

- 1) Money is always a present economic good: there is no such thing as virtual or imaginary money.
- 2) Credit, the interpersonal exchange of present economic goods for future economic goods, always originates in a present economic good as in the case of money. Proof of this is the corroboration that PC, which we know is credit, only is so when circulated, i.e. when an economic agent exchanges a present economic good for it; if not it is simply a printed piece of paper, as we saw when analyzing PC “left on a shelf” and not interpersonally exchanged. Not only is this piece of paper not money, neither is it credit. And we must bear in mind that the economic agent exchanging the present economic good for the PC, grants the credit to whoever issued the PC.

“REGULAR” CREDIT

In this section, we will refer to credit in its most transparent common practical expression, as is the interpersonal exchange of present economic goods for future economic goods. This is “direct” credit, without intermediaries such as a bank.

We will now record the interpersonal exchange of a credit granted by company A of 10 units of economic good (b) to company D, a startup. This exchange is carried out for the value of economic good (b) in company A’s books, of \$ 2.50, which must be cancelled in the economic good (a) we are using as money, and with an interest of \$ 0.50:

Date: 01/06/01

“Credit” exchange in company A

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (b)		10 _b		2.50
Asset (credit _a to D)			3	
Equity owner A (b)	10 _b		2.50	
Equity owner D (credit _a to D)				3

The subindex of the expression “credit_a” indicates that the debt will be cancelled in money (a). We know what happens when credits are compulsively cancelled with PC_a instead of using money (a) or its equivalent CID_a. We wish to stress that in the accounts reflecting the entry of the biunivocal relation “economic good-owner” with the amount of the credit, we do not present figures in the physical units columns, doing so instead in those referring to the retirement of the biunivocal relation “economic good-owner” corresponding to economic good (c). This change in the biunivocal relations that includes physical units in one case but not in the new relation replacing it is the way in which accounting registers economic credit, i.e. it is the purest expression of the interpersonal exchange of present economic goods for future ones. In the entries in the physical units columns’ we only record those that are present. At the time the credit is cancelled, we must counterbalance the pending physical units, and this must be done in physical units. If not the credit could be transferred or endorsed, but not cancelled. We could identify future economic goods with inverted commas (“a”), allowing the use of a matrix to record the entries. We do not do so in this text to simplify the distinction between cash (present physical goods for which we record physical units) and credit (future goods for which we do not register physical units).

Date: 01/06/01
“Borrowing” exchange in company B

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (b)	10 _b		3	
Liability (debt _a with A)				3
Equity owner D (b)		10 _b		3
Equity owner D (debt _a with A)			3	

Obviously, the above remark is also valid here, referring to the economic agent receiving the credit, relative to the use (or not) of the physical units' columns. We only add that the amount of interest for the credit received by company D is imputed to the purchase price of economic good (b). This can be done differently, but it is not what we focus on here.

We will not present the statements for each company or the combined balance sheet because the interpersonal exchange presented here is very simple. The intention is to show the effect of credit – interpersonal exchange of present for future economic goods- and how accounting records that situation, with no figures in the physical units' columns for non-present economic goods. This aspect is essential, because it helps me corroborate PC are not money but credit (we did not register physical units when expressing PC in accounting terms), and it will also help me corroborate our theory on circulating or bank credit.

CIRCULATING OR BANK CREDIT – FM

We will now proceed to show the theoretical similarity of PC and what are commonly called fiduciary media (from here on FM), both being credit.

We have already corroborated the theory relative to not confusing money with credit (in our theory credit with flexible materialization, which truly is an expropriation of equity), -and for this we have referred to the historical process of the institutions that created it. Now we will refer to what has been called alternatively fiduciary media (FM), bank money, bank credit or monetary substitutes.

Economic history tells us banks can create or expand and sterilize or contract credit. This credit is crudely called money or “bank” credit. Economic theory validates this, using names such as monetary substitutes, bank credit, circulating credit, fiduciary media, etc. We will have the opportunity to corroborate –following our theory- that these are simply credits, which in certain circumstances, in connivance with the authorities in charge of “executing” the legal dispositions institutionalizing “flexible materialization”, can effectively become PC, with the same effects these create, and with the authorities previously taking on the debts incurred by the banking system. This last aspect is essential to the whole process. The fact that the authorities responsible for flexible materialization take on the debt generated by the banks (with the title of “lender of last resort”, which is wrong because the bank generating the FM is not the first lender either) with the legal backing of this institutional framework, is a double infringement on private property: first, “supposing” banks grant credit and, second, “supposing” PC is money. Obviously, we are referring to the dangerous credit circle, concealed by the theoretical error of considering a credit cancelled with money, when the money it is being cancelled with is really another credit.

Current theory has not been able to untangle this mess easily demystified by our theory. This does great harm because it validates practices that are completely perverse for private property.

In this section, we will show the error in current theory relative to what is wrongly called money and/or bank credit. Before we begin, we again reiterate the essence of this demonstration is already implicit in what we have corroborated up to this point. Nevertheless, we believe that –given the high practical relevance of the banking system- it is important to refer to the particular case of circulating or bank credit.

The system of “creation of money or credit by banks”

To adopt a unified vocabulary, from here on we will refer to monetary expansion or contraction by banks, without distinction of bank credit or money, considering current theory differentiates them as narrow and broad monetary base. To the effect of what interests us here, we will simply call them “bank credit” or FM. we will clearly show that what we have here is credit, not money, and that this type of credit is granted by other economic agents, not the banks.

Any book referring to the bank system explains banks can multiply the “bank credit” available in a community based on a minimum reserve requirements ratio relative to the real money received in at sight deposits. This is called a “fractionary reserve system” precisely because it calculates the “adequate” volume of “bank credit” the bank system can “grant”, relative to the genuine funds banks hold in at sight deposits.

Suppose economic agent Q leaves at the bank an at-sight deposit of 10 CID_a issued on the economic good (a), as in the exercise we have been developing. The banker, after a period, realizes that the person withdraws and replaces variable amounts of the original deposit, leaving 2 units of CID_a as an average daily balance. Obviously, the clever banker will ask himself why not benefit from this situation: “If Q does not use those 2 units of CID_a, why shouldn’t we use them?” So he lends a third agent those two units of CID_a. It is easy to show that with an equivalent ratio of credit to reserves of 20%, as we supposed here, the banking system as a whole or a single bank, as in the example, can transform into “bank credit” the equivalent of 5 times the money it receives in at sight deposits. In our example we will only deal with money in the form of CID_a that, based on the 10 units of CID_a received in deposit by the “banking” system, will generate total credits of 50 units.

We repeat once again that the exercise will only refer to money in the form of CID, with rigid materialization. This is so precisely to corroborate that what the banks –indirectly- generate as “bank credit”, is credit and not money. We also repeat that we will only consider one bank, knowing we have already shown the results are similar in the case of a group of interacting banks.

Going directly to the accounting exercise that corroborates our theory, bear in mind that in simple terms it says that:

- a) Credit is interpersonal exchange of present for future economic goods and
- b) The present economic goods in the case of “bank credit” are provided by a third economic agent, not the bank, which only acts as an intermediary of the money granted to it as credit and that it “re-lends”, as in the case we are analyzing.

Accounting corroboration of our theory of “bank credit”

We wish to say to the reader that has had the opportunity to see accounting exercises in economic textbooks referring to creation of “bank credit” that the essence of the error in them -obviously the same as in the theory they try to corroborate through that method-, is that they do not include all the accounting entries referring to all the of economic agents involved. This is the reason why the real origin of the error in which they incur -supposing the banks grant the credit- remains concealed.

Considering this observation, we will continue with the recording method we have adopted, based on registering both physical and monetary units with double entry, and entering and retiring whole “economic good-owner” biunivocal relations.

We will begin by including company E, acting as the bank. As a first transaction, we will record the reception of an at sight or current account deposit by company B of a CID_a from its assets, worth \$ 1.

Date 01/07/01
Exchange in company B

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (CID _a)		1 _a		1
Asset (deposit _{CIDA} in E)	1 _a		1	
Equity owner B (CID _a)	1 _a		1	
Equity owner B (Deposit _{CIDA} in E)		1 _a		1
Good (CIDA) in third party's deposit (B)	1 _a		1	
Debtors for deposit of (CID _a) (B)		1 _a		1

As we can see, being an interpersonal exchange of present economic goods, we record physical units, which is simply the expression of the fact that company B now has a unit of economic good (a) in the form of "deposit_{CIDA} in E", replacing what was a unit of CID_a. In terms of suspense accounts we only record an entry indicating the CID_a are in deposit in another company, as the gold is in a third company, which is the reason why we do not cancel that situation. This will allow us to see the real state of the deposits of the economic goods representing "money" in the final combined statement.

Date 01/07/01
Exchange in company E

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Third party's good (CID _a) in deposit (E)	1 _a		1	
Creditors for good (CID _a) in deposit (E)		1 _a		1

Here we clearly see company E began its activities taking an at sight deposit of money in the form of a CID_a. Recording in suspense accounts allows us to see the CID_a is now in the hands of E, but does not belong to it; company E cannot dispose of it. We reiterate that in company E we only record suspense accounts because there is no interpersonal exchange, merely a change of deposit. We do record physical units also because we retired the same physical units from company B's records. It would have been different if it was a loan of CID_a granted by company B to company E.

Now we record 4 units of FM payable in economic good (a); we expand according to current reserve requirements and based on the deposits received:

Date 01/08/01
Emission of FM by company E

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (FM _a)				4
Equity owner E (FM _a)				4

There was no movement of physical units, and we use the expression FM_a instead of PC_a, to distinguish the two concepts, allowing us to compare later.

Immediately company E grants a loan to company D equivalent to one unit of FM_a, through a current account created for the client, company D:

Date: 01/08/01
“Credit” exchange in FM by company E

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (FM _a)				1
Asset (credit _{FMa} to D)			1.10	
Liability (credit _{FMa} in E)				1
Equity owner E (FM _a)			1	
Equity owner E (credit _{FMa} to D)				1.10
Equity owner E (deposit _{FMa} in E)			1	

The credit is established with \$ 0.10 interest and accreditation of \$ 1 in the current account of client D. The FM_a issued that were in deposit are eliminated, which simply reflects the fact that they have no economic meaning. This also happens in reality, since the issue is not recorded. We did it this way to better explain things in terms of our objective.

Date: 01/08/01
“Borrowing” exchange in FM by company D

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (deposit _{FMa} in E)				1
Liability (debt _{FMa} with D)				1.10
Equity owner D (deposit _{FMa} in E)				1
Equity owner D (debt _{FMa} with D)			1.10	

Now we record the payment by company D to company A of one unit of FM_a with a check on the current account it has in bank E. To avoid a duplication of entries –implied by A receiving the check from D and then depositing it in its current account in E- we will proceed to directly transfer the “checks” using only the asset account already used under the title “Asset

(deposit_{FMa} in E)”. This simplification does not complicate the transaction since the equivalent equity account indicates the owner.

Date: 01/09/01

Collection exchange in company A

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (deposit _{FMa} in E)			1	
Asset (credit _a to D)				1
Equity owner A (deposit _{FMa} in E)				1
Equity owner A (credit _a to D)			1	

Date: 01/09/01

Collection exchange in company D

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (deposit _{FMa} in E)				1
Liability (debt _a with A)			1	
Equity owner A (deposit _{FMa} in E)			1	
Equity owner D (debt _a with A)				1

In both companies' records we observe the original credit transaction of three units has been partially “cancelled” in one unit, but this is not really so, because no physical unit has been transferred. No physical units appear in this partial cancellation or payment of the credit: what company A has done is replace one credit with another, i.e. the replacement of “Asset (credit_a to D)” with “Asset (deposit_{FMa} in E)”, which represents a credit. We have the typical case of a substitution or novation of credit, which is commonly confused with payment, i.e. the cancellation of a credit that can have a legal connotation, in the sense that the credit delivered cancels a specific debt between a specific debtor and creditor, but the agent accepting it replaces one credit with another. In other words, in economic theory it must be clear that the substitution or novation of a credit is precisely that: it is an exchange, not the extinction of the credit, an intertemporal interpersonal exchange of the economic good credit. This example is categorical proof of the error in considering the exchange of credit (future) –in its different forms (FM and/or PC) - and not money (present) as a cash interpersonal exchange. This also allows us to see the similarity of barter and exchange with money –interpersonal exchange of present economic goods- opposite to credit –interpersonal exchange of present for future economic goods—.

Now we will record the last transaction of the exercise for the accounting corroboration of our economic theory: the purchase by company E of a unit of the economic good (c) from company C for \$ 1 in interpersonal exchange for a unit of FM_a, paying with an accreditation in a current account created for that company. As in the preceding case, we will not identify the current account as belonging to company C, since we will express this with the corresponding equity account, a situation we will have the opportunity to see in the final financial statement for each company and in the combined balance sheet.

Date 01/10/01
Exchange in company E

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (FM _a)				1
Asset (c)	1 _c		1	
Liability (deposit _{FM_a} in E)				1
Equity owner E (FM _a)			1	
Equity owner E (c)		1 _c		1
Equity owner E (deposit _{FM_a} in E)			1	

Here, it is again pertinent to mention the elimination of the FM_a that were inactive.

Date 01/10/01
Exchange in company C

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (c)		1 _c		1
Liability (deposit _{FM_a} in E)			1	
Equity owner E (c)	1 _c		1	
Equity owner C (deposit _{FM_a} in E)				1

We will now present the balance sheet for each company and the final combined statement, with all the entries in the exercise:

Date 01/10/01
Final statement company A

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	5 _a			5
Asset (b)	10 _b			2.50
Asset (c)	2 _c			1
Asset (d)	4 _d			1
Asset (credit _a to D)				2
Asset (deposit _{FMA} in E)				1
Equity owner A (a)			5 _a	
Equity owner A (b)			10 _b	
Equity owner A (c)			2 _c	
Equity owner A (d)			4 _d	
Equity owner a (credit _a to D)				2
Equity owner A (deposit _{FMA} in E)				1
Third party's good (a) in deposit (A)	1 _a			1
Creditors of good (a) in deposit -CID _a - (A)			1 _a	

Date 01/10/01
Final statement company B

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	4 _a			4
Asset (c)	3 _c			3
Asset (d)	11 _d			2.75
Asset (PC _a)				3
Asset (deposit _{CID_a} in E)	1 _a			1
Equity owner B (a)		4 _a		4
Equity owner B (c)		3 _c		3
Equity owner B (d)		11 _d		2.75
Equity owner B (PC _a)				3
Equity owner B (deposit _{CID_a} in E)		1 _a		1
Good (a) in third party's deposit (B)	1 _a			1
Debtors for deposit of good (a) – (B)		1 _a		1
Good (CID _a) in third party's deposit – (B)	1 _a			1
Debtors for deposit of (CID _a) – (B)		1 _a		1

Date 01/10/01
Final statement company C

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	1 _a		1	
Asset (c)	2 _c		2	
Asset (PC _a)			1	
Asset (deposit _{FMa} in E)			1	
Equity owner C (a)		1 _a		1
Equity owner C (c)		2 _c		2
Equity owner C (PC _a)				1
Equity owner C (deposit _{FMa} in E)				1

Date 01/10/01
Final statement company D

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (b)	10 _b		3	
Liability (debt _a with A))				2
Liability (debt _{FMa} with D))				1.10
Equity owner D (b)		10 _b		3
Equity owner D (debt _a with A))			2	
Equity owner C (debt _{FMa} with D))			1.10	

Date 01/10/01
Final statement company E

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (c)	1 _c			1
Asset (FM _a)				2
Asset (credit _{FMa} to D)			1.10	
Liability (deposit _{FMa} in E)				2
Equity owner E (c)		1 _c		1
Equity owner E (FM _a)				2
Equity owner E (credit _{FMa} to D)				1.10
Equity owner E (deposit _{FMa} in E)			2	
Third party's good (CID _a) in deposit (E)	1 _a		1	
Creditors of good (CID _a) in deposit (E)		1 _a		1

Now we can produce the combined balance sheet for all the companies. We will not clear credits and debts, so we can analyze the results and corroborate our theory:

Date 01/10/01

Combined final statement all companies without clearing

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	10 _a		10	
Asset (b)	20 _b		5.50	
Asset (c)	8 _c		7	
Asset (d)	15 _d		3.75	
Asset (deposit _{CIDA} in E)	1 _a		1	
Asset (FMA)			2	
Asset (credit _a to D)			2	
Asset (deposit _{FMA} in E)			2	
Asset (PC _a)			4	
Asset (credit _{FMA} to D)			1.10	
Liability (deposit _{FMA} in E)				2
Liability (debt _a with A)				2
Liability (debt _{FMA} with D)				1.10
Equity owner A (a)		5 _a		5
Equity owner A (b)		10 _b		2.50
Equity owner A (c)		2 _c		1
Equity owner A (d)		4 _d		1
Equity owner A (credit _a to D)				2
Equity owner A (deposit _{FMA} in E)				1
Equity owner B (a)		4 _a		4
Equity owner B (c)		3 _c		3
Equity owner B (d)		11 _d		2.75
Equity owner B (PC _a)				3
Equity owner B (deposit _{CIDA} in E)		1 _a		1
Equity owner C (a)		1 _a		1
Equity owner C (c)		2 _c		2
Equity owner C (PC _a)				1
Equity owner C (deposit _{FMA} in E)				1
Equity owner D (b)		10 _b		3
Equity owner D (debt _a with A)			2	
Equity owner D (debt _{FMA} with D)			1.10	
Equity owner E (c)		1 _c		1
Equity owner E				2

(FM _a)				
Equity owner E (credit _{FM_a} to D)				1.10
Equity owner E (deposit _{FM_a} in E)			2	
Third party's good (a) in deposit (A)	1 _a		1	
Creditors for good (a) in deposit CID _a - (A)		1 _a		1
Good (a) in third party's deposit (B)	1 _a		1	
Debtors deposit of good (a) - (B)		1 _a		1
Good (CID _a) in third party's deposit (B)	1 _a		1	
Debtors deposit of (CID _a) (B)		1 _a		1
Third party's good (CID _a) in deposit (E)	1 _a		1	
Creditors good (CID _a) in deposit (E)		1 _a		1

Now we will study each item of the valuable information obtained in this chapter with the introduction of credit in general and bank credit specifically:

- 1) Comparing this combined statement with the previous one, the difference being that we have now included "common" credit and "bank credit", the first commentary is that wealth in terms of physical goods has not changed. We only see the following two differences: replacement of the expression "Asset (CID_a)", as 1_a with a monetary value of \$ 1, with "Asset (deposit_{CID_a} in E)" as 1_a with a monetary value of \$ 1. If this were otherwise, we would be counting the physical unit of economic good (a) -the money backing the transaction- two times. Economic good (a) became CID_a, finally represented by an at sight deposit in a bank. The other difference in the accounts is that they reflect a transaction of "common" or "direct" credit. Once again, we can see accounting is the adequate model to express economic theory. Obviously, the suspense accounts represent transfers of deposits, and relating them with each other, we can see their correlations.
- 2) We did not alter the physical units in the exercise, because it allows us to observe the corroboration of our theory of credit, which, as we now, is the interpersonal exchange of present for future economic goods. In our methodology – recording "economic good-owner" biunivocal relations as a whole- this leads us to replace biunivocal relations composed of physical units –relative to the present economic goods interpersonally exchanged- and add new biunivocal relations where no physical units are recorded because the economic goods are not present. In the example, we can see this situation in the liability accounts (and their corresponding equity accounts) because they are precisely the ones reflecting the commitment to cancel in physical units in the future. But for now they are not present economic goods. And the same is true when we represent a credit, since it is the counterpart of the liability or loan. We had the opportunity to see that the "collection" of a credit is no such thing when, instead of using physical units, it is cancelled with credit instruments such as bank deposits of FM –the same is true for PC- which are credit, not money. Once again, we see accounting allows us to record legal and economic transactions and corroborate economic theories.

3) Now, we will separate the combined statement in two parts: a) the part composed of physical units, recording the transactions resulting from cash interpersonal exchanges or credits cancelled with physical units (i.e. present economic goods) or incorporated economic goods; and b) the part only composed of monetary –not physical- units, which reflect the credit transactions.

Date 01/10/01

Combined final statement PHYSICAL UNITS all companies

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	10 _a		10	
Asset (b)	20 _b		5.50	
Asset (c)	8 _c		7	
Asset (d)	15 _d		3.75	
Asset (deposit _{CID_a} in E)	1 _a		1	
Equity owner A (a)		5 _a		5
Equity owner A (b)		10 _b		2.50
Equity owner A (c)		2 _c		1
Equity owner A (d)		4 _d		1
Equity owner B (a)		4 _a		4
Equity owner B (c)		3 _c		3
Equity owner B (d)		11 _d		2.75
Equity owner B (deposit _{CID_a} in E)		1 _a		1
Equity owner C (a)		1 _a		1
Equity owner C (c)		2 _c		2
Equity owner D (b)		10 _b		3
Equity owner E (c)		1 _c		1
Third party's good (a) in deposit (A)	1 _a		1	
Creditors for good (a) in deposit CID _a – (A)		1 _a		1
Good (a) in third party's deposit (B)	1 _a		1	
Debtors deposit of good (a) – (B)		1 _a		1
Good (CID _a) in third party's deposit (B)	1 _a		1	
Debtors deposit of (CID _a) (B)		1 _a		1
Third party's good (CID _a) in deposit (E)	1 _a		1	
Creditors good (CID _a) in deposit (E)		1 _a		1

The analysis of the combined physical statement should be no problem since it will only tell us who the owners of the present physical goods are, considering the biunivocal relation “economic good-owner” we preserved in all the accounting entries. It also shows us the chain

of suspense accounts, expressing that a unit of the economic good (a) in company A's deposit, on which a CID_a was issued, becomes money, property of company B, which is in company E's deposit.

We now present the combined statement of the accounts with no physical units:

Date 01/10/01

Combined final statement all companies ONLY MONETARY UNITS

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (FM _a)				2
Asset (credit _a to D)				2
Asset (deposit _{FM_a} in E)				2
Asset (PC _a)				4
Asset (credit _{FM_a} to D)			1.10	
Liability (deposit _{FM_a} in E)				2
Liability (debt _a with A)				2
Liability (debt _{FM_a} with D)				1.10
Equity owner A (credit _a to D)				2
Equity owner A (deposit _{FM_a} in E)				1
Equity owner B (PC _a)				3
Equity owner C (PC _a)				1
Equity owner C (deposit _{FM_a} in E)				1
Equity owner D (debt _a with A)			2	
Equity owner D (debt _{FM_a} with D)			1.10	
Equity owner E (FM _a)				2
Equity owner E (credit _{FM_a} to D)				1.10
Equity owner E (deposit _{FM_a} in E)			2	

We must eliminate from this statement of physical units the “papers left on a shelf”, which were printed but not subject to interpersonal exchange, such as the PC we saw in the previous chapter and the FM_a. This reaffirms the fact that they have a common origin, being simple paper, neither money nor credit. To do this, we can do the contra entries that eliminate the units left on the shelf, so we can have the combined statement of the data that do not include physical movements and only represent credit transactions (there were no other transactions).

Date 01/10/01

Eliminating non circulated papers company C

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (PC _a)				1
Equity owner C (PC _a)			1	

Date 01/10/01

Eliminating non circulated papers company E

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (FM _a)				2
Equity owner E (FM _a)			2	

Next I update the financial reports of Companies C and E after clearing them with the records of elimination of the “papers on the shelf” (PM_a and FM_a):

Date 01/10/01

Final statement company C

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (a)	1 _a		1	
Asset (c)	2 _c		2	
Asset (deposit _{FM_a} in E)			1	
Equity owner C (a)		1 _a		1
Equity owner C (c)		2 _c		2
Equity owner C (deposit _{FM_a} in E)				1

Date 01/10/01
Final statement company E

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (c)	1 _c		1	
Asset (credit _{FMa} to D)			1.10	
Liability (deposit _{FMa} in E)				2
Equity owner E (c)		1 _c		1
Equity owner E (credit _{FMa} to D)				1.10
Equity owner E (deposit _{FMa} in E)			2	
Third party's Good (CID _a) in deposit (E)	1 _a		1	
Creditors of good (CID _a) in deposit (E)		1 _a		1

Then we produce the new combined statement of non-physical figures, which evidently only shows the figures of the interpersonal exchanges called credits outstanding, which in economics can only be cancelled with present economic goods or declared un-collectable.

Date 01/10/01
Combined final statement all companies "CREDITS OUTSTANDING"

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (credit _a to D)			2	
Asset (deposit _{FMa} in E)			2	
Asset (PC _a)			3	
Asset (credit _{FMa} to D)			1.10	
Liability (deposit _{FMa} in E)				2
Liability (debt _a with A)				2
Liability (debt _{FMa} with D)				1.10
Equity owner A (credit _a to D)				2
Equity owner A (deposit _{FMa} in E)				1
Equity owner B (PC _a)				3
Equity owner C (deposit _{FMa} in E)				1
Equity owner D (debt _a with A)			2	

Equity owner D (debt _{FMa} with D)			1.10	
Equity owner E (credit _{FMa} to D)				1.10
Equity owner E (deposit _{FMa} in E)			2	

The combined statement including entries with no physical units derives from credit transactions, reflecting interpersonal exchanges in which no present economic goods were transferred, which implies there are debts outstanding and credits for the monetary amounts agreed in *intertemporal* interpersonal exchanges. And this must be so, since a credit is the commitment to reinstate in the future a specific amount of certain economic good, be it money (in any of its forms: CID, metal, etc.) or another present economic good. If not it will continue to be credit, except if it is declared un-collectable.

By virtue of the fact that they are exclusively credit transactions, not recording entries in the “present” physical units’ columns, we have shown so called “bank money” or “bank credit” (recorded here as FM) is credit and in no way can it be considered in the category of money. With this, we have also shown FM have the same credit origin as PC.

In short, we can see PC and FM only differ in the way they can be converted to PC with flexible materialization: while PC only requires a regulatory system that allows their conversion, FM are commonly transformed into PC through the –also institutional- process of converting FM into government debt, which is then cancelled with PC.

Who grants “bank credit”?

The individual analysis of each one of the forms in which the debtors and creditors relate will explain the other part of our theory: that bank credits are not really granted by the banks but by the last holders of the FM issued by the banks.

Now we extract from the last combined statement the biunivocal relation expressing the existence of the 3 units of PC_a, with their corresponding equity account that tells us they belong to company B. The absence of physical units precisely showed these units were credit and not CID_a, as we saw in the previous chapter. So we extract the following “economic good-owner” biunivocal relation:

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (PC _a))			3	
Equity owner B (PC _a)				3

And we have the following combined statement:

Date 01/10/01

Combined final statement all companies “CREDITS OUTSTANDING”

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (credit _a to D)			2	
Asset (deposit _{FMa} in E)			2	
Asset (credit _{FMa} to D)			1.10	
Liability (deposit _{FMa} in E)				2
Liability (debt _a with A)				2
Liability (debt _{FMa} with D)				1.10
Equity owner A (credit _a to D)				2
Equity owner A (deposit _{FMa} in E)				1
Equity owner C (deposit _{FMa} in E)				1
Equity owner D (debt _a with A)			2	
Equity owner D (debt _{FMa} with D)			1.10	
Equity owner E (credit _{FMa} to D)				1.10
Equity owner E (deposit _{FMa} in E)			2	

Then we extract the biunivocal relations that represent offsetting accounts of credits and debts in units of economic good (a) of companies not operating as banks –extra-bank credit-, which we include in the following statement:

Date 01/10/01

“Non-bank credits and debts” of all companies, offsetting accounts

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (credit _a to D)			2	
Liability (debt _a with A)				2
Equity owner A (credit _a to D)				2
Equity owner D (debt _a with A)			2	

Now we are left only with the credit transactions in FM_a, which are credit precisely because they are not expressed in present physical units. And these also cancel each other out in the combined statements. We have not done this yet to show they are credits. And also to show who really grants “bank credit” or “bank money”:

Date 01/10/01

Combined statement of offsetting accounts of SO CALLED “Bank credit”

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (deposit _{FMa} in E)			2	
Asset (credit _{FMa} to D)			1.10	
Liability (deposit _{FMa} in E)				2
Liability (debt _{FMa} with D)				1.10
Equity owner A (deposit _{FMa} in E)				1
Equity owner C (deposit _{FMa} in E)				1
Equity owner D (debt _{FMa} with D)			1.10	
Equity owner E (credit _{FMa} to D)				1.10
Equity owner E (deposit _{FMa} in E)			2	

We can see what happens when we clear the credit payable in FM_a for \$ 1.10 from company D to company E (our bank) as if it were regular credit, expressed by the following biunivocal relations:

Date 01/10/01

Partial statement of SO CALLED “Bank credit” before clearing

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (credit _{FMa} to D)			1.10	
Liability (debt _{FMa} with D)				1.10
Equity owner D (debt _{FMa} with D)			1.10	
Equity owner E (credit _{FMa} to D)				1.10

We are left with the net figures of the transaction with the alleged *expansion* of “bank credit” or “bank money”:

Date 01/10/01
Final statement of SO CALLED “Bank credit” before clearing

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (deposit _{FMa} in E)			2	
Liability (deposit _{FMa} in E)				2
Equity owner A (deposit _{FMa} in E)				1
Equity owner C (deposit _{FMa} in E)				1
Equity owner E (deposit _{FMa} in E)			2	

And here we are coming to the last corroboration of our theory: that “Bank credit” is not only credit, but that the credit is granted by the final holders of the FM or at sight or current account deposits, or the holders of so called bank checks. And this is so given the following conclusions of the analysis of the combined final statements:

- 1) The final combined statement tells us company E has a “Liability (deposit_{FMa} in E)” of 2 units –with its correlative biunivocal equity account “Equity owner E (deposit_{FMa} in E)”– equivalent to the two units of FM_a circulated, interpersonally exchanged using the current account as an at sight deposit.
- 2) Companies A and C own company E’s debt as credit, expressed in their statements as “Asset (deposit_{FMa} in E)” -one unit each-, totaling the two units of the final statement shown here.
- 3) If we observe the final statement of company E once again, we see its situation is the following (excluding the suspense accounts):

Account or Item	Physical units		Monetary units	
	Debit	Credit	Debit	Credit
Asset (c)	1 _c		1	
Asset (credit _{FMa} to D)			1.10	
ASSETS	1 _c		2.10	
Liability (deposit _{FMa} in E)				2
LIABILITIES				2
Equity owner E (c)		1 _c		1
Equity owner E (credit _{FMa} to D)				1.10
Equity owner E (deposit _{FMa} in E)			2	
NET WORTH	1 _c	1 _c		0.10

This shows company E’s results with the third party loan, expressed in its liabilities as 2 “monetary” units:

- a) It has acquired one unit of economic good (c). This is one of the ways “bank credit” is “expanded”, by acquiring physical assets.

b) It granted a loan to company D equivalent to 1.10 “monetary” units. This is what we generally know as *classical* bank credit “expansion” or creation of credit through a bank.

We have determined companies A and C, last holders of the “bank checks” –here expressed as FM_a in Asset accounts ($deposit_{FM_a}$ in E)- are responsible for the “expansion of bank credit” allowing the bank to acquire present economic goods as assets and grant credits. It could not be otherwise, since they are the ones providing the present economic goods needed for any credit transaction. In other words, banks do not provide the present economic goods needed for a credit transaction.

THE END OF THE CORROBORATIONS

Therefore, we have corroborated our theories:

- Money is a real present economic good, including material and immaterial goods; there is no such thing as virtual money.
- PC are credits
- FM, also called “bank notes”, “bank money”, “bank credit”, etc., are credits, not money.
- Just as there is no such thing as virtual money, there is no credit without a present economic good as its origin. Just as there is no virtual money, there is no virtual credit.
- Both money and credit can be used as currency (exchange good of common used to satisfy liquidity).
- The last holder of the instruments of bank credits provides the present economic goods in so called “bank credit”, i.e. the bank does not grant any credit, it only operates as an intermediary, both of the credit it receives as such –which is a common credit- and the one said to be created out of nothing, except in a loan using its own assets.
- We have confirmed so called “real” prices arise from interpersonal exchange. We see this when we observe only physical units, including material and immaterial economic goods.
- We have confirmed “monetary” prices also arise from interpersonal exchange and are as real as so-called “real” prices. Monetary prices are used for economic calculation, preferably to “evaluate” equity in monetary prices.
- We confirmed subjective value is different from both the physical and the monetary price of economic goods –both are real prices. In other words, the subjective value of economic goods for each economic agent has incidence on the prices they produce in interpersonal exchange, which are unique, exclusive and unrepeatable spatiotemporal moments. We have shown this with the fact that physical units can have different monetary prices. If we had not used monetary prices, the difference would have appeared in the fact the same economic good would have exchanged for different amounts of other economic goods in different exchanges.
- That the categories of purchase and sale only matter for the accounting records of each economic agents, derived from a practice adopted for practical reasons, but relative to economics, we have been able to use accounting with no need to resort to them. We have done this, guided by the unique and un-repeatable act of interpersonal exchange, replacing whole biunivocal relations “economic good-owner” with new ones.
- Currency (economic good as a common unit of exchange –money and/or credit) is also very useful as a unit of economic measure. We have seen this when we valued and revalued physical units in monetary terms, establishing monetary prices, which allow the economic agent to estimate his equity in terms of the unit of measure of common use.
- We have seen there is no confusion between the quantity of the economic good serving as money not used as such (historically, metal) and the quantity of the same economic good used as money (CID). With the accounting process, we have corroborated Menger’s theory and proven the theories that came after his are wrong, since both gold (metallic currency) and its CID can be used as money. CID replaces it only because its transport requires less effort, but it is still gold interpersonally exchanged, with a “piece of paper” accrediting its possession.

- We have also corroborated our theory that there are only two types of interpersonal exchange: cash and credit.
- PC is irregular credit allowing improper appropriation of present economic goods (direct appropriation). This is so because of its special feature of “flexible materialization”, and its indefinite term.
- FM are irregular credits that allow the temporary appropriation of present economic goods, which becomes real appropriation of present economic goods because of TER (indirect appropriation).
- The quantity of exchange goods or currency (money and/or credit) a community needs is endogenous to the economy, and the institutional environment is a reality economics also has to consider. This regulatory framework of community life includes being –or not- permissive with the process of flexible materialization, or “soft relaxation” implemented in this period, i.e. “relaxing” according to the rate of “inflation”, not realizing that the causality is inverse, since the rate of appropriation follows the rate of relaxation. On the other hand, it is impossible to think in terms of a proportional and homogeneous propagation of the rhythm of relaxation of the appropriation of monetary prices of all economic goods. This is easy to understand if we accept monetary prices appear in interpersonal exchange. This leads us to think that for relaxation to spread proportionally and homogeneously through monetary prices, there has to be an economy with an unchanging, uniform and repetitive cycle, i.e. a world that does not exist. With our theory, there is no need to strive for such an economy.
- Finally, we corroborated PC and FM on a shelf in deposit (not interpersonally exchanged for present economic goods or returned to their issuer to be cancelled) are neither money nor credit, only paper.

We have shown banks are always intermediaries when FM or credit (so called “circulating credit” or “bank credit”) are used, since they can only loan the present economic goods provided by the last holders of the FM in circulation. Therefore, we corroborate that –apart from the credit they can grant on their own equity- the credit banks grant is always on third parties’ present economic goods. They are intermediaries of the money they receive in bank deposits from economic agents and of the “bank credit” erroneously thought to be created by them.

Finally, we reiterate there is no money or credit without present economic goods, since these create the categories of money and credit, i.e. there is no such thing as virtual money or credit. We wish to emphasize the following final question, already presented by Huerta de Soto: Who are the legitimate owners of the interest generated by “bank credit”?

Part IV

Synthesis, expansion and comparison of THE THEORY OF ECONOMIC RELATIVITY

Chapter XIII

SYNTHESIS OF THE THEORY OF ECONOMIC RELATIVITY

In this chapter, we will try to synthesize the theories presented and introduce commentaries that will continue in the next chapters, comparing our ideas with current economic theories. The purpose will be to determine how our ideas are superior to others, because they explain more or because they explain the same things in a simpler manner.

THE CHAIN OF ECONOMIC CAUSALITY

We will now present a table that is a continuation and conclusion of the chain of economic causality that appeared in the first chapters. We beg the reader to see it as a very compact synthesis of what we have written and a guide to the theories developed in greater depth in other chapters of this book. It is a simple graphic guide of the theory of economic relativity.

Table of economic causality

<i>Today → Economic time → Future</i>													
<i>Intertemporal Exchange</i>													
<i>Property</i>													
<i>One economic agent (Unique or collective property)</i>				<i>Multiple economic agents (Divided or private property)</i>									
<i>Intrapersonal exchange</i>				<i>Interpersonal exchange</i>									
<i>Fallible man</i> →	<i>Need</i> →	<i>Economic good</i> →	<i>Economic value</i> →	<i>Cash</i> → <i>Credit</i> →	<i>Monetary Prices</i>	<i>of money</i>	<i>Interest</i>						
Thing →	↑ Good			<i>Liquidity – Monetary measurement (Money – Credit)</i>									
<i>Economic calculation</i>													
→ ←													
The words in <i>italics</i> and bold type refer to economic science. Time does not refer only to economic science, but here I am referring to <i>economic time</i>													

Time: we observe it extends over the whole economic environment, transcending all economic entities. In other words, this is related to the environments of all entities that appear, transform and disappear; the temporal framework transcends their existence. This is what originates our theory of economic relativity as a part of the general theory of relativity, which also includes physics. In other words, we are referring to the theory of time in each science or discipline with its particular elements: physics with physical elements, economics with economic elements, and so on. In the table there are arrows indicating time as continuous and irreversible; that is why we speak of past, present and future. Relative to the concept of irreversibility of time I wish to stress I include two perspectives: Popper's view in the sense that there is zero probability that matter destroyed by energy and movement can be reconstructed with movement and energy; and the idea that even if that possibility is not zero, the reconstruction would be in a different moment than the destruction, which in temporal

terms refers to a different “matter”, if for no other reason, because of the fact it exists in different temporal moments; I could say the same matter is different in different times. In other words, relative to time, nothing remains the same; when we study changes in entities, we are studying time.

Intertemporal exchange: it includes all economic agents, acting alone or in economic society, producing intertemporal exchanges of economic goods. We have seen humans intertemporally exchange economic goods when opting for present *versus* future economic goods.

Property: it also extends over all economic life and it is a consequence of the permanent biunivocal relation “economic good-property”.

Collective or private property: here we begin to stress the importance for economics of adequately institutionalizing a property regime. Though we have stated clearly that where there is division of labor there is division of property and therefore prices, it is also true there are more or less admissible forms of economic freedom. This is the basis for generating the economic good par excellence arising from economic society –interpersonal exchange- and its great economic importance derives from this. We consider of the greatest importance this first evaluation of the way distribution of property occurs and we could conclude the debate is not if private property exists, since it appears as soon as there are at least two individuals interacting, but if there is more or less freedom to exercise it. This is basically the result of a good legal system, both in its norms and the way they are applied, relative to both aspects of economics: free generation of wealth and the disposal of it, and a simple and effective system for protecting credit, which is essential for interpersonal exchange because it has replaced money as a means of exchange. In other words, “gold fever” must not be replaced with “irregular credit fever”.

Intrapersonal and interpersonal exchange: this implies human beings exchange economic goods permanently. When this is done individually, we call it intrapersonal, and when the exchange is between different individuals, interpersonal. On the other hand, both interpersonal and intrapersonal exchanges are carried out in time. Everything is under the umbrella of time, which does not exclude the existence of economic events of short duration for which the period influencing them can be considered equal to zero time. And even if this is not exact, for human needs it is considered so. It is the typical case of cash exchanges of present economic goods. It is obvious that the negotiation of such exchanges lasts a certain period of time but in terms of the theoretical topics that interest us here, that situation can be considered negligible. It is the equivalent of the situation in which an engineer ignores certain terms of a series, equation or polynomial, according to his needs, as Einstein did in his formula $E = mc^2 + \dots$

Intrapersonal exchange: we have included in this subdivision the process with which the chain of economic causality starts. We begin with the isolated individual or economic agent and progressively specify the economic process that ends with man immerse in economic society, economically linked to other agents.

The process develops in each economic agents (intrapersonal) life as shown by the arrows in the table. Fallible man has needs that are satisfied by things when they reach the *status* of goods, which, in turn, become economic goods when they are scarce (the amount needed is greater than what is available). The qualitative and quantitative relation of the need is the link to the qualitative and quantitative relation of the economic good that satisfies it. And this gives rise to subjective valuation by the individual that, as we know, is ordinal and not cardinal. Bear in mind all occurs within the sphere of the economic agent. That is why we refer to value.

Interpersonal exchange: the whole process of economic causality described for the intimate (intrapersonal) life of man is altered by the appearance of his life in economic society, when he begins to have economic relations with other individuals and/or economic agents. The key for understanding the economic entities appearing in life in society is interpersonal exchange of economic goods. Exchange is an economic good in itself, and there are two different types: **cash** (interpersonal exchange of present economic goods) and **credit** (interpersonal exchange of present for future economic goods). This means there can be interpersonal exchange of

economic goods with or without the intervention of time. These are key categories for economic theory. And this distinction is not the same as the difference between barter (direct exchange) and cash (indirect exchange). Confusing these terms would be the same as taking money for credit and viceversa. Here we speak of ***price***.

Monetary prices: I have concluded in my theory that the existence of economic time produces the need to calculate, and that prices are the ideal economic entities for this purpose. Though the concept of price is more extensive, we focus exclusively on those appearing because of interpersonal exchanges carried out in a unique and un-repeatable spatiotemporal point. We saw that when prices refer to an only economic good (currency of account) they become “monetary prices”. We also saw the paper currency of account could be either money or credit. And this is so because generally the economic good commonly used to satisfy the need for liquidity is adopted as the unit of economic measure.

We also saw prices are just as real as the currencies of account used –it does not matter if they are money or credit- since there is no such thing as virtual money or credit. Therefore, it is wrong to speak of real versus monetary prices or absolute versus relative prices.

Cash: is the interpersonal exchange of present economic goods, generally carried out with ***money***, the present economic good that satisfies the need for liquidity and the need to measure for economic calculation.

Credit: is the interpersonal exchange of present for future economic goods and its price is ***interest***. Certain credits can also satisfy the economic need for liquidity and to measure. We have alerted about the risks implied by the possibility of non-compliance with one of the essential requisites of the unit of measure for all sciences: physical rigidity in time.

Liquidity – “monetary” measure: we have referred sufficiently to the needs for liquidity (pure economic time) and to measure in economic terms when there are interpersonal exchanges, and to the reason for using the economic good that satisfies liquidity as the economic unit of measure that makes it easier to calculate in interpersonal exchanges. All this converges in monetary prices. These aspects, we reiterate, refer only to what occurs within interpersonal exchange.

Economic calculation: our opinion on this topic appears in the specific section of the text. We only wish to add that economic calculation exists as long as there is fallible man, alone or in community. “Monetary measure” appears in community, and with the division of labor, as we saw in the corresponding part of the text. In other words, economic calculation exists as soon as fallible man appears and monetary calculus appears with interpersonal exchange, because it requires a unit or currency of account. In calculus, both for the isolated individual and economic society, economic time –without which there is no need to calculate economically- always materializes in other present economic goods (theory of economic relativity).

Economic science: though this does not appear in the preceding table, we invite readers to expand the concept of economic science in the sense that the principles studied in this text are valid for all fallible entities (vegetables, animals, and minerals). This can be observed analyzing the table and eliminating the categories that are possibly unnecessary for some entities. Though this must be an in depth analysis, to see if the categories considered unnecessary do not appear with other names in the different realms.

INTERPERSONAL EXCHANGE – CURRENCY

It is convenient to introduce a synthesis of a topic that is very important in our economic theory: it is related specifically to the theoretical aspects derived from the appearance of the economic entity “interpersonal exchange”. We insist it must be only seen as a short guide.

Table of interpersonal exchanges

INTERPERSONAL EXCHANGE	
CASH	CREDIT

“present economic goods”		“present for future economic goods The Theory of Economic Relativity (and materialization) applies		
Direct BARTER	Indirect MONEY	Regular	Irregular	
NON-LIQUID (Do not satisfy liquidity)	LIQUID (Satisfy liquidity)			
There is no materialization because they are present economic goods (TER does not apply). In cash exchanges (barter and money) time does not intervene; in this type of exchange, economic goods do not need to materialize in present economic goods because they are present economic goods	RIGID Materialization (YES: Identifies specifically quality and quantity of economic good committed).	FLEXIBLE Materialization (NO: It does not clearly specify quality and quantity of the economic good committed)		RIGID Materialization (YES: Identifies specifically quality and quantity of economic good committed).
	Maturity specified	Maturity not specified (generally at sight)	Maturity specified	Maturity not specified (generally at sight)
“Non-monetary” economic cycles	“Non-monetary” economic cycles	Instability in chain of “Irregular Credits” (“monetary” economic cycles)		Possibility of “monetary” economic cycles
The direct or indirect appropriation of wealth is not possible		Implies direct and indirect appropriation of wealth		Indirect appropriation of wealth is possible

In this simple table, we try to show:

- 1) interpersonal exchanges can be cash or credit
- 2) cash can be direct or indirect. Indirect exchange is that in which money (present economic good) is used as exchange economic good. This classification is useful for financial analysis
- 3) credit and money satisfy liquidity
- 4) credits can be regular or irregular
- 5) irregular credits produce direct and indirect redistribution of wealth

The other aspects mentioned derive from our theory, which I will extend and enrich, comparing it with current theories in the following chapters.

THE MOST RELEVANT ASPECTS DERIVING FROM “TER”

Now we will emphasize what we consider the most relevant aspects of our economic theory, without pretending this to be a complete explanation:

- There is no dichotomy between a real and a virtual or non-real economy. In other words, there is no such thing as an equilibrium concept because there are no two worlds to balance, or real and monetary interest rates, there is no need to equate savings and investment, etc.
- Currency appears because of interpersonal exchange, originating what is called monetary economy. This is nothing more than the real economy that includes an economic good acting as a means of exchange, to satisfy the need for interpersonal exchange, and which is called “currency”.
- Interpersonal exchanges can be cash or credit.
- Currency can be money or credit.
- Currency always arises with present economic goods; there is no such thing as virtual currency, be it money or credit.
- Both forms of currency, money and credit, compete for liquidity, which means one or the other economic good will be alternately used to satisfy liquidity as a result of the “economic level” each one reaches, and their prices depend on the subjective valuations of economic agents.
- Economic time is a more comprehensive concept than liquidity; liquidity is a partial aspect of economic time.
- The theory of economic relativity (TER) arises from the existence of economic time. And this theory states that economic time materializes inevitably in present economic goods.
- Credit is interpersonally exchanged economic time.
- The price of credit derives from the following key aspects: first, the composition of the biunivocal relation “economic good-owner” in terms of the greater or lesser wealth of present economic goods relative to the future expectations of economic agents and the distribution of that wealth as to what it will be composed of in the present and in the future; and, second, the institutional level backing both changes in the wealth equations and the free flow of the biunivocal relation “economic good-owner”.
- If currency is credit, its price, interest, will be the price of the currency, and TER determines that it will materialize in present economic goods.
- Since credit is interpersonally exchanged economic time, it is uncertain, because it is future. And its price will rise and fall with the greater or lesser uncertainty. Interest will be higher when there is less wealth (less present economic goods to lend) and greater uncertainty as to the quality of the debtor. On the other hand, we can easily see that economic agents will opt for the credit with the lowest interest or for money.
- Currency in its different expressions (money or credit) never devalues or revalues. It can only have different prices in intertemporal exchange, but this is what happens with all economic goods. In other words, there only is “direct appropriation” through “flexible materialization”.
- Both FM and PC are irregular credits with different specificities –as we have seen; together they generate the dangerous credit chain, which is a combination of direct and indirect improper appropriation of present economic goods.
- Our theory includes the existence of another dangerous credit chain, configured by credits that, not being bank or circulating credits (FM) are “payable in or on” PC. Among these are commercial credits (with personal and real collateral), and all future dividends payable in PC; they all produce direct appropriation of economic goods by debtors in detriment of creditors.
- Money is always a present economic good and when it is used as credit, mainly in the form of PC (flexible materialization) to satisfy liquidity (subsidiarily as a unit of account) because of its “salability”, derived basically from its mandatory (monopolistic) us, we incur in the very “dangerous credit chain”.

In the following chapter, we will compare many other theoretical and practical concepts derived from our theory with those incurrent theories.

(Economic-accounting) WEALTH OF AN ECONOMIC AGENT

We will now present a very simple expression of what we understand by economic wealth of an economic agent at a point in time. We resort once again to accounting. We have defined wealth as the *stock* of present economic goods at a certain moment. From this concept, we derive the following balance sheets:

Wealth economic Agent X

Date: xx/xx/xx

ASSETS		Monetary prices	LIABILITIES AND EQUITY	Monetary prices
Cash and banks			Regular Debts	350
Money (CID)	10			
PC	50		TOTAL LIABILITIES	350
Banks Current Accounts PC	100	160	NET WORTH	1.730
Regular Credits		300		
Exchange goods (commodities)		1.000		
Investments (shares)		120		
Use Goods		500		
TOTAL ASSETS		2.080	TOTAL LIABILITIES + NET WORTH	2.080

(Economic-accounting) EXPRESSION OF WEALTH

Wealth economic agent X

Date: xx/xx/xx

ASSETS		Monetary prices	FUTURE COMMITMENTS	Monetary Prices
Cash and Banks			“Irregular” Credits	
Money (CID)	10	10	PC	50
			Banks Current Account PC	100
			Regular Credits	300
Exchange Goods (commodities)		1.000	TOTAL CREDITS	450
Investments (shares)		120	Regular Debts	(350)
Use Goods		500	TOTAL LIABILITIES	(350)
TOTAL WEALTH		1.630		
PRESENT NET WORTH		(1.630)	“FUTURE” NET WORTH	(100)
(Economic-accounting) COMPOSITION OF WEALTH				
Present wealth			1.630	94%
“Future wealth”			100	6%
“Total” Wealth			1.730	100%

We see the wealth of this economic agent is \$ 1.630, what I call Total Wealth or Present Wealth, because “future wealth” or “future Net Worth” is nothing more than an expression of the consolidated “net” credits taken together. It is essential to consider this structure of wealth in the balance sheets of economic agents. Not considering them in this manner means equating credits (debts) to present economic goods, and erroneously believing balance sheets with that (traditional) structure present the level of wealth at a given time, when you must separate the items as described here. This allows us to express present wealth and exposure to future commitments for and against the economic agent.

Then, when we obtain the present wealth statement later, we will be able to do a full analysis based on the results and origin and the use of funds (the tools of accounting analysis) to see what incidence the initial balance sheet had and the flows it was exposed to. In other words, with the instruments provided by accounting, we can see the relation between the static and dynamic aspects studied by economics with greater technical rigor.

This simple exercise shows the way statistical data should be obtained following our economic theories, expressed in terms that are of common use. This allows us to discern the contributions of money and credit to economic development and avoid confusing them.

Finally, the “future net worth” statement (it should be called **net future commitments**), is essential to financial analysis, since it anticipates the net future liquidity an agent will need to honor his or her commitments. In other words, it is an element of the “*cash flow*”, and has no greater importance for economic theory.

THE TOTAL WEALTH EQUATION (micro and macro)

Now I will express in its complete form what I partially presented relative to the general accounting equation, which I can also call economic equation, considering the concepts included in the development of our theory.

We previously established the equivalences between accounting and economic concepts, arriving at the following economic expression:

$$S^* = C^* + K^*$$

which told me the *stock* saved at a specific moment is the present economic wealth in that precise instant and that, according to our classification of economic goods, wealth was composed of *stocks* of consumer economic goods (C^*) and *stocks* of capital goods (K^*). As the theory developed, we expanded our classification of economic goods, adding storage, which we will identify as A^* . We will also identify the goods that satisfy liquidity, which can be divided into money (which we will call cash and banks and will represent with a D^*) and credit, which in turn can be regular or irregular (we will identify credit with Cr^* and its equivalent debt as Dd^*). We call economic goods acquired through interpersonal exchange, exchange goods (EG^*). We could add more items according to our taxonomic needs, but this is enough to present the equation of economic and accounting wealth we call “total or complete wealth equation”:

$$S^* = C^* + K^* + A^* + D^* + EG^* + (Cr^* - Dd^*) = A = NW$$

Specifying that the expression $(Cr^* - Dd^*)$ is algebraically always equal to zero, in combined balance sheets and in the statements of individual economic agents, it must not be considered present wealth, a situation that was explained in accounting terms in the previous section. Therefore, eliminating from the equation above the subset $(Cr^* - Dd^*)$, because it is not a part of present economic wealth, both in the aggregate figures in the economy as a whole (not consolidated) and in the microeconomics figures of an economic agent (because they are “future commitments” and not present economic wealth), we have the following equation of “present wealth” (or final wealth, we could say):

$$S^* = C^* + K^* + A^* + D^* + EG^* = A = NW$$

In short, economics should be based on the principles of accounting when classifying wealth and accounting should adapt the presentation of present wealth and future commitments to the terms of the diagram in the preceding section.

Finally, we believe that if the accounting profession used the classification proposed here, this would allow a simple financial analysis of the quantities of money and credit different countries need for their economic development and investment. It would be sufficient to know

the relative share of these economic goods in the economy, measured both as stock and as flow. This approach shows the amount of currency (money or credit) an economy needs is nothing more than its financial analysis: it is the study of the financial needs or liquidity of a country or group of economic agents, which is always endogenous. If not, it would not belong to the economic sphere.

In the same way, we could analyze the incidence of the concepts of “caution”, “transaction”, “speculation”, “storing”, etc. on total wealth.

In short, with the “present wealth equation” as shown, adding “future commitments on present wealth” we can see the eminently financial nature of the monetary topic that originated so many problems for economic theory.

Derivations of the equation of total or complete wealth

We will have the opportunity to observe the great importance of the concept of total or complete wealth *versus* partial or incomplete wealth when we compare our ideas with current economic theory. To this end it is useful to refresh the following fundamental aspects:

- The total wealth equation derives from the biunivocal relation “economic good-owner”. An economic cell deriving from the biunivocal relation that precedes it: “need-economic good”.
- The error of considering the partial wealth equation instead of the total wealth equation is one of the central defects of current economic theory.
- Accounting must readapt the presentation of balance sheets to the structure of present total wealth and its accessory, the future component deriving from current credit.
- The tributary system should also be adapted to this composition of wealth, bearing in mind it derives from the basic economic cell, the biunivocal relation “economic good-owner”, and everything related to the need to distinguish cash from credit. Must credit be taxed as wealth? And, if so, should credit pay the same tax rates as wealth (present economic goods)?

Chapter XIV

COMPARATIVE STUDY AND EXTENSION OF THE THEORY

In this chapter, we will compare the theories developed and corroborated in this work with current theories in economics.

We must remind the reader that here we have not only dealt with money and credit theory, but have also studied the concepts of equilibrium, comparative advantages, balance of payments, types of exchange, monopoly, and many others.

The methodology will be to present each topic with a title, a brief introduction and, then, the way our theory deals with the subject.

Economic demand

In light of our theory of economic relativity, the chain of economic causality and the biunivocal relation "economic good-owner", we can see the broad concept of demand includes all economic needs that can only be satisfied with economic goods, which can be a property (possession) of the economic agent that has the need or of a third party. In the case when the economic good belongs to a third party, the agent that has the need can obtain it through cash or credit interpersonal exchange. In other words, the simple possession of a stock of economic goods –consumer, capital, savings, liquidity, exchange goods, etc.- must also be considered demand, as legitimate as the demand for third parties' economic goods. The demand we must considerer in economics is in the broad sense described, not the partial demand alluding only to economic goods owned by third parties. That partial demand has great importance for economic agents dedicated to interpersonal exchange, which today means the whole of society. However, this is seeing things from the point of view of a particular case of demand in general.

Now we will clarify what demand means and show how many of the problems current economic theory presents simply disappear with our theory.

In the more general sense, demand, as a representation of the needs of a fallible being (individual or as a group) that must be satisfied, should always exceed the quantity and quality of disposable economic goods. All this is part of the definitions of need and economic good, which lead us to economic calculation, to deal with human scarcity. But this reasoning should not make us forget that the demand that can be satisfied at each instant is exactly equal to the existing present economic goods (in keeping with the definition of economic goods).

This reflection is essential because it allows us to obviate many concepts that confuse economic analysis, such as effective demand, since we can only consider as such the demand for present economic goods at each instant. This is complete or total wealth, if not they would not be economic goods. In other words, we can conclude:

- Economic demand is the manifestation of the need of a fallible being for an economic good.
- What is not demanded economically is not an economic good. Only economic goods are demanded economically.
- Economic goods can satisfy different needs: use, liquidity, savings, exchange, consumption, capital, etc. All these are human needs.
- A fallible being can demand economic goods he or she owns or belonging to a third party, but considering fallible beings as a group, their needs can only be satisfied to the point admitted by the present economic goods existing at the moment of demand.
- This determines that the demand that can be satisfied (expressed in economic goods) can never exceed the existence of economic goods, and the demand satisfied is equal to the

existing economic goods, since there cannot be economic goods that do not satisfy human needs (which can be savings, liquidity, consumption, investment, exchange, etc.).

Economic supply

The same reasoning is valid for supply, linked to the biunivocal relation “economic good-owner”, inherent to the existence of the fallible being, from which the economic sphere derives. So we can say:

- Economic supply is the manifestation of all economic goods.
- What is not economic supply is not an economic good. Only economic goods are supplied in economic terms.
- Economic goods can satisfy different needs: use, liquidity, savings, exchange, consumption, capital, etc. All are economic goods.
- A fallible being can offer the economic goods that are his or third parties' property but taking fallible beings as a group, there can only be supply of the present economic goods existing at the time they are supplied.
- This means the supply of economic goods can never exceed in quantity or quality the existing economic goods: supply is equal to the existences of economic goods, since there are no economic goods that do not satisfy the conditions for being an economic good; they can be of different natures according to the need they satisfy (savings, liquidity, consumption, investment, exchange, etc.).

Say's law and employment

We now remit the reader to the paragraphs where we dealt with “unemployment of economic goods” in chapter IV. We reiterate what interests us here:

In this way we can better understand that to speak of employment of productive factors means referring to the relation of availability of things and goods that acquire the status of economic goods, and more specifically when it is considered within the biunivocal relation ‘economic good-owner’, with the constant mutation an economic good undergoes in the hands of its owner, in such a way that at a certain point, the owner goes from owning what is an economic good to owning a good or a thing, with the consequent loss of value. And here we can understand Say's law in its two interpretations:

1) J. M. Keynes' interpretation: ‘all supply creates its own demand’, which would be in line with the concept that any good is economic when it satisfies a human need in a quantitative relation in which the amount supplied is always less than the amount demanded; in the opposite case it is a good or a thing. In other words, if an economic good satisfies no demand it is not an economic good, and it is improper to speak of unemployed economic goods when what we have really is goods that are not economic. What Keynes said was correct, but he wasn't conscious of it; his intention was to prove Say's law was erroneous; but we see it was correct even in the conception expressed by Keynes, since if there is a supply it is of economic goods and in the economy there is only demand for economic goods; goods that are not scarce are not on offer in the economic sense. In this manner if a good that was an economic good is no longer so and has become a good or a thing, we cannot say it is unemployed; we must say instead that it has stopped being an economic good; if not, for example, we would be saying that a human being that has died is unemployed as a human being, when what we wish to express is that he or she no longer exists as a human being. In short, Keynes was not talking of unemployment –more specifically of labor- in scientific term, but rather in ethical and moral terms –which is understandable, because he had the experience of unemployment; this is worthy of praise. But we shall see that the best ethical and moral solution is the scientific one.

2) A different interpretation from J. M. Keynes's states that Say meant that no-one can demand economic goods belonging to others if he or she does not have economic goods to

offer in exchange. This interpretation is an axiom if we consider there can only be economic exchange with economic goods, which add nothing to the chain of economic causality I am developing.

With either interpretation it doesn't make sense to speak of employment-unemployment of economic goods simply because they are employed or they are not economic goods. With this approach, the fact that part of economic theory has been based on the assumption that the economy is always fully employed acquires relevance, and at the same time the theory known as Say's law can be seen under a new light and with greater precision.

With all that has been presented in this book after these paragraphs from chapter IV, the theoretical arsenal has been expanded enough to ratify our ideas on the concept of full employment.

In 'Keynes' ideas in chapter XVI, we will see current theory had to reject Say's law. We will see it is one of the many *ad hoc* exits derived from "paradigmatic" paths not based on solid primitive terms. In other words, not realizing primitive terms are being violated leads to continuous and diverse theoretical (*ad hoc*) "flip-flops".

Aggregate demand and prices

Having compared our theory in the preceding paragraphs, we can specify better how the decision not to interpersonally exchange economic goods affects things. We must bear in mind interpersonal prices arise in interpersonal exchange in unique and unrepeatable spatiotemporal points. We must consider the incidence of the *stocks* of economic goods not exchanged because they are demanded as holdings and not for interpersonal exchange. In other words, *stocks* of economic goods (in their different expressions: consumption, capital, savings, exchange, etc.) are part of (expanded) aggregate demand and therefore influence physical and monetary prices.

The concept of broad demand and supply adopted here leaves no doubt that the economic goods not interpersonally exchanged are simply the expression of the demand of economic goods for stock, which implies flows –change- given the existence of time.

Dichotomization of prices

This concept clarifies the synthesis Mark Blaug presents in his work "Economic Theory in Retrospect":

"This is the basis of Patinkin's famous charge that both the classical and the neoclassical economists consistently 'dichotomised the pricing process': they determined relative prices in goods markets and absolute prices in the money market..." (Cambridge University Press, 2002, p. 147)

Evidently, in our theory it is not possible to conceive absolute prices as opposed to relative prices. We can only speak of physical and monetary prices, supposing both are real, differing only in the fact that one is expressed in units of any economic good for which there is interpersonal exchange, and the other is expressed in units of the economic good used as the unit of economic measure, generally called currency or money, from where the term monetary prices derives.

Believing absolute prices are not real implies money or credit (depending on which is used as currency) is virtual, a situation rejected by our theory. Nevertheless, introducing this concept is essential, because it refers to a chain of theoretical errors that we have referred to and will continue to do so.

Finally, the "erroneous" process of dichotomization of prices (relative prices in economic goods' markets and absolute –or monetary- prices in monetary markets) is in line with Keynes' theory, which states interest is determined in money markets, showing his theories considered two originally dissociated worlds, the real and the virtual, and science's task consequently was to try to unite them, which was impossible because there is no such

dissociation. As we will opportunely see, this error of believing there are two worlds (real and virtual) is found in all economic theory, not only in Keynes.

We must emphasize what is wrong is to postulate a real and a virtual world, not differentiating a monetary and a non-monetary world, which do exist: the monetary world uses currency (money and/or credit) and the non-monetary one does not, but both are real. We can summarize saying the “classical dichotomy” states monetary variations do not alter the “real” economy, validating once again the concept that the monetary sphere is virtual, not real, to the point that it has no economic entity at all.

Greater precision on the meaning of prices of currency

In light of the theoretical development we presented after dealing with the topic of prices, it is convenient to expand –and at the same time, summarize- what we have said. In this sense, we adopt the following concepts or definitions that are simpler and clarifying:

Price: defining price in general as “the exchange of quantities of different economic goods”.

Intrapersonal price: “price generated by an economic agent in time”.

Interpersonal price: “price generated by interpersonal exchanges”.

Monetary price: “price expressed in the economic good used as currency or unit of account generally accepted”. It is essential to bear in mind this definition allows credit to be considered currency, since it is not limited to present economic goods (money).

Currency: economic good that satisfies the need for liquidity and is therefore used as an economic unit of measure or “monetary unit”.

Therefore we should refer to monetary theory when speaking of liquidity and theory of money and credit when we refer specifically to those economic goods, which, we know, belong to different categories, since money is a present economic good that satisfies liquidity and credit belongs to the category of interpersonal exchanges, also satisfying liquidity. But it differs from cash exchanges because these only involve present economic goods and credit is the exchange of present for future economic goods.

In general terms, economics refers to monetary prices.

Continuing with the expansion of concepts, we can present the following categories of prices:

Past prices: are prices obtained in the past. They generally orient economic calculation until others appear.

Present prices: they are the prices obtained in each present spatiotemporal instant; obviously, their duration is ephemeral.

Future prices: prices that will be formed in the future.

This simple classification –that must follow our line of temporal classification of economic goods because it derives from their existence- plainly and simply shows the impossibility of prices remaining constant in anything but very short periods of time, because it specifies what time means in a general philosophical and specifically economic sense, where everything is in constant change. Change implies time, time implies change.

There are prices in socialism

Here we only wish to reiterate our critical position relative to Mises, when he says you cannot think in terms of prices in a collectivist system. Given that we have dealt extensively with the issue, there is no need to extend further. We only wish to emphasize the topic, which has created additional confusion on the subject of prices.

Locke, Say and the beginnings of quantity theory

Locke studied the role of monetary prices with the presence or absence of variations in the quantity of money and the proportionality in these relations. We can summarize his theory with the expressions in the work by Mark Blaug we have already quoted:

“*The pure Lockean version of the quantity theory of money –the value of money is determined by the quantity of money in circulation and nothing more- implies Say’s equation and viceversa. In effect, quantity theory was the element that produced in the first place the*

dichotomization of the process for determining prices. The merit of quantity theory had been demonstrating money as such was not wealth..." (p. 148)

It is very useful to summarize all the ideas we wish to analyze in this passage by Blaug, since it presents the essential errors in economic theory:

- We have rejected the concept of dichotomization of prices.
- We have shown prices are a synthesis of economic quality and quantity appearing in exchange. We do not agree with the idea that quantities are the only factors forming prices. We can say they are the quantitative expression of them once the qualitative aspect has been established, but without quality, no quantity can be determined. In turn, the price, arising from exchange, is part of a broader set, composed of quality and quantity.
- Obviously, there was no merit in quantity theory proving money is not wealth, especially not present wealth. We believe behind that unfortunate expression is the error of confusing money with credit, and not realizing credit is the best economic good for satisfying liquidity. As we can see, the error of confusing money (present economic good) with credit (that is an economic good because it is interpersonal exchange –of present for future goods) appears in the first studies on money.
- We conclude quantity theory, in its original version, was a mathematical model of the theoretical error present in the concept of dichotomization of prices. We say this because without the presence of "virtual" money, it is not possible to derive quantity theory, and this can be seen in Blaug's final expression: "*The merit of quantity theory had been demonstrating money as such was not wealth..."*"

"Locke's problem"

Locke explained very clearly the problem produced by what we call flexible materialization, expressed by Stephen Kresge in the introduction to Hayek's work "Good Money II" (p. 34) as follows:

[...] But though silver could be the value standard, the shilling was the standard in which contracts were stipulated, rents were paid and prices of commodities were established and compared. The shilling was supposed to have a fixed and determined content of silver, establishing the relation between the value-standard and the payment-standard. But with the passage of time coins could lose part of their contents of silver, which derived in "bad" money, the worn coins, continuing to circulate while the "good" money, that retained its content of silver, were taken out of monetary circulation and dedicated to other uses.

'Locke's argument posed the real problem. How can the Treasury determine the appropriate weight in silver of each shilling if the total possible number relative to the total quantity of silver available is unknown? Any error of calculus at this point would have produced a change in exports and imports of silver (exports would take place in the form of shillings) with the resulting rise or fall of prices. This difficulty that can be called Locke's problem, is the dilemma confronted by all monetary standards and all monetary policies, and it is particularly difficult when seeking the exchange rates between coins that do not have a common standard'. (The University of Chicago Press 1999)

The topic includes several aspects already considered here and we can say "Locke's problem" simply does not exist, considering the theory present in this work directly or indirectly clarifies all the aspects it refers to:

1) Locke concretely refers to flexible materialization of what we call here irregular credit in the form of PC; only he considered it money and we believe it is the essence of "Locke's problem". In other words, Locke clearly perceived the problem produced by what we have called metaphorically "different types of money": passing from L(a) to L(n) when L(unique) is adopted as payment standard subject to flexible materialization.

- 2) It stresses or anticipates Gresham's Law, on which we present our position in another part of the text.
- 3) As to the problem of not knowing the physical quantity in existence of the economic good used as money relative to the total number of shillings (PC), our theory explains this with the concept that an economic good can satisfy different needs and that, the more features it has, the greater its value. On the other hand, establishing the weight of each coin chosen as money is not a problem, since it is merely a quantitative relation depending on practical needs; the main thing is for it to be money it must not be subject to flexible materialization, if there is a "paper" circulating in place of metal. In our theory you do not need to know the amount of silver available –both what is used as metal and what is circulated as money- more than you need to know the quantity of any economic good to establish its influence on its value and the prices it obtains in interpersonal exchanges.
- 4) Locke's concept that the value of money is relative to its quantity, it leads directly to the quantity theory of money, which we will refer to in particular. Because of this, there is no "Locke's problem" as a special case for money. It appeared as a special problem for him because of the original conflict in his theory: the concept that the price of money derives exclusively from its quantity, which opened the door to the erroneous idea that manipulating the quantity of money you can make people richer (validating the concept that money is not wealth). There is only one step from there to "making" money without effort; from this theory derives the direct and proportional transfer of the variations of the quantity of money (including circulating speed) to the variations of prices.
- 5) Finally, the dilemma expressed as a problem monetary policies confront when countries adopt different monetary standards (i.e. different economic goods used as money), originating in variations of prices in time, is no more relevant than the economic concept of intertemporal variations of prices. In other words, the fact that different countries adopt different economic goods as currency only generates the need for the economic agents in those countries to consider in their interpersonal exchanges the intertemporal variations of prices of their currencies. But this is characteristic of all interpersonal exchanges and, above all, of credits outstanding with intertemporal variations of prices in the period between the transfer of present economic goods and of the future economic goods with which the credits are cancelled. In short, intertemporal variations of prices influence all economic calculation, especially related to credits, since they must always be expressed in a present economic good with prices that always vary (more or less) in time. Adding another uncertainty to the natural intertemporal variations of prices, the possibility of altering the rigid materialization that a unit of measure should have.

In short, "Locke's problem" does not exist in our theory as something special referred to money, because everything is explained by the general theory of the incidence of quality and quantity in economic values and prices, including the situation where an economic good can satisfy several needs.

We could summarize by saying "Locke's problem" is simply the expression of our irregular credit in the form of paper currency (PC); the quality and quantity for final materialization are not specified; if we consider PC as a IC there is no such thing as "Locke's problem", or this is the problem derived from the existence of IC.

This is a preview of our opinion on the theoretical errors appearing in what are commonly called "exchange rate" and "balance of payments".

Exchange rate

The exchange rate is considered the price paid for one currency in another or rate of exchange of two currencies at a specific date.

Following our theory, we can only present two reflections relative to the uselessness of this concept:

- a) If we consider the rate as the quantity in which one economic good is exchanged for another, this is the price of any economic good.

b) The other way you can interpret the concept of exchange rate would be to assimilate it to purchasing power of any economic good exchanged. Generally, purchasing power is attributed to money, which tells us the quantity of specific economic goods you can acquire delivering a specific economic good in a specified amount: this is true of any merchandise by definition, not only currency.

Things being what they are, in the two preceding cases it makes no sense to refer to exchange rates, which only leaves us with one alternative, that the exchange rate will be the quantity of specific quality of economic goods credits will be converted to. Referring to exchange rates is to speak of the final materialization of credits; it makes no sense to speak of convertibility of money, because it is a present economic good that is interpersonally exchanged, the same as any other. We can only refer to (final) materialization of present economic goods in terms of something in the future, credit. And this is simply applying TER once again.

In short, the exchange rate is simply applying TER in terms of the concept of final materialization of credit. Therefore, it makes no sense to speak of the exchange rate of present economic goods that only originate prices when they are exchanged. The concept of exchange rate is only applicable to credits when they materialize in present economic goods (TER). So we have the following options:

- 1) We assimilate exchange rates to prices, and so we do not need the new concept.
- 2) We are speaking of materialization of credit in present economic goods, for which we have TER and the concept of final materialization of credits.

Evidently, with virtual currency (money or credit) in economic theory, and giving it an important role in economics, the essential problem was the link between two worlds, real and monetary or virtual. That is why unconsciously a special name is assigned to price relations between different currencies.

We conclude that (if the term exchange rate can be used at all), when we refer to fixed exchange rates we are speaking of the price of money (a present economic good) and if we refer to flexible exchange rates we are referring to flexible materialization and, therefore, irregular credit.

Balance of payments and national currencies

We believe the adequate way to deal with this topic in simple form, in terms of what interests us here, is presenting the balance of payments as the account that debits and credits all interpersonal exchanges of an economic agent with other economic agents. When we refer exclusively to records of credit interpersonal exchanges, including the origin of the credit and its cancellation, what we have are commercial current accounts. Finally, when referring to a country as the economic agent, we have what we call “balance of payments”.

We are particularly interested in pointing to the error in economic theory, transferred to legal institutions, of considering a future economic good, credit, as a present economic good or money. Commercial current accounts by law are considered cancelled with the simple receipt of an IC, which is not a present economic good. In other words, this mistake validates the chain of irregular credits we denounce. In this manner, when IC circulate, the scenario of instability that is typical of the chain of irregular credits is established.

If different countries use different IC as currency (national currencies), when economic agents trade, they create an international chain of irregular credits. The situation becomes even more complicated (in trade between countries) when all “collection” and “payment” of debts by economic agents have to be carried out with the unnecessary intervention of the State.

Evidently, this new monopoly, in accordance with the use of IC, is an additional cause of instability in the irregular credit chain.

It makes no sense to speak of monetary zones, exchange rates and balance of payments, when the economy already has the general laws including all of them: IC, current account and prices.

In current economic theory, balances of payments are dealt with based on two erroneous concepts:

- 1) The irregularity derived from IC is not taken into consideration.
- 2) They are analyzed base on the partial or incomplete wealth equation.

We will not extend further on this topic, having already analyzed its central aspects. We will come back to it when referring to Hayek.

Theory of macroeconomic equilibrium

We could summarize current macroeconomic theory as the attempt to make the real world compatible with the virtual world, to establish the existence of “two worlds in equilibrium”, what is called “economic equilibrium”. Obviously, if you wish to balance things it is necessary to study what is unbalanced and why. The origin of economic imbalance is in the concept of virtual currency:

- 1) The theory of indirect exchange involves virtual currency (money and credit).
- 2) Virtual currency (money and credit) implies the concept of the existence of two worlds, the real world, and the virtual or monetary world.
- 3) From those two worlds arise real and monetary prices (dichotomy of prices).
- 4) From all the above comes the idea of balancing those two worlds. Equilibrium requires:
 - a) Real and virtual prices must be the same, especially real and monetary interest (not realizing it is the price of credit and not money, and that credit replaces money).
 - b) Savings and investment must be equal (not realizing the axiomatic impossibility of this, if we adopt the total or complete wealth equation).
 - c) In turn, equilibrium implies constancy, static or movable. In economics, constancy can only refer to constancy of the level of monetary prices; a synthesis of what current theory considers economics to be.

We could extend the analysis on what we understand by equilibrium but what has been said is enough to conclude –with the explanation of the deviation these simple and basic concepts represent relative to our theory- that economic equilibrium does not exist. We only need to bear in mind TER; economic causality; that credit replaces money; that interest is the price of credit, not money; the concept of prices; the total wealth equation; that capacity is fully employed on a permanent basis, etc.

The puzzle behind the concept of equilibrium –making the real and the virtual world compatible- has no meaning, which does not imply disagreement with Popper’s three worlds or disowning his theory that “something can be created from nothing”. Evidently, the mere intention of seeking monetary price stability means not acknowledging the existence of currency in the form of IC (PC or flexible exchange rates or flexible materialization), because it would be very difficult for an economist not to realize prices vary intertemporally. Then (because of an incorrect monetary theory) there is the attempt to establish the rigidity that a unit of measure must have through prices (value) and not through “physical” materialization. This is left to the authoritarian Lamarckian genius –or several of them, in free competition (Hayek)-.

When comparing our theories with Keynes’ ideas we will have the opportunity to summarize the inconsistencies of the term *equilibrium* in economics.

Interest rates and price levels – The direct and indirect transmission mechanisms

Knut Wicksell was the first economist to study the relation of interest rates with price levels in depth, but economic theory since then has made great efforts to relate both aspects. These theoretical efforts gave birth to two schools: one that says variations in the quantity of money affect prices directly, and the other saying its incidence is indirect, through interest rates.

Immediately we can see there is a great distance separating these ideas from our theory, interest being the price of credit, not money; what is special in monetary theory appears in the

application of TER, which governs economic time, which, when interpersonally exchanged, is credit, not money. Lastly, and most importantly, since we use credit as currency –and therefore as a unit of economic measure- the relation between the monetary prices of the different economic goods, between the price of currency and interest, is direct, because the price of currency is then interest, which materializes inevitably in all other economic goods. This reflects that when credit is used as currency, the economy operates completely without or with very little incidence of money.

Though we know how monetary authorities work, seeking to “control the price” or the purchasing power of money they manipulate, we merely say they do so by adulterating the chain of irregular credit: they inject PC with flexible materialization or, if they see “price indicators measured in that PC” rise too steeply, they withdraw “certain” quantity of PC from circulation to stabilize them. This is generally done “borrowing PC” (issuing government debt) and paying interest, which does not worry the authorities overly because both interest and principal are payable in the same PC they issue. Also, they manipulate the minimum reserves requirement for banks (i.e. the percentage of the deposits they appropriate to grant loans, which was 20% in our example in the accounting corroboration of the theory), but the FM are, in turn, “payable” in PC. In short, we can see the whole circuit of the irregular credit chain is in the hands of the government, configuring modern authoritarianism. One country is different from the next only in the degree of authoritarianism. This can be measured in the relative volume of “inflation” and the level of government debt –*in which we must include both regular and irregular credit, acquiring the form of PC and FM (because government is not the payer of “last resort”)*– and interest (relate this to the “interest paradox”).

We will continue with this topic in the following section, titled “The Gibson paradox”. However, we need to say that at this point it is a theoretical reductionism of the central problem of current monetary theory.

The theory of economic cycles

In our theory, speaking of economic cycles means referring to wealth variations in the biunivocal relation “economic good-owner”. From this, we derive that the relation of economic cycles with the monetary aspect is one topic among all those related to economic scarcity.

Relating specifically our theory with what current theory says about economic cycles, ascribing them to monetary aspects, implies considering the partial wealth equation *versus* our total wealth equation, and the fact that current theory does not recognize the existence of virtual currency (both money and credit) as ours’ does. Therefore, what today are considered economic cycles deriving from the monetary sector, in our theory refers to financial crisis and stock management relative to economic time.

In other words, the concept of cycles goes hand in hand with the concept of time, and economic time in a monetarily advanced world refers to credit. From here, we can conclude economic crises in a world where credit is chosen as currency, are the cause of so-called “economic cycles of monetary origin”. From this, we derive that the chain of IC is the main cause of this type of cycles, and that is why they are “moderate” when there is “moderate” relative abuse of IC (their share of total wealth). This is the same as saying the dose of drugs is less harmful if it is very small relative to the system receiving it. With this, we alert on the greater or lesser proximity of a “monetary” crisis in the economies toying with the dangers of the irregular credit chain (PC and FM cocktail).

In other words, our theory leads to the simple conclusion that what is needed in economics to confront cycles –i.e. acute crisis of shortage of economic goods-, is basically excellent accounting and a good treasurer to respond to financial crisis (of credit, in the economies that adopt it as currency), which is nothing more than providing for the future, since credit is future and only future, along with not allowing IC.

The last aspect, avoiding the chain deriving from IC, is essential considering the redistribution of wealth (direct and indirect) generated by that chain. If there is any doubt as to the devastating effect it has, we can refer the great number of cases in history of the people having to take on debts generated by the chain of IC. The insolvency crisis this generates

leads to “devaluation” and “nationalization of the debts of a few economic agents”, with active intervention by the government that then negotiates reductions and refinancing of “sovereign” debt in default. In short, the “huge benefit obtained by a few” (the incumbent authorities and some private individuals) who divvy up the wealth of the country and make the people as a whole pay for it with their efforts (for what is repaid) or with “shame” (for what is reduced). This is done in the name of “the peoples interest”, when the real role of the people is being slaves to financial interests, their power deriving from the authoritarianism implicit in IC. This shows the sarcasm, hypocrisy, ignorance, arrogance and/or pathology of the authorities.

Theory of proportionality and homogeneity

Here, we wish to refer briefly to two concepts of current economic theory, which in our hypotheses are not special, and are included in our theory of direct and indirect appropriation of wealth.

The concept of proportionality refers to the way in which the quantities of “money” affect the price levels of different economic goods. This gives rise to the theory that says their incidence is proportional for all prices (this is implicit in quantity theory) and to the theory that says it is not so (generating economic cycles of monetary origin). Our theory includes this subject when referring to undue appropriation of wealth with IC, and considering total and not partial wealth, which leads to compute only the variations of relative prices between consumer and capital goods.

Relative to homogeneity, current theory refers to the problems arising in monetary theory from considering only one type of “money”, a topic we will deal with when considering Hayek’s criticism of quantity theory. However, referring to this aspect, it is important to emphasize the problems presented by the IC chain cannot be solved by adopting one international currency or one that includes several nations (euro), whether imposed compulsively or appearing spontaneously and freely. What is important is that there be freedom to issue currencies and if any of them are IC, there must be corresponding legislation clearly stating we are in the presence of irregular credit and not money. In other words, we stress once again there is no need to invent anything in currency terms that does not already exist in all other economic theories: freedom with a legal framework to avoid illicits; in this case the illicit of offering the market money that is really irregular credit.

Distribution theory

Considering the pillar of economics rests on the biunivocal relation “economic good-owner”, and supposing economic goods implicitly include the biunivocal relation “need-economic good”, evidently referring to distribution means speaking of economic goods. All this boils down to the composition of credits and debits in our total wealth equation or accounting equation.

The world, as a laboratory for corroborating theories, has already abundantly shown the best scenario is where there is the greatest freedom, with an adequate use of private property of economic goods, allowing the full development of comparative advantages (not only among countries, but also among economic agents, i.e. specialization based on natural aptitude). And encouraging freedom to interpersonally and intertemporally exchange those goods, so those most apt for generating wealth can dispose of the things they need that are in the hands of other economic agents. Our hypotheses give economic science sounder foundations with a better understanding of the temporal aspect in economics, i.e. what economic time is and how it materializes, which has great relevance for the biunivocal relation “economic good-owner” in time, the expression of wealth distribution.

In other words, concurrence of the elements described above, configuring an adequate framework of free competition, is what has allowed human beings to develop economically without the need to resort to war to rob neighbors. Our theory analyzes in depth the aspects we must perfect to better reach that goal of progressing economically without unduly appropriating our neighbors wealth, which in our time appears through the “chain of irregular credit”, leading to direct and indirect redistribution of wealth and not through wars with arms.

Our theory alerts on the new war-elements promoting violence. Could IC possibly be the white gloves used by thieves in our time?

We believe our theory can help promote the permanent human endeavor to grow in peace, where growth refers to economic goods and peace to the way they are distributed, caring for the health of the basic economic cell.

Science can help to deal with the fallibility inherent to all entities confronting mighty time. That is why it is essential to master it theoretically as best we can. Our theoretical contribution is oriented in this sense, seeking to avoid the “undue direct or indirect appropriation of wealth” originating in IC.

In other words, totalitarianism has found an excellent stratagem to impose upon us the outrages that allow it to concentrate power in its hands. It consists of the following: based on the subtle difference between property and disposition of economic goods, it allows private property to exist –controlled by state authorities, in connivance with financial sectors- in the guise of collective disposal of property. This is essential for the kind of “marketing” that allows politicians to win elections based on scientific fallacies and popular ignorance. In other words, the State disposes of economic goods that are the private property of others through debt, of which it alone controls the level of materialization in present economic goods, thanks to the irregular nature of that credit. We already know from our theories that when referring to irregularity in credit, we are speaking of undue appropriation of economic goods, which can be direct or indirect.

Gibson's paradox

We have left this topic, what John M. Keynes called “Gibson’s paradox”, for the end of the chapter because we see it as another synthesis of current monetary theory’s mistakes. The forceful explanation we present for this “paradox” is also a powerful tool for the reader to approach the following chapters, where we compare our scientific hypothesis with those of the quantity theorists (Friedman), Keynesians, and Austrians (Hayek), having mastered the TER presented in this book.

Continuing with our style of summarily presenting the posture we wish to compare with ours’, here is Mark Blaug’s rendition of the “Gibson paradox” in his work “Economic Theory in Retrospect” (p. 618) (italics by the author):

[...] Instead, Wicksell’s contribution to monetary theory is a careful restatement of the “indirect mechanism”, linking money to prices via the rate of interest. (we already have seen our posture) [...] (P. 619) But Wicksell was the first writer after Mill systematically to develop the implications of Thornton’s insights [...] The expansion of bank credit, Thornton had argued in 1803, can become effective only through a reduction in the loan rate of banks and hence the money rate of interest. (obviously here we have the two worlds, the real and the monetary, and two rates, apart from the infinite rates according to the economic goods in existence). As soon as the addition of credit ceases, prices stop rising and the rate of interest returns to its former equilibrium level determined by the unchanged rate of return on real capital. Following this argument, one would expect the interest rate and the general price level to move in opposite directions. But the foremost critic of Ricardian monetary theory, Thomas Tooke [...] showed that, on the contrary, the market rate of interest and the price level are positively correlated. This finding, corroborated in later days, was dubbed the “Bigson Paradox” by Keynes in The Treatise on Money (1930). The paradox is not hard to explain when it is realized that capital accumulation and technical change tend to alter the real rate independently of monetary forces. The loan rate and hence the market rate of interest is therefore likely to trail behind the real rate of return on capital. What is needed to disprove the theory is, not a positive correlation between prices and the absolute height of the market rate of interest but a positive correlation between prices and interest differentials.”

We could not have wished for a better synthesis of current economic theory to compare it with ours than Gibson’s paradox. It evidently summarizes everything current theory stands for: two worlds (real and virtual); infinite interest rates according to each existing economic

good (it does not recognize TER) but, in general, two interest rates, one real and the other monetary or virtual; wrongly ascribing interest to money and confusing money with credit; validity of the partial wealth equation; validating the nonexistent economic equilibrium ($S=I$, among other concepts), etc.

We wish to stress the solution Blaug contributes for “Gibson’s paradox” is within the framework we reject, the existence of a real and a virtual world that have to be related. Evidently, in our theory there is no “Gibson’s paradox” because we adopt an only economic world and we do not believe interest to be alternatively the price of money at one moment and the price of credit at another, which is the reason for the existence of said paradox. When we refer to Keynes we will clearly see his “Gibson’s paradox” (which we will call “Keynes’ paradox”) exists only in his mind, because he believes in the existence of two worlds and the need to make them compatible. We will appreciate it with full precision when referring to the charts that represent Keynesian theory; IS-LM curves; Lipsey’s aggregate supply and demand; and the partial wealth equation underlying the so-called 45-degree Samuelson curve. We could say “Gibson’s paradox” is nothing more than economic theory’s acceptance that the world has replaced money with credit as currency, and economic theory itself has not realized it. Once again, the spontaneous order of natural selection is present.

When we deal with Keynes’ ideas, we will see the theoretical content of his “Gibson’s paradox”. We will present it as “Keynes’ paradox”, which is alive and kicking in current theory, as opposed to what Blaug tells us (p. 707):

“Now finally Wicksell resolves Gibson’s paradox. All variations in the level of prices not brought about by changes in gold production have their origin in a passive bank rate trailing behind the active real rate of interest. Statistics about prices and interest rates fail to reveal the dynamics of the process”.

No statistic will reveal any dynamic not arising from an adequate theory. The theoretical error is attributed to statistics. Blaug will never have a statistic that satisfies a theory that alternatively confuses interest with the price of money and/or credit. Once it recognizes interest is the price of credit (economic time interpersonally exchanged) and not of money (present economic good), it must also realize credit replaces money as currency and so monetary prices will refer to it. Interest is the reference price for “monetary” economics – when credit is used as currency-, but since it is economic time this means it will inevitably materialize in present economic goods. In short, the way to link interest with prices levels is using the theories presented here, not current ones; our theory is real and not virtual. The reader that still has doubts on this comparative synthesis of our theory of economic relativity (relativist) and current virtual monetary theory (virtualist), will find more information in the following chapters, in which we continue in the attempt to show our theory is superior to current ones, in the manner Popper taught us what the scientific method should be.

In reference to “Gibson’s paradox” that Keynes analyzes in his “Treatise of money” in section “VIII. Gibson’s paradox” (p.345), we wish to stress that though we do not agree with his theory, we also do not accept Hayek’s criticism, as presented in the work “Against Keynes and Cambridge”. We will only say Hayek did not understand what Keynes was trying to do in theoretical terms and only gave an eminently practical answer, not realizing they both base their ideas on the same theory of the existence of two worlds, the real and the virtual, from which the paradox stems.

Chapter XV

QUANTITY THEORY

Dedicating a chapter to quantity theory and specially comparing it with our hypotheses is important.

We could say, as a summary introduction, that quantity theory is the theoretical attempt to study the relation of the quantity of money with monetary prices (with the important particularity that it does so confusing money and credit, which places it from the start in a position opposite to ours, relative to the fact that qualities should be considered before analyzing quantities).

Brief history

It is generally recognized that quantity theory began with Hume and was continued by Locke, in both cases with the central concept that “monetary” prices vary according to the quantity of currency.

Later, new elements and variants were introduced in the initial formulation, but always seeking to produce a theory that would explain the workings and relations between currencies and monetary prices. Interest and wealth in their different expressions (stocks –wealth- and flows –revenues and consumption) were later added. We will present each of these stages in the most synthetic possible way, so as not to lose sight of how our theory compares with these.

DIFFERENT VERSIONS OF QUANTITY THEORY

Theorists identified four different approaches to quantity theory, which was called “the quantity theory of money”, because it assimilates money and credit. This is incongruent for our theory –not so for current ones-, and it is one of the central elements distancing our monetary hypothesis from the four different versions.

1 –Fisher’s transaction approach

David Laidler, in his work “*The Demand for Money: Theories and evidence*” (p. 46-47) summarizes Fisher’s transaction approach to quantity theory:

Every transaction has both a buyer and a seller. Hence, for the aggregate economy, the value of sales must equal the value of receipts. Now, the value of sales must be equal to the number of transactions conducted over any time period multiplied by the average price at which they take place. The value of purchases must be equal to the amount of money in circulation in the economy times the average number of times it changes hands over the same time period. Hence, where M_s is the quantity of money, V_T is the number of times it turns over (its transactions velocity of circulation), P is the price level, and T is the volume of transactions, one can write, as an identity

$$M_s V_t \equiv PT$$

Obviously, the expression on the left represents *purchases* and the one on the right, *sales*, both in a certain period.

Theoretical analysis then transforms the identity in an equation and different types of studies are developed considering the quantity of exogenous money, with circulating velocity constant or not, short and/or long term, and with price levels constant or variable. The same with transactions and other aspects.

Based on our theory, we can only reject these postulates and we believe one argument should suffice: that all variables presented here are endogenous to the economy and interdependent, also stressing not all transactions are cash, as is implicit in this formula. We will show everything in this framework is complicated as soon as we pretend to include credit in interpersonal exchanges. This is completely legitimate, only cash and credit should not be assimilated in a formula that considers them as the same, because it means assimilating present and future.

We could conclude it is an attempt to create a theory of cash interpersonal exchanges (up to here) with an economic-theory structure already presented by accounting. In other words, the study of interpersonal exchanges is presented by the analysis of balance sheets, and what quantity theory pretends to do up to here is the study of stock rotations and median prices of interpersonally exchanged goods in cash transactions (up to this point) in a certain period. Once these data have been obtained, the dynamic analysis with different assumptions begins: quantity of money as a constant; constant prices; etc., etc., not realizing they are all endogenous and interdependent variables.

The whole pretension of quantity theory is nothing more than the attempt to study variations in money stocks, resulting from interpersonal exchanges carried out with it in a certain period, which is part of the study of stock rotations for any economic good. As a derivation, there is also an attempt to study prices, because they appear in those interpersonal exchanges. Then conditioning factors are added to these studies to analyze the behavior of prices and money. But the dependent role assigned to these entities by economic causality is ignored: prices arise in each unique and unrepeatable interpersonal exchange in a certain spatiotemporal point (the average is a very useful statistical datum for orienting economic calculation). The quantity of money used in interpersonal exchanges is defined by economic events and, if somebody interferes (government), that interference is an integral part of the event, producing real effects. But there is no such thing as non-economic entities that have nothing to do with the economy.

We deduce from all this that the only thing that can justify the attempt to create a quantity theory of money is considering it virtual and not a real economic good, because with real economic goods it makes no sense to “search for their price” and study their rotation or velocity with theories that are independent from stock rotation, in which interpersonal exchange is just another factor.

The transactions approach to quantity theory analyzes interpersonal exchanges through money, and here we can refer to Laidler again (p. 47):

The demand for nominal money depends on the current value of the transactions to be conducted in the economy and is equal to a constant fraction of those transactions.

Obviously money has to do with transactions –our interpersonal exchanges- and this is so by definition, because money exists as long as there is interpersonal exchange. But this should not lead us to believe money intervenes when there is credit and, in a more general sense, we must suppose the presence of money when it only serves as a unit of economic measure.

What is very legitimate in Fisher's transactions formula (our interpersonal exchange) is that it implicitly accepts that interpersonal exchange (his transaction) is an only act (“*Every transaction has both a buyer and a seller. Hence, for the aggregate economy, the value of sales must equal the value of receipts*”) and not separated in receipts and sales. However, not realizing this is so, he develops an unnecessary identity, constituting one of the diverging points between quantity theories and ours.

The central aspect of our differences with quantity theory is evidenced when emphasizing the conditions or necessary assumptions for it to acquire scientific significance. In all its versions, quantity theory requires economic variables to be constant and/or exogenous, which is an

implicit recognition that the theoretical foundations are weak. This is essential, because it operates with the partial wealth equation and not the total or complete wealth equation, which has no need for those conditions or for any variable of an exogenous nature. We must add the other elements that differentiate them from our theories (TER; difference between money and credit; interest as the price of credit and not money; etc.).

2 – The “real balances” or Cambridge approach

Different from the approach focusing on the study of interpersonal exchanges through money behavior –partial wealth equation flows-, this approach focuses its studies on the desire to have the economic good in stock –assets in the partial wealth equation-, the reasons why there is a desire to hold stocks of wealth. It does so studying money behavior, and how economic agents behave in terms of owning balances of money in stock. The focus on “real balances” derives from this.

Quoting Laidler once again (p. 65):

Fisher's approach to monetary economy stands out in that, when postulating money arises from individuals' need to trade with one another, he relates demand for money with the existing volume of commerce in an economy at a certain time and, therefore, it leads directly to a new macroeconomic theory of demand for money [...] the so-called “Cambridge” approach to the problem of money demand, developed in Marshall and Pigou's work, follows a very different trajectory from Fisher, though it begins in the same place and ends with a formal exposition of the function of money demand that is very similar [...] The Cambridge economists did not ask, as Fisher did, what determines the quantity of money an economy needs to carry out a certain volume of transactions, but rather what determines the quantity of money an individual wants to have, since his desire to carry out transactions is what makes the possession of money really desirable’.

We have here the two aspects influencing variations of stocks, what we have called demand in a general sense: our demand for things in other people's possession and for things we possess; in other words, demand is also composed of the stocks not interpersonally exchanged. From the point of view of our theory of broad demand, we can say both approaches are complementary, and conclude that, while one sees quantity theory of money as demand for transactions, the other analyzes it as the demand for stock holdings. But no matter if both theories are complementary, and apart from the aspects we do not accept in them, the bottom line is that dealing with stocks is not something exclusive of money but rather corresponds to all economic goods, a concept Laidler (p. 66) validates in a sense:

The question was posed in microeconomic terms, focusing on individuals' behavior when choosing. This approach seems more like an application of the general theory of demand to a particular problem, than a special theory of money demand, and when the problem is posed in these terms the type of variables an economist must contemplate tend to be different than those pointed out in Fisher's approach.

After some commentaries on the similitude and differences of these approaches, we consider Laidler to be right when he says (p. 66):

'All this is to say that in addition to depending on the volume of transactions individuals may be planning to conduct and the nature of the markets in which they operate (this would be Fisher's approach), the demand for money also varies with the level of wealth and with the opportunity cost of holding money, the income forgone by not holding other assets.

On this paragraph we only wish to point out that if we consider an individual and not society, any economic agent can obtain money (present economic good) just like any other present economic good with a credit; this is evidently not so for the whole of society, since only

present economic goods can be loaned. Evidently, in this case where we are considering society as “an only economic agent” –as in the case of Robinson Crusoe-, it cannot interpersonally exchange with anybody (bear in mind combined balances that clear out interpersonal exchanges).

Then Laidler refers to nominal prices and their proportional variations; a thesis we reject because nominal means not real, and relative to proportionality, Laidler adds (pp. 67 - 68):

*When formalizing their model, the Cambridge economists, particularly Pigou, chose to simplify it by assuming that for an individual the level of wealth, the volume of transactions, and the level of income –over short periods at least- move in stable proportions to one another. They then argued that, **other things being equal**, the demand for money in nominal terms is proportional to the nominal level of income for each individual and hence for the aggregate economy as well. Thus, they wrote the demand equation for money:*

$$M_d = kPY$$

which, combined with an equilibrium condition for the money market,

$$M_d = \bar{M}_s$$

yields

$$M_s = kPY$$

and from this we get

$$\bar{M}_s \frac{1}{k} = \bar{M}_s V = PY$$

This looks similar to Fisher's approach, but V represents not the transactions velocity of circulation of money, referred to above as V_T , but rather its income velocity –not the number of times a unit of money physically turns over, but rather its rate of circulation relative to the rate of production of real income.

Apart from the different “observation methods”, we appreciate that both theories study the factors that determine stock variations, though from different points of view. One does so from the point of view of “outflows of stocks for interpersonal exchanges” (which would explain only one aspect among many that affect decisions on stocks) and the other, the motives determining that a stock is not interpersonally exchanged. We remain within the boundaries of our previous synthesis where we stated that both theories –though irrelevant from our point of view because these factors can be seen in the financial analysis of any stock of economic goods- are complementary in their purpose. Only here there is the intention to show money is a very special case and does not obey the general law. All this derives from differentiating barter from indirect exchange and then separating the unique act of interpersonal exchange in two instances: purchase and then sale. With great emphasis we wish to stress that temporally separating the specific spatiotemporal act, unique and unrepeatable, of interpersonal exchange in two separate events (purchase and sale) in time was the origin of assigning money the temporal aspect that corresponds essentially to credit, as a more general economic entity, as representative of economic time interpersonally exchanged. This was the origin of monetary theories’ errors.

But the aspect we wish to emphasize in the “real balances” or “Cambridge” approach is what underlies the concept of “opportunity cost” on which it is implicitly based. This means introducing interest in terms of its incidence on the decision to keep stocks of an economic

good or interpersonally exchange it (monetary theory refers only to money and finance generalizes it to all economic goods), a situation we will obviously refer to, having already clarified the matter in theory. This concept is what opened the way to so-called “Keynesian theory” or preference for liquidity.

We repeat here the central observation emphasized when analyzing “Fisher’s approach”, that the central error of quantity theory was expressed in the conditioning factors, in terms of stability and exogeneity of economic variables required by it, as a result of operating with the partial wealth equation. This is what we emphasized in Laidler’s paragraph where, alluding to Pigou, he says: ‘*everything else remaining constant*’.

3 – The “preference for liquidity” approach or Keynesian theory

Continuing with Laidler’s very practical guide for our purpose of comparing our theory with the quantity theory of money in its different versions:

‘Keynes [...] analyzed with more care than his predecessors the motives that lead people to hold money and was more precise on the nature o the convenience to be had form its possession. The peculiar characteristic of money as an asset emphasized by Fisher and the Cambridge school was that money, alone among assets, is universally acceptable as a means of exchange. Keynes also listed the “transactions motive” as an important, but by no means the only, factor underlying the demand for money. He postulated that the level of transactions conducted by an individual, and also by the aggregate of individuals, bears a stable relationship to the level of income and hence that the “transactions demand” for money depends on the level of income [...] He suggested that people also find it prudent to hold some cash in case they are not able to realize other assets quickly enough to be of use to them for those classes of payments that cannot be considered regular and planned [...] This he called the precautionary motive for holding money and suggested that the demand for money arising from it also depends, by and large, on the level of income.

Keynes himself did not regard the demand for money arising from the transactions motive and the precautionary motive as being in any sense technically fixed in its relationship to the level of income. He was quite clear that the convenience to be had from holding cash for these purposes can be traded off against the return from holding other assets and made the transactions and precautionary demands for money functions of the rate of interest. However he did not stress the role of the rate of interest in this part of his analysis and many of his popularizers ignored it altogether, not because the rate of interest is not important in Keynes’s analysis, but because its chief importance is to be found in the role it plays in determining the speculative demand for money (a key error in Keynes since either he does not realize interest is the price of credit, not money, or he confuses money with credit, apart from considering the partial wealth equation).

We believe this to be a simple and precise summary of Keynes ideas and the historical moment of his appearance, being a continuation of the same monetary reasoning (erroneous according to our theories).

In the first place, we must clarify the essence of the error of current monetary theory, of which this is just one more expression, considering Laidler says: ‘*As we have seen, the peculiar feature of money, as an asset, emphasized both by Fisher and the Cambridge school, was the fact that money is the only asset universally accepted as a means of exchange. Keynes did not reject this point of view*’. Though Laidler continues the paragraph, saying this aspect of considering the point of view of money as the only asset universally accepted as a means of exchange is related to Keynes’ accepting the transaction motive, and later considered other functions of money such as preserving value, which leads him to the motives of precaution and speculation, we must emphasize that underlying the essence of all these economists ideas (Fisher, Cambridge and Keynes) is the concept that the only economic good that can satisfy liquidity is money. They do not consider credit, which they make fulfill the role of money,

assimilating money to credit, which is precisely what our theory reveals to be an essential error of current monetary theory, which we oppose categorically.

Then Laidler points to Keynes' introduction of bonds and their price variations following interest rates, an aspect showing Keynesian theories' mistake, showing it to be –in this sense– a continuation of Knut Wicksell's ideas. Let us see what our theory proposes on this matter:

- Bonds are credit
- Credit is economic time interpersonally exchanged.
- Economic time always materializes in a present economic good (our theory of economic relativity or TER).
- The price of credit is interest; economic causality is not what Keynes states, in the sense that interest rates establish the price of credits (bonds); as Laidler says (p. 53): "*It follows, then, from the very nature of bonds that changes in the rate of interest involve changes in their price*". Implicit in this commentary is that, for current theory as a whole, interest is the price of money and not credit (economic time interpersonally exchanged). But he continues: "[...] *However, these same changes in the rate of interest do not involve any change in the value of money*". Here interest is not the price of money or money is virtual (with no price, implying it is not an economic good). All this leads to the existing confusion on what money is, what credit is, what interest is, as we have emphasized in our theory.
- Then, since Keynes did not explain how interest rates vary, from where the price of credit supposedly derives (inverted causality), he adopted in an *ad hoc* manner the Wickesellian theory of multiple interest rates, the "normal" rate of interest, and the consequences for prices of the deviation of market interest rates from the "normal" rate. Obviously Keynes is a classic, because he maintains the concept of equilibrium between real and monetary or "virtual" markets.

Then Laidler (p. 54) summarizes:

The simplest form of the total Keynesian demand-for-money function makes transactions and precautionary balances functions of the level of income and speculative balances a function of the current rate of interest and the level of wealth, the latter variable being included because the foregoing argument about the speculative demand for money is cast in terms of the proportion of its total assets the economy will seek to hold in cash. Moreover, these two relationships are thought of as being additive. We obtain, then, as the demand function for money, with W representing real wealth,

$$M_d = [kY + l(r)W]P$$

The first term within the brackets represents transactions and precautionary balances, and the second term represents speculative balances.

He adds in a note: "*The fact that the whole expression is multiplied by P , the price level, indicates that this theory, like the preceding ones, is a theory of the demand for real money. It therefore implies that, other things being equal, the demand for nominal money is proportional to the price level.*" We will not extend on this comment because, if price levels are obtained as proportion of all the transactions carried out, it is evident he adopts proportionality as an axiom from its origin; on the other hand, he implicitly expresses the confusion existing relative to the concept of money, when he tells us it is "*a theory of money demand in real terms*"; but in the rest of the theory money is virtual: where did the barbarous relic go?

If we eliminate speculative demand, we have the same expression used by Cambridge quantity theory.

Laidler states Keynes considers the level of wealth to be constant, and that the relation between money demand and interest rates must not be seen as a linear relation, stable and

negative. These are speculations not related to our purpose here but that we must say, do not correctly reflect Keynes ideas.

The theory of money demand summarily developed up to here (derived from the historic sequence of quantity money theory) gives interest an important role, which tells us nothing more than the following: it is the way expectations for the future (from where interest arises, as interpersonally exchanged economic time) affect credit interpersonal exchanges. And since this is the interpersonal exchange of present for future economic goods, it is the way it affects present economic goods interpersonal exchanges (without which interest cannot exist), of which money is just one example. In other words, interest, as the price of credit, acts as just another relative price in the world of interpersonal exchanges. Therefore, monetary prices of economic goods arise in interpersonal exchanges and are interpersonally exchanged for other economic goods depending on the benefits economic agents expect to obtain.

The incidence of interest on present economic goods refers to the way present economic goods (including money) are interpersonally exchanged for future economic goods. The situation seems to be complicated when credit is adopted as the currency of exchange, which indicates interest becomes the price of currency, being the price of the credit used as currency. Our theory presents this explicitly, showing credit is interpersonally exchanged for other present economic goods. With the particularity that, according to TER, it qualitatively and quantitatively materializes in other present economic goods. Our theory also points out the risks involved in using irregular credits (PC, FM and the chain that can be built with them) as the exchange currency.

We could reiterate here that the error in economic theory consisted in assimilating money and credit, and dealing with them as if they belonged to the same category of economic goods, not realizing that one is present and the other is future, and supposing interest is the price of money and not of credit, along with the use of the partial wealth equation and hazily trying to define the total wealth equation. We believe this is the expression of how Keynesianism and the theory of income, consumption and the nonexistent equilibrium of savings and investment express the error they share with the Austrians, of confusing money with credit and interest with the price of money.

As to the central observation we have stressed on the essential failing of quantity theory that, because it uses the partial wealth equation, it becomes an irrelevant theory, condemned to resort to very severe and fictitious conditioning factors, we must say Keynes not only remains tied to this error (Keynes also has to resort to constant and exogenous variables), but adds one of his own, introducing in the incomplete wealth equation the idea that credit is part of the present wealth equation. This means theory begins to take the future as equivalent to the present and include it in the present wealth equation. With this, Keynes opens the way to the error we will find in modern quantity theory with Friedman, in the unconscious and imperfect theoretical endeavor to reach the total wealth equation, which should be the starting point, and not the final goal of economic science.

4 – The “Modern quantity theory” approach – Friedman

Milton Friedman returns to the Cambridge quantity theory and investigates what is behind money demand or the factors that determine the quantity of money economic agents wish to have.

Laidler (p. 57) uses an interesting expression when referring to Friedman:

“[...] He thus treats money in exactly the same way economist would treat any durable good, were they asked to construct a model of the demand for it. In doing so, he formulates a demand function whose form is dictated by the ultimate aim of testing its predictions against empirical evidence”

It seems evident that Friedman’s positivism led him to act in this way, a posture we share concerning the idea of corroborating theories and not accepting there can be an observation without a preexisting theoretical background but, apart from this epistemological aspect, we

believe you cannot operate in any other way, especially considering this idea implicitly contains, not only the desire to corroborate the theory, but also the most general theory possible, in such a way that there is no need for a special theory of money, a weakness that is present in all current monetary theory.

Before ending this section, we will come back to the relation between this theory and Friedman's observations when he says there is no greater causality in the economy than the one found between the quantity of currency and monetary prices, and his reference to the weaknesses in current monetary theory as a tool when it comes to explaining observed monetary phenomenon, as Paul Krugman also says.

Once again, we consider Laidler's work very practical as a synthesis of Friedman's ideas for comparison with our theory. We will comment on our posture between brackets (italics in the original) (p. 57):

Friedman begins by postulating that money, like any other asset, yields a flow of services to the agent who holds it (this is nothing more than a recognition of the biunivocal relation "economic good-owner", or the double entry accounting equation of Assets = NW). *Apart from noting that these services derive from the fact that money is a "temporary abode of purchasing power"* (we consider –as we know- analyzing money in terms of its purchasing power as if it were an exclusive feature a mistake), *there is no detailed analysis of the motives that are satisfied by the services* (we do not agree, because money was always attributed specific functions, wrong or not). *All that Friedman says about them is that the more money held, the less valuable relative to the services of other assets those flowing from money become. This is but a particular application of the general principle of the diminishing marginal rate of substitution between goods in consumption* (We have to agree with Laidler's last observation, since it is line with our general posture that there is no need for a special theory to deal with money).

Then Laidler expresses the final synthesis of Friedman's position concerning his continuity with the Cambridge approach, which he tries to perfect in its concept of wealth, together with an approximation to the Keynesian scheme. Laidler says (p. 57):

As with any other application of demand theory to a special case, the bulk of Friedman's effort is put into closely analyzing the nature of the budget constraint and picking out relevant variables to measure the opportunity cost of holding money. (Friedman maintains the idea of the incidence of the rate of interest on the demand for money, Keynesian style) *That wealth is the appropriate constraint on asset holding* (in our theory wealth is an asset) *and, therefore, on the demand for money should go without saying,* (we can accept the underlying idea if we are referring to macro-economics, but in micro-economics every economic agent can use credit to dispose of present economic goods, though we must accept Friedman's component of "realism –rejection of "virtuality"- though he later contradicts himself) *as it should, that the rates of return to be earned by holding assets other than money are the relevant opportunity costs.* (We already pointed out that Friedman sees an influence of interest on the holdings of any asset, Keynesian style, validating the error of considering interest to be the price of money instead of credit). *This much is evident from the work of Marshall and Pigou, but they do not provide a careful working out of the specific definition of wealth to be used in analyzing the demand for money on an empirical level or a precise listing of the relevant alternative rates of return to be considered. It is here that Friedman's key contributions lie.* (Which means referring to Friedman as a positivist, but it is the basis for Laidler's correct theoretical evaluation of Friedman, leading to the following paragraphs).

Laidler continues with the analysis of Friedman's theory (p. 57):

One role played by the budget constraint in demand theory is to define the maximum amount that can be bought of whatever good is being studied, or, in the case of an asset, the maximum amount of it that can be held. (In our theory economic goods and assets are the same, as is implicit in this expression, but Friedman's idea is that the economic agent can decide on the

composition of his or her wealth). *If an individual agent were to dispose of all assets, durable goods, bonds, and the like, he or she could certainly acquire and hold money instead an this stock of assets is what we usually would refer to as the agent's wealth.* (Accepting credit – bonds- as an economic good that is part of present wealth is in contradiction with our theory).

Immediately, Laidler summarizes the essential aspects of Friedman's theory that is an extension or development of current economic theory (p. 58):

However, in a world in which there are no restrictions on what can be bought or sold (this has nothing to do with the question, unless it is based on the mistaken concept of confusing money and credit, and separating the indivisible act of interpersonal exchange in purchases and sales and, finally, considering barter different from exchange using cash), *wealth thus defined does not impose a maximum bound on the amount of money an agent can hold.* (Here he begins to accept the possibility of obtaining money as a loan, but Friedman surprises us including “another” supposedly future asset as if it were present). *If the agent has labor income, there is no reason why a claim to this income stream cannot be sold and the proceeds devoted to money holding as well.* (Inadvertently, Friedman is referring to interpersonal exchange of money –present economic good- that the worker would receive in exchange for future work –future economic work-, which is simply a credit defined as the interpersonal exchange of present economic goods for future economic goods). *Bonds are nothing more than a claim to future interest income* (he seems to be rediscovering what credit is) *and stocks a claim to the future income from some piece of capital equipment.* (With the important difference that share capital is composed of or represents present economic goods as opposed to credits). *There is not that much economic difference between trade in these assets and trade in future labor income...* (Supreme expression of equating wealth composed of present economic goods with future economic goods, and adding and subtracting them as if they were the same thing. There is no objection to interpersonal exchange of future economic goods for present economic goods, the essence of credit, what we do not accept is considering cash and credit or present and future wealth as the same thing)

There is a further analytical development of this error, to the point of adding and subtracting present and future wealth. Continuing with Laidler (p. 58):

...This suggests that the concept of wealth should include the present value of labor income or, as it has come to be called, human wealth. Analytic precision certainly suggests that this is a sensible course to take .[Author's note: there is a discrepancy between the Spanish translation and the English original of Laidler's text. But the general sense of Laidler's ideas is the same as stated before: he agrees with Friedman's position.] (this last expression clearly equates present and future or, alternately, it means the future does not exist, or it exists but totally determined and is the same as the present. It is a very different thing to “valuate” present economic goods in terms of future income flows, which is completely valid for economic calculation.)

Evidently, here we find the error in economic theory relative to the beginning of the chain of economic causality, since it confuses the concepts of wealth as a *stock* of present economic goods at a certain moment with the variations of said wealth and, at the same time, with the factors producing the variation, forgetting that any variation means comparing *stocks* of present economic goods at different moments, and the study of how that stock varied can explain more or less “truthfully” what the real causes were. But in the partition of time trying to explain what happened, we find ourselves in the complex study of the infinite in the infinitely small, following Zenon's parable –the race between the tortoise and the hare. In other words, it is hard enough to evaluate present economic goods; it is much more difficult to understand their origins and variations. Nevertheless, what worries us most in current theory, of which Friedman is just one more expression, is that it mixes present and future as if we

were referring to the same economic time; implicitly this means non-existence of economic time, as if everything belonged to a “final” time”, or as if all present time were final.

Friedman’s theory focuses on considering the current value of all future income (as in Fisher’s present values, when calculating the Internal Rate of Return or IRR of an investment), not only human income, as a present economic good because with it we can demand present economic goods. This is operating with credit and Friedman’s analysis, supposedly taking a different path compared with other economic theories, makes the same mistake of confusing credit with money and, more generally, confusing present economic goods with credit. The fact that we can satisfy liquidity with both money and credit does not mean we can confuse interpersonally exchanged money with credit.

It is easy to see that for Friedman interest becomes the price of money instead of credit, and that his analysis does not differ from current theory. As Laidler shows, his contribution was an “attempt to promote empirical studies”, with obviously erroneous results, because they were based on erroneous theories. Friedman himself admitted as much.

In other words, considering the “current value” of future economic goods (income is nothing more, just like credit) as wealth that must be added to present economic goods, because present economic goods can be acquired with it, is an elementary expression of not understanding that any interpersonal exchange of present for future economic goods is credit. Continuing with Laidler’s rendition of Friedman’s ideas (pp. 58-59):

The principle of the diminishing marginal rate of substitution between money and other assets ensures that if the return on any of these other assets rises, the demand for money will fall. The return on these other assets has two components. (Assets do not produce income per se, they only do so within the biunivocal relation “economic good-owner”) First, the interest (or service) income yielded by them must be considered, (no, interest is produced by interpersonal exchange of present economic goods in time, not by present economic goods by themselves – here our theory of economic relativity has its full expression) but so also must the way in which their market prices are expected to vary, (this is correct if it refers to intertemporal variations of prices, not what is called inflation) for a forgone capital gain (or loss) is every bit as much a part of the opportunity cost of holding money as is forgone interest. As explained earlier, the price of income-earning assets varies inversely with the market rate of interest, (we have already stressed that this expression implicitly involves an erroneous concept of economic causality, interest is the price of economic time, called here income-earning assets; economic time subject to TER is what generates interest, explaining the relation between interest and other present economic goods) so that the expected percentage rate of exchange of this rate of interest can be used (intertemporal variations of prices, referring here to variations of interest, that is just another price) to measure the expected percentage rate of capital gain and loss (i.e. wealth) from holding other assets (which is legitimate, as with all economic calculation). The percentage rate of change of the rate of interest is, of course, opposite in sign to the rate of capital gain (or loss) it is here being used to measure. It must be subtracted from the rate of interest itself to obtain the expected yield on the relevant asset, this yield being what is forgone if money rather than the asset in question is held. (Which is again legitimate as with all economic calculation based on our theories, considering the aspects referred to here). Footnote 8: This is, of course, the same variable that underlies the Keynesian speculative demand for money, but this does not make Friedman’s views the same as Keynes’. The essentially Keynesian step is to relate the expected rate of change of the interest rate to its current level, and Friedman does not do this. (This finesse does not deny they both make the same mistakes relative to what our theory shows.)

We could summarize this paragraph with the following comment: the preceding text is in line with financial analysis of the opportunity costs of holding assets (present economic goods in stock) or lending them, and defining the alternative composition of assets considering different options. Notwithstanding the implicit error of considering interest to be the price of the present economic good that is being lent (as in the case of money) and not of the loan –of economic time and not the economic good in which it materializes-, the concept of

opportunity cost is valid. Not only do we not reject this concept: it is a corroboration of our “theory of broad demand”. In other words, opportunity cost involves estimating the value of stocks (demand of holdings) in terms of the period in which they are retained, based on monetary market prices of economic time, i.e. the rate of interest (the price of credit), that appear in interpersonal exchanges of economic time, when credit is used as currency.

It is important to reiterate the difference that exists between calculating the value of future income of a present economic good –remember the owner and not the economic good obtains the income- to estimate its current price, and assimilating future economic goods –that income that will become present economic goods tomorrow- with present economic goods.

It is also interesting to analyze the convergence in this analysis of the quantity of money, price levels and rates of interest. Laidler says (p. 60)

Thus the expected rate of inflation is a potentially important variable in the demand-for-money function (as in any economic good) [...] the demand function for money we have been discussing is one that determines the demand for money measured in units of constant purchasing power, for real money balances. (Here again we have real versus monetary prices, and constant prices of economic goods in time). If we wish to convert it into a demand function for nominal balances, it must be multiplied through by the price level. (the axiomatic proportionality of the median price arising from interpersonal exchange; then, the quantity of interpersonal exchanges multiplied by that median is equal to the monetary value of demand for money used or “demanded” in the referred period, and the dichotomy of prices. We reiterate that assigning stock monetary prices is very useful for economic calculation but it has no other meaning, since the prices arose from interpersonally exchanged stocks and not those being valued). [...] Friedman's model of the demand for money can be written as follows, where M_d is the demand for money in nominal terms, r is the rate of interest, W is wealth, h is the ratio of human to nonhuman wealth, P is the price level, and all time derivatives denote expected rates of change: $M_d = f(W, r - 1/r \cdot dr/dt, 1/P \cdot dP/dt, h) P$ (which is nothing more than another expression of partial wealth, adding present and future trying to reach imperfectly the total wealth equation, that is in turn the beginning and not the end of economic science).

We only add that Friedman inevitably had to study inflation and how it affects the decisions agents make relative to the future.

This leads us to what is known as “rational expectations”, i.e. how economic agents anticipate the effects that can derive from a process of manipulation of “exogenous” monetary offer on price levels or inflation. Something like studying how to protect oneself from “irregular” credits and the chain they form, so that the direct and indirect damage they cause with the redistribution of present and future wealth (credits-debts and income) affects other economic agents.

Summarizing “modern quantity theory” we can say the following:

- The concept of virtual money is present in this theory, especially when it emphasizes “purchasing power of money”, not realizing it is referring to credit (which is not a present economic good) and analyzing it as if it were “real” money (present economic good), and that is why it refers to “real balances”. In quantitative theory money becomes real when it is exchanged for present economic goods, a distorted form of the theory of economic relativity, and that is why money is confused with credit.
- One concrete way of expressing the error of current monetary theory, of which Friedman is just another exponent, is Laidler's expression “*Wealth is the current value of future expected income*”. Though we had already seen the concept of current value in Fischer, it was an attempt to assign a certain value to present economic goods in terms of the benefits that could be obtained from them in the future, minus the interest rate or price of the time it would take to obtain that income. This is valid in terms of helping the economic agent in his struggle to predict the future with a price estimate that can be used to evaluate present wealth, but that

“current value” cannot be confused with present wealth; in other words, it helps the economic agent to position himself for the future.

- The error of considering credit and future income as present wealth. In this Friedman is an orthodox Keynesian since, though Keynes said it was not possible to generate in the aggregate more liquidity than what is real, in his theory he said the opposite, when he considered the future as present.
 - It believes there are two economic spheres, the real and the monetary or “virtual”, upholding the idea of absolute prices; this is still within the framework of the theory of the dichotomization of prices.
 - Both Keynes and Friedman, like all other current monetary theoreticians, assimilate money and credit and believe interest is the price of money instead of interpersonally exchanged economic time; the relation between the prices of present and future economic goods is subject to the theory of economic relativity and the intertemporal variation of prices, and prices of present and future economic goods are relative, just like prices in general.
 - Friedman, as other economists, assimilates on occasions the concept of price with the value of things, not understanding that price is a *total* relation arising in each interpersonal exchange in a unique and unrepeatable point in space and time. There is a tendency to assign the prices that arise in interpersonal exchanges to stocks, which is known as assigning market prices to assets, a very commendable practice. But this is only data for economic calculation. And giving them greater relevance than this leads us to “absolute prices”, which are unreal and lead theorists to create tools such as general price levels, to transform “virtual” monetary variables into “real” variables, which shows they are unreal from their inception.
 - Then, because he confuses money with credit, Friedman states there are very few causal relations in economics as in the relation between price levels and the quantity of money. This leads him to conclude, in Laidler’s words: *other things being equal, the higher the level of wealth*, (which implies the partial wealth equation) *the greater the demand for money*. (on the road to Keynes’ monetary Apocalypse due to the “barbarous relic”) *This theory identifies certain variables as being potentially important determinants of the demand for money* (as the future is potentially for the demand of all present economic goods) *and also specifies the sign of the relationship which the demand for money can be expected to bear toward them*.
- Evidently at first sight this conclusion is in contradiction with our theories, which says that, with constant demand, the more present wealth there is, the lower the price of credit. Since credit competes with money to satisfy liquidity, it will be economically more convenient to satisfy liquidity with credit than with money. So the growth of wealth would result in relatively less use of money than of credit (Friedman’s statistics do not seem to validate this, because he adds money and credit instead of treating them separately to see how the three components –money, credit and wealth- relate. He treats them as if they were only two, money and wealth, and in a confused manner, adopting the partial wealth equation, mixing present and future. We believe a more adequate study of facts would support our theory. We only need to separate money from credit and we will see this allows us to dissipate the analytic fog derived from adding and subtracting different economic goods. The causality Friedman sees is the result of confusing credit and money. We are here within the realm of financial analysis, from which derives the study of stock variations in general (among the factors causing these variations we will find interpersonal exchange as just one more).
- Relative to the relation between money and credit, we have already shown this has to do with money loans and cancellation of credits payable in money. This final aspect is very important because it can influence empirical studies of statistical “delays” where credit and money are considered to be the same.
- We shall see that Friedman also incurs in what we will later call “Keynes’ paradox”, the same as the Austrians.
 - Friedman’s theories can be considered –according to our analysis- as an attempt to reconcile the Austrians with quantity and Keynesian theories, where he does not see the error –common to all other monetary theories- of confusing money with credit and considering interest as the price of present economic goods and not of credit or loans of said goods. He

also admits, implicitly or explicitly, the existence of virtual money and credit, with all that implies (searching for “their price” in purchasing power; separating interpersonal exchange into purchase and sale, etc.)

In short, Friedman perfected Keynes error: the adoption of the partial wealth equation, including the future as if it were present. This is possibly the reason why quantity theory presents the same economic reductionism relative to money as current monetary theory.

The conditions for quantity theory

The best way to close our analysis of the quantity theory of money, based on the theory of economic relativity and its monetary aspects (cash and credit; money different from credit; interest as the price of credit and not of the present economic good in which it materializes; the total wealth equation), is to consider the basic assumptions on which quantity theory is based. We will refer to what Mark Blaug considers as such (p. 633):

The quantity theory of money depends, as we have said, on three inter-linked propositions: (1) The exogeneity of the money supply, so that money can be said to cause prices; (2) the independence and stability of the demand-for-money function; and (3) the real determinants of the volume of transactions or level of output”.

Let us analyze each of these conditions.

Is the money supply exogenous? In our theory there is no place for exogenous money. So we have the question of how it is possible to consider the existence of exogenous money and this is the result of considering as money what we now know is irregular credit. On the other hand, we have defined what prices are and how they are determined, which shows the interpretation of the causality of prices by quantity theory is wrong (it is inverted), when it says “*money causes prices*”, combined with the endogenous nature of monetary supply in our theory. Finally, our theory does not have different definitions for the long and short term –as in current economic theories (“Exogenous in the short term and endogenous in the long term” or similar ideas), because we always refer to real instead of virtual entities.

Is there independence and stability of the demand-for-money function? Here we must reiterate what has been said in reference to the exogeneity of money and add what we emphasized in the analysis of statistical data: it is essential to separate the liquidity that is satisfied with credit from the liquidity satisfied with money and the degree of “irregularity” and the intensity of the credit chain (FM and PC). In short in our theory there is no room for the independence or stability of the demand for money, apart from the empirical study of relative shares. We reiterate that in our theory there is no room for exogenous currency (money or credit); both in quantity and in quality (price) currency arises from economic activity, there is no inverse causality. Here to, it is irrelevant to differentiate the short and long term.

Is money neutral? We have already referred to the possibility of the neutrality of money and the impossibility of prices being proportional to the quantity of money, based on the definition of prices and showing it is wrong to suppose they are an expression of “the price or value of stocks”. Here it is also important to emphasize that in our theory it is not necessary or pertinent to separate the short and long term; in other words, said distinction simply shows once again the inconsistency of current monetary theories, representing an *ad hoc* attempt to justify or explain gaps in the theory.

The conditions (stability and exogeneity of variables) necessary for quantity theory to be viable, in all its versions, implicitly imply that it is based on the partial wealth equation –not the total wealth equation- and virtual currency –money and credit-. Aspects of Keynesian theory are added to it in Friedman’s version, when assimilating future and present wealth. If we analyze it in philosophical terms, we could conclude that the modern conception of quantity theory is a kind of determinism, because it supposes the future can be predicted

exactly –the current value of future economic goods equal to the value of present wealth- or it supposes the future does not exist.

Other theoretical consequences in the same sense

Laidler, and other economists, summarize the later progress of monetary theory that has the same origin as all current ones and, in this sense, refers to Baumol's contributions, trying to develop a transactional motive (a study seeking to determine stock rotations) and precaution and speculation motives in the demand for money, related to demand for credit, especially in connection with the incidence of risk and uncertainty about the future. This is essentially related to credit –that is future- and with present economic goods as a part of the economic goods involved in credit.

A synthesis of our view of quantity theory

Any synthesis excludes some elements, but we believe it is useful in a didactical sense, and that it helps us to see that all the agenda of the quantity theory of money is included, with a more rigorous and scientific approach, in the general theory developed in this work:

- a) Economic quality and quantity, bearing in mind we must first define quality to be able to refer to quantity (this allows us to avoid confusing money with credit and assigning the price of credit to the money in which it typically materializes).
- b) Prices as the expression of the synthesis of economic quality and quantity rising from interpersonal exchanges.
- c) Everything is reduced to the study of stocks of economic goods and their variations, which could be the definition of the purpose of economic science.
- d) The study of stocks of economic goods can be carried out from the point of view of the stocks an economic agent wishes to possess (holdings) and of the motivations that produce their variations (flows), but in both cases we must consider the criteria for broad demand defined in our theory. Just as we generally consider the demand arising in interpersonal exchanges, we must also consider the demand for holding stocks. In other words, the study of wealth should be based on the total or complete wealth equation.
- e) Possibly, it is best to generalize the analysis of stock variations of economic goods, considering it a part of the “study of the level of economic goods”, of which prices are a partial expression arising in interpersonal exchanges. This leads us to believe Mises' idea that economics is the study of prices is inappropriate, since this is a partial aspect of economics, seen from the point of view of our more general concept of prices, not limited to prices appearing in interpersonal exchanges.
- f) Financial analysis, together with the study of how prices behave, includes the topics the quantity theory of money pretends to explain. It will do so more efficiently if it rejects the mistaken theoretical idea of assimilating money and credit and accepts the concept of the danger implicit in the chain of irregular credits (PC and FM), replacing the partial wealth equation with the total wealth equation.

We could summarize our reflections on quantity theory saying that, once issues of quality are correctly explained (not confusing money with credit), all the other topics it studies can be included in the analysis of stocks, a financial matter, within the framework of the theory of total or complete wealth, TER, interest as the price of credit, money different from credit, etc.

QUANTITY THEORY AND ECONOMIC QUALITY AND QUANTITY

Everything that has been said in this text relative to the topics included in the title leads us to relate them to quantity theory.

We know that when we refer to quality and quantity in economics, we do so in terms of economic goods that are such because they satisfy the needs of economic agents (fallible entities) and because they are scarce (the quantity disposable is less than what is needed). On the other hand we know prices are a synthesis of quality and quantity, and always arise in a process of exchange (intra or interpersonal) and generally we refer to monetary prices that arise in interpersonal exchanges where currency is involved (exchange good of common use). But both conclusions lead us to the final deduction that solves the problems of quantity theory and economics in general, showing more precisely that the problem does not exist in the terms established by both, when they try to define quality and quantity as two independent entities, not realizing they are both part of the single concept of economic goods. Quantity theory makes the same error of separating purchases and sales in cash or credit interpersonal exchange, instead of considering it a single act. The same holds true for the attempt to separate the quantity and quality of an economic good. Both appear together, establishing the existence and level of an economic good relative to the needs it satisfies and in any comparison with other economic goods.

If there is any doubt, we can simply go back to the chain of economic causality:

- 1) An economic agent's main feature is fallibility.
- 2) The fallibilities of the economic agent are his needs.
- 3) These needs are satisfied by things that are useful for satisfying those needs; we call those things goods (good means useful in economics). Which means that all goods have a quality, and that the quality, not the good, satisfies needs, and this identifies the useful thing, it is the identity of the useful thing.
- 4) The good becomes an economic good (enters the economic sphere) if it is scarce, i.e. if the amount disposable to satisfy the need is inferior to that need. So an economic good is inevitably scarce, because of its quality or quantity.

Forgetting this elementary chain of economic causality is what leads economists to believe quantity theory is useful for things other than economic calculation; we can say the same of theories that analyze the possibility of controlling the output (production) or the price of economic goods, which only causes theory to be distracted from the central issues.

There is no sense in studying if we can control the quantity and/or quality of economic goods without affecting prices (and viceversa), which are the synthesis of both entities. In other words, prices are based on the quality and quantity of economic goods.

This final synthesis shows that there is no need to study quantity theory. But we considered it was convenient to do so, not only because it allowed us to discuss qualities, quantities and prices, but also because these topics include economic time, although an imperfect expression of it according to our theory. In the last analysis, it is valid to mention the different versions of quantity theory considering the epistemological aspect of comparing theories to show which is simpler or more complete or both.

CHAPTER XVI

KEYNES

We believe dedicating a chapter to compare our theories with John Maynard Keynes' essential theoretical principles is important. The influence he has had on the course of economics, independently of his theories being right or wrong, cannot be denied.

Though the essence of his ideas is much debated, we will focus on aspects that have been considered central to what he tried to transmit, based on his second work "*The General Theory of Employment, Interest, and Money*", not considering the differences with his first work, "*Treatise on money*".

As we have done up to now, we will present a brief outline of the ideas that interest us here and then compare them with our theory.

A Synthesis of Keynes' ideas

We believe the best way to introduce Keynes' work is refer directly to it. Specifically we will refer to the "Preface to the French Edition" Keynes himself wrote (February 20, 1939 – King's College Cambridge). This preface was written quite a while after the first edition of the book and in that time, important favorable and unfavorable judgments had been expressed, allowing Keynes not only to defend but also to summarize his ideas.

We will now present an extract from this preface, inserting brief comparisons with our theory:

I have called my theory a general theory. I mean by this that I am chiefly concerned with the behavior of the economic system as a whole,—with aggregate incomes, aggregate profits, aggregate output, aggregate employment, aggregate investment, aggregate savings rather than with the incomes, profits, output, employment, investment and saving of particular industries, firms or individuals. And I argue that important mistakes have been made through extending to the system as a whole conclusions which have been correctly arrived at in respect of a part of it taken in isolation. (We have developed our system as a whole based on its elements in the specific case of doing the accounting of the whole system, consolidating the subsets that form it. We have proceeded in this manner because our hypothesis on the topic of "aggregates" is that they are nothing more than the sum of homogeneous entities –in correspondence with the limits of homogeneity adopted in each case according to the needs of whoever homogenizes- of a set of economic entities. When we refer to the economic entity wealth and, more specifically, to the biunivocal relation "economic good-owner" we are referring to the TOTAL OR COMPLETE WEALTH EQUATION in its two versions, micro and macro or aggregate).

Let me give examples of what I mean. My contention that for the system as a whole the amount of income which is saved, in the sense that it is not spent on current consumption, is and must necessarily be exactly equal to the amount of net new investment has been considered a paradox and has been the occasion of widespread controversy (surely he refers to Hayek's correct criticism relative to the savings-consumption paradox that we will deal with). The explanation of this is undoubtedly to be found in the fact that this relationship of equality between saving and investment, which necessarily holds good for the system as a whole (evidently referring to the partial wealth economic equation we reject, and the analysis of the theoretical and factual impossibility of savings being equal to investment), does not hold good at all for a particular individual (as we have seen in the total wealth equation we make no distinction of micro and macro aspects, except in the technical accounting analysis of consolidation, where individuals are grouped to obtain a consolidated statement for the

whole group). *There is no reason whatever why the new investment for which I am responsible should bear any relation whatever to the amount of my own savings. Quite legitimately we regard an individual's income as independent of what he himself consumes and invests.* (Obviously we do not share his concepts of wealth and savings, though we will see Keynes sometimes does and sometimes does not accept our concepts, and we believe this is connected to the fact that he does not define income as a variation of wealth and present wealth as the accumulated stock of past savings, operating at the same time with the partial wealth equation versus our total wealth equation). *But this, I have to point out, should not have led us to overlook the fact that the demand arising out of the consumption and investment of one individual is the source of the incomes of other individuals* (he forgets demand of stocks, showing once again he operates with a partial wealth equation), *so that incomes in general are not independent, quite the contrary, of the disposition of individuals to spend and invest; and since in turn the readiness of individuals to spend and invest depends on their incomes, a relationship is set up between aggregate savings and aggregate investment which can be very easily shown, beyond any possibility of reasonable dispute, to be one of exact and necessary equality.* (We can see Keynes' effort trying to recreate the key biunivocal relations in economics, “need-economic good” and the axiomatic “economic good-owner” that lead us to “wealth-owner” and “Asset = Net Worth”, an accounting expression of total wealth. This whole detour is the result of not considering the elementary biunivocal relations from where the chain of economic causality presented in our text derives, instead of dissociating past from present and present from future, as if time were not continuous, transcending all fallible entities).

[...] It is shown that, generally speaking, the actual level of output and employment depends, not on the capacity to produce or on the pre-existing level of incomes, but on the current decisions to produce which depend in turn on current decisions to invest and on present expectations of current and prospective consumption (the introduction of expectations is very commendable, but there must be no dissociation from past and present, which are the basis for temporal continuity). Moreover, as soon as we know the propensity to consume and to save (as I call it), that is to say the result for the community as a whole of the individual psychological inclinations as to how to dispose of given incomes (we believe subjective value theory explains human behavior correctly, and consider it to be the theoretical framework within which psychological functions act), we can calculate what level of incomes, and therefore what level of output and employment, is in profit-equilibrium (obviously Keynes is a classical economist) with a given level of new investment (exogenous, extra-economic investment?); out of which develops the doctrine of the Multiplier (a technical resource). Or again, it becomes evident that an increased propensity to save will ceteris paribus contract incomes and output (implies demand for savings is not a part of wealth, confirming he uses the partial wealth equation); whilst an increased inducement to invest will expand them. We are thus able to analyze the factors which determine the income and output of the system as a whole;—we have, in the most exact sense, a theory of employment (which our theory does not deal with in that manner).

We can start building the “Keynesian model”, including the following elements:

- Real production and employment levels depend on present investment decisions and present expectations relative to current and expected consumption.
- Then he resorts to marginal propensity to consume (MPC) and marginal propensity to save (MPS) that, associated to a given investment (I) and the multiplier, give us the equilibrium level of income. We can summarize all this:
 - a) An increase of MPS reduces income and production
 - b) An increase of I increases income and production.
 - c) A permanent equilibrium of aggregate S and I.
 - d) The theory of employment is “explicated”.

Considering our theory of the chain of economic causality, we observe the following fundamental differences that produce a growing theoretical gap between our theory and his:

- 1) Referring to income and production as two different things means denying the existence of the biunivocal relation “economic good-owner”.
- 2) Our axiom of the total wealth equation rejects the concept of equilibrium and especially the equilibrium of aggregate S and I as an axiom.
- 3) We obviously do not agree with the concept of employment.

Then Keynes continues to build his “model”:

Another feature, specially characteristic of this book, is the theory of the rate of interest. In recent times it has been held by many economists that the rate of current saving determined the supply of free capital, that the rate of current investment governed the demand for it, and that the rate of interest was, so to speak, the equilibrating price-factor determined by the point of intersection of the supply curve of savings and the demand curve of investment (concepts our theory does not accept). *But if aggregate saving is necessarily and in all circumstances exactly equal to aggregate investment, it is evident that this explanation collapses* (correct, only he comes to this conclusion by the wrong road, since he accepts the concept that investment and savings are equal, which will lead him to search for a way out taking the wrong path; though in another part he says that precisely the difference between savings and investment is unemployment, implying he accepts an equilibrium where unemployment is the adjustment variable). *We have to search elsewhere for the solution. I find it in the idea that it is the function of the rate of interest to preserve equilibrium, not between the demand and the supply of new capital goods, but between the demand and the supply of money* (equilibrium once again, money is the adjustable variable here), *that is to say between the demand for liquidity and the means of satisfying this demand* (this is the starting point for his whole monetary theory; built on the same error committed by all economists, attributing money a temporal aspect that is a typical feature of credit and confusing them; attributing interest to money and not to credit, which is opposed to our theory of economic relativity and the chain of economic causality).

We can say that in the preceding paragraph we find two different Keynes, a brilliant Keynes and one that has lost his bearings.

- 1) *The brilliant Keynes* is the one expressing, in some way, the problem macroeconomic theory finds itself in: how do you make the necessary axiom $S = I$ compatible with market interest rates? This question shows a fatal incongruence: how to make a concept that always shows a mathematical equivalence compatible with a –necessary- requisite that does not occur permanently. In other words, how to make an axiom compatible with a required component that is not so. He presents what we could call *the equilibrium solution*: a scheme pretending to balance the real and the monetary or virtual world, individually and as a whole.
- 2) *Keynes loses his bearings*, seeking the solution to a problem that does not exist, and that is why –agreeing with all other economic theoreticians- he insists on analyzing interest, which is correct, but taking the wrong path. Trying to find a solution to his question in interest he studies money, obviously attributing interest to money and not to credit. All this is a consequence of assimilating money to credit. And so he takes the same wrong turn as all other theorists. He will then seek for *ad hoc* alternatives, having reneged on the primitive terms of economics (assimilating money to credit; considering interest to be the price of money and not credit; partial wealth equation; the money-interest-prices transmission mechanisms; employment-unemployment; equilibrium; inflation; etc.).

If he had discovered from the beginning the error of operating with the partial wealth equation instead of the total or complete wealth equation –which would have taken him to reject the axiom $S = I$ - he would have found the correct path. Or at least he would have avoided the

confused virtual, *inexistent*, development which his question led him to. Obviously, we prefer the brilliant Keynes, since his wrong answer –the same as other economists’– is what made us reject macroeconomic theory and begin our investigations. Because of this we were able to compare his question with our theory of the total or complete wealth equation that showed us the incongruence of the $S = I$ equation as an axiom. In other words, there is no difficulty in discovering the weaknesses in current theories based on the total or complete wealth equation. Everything is reduced to comparing with the different versions of the partial wealth equations presented to date. The fact that the successive changes introduced in the partial wealth equation have been expansive, i.e. inconsistent attempts to complete it, to produce the complete or total wealth equation, is no accident. Evidently, the solution is much simpler and solid if you start from the complete equation. *Now we can clearly see why we began our theory with the total or complete wealth equation, and the simple but forceful demonstration of the impossibility of the occurrence of the $S = I$ equation or equivalence. We reiterate once again: the heart of the solution was in accounting, we should not renounce the $A = NW$ equation, which is the same as the basic cell of economics, the biunivocal relation “economic good-owner”.* Here we see from another point of view why there is a need for a “virtual” solution: if you are trying to solve an nonexistent problem, the best way out is finding an nonexistent solution.

However, we will come back to the specific subject of interest and money when we comment on his chapter 17, “The essential properties of interest and money”.

But still in his preface to the French edition, Keynes says:

[...] and the third feature to which I may call attention is the treatment of money and prices. The following analysis registers my final escape from the confusions of the Quantity Theory, which once entangled me (obviously, he never really escaped from quantity theory, since his theory is still based on its essential ideas). I regard the price level as a whole as being determined in precisely the same way as individual prices; that is to say, under the influence of supply and demand (again, classical Keynes, accepting the law of supply and demand). Technical conditions, the level of wages, the extent of unused capacity of plant and labour, and the state of markets and competition determine the supply conditions of individual products and of products as a whole (its aggregates are not concrete? they are not so because they derive from virtual money). The decisions of entrepreneurs, which provide the incomes of individual producers and the decisions of those individuals as to the disposition of such incomes determine the demand conditions (a new attempt to return to biunivocal “economic good-owner” relations, from where he does not begin and where inadvertently and inconsistently he is trying to go, but he does not know precisely where he is going). And prices—both individual prices and the price-level—emerge as the resultant of these two (real) factors.

Money, and the quantity of money, are not direct influences at this stage of the proceedings (there are two alternatives, either he is not referring to monetary prices or, if he is referring to monetary prices, these are not real, which implies virtual currency; but since he accepts prices, evidently the second option is the one underlying his theory). *They have done their work at an earlier stage of the analysis. The quantity of money determines the supply of liquid resources, and hence the rate of interest* (he assumes money determines interest rates, not realizing interest is the price of credit; this leads us to conclude that if money does not determine interest rates, in the Keynesian scheme we are only left with virtual money, since it has no other influence on the economy) *and in conjunction with other factors (particularly that of confidence) the inducement to invest, which in turn fixes the equilibrium level of incomes, output and employment and (at each stage in conjunction with other factors) the price-level as a whole through the influences of supply and demand thus established* (is this Walras’ theory of equilibrium?).

At the end of the preface Keynes says:

I believe that economics everywhere up to recent times has been dominated, much more than has been understood, by the doctrines associated with the name of J.-B. Say. It is true that his 'law of markets' has been long abandoned by most economists; but they have not extricated themselves from his basic assumptions and particularly from his fallacy that demand is created by supply. Say was implicitly assuming that the economic system was always operating up to its full capacity, so that a new activity was always in substitution for, and never in addition to, some other activity (employment and potential capacity are different categories). Nearly all subsequent economic theory has depended on, in the sense that it has required, this same assumption. Yet a theory so based is clearly incompetent to tackle the problems of unemployment and of the trade cycle.

We have already answered this, when referring to Say's law and its diverse interpretations, and also rejected Keynes' version or interpretation. We will only refer here to the aspect Keynes stresses when saying: "Say was implicitly assuming that the economic system was always operating up to its full capacity", where he includes the potential aspect, which is legitimate, but not with the interpretation that no one can interpersonally exchange economic goods if they do not have economic goods to offer. Keynes continues: [...] so that a new activity was always in substitution for, and never in addition to, some other activity [...] an aspect that cannot be derived from the essence of Say's law, which does not prevent adding economic goods. In other words, Say's law refers only to interpersonal exchanges, but not to total demand as a whole.

Up to here, we can conclude the "simple" Keynesian model is complete when the equilibrium level of income is found, where interest is determined in the money circuit and investment is "autonomous", which configures a "virtual and partial equilibrium" scheme, because credit is not considered or is confusedly assimilated to money.

However, considering the importance of economic time in our theory and the erroneous manner with which current economic theories –including Keynesian theory– refer to it, it is essential to comment extensively his chapter on "The essential properties of interest and money". In this chapter, he completes his model, referring to the aspects that interest us in this work, with incidence in monetary topics in particular and economic time in general.

We reproduce some passages from chapter 17:

It seems, then, that the rate of interest on money (this is in complete contradiction with our theory that says interest is the price of economic time, and this is so considering what follows) plays a peculiar part in setting a limit to the level of employment, since it sets a standard to which the marginal efficiency of a capital-asset must attain if it is to be newly produced (is he saying what he denied, that interest is also determined by the $S = I$ equilibrium, and not only the money market, although our view is that this would be wrong too?). That this should be so, is, at first sight, most perplexing. It is natural to enquire wherein the peculiarity of money lies as distinct from other assets, whether it is only money which has a rate of interest, and what would happen in a non-monetary economy (we can see he is in line with current theory, to explain the economy it must reconcile the real and virtual worlds). Until we have answered these questions, the full significance of our theory will not be clear (and this was so; we see another expression of the equilibrium solution).

This paragraph is very clear, together with the one in which, following Wicksell, he deals with the existence of different rates of interest, according to the economic good we are referring to (rates of interest in terms of wheat, etc.). They show us Keynes with the same theoretical foundations as the Austrians, and with the same basic error as all current economic theory. In other words, they show us economic theory is based on the same principles and the debates are about accessory topics. Then Keynes tells us money is a "very special case" because of its essential feature of being the "only thing" that satisfies liquidity. That is why its elasticity is different from all other economic goods and that quality is the limiting factor

preventing full-employment. All this is topped off with the idea that the solution is to manipulate the quantity of money to make the unemployment problem less traumatic. This can also be expressed as follows: money in the form of gold (or its equivalent CID) is a very big and unnecessary limitation for the economy, which leads it to an Apocalypse, similar to what Malthus postulates. The Keynesian expression “barbarous relic” referring to gold derives from this concept. Comparing this reasoning with our theory, we observe the following substantial differences:

- 1) Keynes does not consider TER, which leads him to *ad hoc* solutions -because of the inconsistency of his theory, derived from others’, such as Wicksell’s, ideas- and to adopt the concept of several interest rates according to each economic good.
 - 2) He relates interest to things, goods and/or economic goods, not to economic time.
 - 3) We already saw in Keynes’ scheme, money is virtual, which is the reason why in the previous point we said he relates interest to “things, goods and/or economic goods”, with the possibility of money being an economic good or, alternately, a virtual or extra economic entity.
 - 4) He relates employment only to the level of investment, though he assigns consumption the same role, forgetting the other concepts included in our total demand (savings, liquidity, etc.) which he will include partially in the demands for transactions, savings and speculation, in an attempt to approach “intuitively” our total or complete wealth equation.
 - 5) Underlying his theory is the temporal nature of money, which is the nature of credit in our theory, and he does so when stressing –just as all other economists- the need to differentiate barter (direct exchange that he calls “non-monetary economy”) from indirect exchange using money. We already know this leads to the error of separating cash interpersonal exchange (unique and unrepeatable in space and time) in two different acts, purchase and sale, and all that this original sin implies for economic theory.
 - 6) The confusion in Keynes’ ideas on the topic of money is evident; confusion visible in the fact that in certain passages money is something innocuous, virtual, with unimportant consequences, and at other times it is the fundamental element limiting or regulating economic activity (“employment”, etc.). It is another expression of our “Keynes’ paradox” that we will refer to later on.
 - 7) Relative to the topic of employment, the difference with our theory is in the fact that Keynes considers as unemployed economic goods what in our theory are not economic goods at all, though they might have been in the past or could be in the future.
 - 8) The central nucleus of the differences with our theory is found once again in the partial wealth equation versus our total or complete wealth equation. We know this attitude leads to the wrong axiom –because it does not exist- $S = I$. The total wealth equation and/or biunivocal relation “economic good-owner” is a simpler and more solid basis, freeing us from the need for all the theoretical construction built around the $S = I$ equation (equilibrium theory, transmission mechanisms, employment-unemployment, inflation, “real” and monetary rates, etc.).
- To present in Keynes own words the central mistake of his theory –of economic theory in general- in terms of relating interest to money (extending this to all present economic goods), we reproduce the following:

The money-rate of interest—we may remind the reader—is nothing more than the percentage excess of a sum of money contracted for forward delivery, e.g. a year hence, over what we may call the ‘spot’ or cash price of the sum thus contracted for forward delivery. It would seem, therefore, that for every kind of capital-asset there must be an analogue of the rate of interest on money.

We believe that there must be no more specific expression disowning TER than this passage from Keynes, obviously derived from Wicksell. Keynes is wrong to speak of an “analogue”, when what he should stress is the TER process, the materialization of economic time in other present economic goods. This leads him –it could not be otherwise- to investigate the “special

characteristics" of money (since he "discovered" that interest differs according to each economic good, then money has to have "something special" compared with other economic goods, which makes its interest also "something special"), just as all other economists have done, conceiving money to have what would seem to be "mystical traits", and that is why all economists have navigated between the real and the virtual. This includes validating the "dichotomy of prices"; accepting Mises style "money substitutes"; confusing irregular credits with money; considering interest to be the price of money and not credit, etc.

In short, Keynes begins a theoretical search trying to discover what is special in money, just like all other economists, not realizing it is simply one more present economic good that satisfies a need and that its "peculiarities" derive from that need –economic causality goes in that and not the contrary sense. But he does not see this refers to the need for economic time, which is subject to TER, and that credit satisfies this need better than money, when the institutional and cultural framework creates the adequate conditions. In other words, the greater the ignorance, the higher the cost of currency, money in place of credit. Then, from the initial error, Keynes derives his "general" theory:

It follows from this that there is no reason why their rates of interest should be the same for different commodities,—why the wheat-rate of interest should be equal to the copper-rate of interest (he did not discover TER). For the relation between the 'spot' and 'future' contracts, as quoted in the market, is notoriously different for different commodities (in terms of our theory, he does not realize this refers to intertemporal variations of past, present and future, prices). *This, we shall find, will lead us to the clue we are seeking. For it may be that it is the greatest of the own-rates of interest (as we may call them) which rules the roost (because it is the greatest of these rates that the marginal efficiency of a capital-asset must attain if it is to be newly produced); and that there are reasons why it is the money-rate of interest which is often the greatest (because, as we shall find, certain forces, which operate to reduce the own-rates of interest of other assets, do not operate in the case of money)* (Keynes continues with his *ad hoc* solution, that is why he positions money as something "very special, almost mystical", being the only thing that can solve all evils or advance towards that goal).

Keynes finishes this section of chapter 17 following the strategy determined by his *ad hoc* theory; and that is why he anticipates the second section as follows:

So far, therefore, the money-rate of interest has no uniqueness compared with other rates of interest, but is on precisely the same footing. Wherein, then, lies the peculiarity of the money-rate of interest which gives it the predominating practical importance attributed to it in the preceding chapters? Why should the volume of output and employment be more intimately bound up with the money-rate of interest than with the wheat-rate of interest or the house-rate of interest? (Questions we do not pose because they are solved by TER; the chain of economic causality indicates interest is the price of credit; the concept of economic good includes those of employment and/or unemployment; etc.).

In his second section, Keynes says:

Let us consider what the various commodity-rates of interest over a period of (say) a year are likely to be for different types of assets (inverse causality compared with TER). Since we are taking each commodity in turn (we believe Keynes refers to economic goods; we say this here because he sometimes refers to virtualism) as the standard, the returns on each commodity must be reckoned in this context as being measured in terms of itself.

There are three attributes which different types of assets possess in different degrees; namely, as follows:

(i) Some assets produce a yield or output, measured in terms of themselves, by assisting some process of production or supplying services to a consumer. We call this yield q (Inadvertently he refers to TER).

(ii) Most assets, except money (because of its “special liquidity), suffer some wastage or involve some cost through the mere passage of time (apart from any change in their relative value), irrespective of their being used to produce a yield; i.e. they involve a carrying cost c measured in terms of themselves. It does not matter for our present purpose exactly where we draw the line between the costs which we deduct before calculating q and those which we include in c , since in what follows we shall be exclusively concerned with $q - c$.

(iii) Finally, the power of disposal over an asset during a period may offer a potential convenience or security, which is not equal for assets of different kinds, though the assets themselves are of equal initial value. There is, so to speak, nothing to show for this at the end of the period in the shape of output (this means rejecting TER, and at the same time implies implicit acceptance of virtual money, not realizing he is alluding to credit, something we will show shortly); yet it is something for which people are ready to pay something. The amount (measured in terms of itself) which they are willing to pay for the potential convenience or security given by this power of disposal (exclusive of yield or carrying cost attaching to the asset), we shall call its liquidity-premium “ r ” (Menger’s salability together with the mistake of relating “only” to money and not economic time in general. In other words, Keynes, with his liquidity premium, comes close to our concept of interest, but he cannot reach the right conclusion because he does not discover TER, along with all the rest of his errors shown by our hypothesis. We will come back to this, which is essential to understand Keynes from our point of view).

According to our theories, this is no more than trying to classify wealth and reach the “total wealth equation”, and it shows us the language with which Keynes includes Menger’s liquidity and the “special” characteristics of money for satisfying it better than all other economic goods. We will not extend on this because we are in the same situation of comparing our theory with all those that ignore TER and the chain of economic causality we propose.

Keynes continues:

It follows that the total return expected from the ownership of an asset over a period is equal to its yield minus its carrying cost plus its liquidity-premium, i.e. to $q - c + l$. That is to say, $q - c + l$ is the own-rate of interest of any commodity, where q , c and l are measured in terms of itself as the standard (his intuition leads him to TER, in a complicated attempt to explain economic time in terms of temporal wealth variations, together with intertemporal variations of prices, notwithstanding the erroneous concept of trying to assimilate yields to interest, a topic we will deal with). It is characteristic of instrumental capital (e.g. a machine) (it is not true that Keynes did not consider capital, though he may deal with it wrongly in theoretical terms) or of consumption capital (e.g. a house) which is in use, that its yield should normally exceed its carrying cost, whilst its liquidity-premium is probably negligible [...] and of money that its yield is nil and its carrying cost negligible, but its liquidity-premium substantial (This is only one step –that must be covered- removed from virtual money). [...] But it is an essential difference between money and all (or most) other assets that in the case of money its liquidity-premium much exceeds its carrying cost, whereas in the case of other assets their carrying cost much exceeds their liquidity-premium (he is still trying to show the feature of greater salability [Menger] of the economic good used as money. Keynes is using the same concept as Mises when saying money owes its existence as such to its being an exchange good, an aspect we deny but at the same we do not see any mystical quality here or any exclusive trait; also there is the fact that in Keynes and Mises there is virtual currency).

We could anticipate sequences in Keynes presentation if we wanted to refer only his specifically monetary ideas, but we wish to follow the original order of his theory because it enriches our own:

[...] To determine the relationships between the expected returns on different types of assets...

This last paragraph, together with the preceding ones, clearly shows others aspects that we do not agree with:

1) He confuses wealth variations, that he calls “asset yields” with interest; and this is so even though he contradictorily deduces interest to obtain the yield and comes to the conclusion that “*q – c + l is the own-rate of interest of any commodity, where q, c and l are measured in terms of itself as the standard*”, which must be simply understood as an attempt to clear yield from opportunity costs or to give “virtual” monetary yields a semblance of “reality”.

Obviously, this confusion results from considering interest as arising from present economic goods, and not as the result of economic time. We could say this is some kind of synthesis of the causality of economic time in the inverted economic theory currently in use relative to TER. We need only reiterate here that this inversion of temporal economic causality is not exclusive of Keynes.

2) Relative to the topic of asset yields, it is also very useful to bear in mind there is no such yield of economic goods if it is not related to a specific owner economic agent. In other words, Keynes –the same as current economic theory in general- tends to refer to assets or economic goods as if they had a life of their own, apart from the biunivocal relation “economic good-owner”. This in turn has a previous component which we saw and which leads us to think of the triunal relation “need-economic good-owner”, since there is no economic good that does not satisfy a need; this could lead us further back in the univocal chain to what we referred to at the beginning of this text: “fallible entity-need-economic good-owner”.

Going back to the monetary aspect, we continue with Keynes:

[...] *it is easy to see that the demand of wealth-owners will be directed to houses, to wheat or to money, (...) as is greatest. Thus in equilibrium the demand-prices of houses and wheat in terms of money will be such that there is nothing to choose in the way of advantage between the alternatives...* (we not only have the Keynes that defends the concept of equilibrium but also the one that speaks of the adjustment of supply and demand plus the classical adjustment, where profits are equal or tend to disappear due to competition).

The choice of the standard of value (currency or unit of account) will make no difference to this result because a shift from one standard to another will change all the terms equally. (Keynes the realist) [...] *Now those assets of which the normal supply-price is less than the demand-price will be newly produced; and these will be those assets of which the marginal efficiency would be greater (on the basis of their normal supply-price) than the rate of interest (both being measured in the same standard of value whatever it is). As the stock of the assets, which begin by having a marginal efficiency at least equal to the rate of interest, is increased (implicit here is the concept of equilibrium he supposedly rejected in other economists, that were also wrong when saying the rate of interest determined the equilibrium between savings and investment), their marginal efficiency (for reasons, sufficiently obvious, already given) tends to fall. Thus a point will come at which it no longer pays to produce them, unless the rate of interest falls. When there is no asset of which the marginal efficiency reaches the rate of interest, the further production of capital-assets will come to a standstill (more from classical Keynes, and adjustments towards equilibrium where the rate of interest comes to the rescue...). [...] It is now apparent that our previous statement to the effect that it is the money-rate of interest which sets a limit to the rate of output, is not strictly correct. We should have said that it is that asset's rate of interest which declines most slowly as the stock of assets in general increases, which eventually knocks out the profitable production of each of the others,—except in the contingency, just mentioned, of a special relationship between the present and prospective costs of production. As output increases, own-rates of interest decline to levels at which one asset after another falls below the standard of profitable production;—until, finally, one or more own-rates of interest remain at a level which is above that of the marginal efficiency of any asset whatever. (Apart from the error of considering different interest rates according to the good in question, it is clear he is referring here to the*

classical adjustment process among different goods markets, emphasizing the incidence of expectations relative to intertemporal variations of prices).

But the most important result relative to the monetary aspect appears in the next paragraph when he seeks for a solution to the adjustment problem, which is hindered because of the lack of an economic good that eliminates the limits he mentions –an asset with an own-rate of interest that does not decline with the increase of output- and that can “liberate humanity from restrictions and the barbarous relic”.

If by money we mean the standard of value, it is clear that it is not necessarily the money-rate of interest which makes the trouble. We could not get out of our difficulties (as some have supposed) merely by decreeing that wheat or houses shall be the standard of value instead of gold or sterling. For, it now appears that the same difficulties will ensue if there continues to exist any asset of which the own-rate of interest is reluctant to decline as output increases. It may be, for example, that gold will continue to fill this role in a country which has gone over to an inconvertible paper standard. (Opens a road to salvation by appealing to IC)

We believe this to be Keynes' most important passage, appearing as a genius in search of a solution. But, because he does not find it, he ends up more confused, not realizing he was not very far from finding it.

- 1) In the first place, he assimilates all present economic goods to the “barbarous relic” since all equally prevent all “needs” from being satisfied, which is not wrong. It means accepting man is fallible, though by an unnecessarily complicated route. But he does not give up. He searches for that good, knowing it must be an economic good with an own-rate of interest that will not decline when output increases, not realizing he is immerse in a causality inverse to the one defined by TER. And that is why he continues to search for interest in money and not in credit.
- 2) What we wish to stress is that Keynes also assimilates money to credit – we have repeatedly said this is not exclusive of him-, because he introduces here non-convertible paper currency, which he considers money instead of irregular credit, as in our theory. We must emphasize this aspect because we are seeing it in this chapter, but Keynes already presented this concept in previous ones.

Consequently, the chapter continues with this confusion of money and credit. In general this chapter is considered especially complex and of the highest degree of abstraction. It is difficult to see this because Keynes refers to two different entities believing it is only one. It is especially difficult to follow him when he is trying to develop a theory of economic time that, since he does not understand TER, has no clear definition. In other terms, the topic is completely theoretical and not practical –as positivism pretends-, and not having an adequate theory implies diving into uncharted waters, where his conclusions are simply the result of what he confronts; this is what makes it so complicated. The reader will now understand why we chose this chapter to compare our theories with Keynes' ideas: precisely because in this chapter he deals theoretically with economic time and because he mixes money and interest under the title “The essential properties of interest and money”, simply defining the mess in which economic theory in general finds itself.

Keynes then tries to explain money is the good presenting the “special” features that limit full-employment and output. But he introduces completely contradictory explanations to support this; contradictions linked to occasional references to money as a present economic good and others where credit appears as money. This defines the substantial difference of our theories with Keynes', which is similar to the theories of his “rivals”.

In attributing, therefore, a peculiar significance to the money-rate of interest, we have been tacitly assuming that the kind of money to which we are accustomed has some special characteristics which lead to its own-rate of interest in terms of itself as standard being more

reluctant to fall as the stock of assets in general increases than the own-rates of interest of any other assets in terms of themselves (the barbarous relic). *Is this assumption justified?* (He assents and describes them)

(i) *The first characteristic which tends towards the above conclusion is the fact that money has, both in the long and in the short period, a zero, or at any rate a very small, elasticity of production, so far as the power of private enterprise is concerned* (our endogenous present economic good), *as distinct from the monetary authority* (mint or exogenous, originating PC and FM).

We find here money, defined by our theory as a present economic good (metal and/or CID) that satisfies liquidity. Keynes derives from this money the idea that, even if its value increases, people will still want to have it and output will never change this trend. From here, he derives directly that this determines there will never be full employment because money is the exchange good par excellence and its common use results in it influencing the economy as a whole as no other can. In other words, the cost of gold and the need for it will both increase constantly; there is no way out and this cannot be avoided liberating money (decrease of factors affecting its demand) lowering the money-price of all other economic goods –this is called downward rigidity of prices- especially of labor. According to Keynes, this circumstance is due to the essential characteristic of money as a present economic good that satisfies liquidity. Evidently “this money” leads to a dead end, an hypothesis that derives in the idea of the “barbarous relic”. Then Keynes continues, in the attempt to solve the problems his theory presents, adopting ad hoc solutions:

(ii) *Obviously, however, the above condition is satisfied, not only by money, but by all pure rent-factors, the production of which is completely inelastic. A second condition, therefore, is required to distinguish money from other rent elements.*

The second differentia of money is that it has an elasticity of substitution equal, or nearly equal, to zero which means that as the exchange value of money rises there is no tendency to substitute some other factor for it;—except, perhaps, to some trifling extent, where the money-commodity is also used in manufacture or the arts (he does not see the use of credit to satisfy liquidity, and he cannot explain the change in time of different present economic goods used as money; Menger’s theory does see this). *This follows from the peculiarity of money that its utility is solely derived from its exchange-value* (a direct disciple of Mises?, a topic we have already considered in our theory corroborating the common origin of all current monetary theories), *so that the two rise and fall pari passu, with the result that as the exchange value of money rises there is no motive or tendency, as in the case of rent-factors, to substitute some other factor for it* (he does not see credit as a more useful and general alternative to money to satisfy liquidity).

Thus, not only is it impossible to turn more labour on to producing money when its labour-price rises, but money is a bottomless sink for purchasing power, when the demand for it increases, since there is no value for it at which demand is diverted—as in the case of other rent-factors—so as to slop over into a demand for other things (we ask readers to bear in mind this concept referring to the “bottomless sink” humans are confronted with due the constant increase in the cost of money, which will immediately lead to what we call the “Keynes’ paradox”).

Then Keynes refers to the possibility of his conclusions still being valid in different situations from those considered up to here, which complicates matters for him, leading him to resort to more important *ad hoc* theories:

(iii) *Thirdly, we must consider whether these conclusions are upset by the fact that, even though the quantity of money cannot be increased by diverting labor into producing it, nevertheless an assumption that its effective supply is rigidly fixed would be inaccurate. In particular, a reduction of the wage-unit will release cash from its other uses for the satisfaction of the liquidity-motive; whilst, in addition to this, as money-values fall, the stock of money will bear a higher proportion to the total wealth of the community.* (We already

referred to this when speaking of the dead end Keynes leads us to; now he does so referring to the rigidity of monetary prices).

It is not possible to dispute on purely theoretical grounds that this reaction might be capable of allowing an adequate decline in the money-rate of interest (interest is the price of credit, not money).

This **transit in his references from money to interest**, the two central aspects of the chapter, is what introduces us directly to what we call “**Keynes’ paradox**”:

There are, however, several reasons, which taken in combination are of compelling force, why in an economy of the type to which we are accustomed it is very probable that the money-rate of interest (again money and its “rate of interest”) will often prove reluctant to decline adequately (here we also have implicitly the idea that he is referring to monetary prices with their intertemporal variations, and not to the money-rate of interest; nevertheless, this leads to another *ad hoc* solution, the possibility of interest rates of other economic goods being negative, but not the money-rate of interest, because money is “special”).

(a) (This point does not interest us here).

(b) *The fact that wages tend to be sticky in terms of money, the money-wage being more stable than the real wage* (implies the dichotomy of prices, admitting virtual money). [...]

Furthermore, if wages were to be fixed in terms of some other commodity, e.g. wheat, it is improbable that they would continue to be sticky. It is because of money's other characteristics—those, especially, which make it liquid—that wages, when fixed in terms of it, tend to be sticky (reasoning that shows Keynes’ economic reductionism in terms of money).

(c) *Thirdly, we come to what is the most fundamental consideration in this context, namely, the characteristics of money which satisfy liquidity-preference. For, in certain circumstances such as will often occur, these will cause the rate of interest to be insensitive, particularly below a certain figure, even to a substantial increase in the quantity of money in proportion to other forms of wealth* (here we find Keynes beginning to erroneously identify money with credit, and he does so with all the weight of his theory on interest, as if it were the price of money instead of credit; he does not see this because he believes interest is the price of money instead of credit or because he assimilates both concepts, a posture in line with his whole theory and that of all other economists, supposing money is economic time and not discovering TER. The term that points to his error is the word “insensitive”). *In other words, beyond a certain point money's yield from liquidity does not fall in response to an increase in its quantity to anything approaching the extent to which the yield from other types of assets falls when their quantity is comparably increased.*

In this connection the low (or negligible) carrying-costs of money play an essential part (another expression of “Keynes’ paradox”: how can the cost of having an increasingly dear good be low?; we are evidently in the presence of *ad hoc* solutions; he evidently forgets opportunity costs, the centerpiece of his theory). *For if its carrying costs were material, they would offset the effect of expectations as to the prospective value of money at future dates* (here he refers to intertemporal variations of prices of present economic goods –among which is the “special” one, money-, instead of interest, and this is so because he is referring to the demand for money, different from speculation. So we have one money for transactions, another for speculation, another for savings, as if they were all different moneys; all goods – this is not exclusive of money- can be used for different purposes, but they are still the same economic good). *The readiness of the public to increase their stock of money in response to a comparatively small stimulus is due to the advantages of liquidity (real or supposed) having no offset to contend with in the shape of carrying-costs mounting steeply* (he reiterates the absence of costs of opportunity) *with the lapse of time* (this is not exclusive of time). *In the case of a commodity other than money a modest stock of it* (our minimal stock of money for final use and not for exchange) *may offer some convenience to users of the commodity. But even though a larger stock might have some attractions as representing a store of wealth of stable value, this would be offset by its carrying-costs in the shape of storage, wastage, etc.*

Hence, after a certain point is reached, there is necessarily a loss in holding a greater stock (this is a cost-benefit analysis of the composition of wealth in general).

In the case of money, however, this, as we have seen, is not so,—and for a variety of reasons, namely, those which constitute money as being, in the estimation of the public, par excellence 'liquid' (he disregards credit, that is better). Thus those reformers, who look for a remedy by creating artificial carrying-costs for money (we are speaking here of something that is not a present economic good) through the device of requiring legal-tender currency to be periodically stamped (he is referring to Silvio Gesell's proposition of stamping periodically money which does not differ in concept from the present procedure of intervention to alter interest rates by monetary authorities) at a prescribed cost in order to retain its quality as money (CID do not need this, therefore he is referring to virtual money that, having no cost, must be stamped with a certain cost, to make it real, make it economic) or in analogous ways, have been on the right track; and the practical value of their proposals deserves consideration (we feel surprised by this consideration, but we shall see this is not so surprising when we explain "Keynes' paradox", ratified in his own words in this paragraph). *The significance of the money-rate of interest (he no longer speaks of money but of its rate of interest) arises, therefore, out of the combination of the characteristics that, through the working of the liquidity-motive, this rate of interest may be somewhat unresponsive to a change in the proportion which the quantity of money bears* (instead of the price of money, interest now becomes the price of credit, but he believes he is still referring to money. What is striking is the theoretical error this implies, judged from the point of view of our theory of quality and quantity in economics, which is synthesized in the price, because Keynes says the variations of quantity do not affect prices; he does so in reference to money, but it is obvious this is a very serious gap in his general theory of prices. We believe this is in line with his desperate search for an *ad hoc* solution, an expression that is very adequate since here he rejects theories he accepted before) *to other forms of wealth measured in money* (the center of his error: the only thing that materializes in other present economic goods is economic time; though Keynes says "wealth measured in money" it is obvious he means *materialized* or that money materializes in economic goods and, if this is the case, TER clearly shows us we again have credit here, while he still thinks he is referring to money), *and that money has (or may have) zero (or negligible) elasticities both of production and of substitution* (here he comes back to metal money). *The first condition* (we believe he is referring to the part where he erroneously tries to apply TER to money) *means that demand may be predominantly directed to money, the second that when this occurs labor cannot be employed in producing more money* (he comes back to money that is increasingly dearer), *and the third that there is no mitigation at any point through some other factor* (he does not see credit as an option) *being capable, if it is sufficiently cheap, of doing money's duty equally well. The only relief—apart from changes in the marginal efficiency of capital—can come (so long as the propensity towards liquidity is unchanged)* (again he accepts interest regulates the supply of savings and demand of investment, though he denied it previously) *from an increase in the quantity of money, or—which is formally the same thing—a rise in the value of money which enables a given quantity to provide increased money-services* (here Keynes accepts the law of supply and demand determines prices and produces "equilibrium").

Keynes continues saying:

Thus a rise in the money-rate of interest retards the output of all the objects of which the production is elastic without being capable of stimulating the output of money (the production of which is, by hypothesis, perfectly inelastic) (Keynes' economic-monetary reductionism).

In pointing to the rise of interest rates as the factor allowing the price of money to increase, he once again says interest is the price of money, accepting at the same time the inverted causality of prices, and pretending, as Gesell, to raise the price of *cheap* money with an increase in interest rates.

In light of all that has been said, we must agree our theory comprises Keynes' if you accept that, in the first part of his exposition, when speaking of money that is increasingly dear, he was referring to metal money (or CID); and when he spoke of money that was very cheap and to which a cost must be added (make it dearer), he was referring to virtual credit. All this considering other problems already indicated here and in the rest of this book: not realizing credit competes with money for liquidity, but they are not the same; that interest is the price of credit and not of money; the constant validity of TER that avoids all these *ad hoc* detours, etc., etc.

In our theory, we do not have "Keynes' paradox" thanks to the adoption of TER. Some authors refer to "Keynes' paradox" as the "liquidity trap".

The reader can now see why we said "Gibson's paradox", -that received this name from Keynes' himself- caught him too: the same ideas underlie both their theories. And in both cases there is no paradox if we differentiate money from credit.

Then Keynes explains why there can be equilibrium with unemployment:

The money-rate of interest, by setting the pace for all the other commodity-rates of interest, holds back investment in the production of these other commodities without being capable of stimulating investment for the production of money, which by hypothesis (apocalyptic) cannot be produced.

TER solves the temporal problem (money included) from the start, since economic time implies constant materialization in "all" other present economic goods, and proposes credit as a more adequate economic option for the solution of all temporal problems (not only liquidity) related to interpersonal exchanges. However, credit does not solve scarcity, an aspect present in Keynes, especially when he refers to unemployment. Otherwise, we would incur in credit-economic reductionism –instead of Keynes' money reductionism- and this means anticipating the demise of the economy because man would no longer be fallible. Keynes still says that without money or some similar good, interest rates would only reach equilibrium in a situation of full-employment. Our answer includes all the points in our theory:

- 1) There is an economic good, different from money, which satisfies temporal economic needs —of which liquidity is one of many expressions- better, and that is not subject to a permanent increase of its price, quite the contrary, when there is an increase in wealth its price tends to decrease. This good is credit in economies that are growing richer, and "its" unemployment persists.
- 2) There are not different rates of interest for every economic good. What exists is TER.
- 3) The concept of full employment is an axiom permanently valid considering our concept of economic good. We must speak in terms of goods that enter and leave the economy and wealth variations, not unemployment. In other words, in our theory unemployment refers to the economic agent that has needs and does not possess the economic goods to satisfy them. For those circumstances, human beings have palliatives such as assistance by other people and savings for crisis situations.

Later in the same chapter, Keynes poses an idea that underlies his whole theory. He presents it in reference to wages:

[...] its liquidity-premium (a term close to our concept of interest) exceeds its carrying-costs (for, otherwise, since there is no hope of profit from a higher price, the carrying of a stock must necessarily involve a loss)...

If a commodity can be found to satisfy these conditions, then, assuredly, it might be set up as a rival to money. Thus it is not logically impossible that there should be a commodity in terms of which the value of output is expected to be more stable than in terms of money. But it does not seem probable that any such commodity exists (he does not see the existence of credit because he does not previously recognize the existence of TER, that explains economic time

inevitably materializes in present economic goods, and that economic time appears in interpersonal exchanges expressed by credit instead of money. This difficulty, recurrent in current theory, results from taking the virtual sphere as a starting point instead of the real sphere of economic goods).

If we eliminate from this sensational paragraph the term “more stable”, that is not essential (since it refers to constancy of prices that we reject), it possibly is the best expression of Keynes’ intense intellectual work (he was accused of not being interested in theory, and that he was simply “into marketing”), even if he did not reach a satisfactory result. He was evidently aware of not solving the problem and discontent with what had been discovered up to that point. If we analyze this paragraph with the concepts contributed by our theory, the following aspects are clearly revealed:

- 1) We can accept Keynes refers to our concept of interest (the price of credit) when he mentions a liquidity-premium. We will not analyze here if is the same concept or not and what the discrepancies are, considering he assimilates money and credit, and that assimilation is prudent since it derives from the characteristic of the economic good that has the best conditions to satisfy liquidity, which can be measured focusing on its costs (holding), with the benefits obtained from satisfying liquidity (less interest or lower price of interpersonally exchanged economic good), and this is the argument he develops in this paragraph. That is why it is logical to think he was referring to our concept of interest, though expressing it in another way: *“its liquidity-premium exceeds its carrying-costs”*. Evidently, he does so because he calculates based on the values at the end of the period, which he compares with interest as income from the economic good in that period and subtracts it from the cost of storage. He is evidently referring to what, in our theory, is interest –the price of interpersonally exchanged economic time- though he did not realize it was so.
- 2) In the second paragraph he says that if it were possible to find a good that satisfies these conditions, it could undoubtedly be considered a worthy rival of money, supposedly in the race to satisfy liquidity, which he stresses is the central role of money (as Menger’s whole theory does). But he abandons the search saying *“it does not seem probable that any such commodity exists”*. Obviously, he came to the threshold of the solution, but did not realize that good was staring him in the eyes, credit. That is why “part” of his theory is included in ours when we correct his concept of interest, in the sense that it is the price of credit, not of money, as he believes. That is why we say when vindicating Keynes you must consider when he referred to money or credit. But this is not exclusive of Keynes, it is true for economic theory in general when considering economic time.

Keynes seemed to come very close to solving the problem. The best way to express the situation is to say he put a great effort into getting there and knew he had not succeeded; he was wading in murky waters and could not see the origins of the contamination: he did realize the existence of TER, which refers to credit and not money. This situation would have led him directly to consider the act of interpersonal exchange as unique and unrepeatable (not dividing it into purchase and sale); he would have seen the categories related to exchange are cash (barter and money) and credit; that money is not comparable to credit, because one is a present economic good and the other is an economic good because it arises inevitably in interpersonal exchange (of present for future economic goods); that there is no dichotomy of prices (monetary prices are also real); that interest is the price of credit and not money; he would have come to the total or complete wealth equation; etc. But we see these objections to Keynes’ theory are identical to the ones derived from our theories relative to all other economists.

This chapter of Keynes’ work is central –not dispensable as other economists believe, saying it is useless and/or abstract- because it shows his desperate efforts to understand the theory of economic time, which led him to assign money a central role, that solved liquidity following Menger’s ideas, until he stumbled on the “high cost of the barbarous relic”, not realizing the need for liquidity is satisfied better by credit, and that liquidity is a partial aspect of the more

general subject of economic time. That is why he introduces non-convertible money, our irregular credit (similar to Mises money substitutes), derived from the erroneous theory of different interest-rates, instead of starting directly from TER. All this expresses the desperate search for an economic theory of time that leads him to *ad hoc* solutions, which in turn put him inconsistently on the road back to TER. He will never get there because there is a very intense fog, which makes him lose his way, not knowing where he came from and where he is going, though he senses the central topic is time.

Another way economic theory expresses the errors we have discovered studying Keynes' is when it says what he proposed is that the analysis of the preference for liquidity really is the analysis of the way in which prices of assets are determined. This was some kind of answer to the Austrian critique that his theory could not explain variations in relative prices that appeared between consumption and capital goods, operating as incentives for transference of production resources from one to the others. This "maintained" the level of employment and so went against Keynes' unemployment policies. But this only validates our theories, since the current value of any economic good is an estimation of future rents discounting interest for the period in question (the concept of current value), a matter that, as we have seen, orients economic agents' actions considering future perspectives, but this does not mean future economic goods are wealth. In other words, it is the way in which time influences the prices of present economic goods. It does so through interest, and that is all there is to it. In economics, when we wish to effect temporal calculus we use economic time, and since the prices of economic goods are used for economic calculation, when economic time appears in any calculation, we use interest, which is its price. In other words, economic time has incidence in the formation of prices just as any other economic good, bearing in mind that, in this case, we must consider TER. At the same time, when economic time appears as credit, its expression is currency and it is used as the unit of measure. Therefore, interest is used in economic calculation because it is the price of credit, and we know both concepts are subject to TER.

Before we leave Keynes' chapter 17, we wish to point to a passage in which he shows clearly how economic theory in his case deviated from previous postulates that were correct.

That the world after several millennia of steady individual saving, is so poor as it is in accumulated capital-assets, is to be explained, in my opinion, neither by the improvident propensities of mankind, nor even by the destruction of war, but by the high liquidity-premiums formerly attaching to the ownership of land and now attaching to money. I differ in this from the older view as expressed by Marshall with an unusual dogmatic force in his Principles of Economics, p. 581:

Everyone is aware that the accumulation of wealth is held in check, and the rate of interest so far sustained, by the preference which the great mass of humanity have for present over deferred gratifications, or, in other words, by their unwillingness to 'wait'.

Obviously, Keynes did not see the irruption of credit to satisfy the "unsolvable conflict" liquidity represented for him; this is also a clear example of how he lost his way leaving the theoretical path economics should have followed, based on these wise expressions from Marshall. The other possible interpretation of Keynes' expression is that he was unable to see the enormous accumulation of capital by humanity (in his time it was already visible) –which we do not believe- or that he was referring to lack of progress, even though there still are human beings that suffer immensely in economic terms. The main cause for this is improper appropriation of wealth –direct and indirect. Nevertheless, our theories rectify some theoretical mistakes that are a bad guide for policies. But there will never be a final solution because fallible man would disappear. However, the errors mentioned above should not serve as theoretical or political justifications, because all they do is hide the true totalitarian or paternalistic intentions of governments. Finally, in reference to this commentary by Keynes, we will only say our analysis is directly opposite, since we say: how much more would have wealth expanded in the 19th and 20th centuries, with greater justice and less wars, if there had not been direct and indirect appropriation of wealth. In other words, the reflection would be

that we should be astounded by how much wealth expanded thanks to credit, notwithstanding the fact it was not pure, and the imperfections of irregular credit and the juridical rules allowing the worst sin in terms of the distribution of wealth. And we can say the same in the sense that an adequate study would show the abuse of irregular credit (the PC-FM chain) and also of regular credit, when it becomes unrecoverable, is the cause of the backwardness of many underdeveloped countries.

We will now refer to theoretical derivations and interpretations, mostly with charts, that were developed based on Keynes' theory, which we believe honor the spirit of his ideas (that have no essential difference with current theory). We disagree with authors that say this is not so and consider they do so attempting to find "additional" theories when Keynes' original ideas do not offer an answer to real events. In other words, we believe what is essential to Keynes' ideas is what we have presented here, at least in terms of our theoretical purpose.

KEYNES' IDEAS

It will be obvious that the following is a short synthesis of the ideas or theories underlying Keynes' work, which we could say are *ad hoc* ideas responding to his philosophical and/or political intentions. We have chosen a paragraph from his major work, considering it summarizes his ideas:

Thus in the absence of money and in the absence—we must, of course, also suppose—of any other commodity with the assumed characteristics of money, the rates of interest would only reach equilibrium when there is full employment. Unemployment develops, that is to say, because people want the moon;—men cannot be employed when the object of desire (i.e. money) is something which cannot be produced and the demand for which cannot be readily choked off. There is no remedy but to persuade the public that green cheese is practically the same thing and to have a green cheese factory (i.e. a central bank) under public control.

Apart from this being very similar to the idea of "bread and circus for the people", And that in scientific terms it is as if he were recognizing not having found a satisfactory theory, we believe this passage illustrates the ideas underlying lord Keynes' theory:

- 1) The central idea is ratified that money is something mystical or special and that everything economic can be expressed or synthesized with money; a scientific reductionism, as Marx's scientific materialism was called. We have referred to it on several occasions when comparing Keynes' theory with our own.
- 2) His concepts of aggregates and of "general" theory are an inevitable consequence of his economic reductionism. In other words, his whole theory is an "aggregate" of what we would call "totalities", and that is why he reduces everything to one key element, money. And then he tries to control and manage it in the style of the Lamarckian genius.
- 3) Derived from his "totalitarianism" is the need for an all powerful entity to regulate the catalyzing economic element, money. That is why in his scheme there is an entity (central bank) imposing on the will of economic agents.
- 4) That entity would have the divine responsibility of solving scarcity and making the economy disappear with two instruments: a) supply of the scarce economic good par excellence and with this all economic problems are solved or b) if the real solution of the problem is not feasible, then proceed to enchant with illusionism, and for this he sardonically assigns the central bank the function of a green cheese factory.
- 5) We see Keynes is dominated by the Apocalypse because, starting from a "dead end", with the abyss opening at his feet, represented by money that stifles economic progress (Malthus' style)—because economic progress' growing need for liquidity will be insufficiently supplied with gold- he comes to another situation of despair: with the impossibility of satisfying human need (represented by money), the only way out is illusion. On the other hand, he believes paradise is possible. You only have to solve the money problem (economic reductionism) to

have full employment (“*the rates of interest would only reach equilibrium when there is full employment*”).

6) His need for a rate of interest in the money markets compatible with his axiom $S = I$, leads him to a *virtual* monetary market (both of money and credit, because he does not realize they are different entities) but in a very confused manner: real versus monetary rates, currency that at times is very dear –the barbarous relic represented by “real” money- and at others has no cost and therefore needs to be “stamped” or manipulated into having some cost. Evidently, here it becomes virtual for the economy, because it no longer is an economic good, etc. Since he does not find a satisfactory solution in the virtual world, Keynes returns (conscious or unconsciously, because he does not recognize his tour through the virtual world brought no solutions; we already know that world simply does not exist) to the real world and introduces unemployment there, which we consider an adjustable variable that he uses to reach the $S = I$ equilibrium in the real world.

7) What we said in the previous point is the motive for Keynes’ rejection of Say’s law, and worse, a primitive term such as economic good, which he deals with diffusely with the concept of employment-unemployment.

8) Finally, we can summarize that Keynes’ scientific errors –as with all theoreticians after Menger- is the result of abandoning *scientific rigor* based on primitive terms. We believe this to be the result of producing science based on paradigms, a type of epistemology we reject.

We can say Keynes finally discovered what Menger expressed with his simple chain of economic causality; beginning with the statement that man has needs he will never satisfy completely, because as soon as one is satisfied another appears.

In short, Keynes told us man is fallible, the initial concept of economic theory and, as an alternative, he opted for determinism. In other words, Keynes was to economics what Bacon was to science in general, trying to displace God as the absolute truth with all powerful science (with science we have no need for God), finally accepting human beings are fallible when he sees his scientism is so too.

We believe in a personal dialog John Maynard Keynes would have accepted this x-ray of his philosophical, political and scientific thinking.

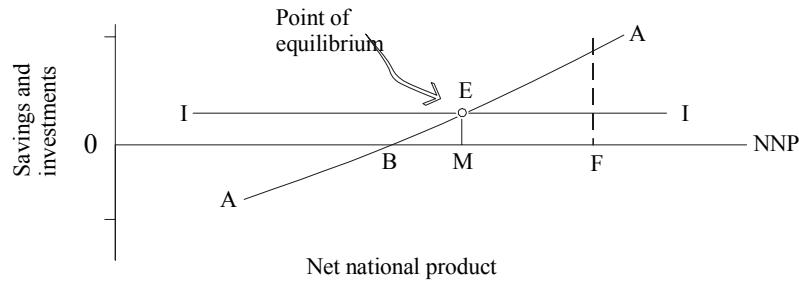
THE 45 DEGREE CURVE

This curve was popularized by Paul Samuelson in his attempt to graphically represent Keynesian economic theory (we will refer to his work “Economics”) that we can summarize as follows: Samuelson’s presentation is based on the flow of economic goods’ equations –that we described and rejected in chapter IV- the first version of which is $Y = C + I$ and the second $Y = C + S$, from where he deduces that economic equilibrium demands that $S = I$. We will debate here if Keynes accepted equilibrium or not, though we believe he did, because his thesis was the attempt to prove there is equilibrium between S and I before full-employment is reached. This is expressed in another form, as insufficient demand or the theory of under-consumption, which was developed before him. We can consider this as the idea that including unemployment as the adjustment variable in the imbalance equation we can find the equilibrium equation.

This theory leads Samuelson to present his famous curves, of which we only use a few to show what we believe relevant. Our analysis on those we will refer to is also valid for those we will not reproduce here.

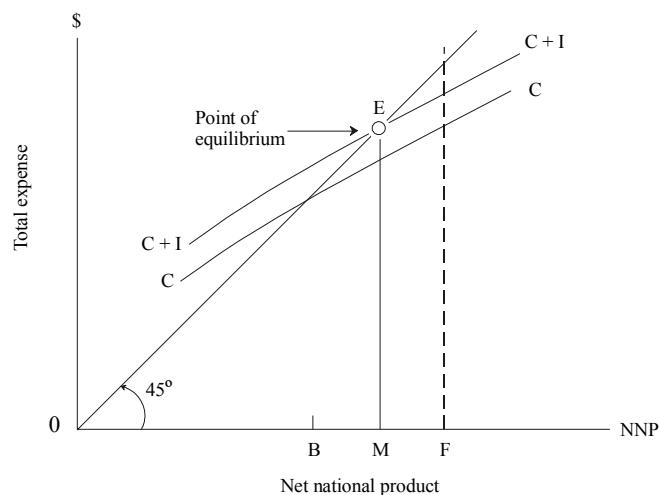
Different forms of representing the national income equilibrium

1st As an intersection of the savings and investment curves



With the following text: “How savings and investment determine income. – Equilibrium is at E, intersection of the savings and investment curves, because at no level of the NNP would the population save what companies wish to invest”.

2nd As the intersection of curves of C + I with the 45 degree line



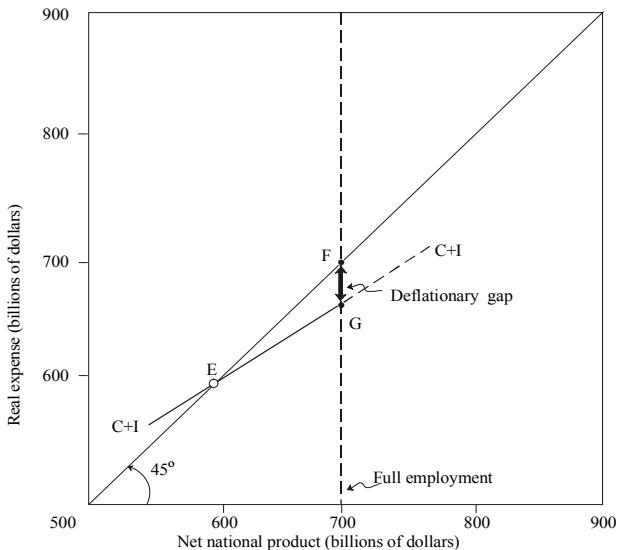
With the following text: “How consumption and investment determine income – Adding II (propensity to invest) to CC (propensity to consume) we have the curve C + I of total expenses. In E, where the curve intersects the 45 degree line, we have the same equilibrium is in the figure for savings and investment. (Observe similarity of this figure and three: investment added to CC is the same II of the following figure; B and F are in the same places in both figures; and the same happens in intersection E)”.

Evidently, the two figures honor the title that precedes them: *Different forms of representing the national income equilibrium*, which means this refers not only to Keynes’ “aggregates”, but also involves the concept of equilibrium in economics.

These expressions will be later expanded in the theory to include government and the external sector in the concept of total expenses, but this does not affect our conclusions. From these graphs derive the moments in which there are inflationary and deflationary processes, related to supply and demand imbalances, according to the existence or not of full-employment. Then Samuelson says:

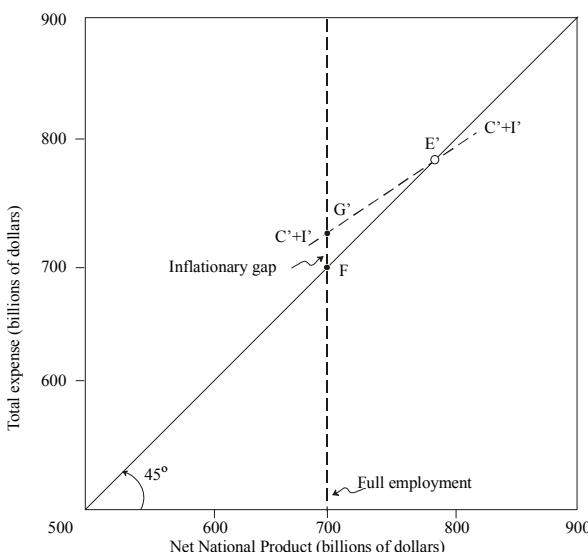
When the $C + I$ expense generated with full employment differs from the NNP of employment we call:

the expense deficit, 1st deflationary gap:



With the following commentary: “The deflationary gap is always measured in the level of full employment of NNP and is the vertical difference between the 45 degree line and the $C + I$ curve, i.e. FG . The deflationary gap reduces income with a multiplying effect (When we introduce the State in the scheme, the line $C + I$ will be $C + I + G$)”.

The excess expense, 2nd inflationary gap



With the following commentary: “The inflationary gap. – FG measures the inflationary gap. The population is trying to buy more than what is produced and so pushes price-levels up. (If

all prices vary the curves of expense probably will be displaced upwards, and because of this it would be wrong to consider the point of equilibrium E is easy to reach”.

We will not extend on this topic and simply separate the topic in two parts; first we will emphasize the difference (already shown in our theory) in a simple form and then present our own graph, if there is any sense to it, to compare the elements that refute these graphs, that are without a doubt Keynesian.

If we observe what Samuelson considers a variation of total wealth in time –he calls it total expense- as composed of C and I, obviously we are only considering a part of what we include in our total wealth equation (and so his variations are composed of the same elements). Our complete wealth or total wealth equation said the following:

$$S^* = C^* + K^* + A^* + BC^* + (Cr^* - Dd^*) = A = NW$$

To have the flows or variations, here represented as stocks (*), we only need to eliminate the (*). Therefore, the difference with the 45° Samuelson-Keynes curve is that it only considers C and I (variations of K) of the total wealth equation.

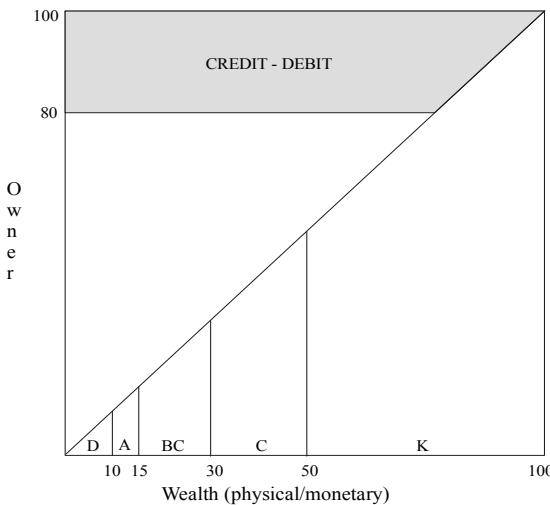
This simple concept changes if we consider the elements he inadvertently uses to obtain the inflationary and deflationary Samuelson-Keynes gaps. In turn, the aspects not considered in this partial wealth are those Keynes deals with outside his equation, with the topics of transaction, savings and speculation. In other words, he tries to get to what we have called “broad demand”, which is no more than a dynamic expression of the total wealth equation, seen from the dynamic aspect of demand (as we see, when theory is more consistent, it is easy to find relations without forcing our reasoning, in the style of systemic theory). Obviously, we now understand why we have said Friedman tries to complete or assemble Keynesian theory with Quantity theory that he expands. This is an effort to complete or join what should never have been divided: the total wealth equation. He should study the way each element acts within the whole based on it and within the framework of TER, which studies the way wealth variations in time (with all its expressions) show that referring to time means speaking of change and speaking of economic time is the same as speaking of changes in economic goods, a concept derived from TER.

Once again, we see accounting and finance are adequate ways to study economics; they are natural economic models. And we do not need “new models” different from those; it is adequate to use mathematical tools within that framework (derivatives and integrals, etc.) with the adequate limitations.

We only need to add to our critique of these graphs those deriving from what we called in the previous chapter (which was a synthesis of our theory of prices) “The quantitative theory and quality and quantity in economics”. In the sense that these graphs partially commit the error of separating quantity and quality, especially underlying the concepts of inflation and deflation. Since this error is more clearly expressed in other graphics also derived from Keynesian theory, we leave this aspect of our critique for the analysis of IS/LM curves and the Phillips curve.

TOTAL WEALTH GRAPH

We will now present what would be our graph, replacing those derived by Samuelson. It is nothing other than a geometric form of the accounting equation or total or complete wealth equation, from where we can derive two expressions: static (balance sheet) and dynamic (statement of income). Possibly this presentation of a simple graph shows an occult personal desire that balance sheets in the future should be presented in this manner (as we emphasized in chapter XII), to which we would add budgeted expenses, cash, accrual basis, and performance, considering our presentation in the book “Knowledge accounting”:



Both the abscissa and the ordinate can be expressed in physical or monetary units but, for reasons of homogeneity of information, it is best to express it in monetary units, as we do in accounting.

It is easy to see that the wealth graph present here includes both micro and macro entities, individual economic agents and a group of agents: community, nation, continent or world. We have already seen how to go from micro to macroeconomics using consolidated and combined balance sheets.

The graph shows in the abscissa the composition of wealth according to our theory ($C + K + A + D + BC$). In a simple form, we suppose a wealth of 100 units with the relative composition: D 10%, A 5%, BC 15%, C 20% and K 50%. From these data, we can deduce the liquidity of the macroeconomic set –a country, for instance-, which related to the composition of the cash exchanges and maturity dates for credits, allows us to foresee financial crisis. On the other hand, the ordinate shows us the way the total wealth of the community is distributed in relative terms. In this case, it tells us 80% is in the hands of the owners and 20% has been loaned. Evidently, the loans fraction is a part of the present total wealth, not an aggregate to the 100 units of total wealth.

You can analyze the behavior of the economies of the different macroeconomics sets (countries, for instance) in terms of determining the relative compositions of wealth according to the types of present economic goods that compose it ($C + K + A + D + BC$), and the relative composition of credit as a part of the total present economic wealth. Obviously, there are more elements to consider, such as the present economic goods the loans must be cancelled with, relative to the stocks of those goods.

The study of the relative composition of wealth and credit, together with the detailed analysis of each one, is essential to determine the economic and financial health of an economy, as shown by the corresponding balance sheets. The projections of economic expansion –the expansion of the graph beyond the 100 units represented here- must be based on these analyses; and the same is valid for possible financial crisis, especially considering credit has been adopted as the currency by the economy.

From this we derive that in our theory referring to currency-economic cycles (originated in currency) is the same as referring to the financial analysis of the balance sheet of an economy, considering only one economic agent or the combined statements from several agents, all the way up to the economy of a country or the world economy. We presented this simple graph only to compare it with the 45 degree curve that economics already recognizes. This wealth graph is nothing more than an expression of a double entry balance sheet. In other words, the object of the graph has been to emphasize the difference of our theory of total or complete wealth versus partial wealth expressed in Samuelson's 45° curve.

Obviously, the 45-degree curve –or 45 degree line- in our graph always represents full employment, considering our criterion of seeing it as permanent, because the opposite would

mean considering entities that are not economic goods as if they were. On the other hand, we reiterate, this is in complete harmony with the concept of the total wealth equation. This methodology is in correspondence with our concept that there is no such thing as equilibrium and that what man permanently pretends is to extend the abscissa (wealth) and reach the most peaceful composition of the ordinate (property) possible. In other words, our graph is the expression of the biunivocal relation “economic good-owner”, which admits as many variants as studies we wish to have, but bearing in mind it can be used both for micro and macro analysis. This also is in line with our concept that what we need to do is not explain things based on the fallacies of composition or the problems of passing from micro to macro economics, since set theory helps us demystify a great part of what this dichotomy supposedly shows. We believe that in general this composition error is used as an ad hoc way out for inconsistent theories.

We could end this section saying the societies with the highest possibility of economic success in the race to “expand wealth in peace” are those that create the necessary institutions, an aspect we will continue to reiterate in this text. Starting with the contribution of a more adequate theory to orient actions, in themselves always complicated. We believe that to avoid war and consolidate peace (eliminating injustices in both cases) we need to avoid direct and indirect appropriations of wealth, especially those based on the lie that this benefits everyone and especially the poorest members of society.

Evidently, from this simple graph or classification of wealth we can derive many more, for example studying the composition of owners, divided by companies and individuals, or concentration of wealth, etc.; all this referred to the study of the expansion and distribution of wealth.

One of the most useful graphs will be the one reflecting the level of debt in terms of final materialization (the present economic good in which the debt will be cancelled), which will be a key element to consider in the financial analysis of the stocks of this present economic good, relative to their incidence on the demand for it, and the quantities and dates of maturity. That graph will be the complement of the final curve of variations of the stock of an economic good, which is composed of demand and new supply, plus what is left over from previous commitments.

Another essential graph will be the one showing wealth composition relative to the type of economic goods included in it, expressing the potential of the economy; and the composition of owners by age and maturity of debts. There are many extremely useful economic-financial analyses (including the profitability of economic agents to measure their efficiency, it will be very useful to study the economic goods that are state property and their share in the economy), but they must all be based on the total wealth equation, which as we saw is nothing more than double entry accounting, the most reliable alternative in terms of economic-accounting information (see our book “Knowledge Accounting” and the new accounting structures we propose there).

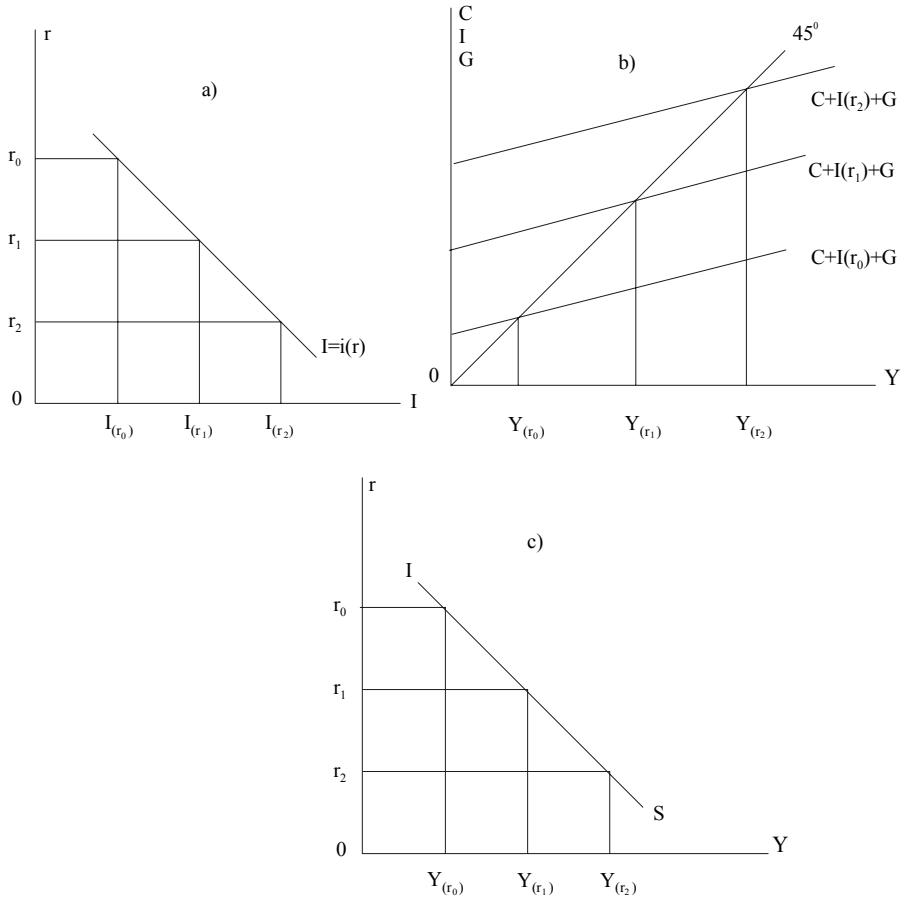
Finally, let us say the studies Keynes proposed (demand for money through transaction, savings, and speculation; marginal productivity of capital; multiplier; etc.) have greater scientific rigor within the framework of our theory of total or complete wealth and total demand.

IS AND LM CURVES

Another theoretical tool frequently used, though it did not produce the expected results – considering our theories it could not be otherwise-, is a kind of expansion on the model of Samuelson’s 45° curve that is considered the simplified model compared with the one we will consider here, which includes interest (according to Keynes’ theory, interest is determined in the market by money) and it is known as the IS and LM curves.

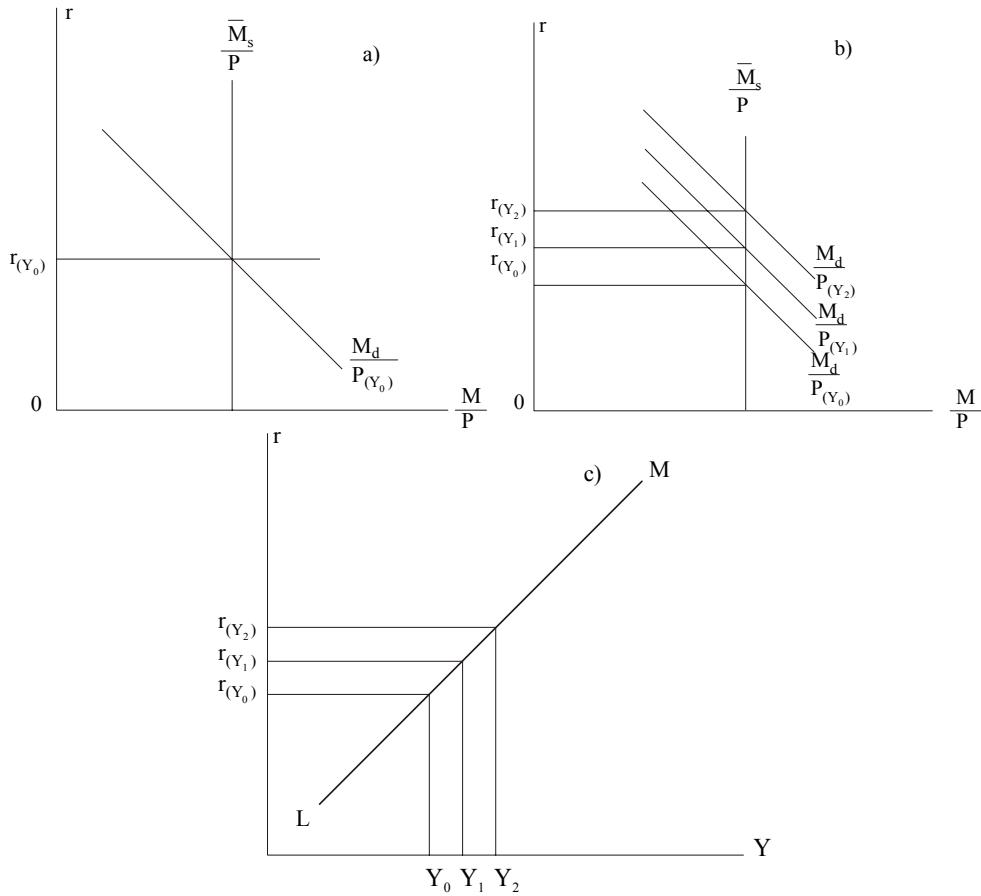
In the case of the IS and LM curves we can say they are an attempt to present the Keynesian theory on interest and the equilibrium level of income, within the framework presented in the previous section referred to Samuelson’s 45 degree curve.

To study these curves, we will follow Laidler, transcribing the graphs that interest us:



Laidler's comment: "*Equilibrium relation of interest rates and income level implicit in the model of the real goods market*".

According to Laidler "(The IS curve shows that, in a model without public expenditure, any of its points represent savings equal to investment. Currently this denomination can be used for any curve that represents the equilibrium condition in the real sector)". Evidently, all the considerations and comparisons relative to the 45° curve are valid for this curve too. This should not surprise us because in both cases we are referring to the real sector, while the monetary sector is reserved for determining the LM curve, and then the previous ones intervene to reach Keynes' synthesis.



Laidler's commentary: "*Equilibrium relation between interest-rates and level of income implicit in the money market model. M is the quantity of money and P is the price level, so that M/P is the quantity of money measured in terms of purchasing power as a constant. Subindex s and d represent supply and demand and the hyphen above M indicates an exogenous variable*".

Then he says: "(The LM curve shows that in any of its points, the supply of money completely satisfies the preference for liquidity.)" In other words, this means the LM curve shows the situations in which there is "equilibrium" between supply and demand of money.

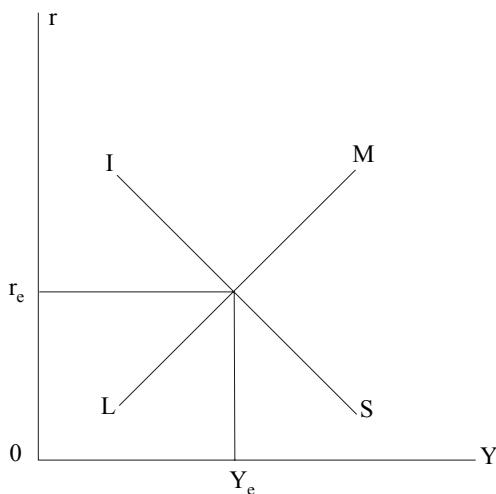
This completely validates the idea that the money demand function –arising from the addition of the demands for transaction and savings (increase functions of monetary income) and speculation (decreasing function of interest rates)- which Keynes calls the function of preference for liquidity, is a decreasing function of interest rates. Adding the different quantities of money demanded, you have total money demand as an increasing function of the level of monetary income (which will be the PY expression in quantity theory), and decreasing relative to interest rates. There can be different analysis based on this, if you suppose the entities involved are variables (dependent and independent) or constant, exogenous or endogenous, etc. But if we adopt Keynes' theory, the quantity of money is autonomous and it determines interest rates. Which leads to the quick and easy solution: government can manipulate it at will, regulating the economy (as a consequence of Keynesian economic causality, we have already seen).

Since we have already dealt with this topic under "Keynes' paradox", we will only refer to the way it is reflected in this figure, based on the essential assumption related to it: that the quantity of money does not vary relative to demand for it; in other words, demand for money is in direct relation (function) with wealth variations, more wealth requires more money; a condition or assumption that is unnecessary in our theory, since we have seen precisely the

opposite process in the economy, where an increase in wealth produces displacement of money by credit:

- 1) In our definition of money (present economic good) it is obvious that if a greater quantity of wealth requires a greater quantity of money but the stock or supply is constant, its price, which here is wrongly represented as interest, will go up. We have the bottleneck we defined in our hypotheses: its origin is that current monetary theory presents money as the only solution to liquidity, along with “virtualism”. Then this graph can represent –based on these assumptions- the behavior of the price of money (considering the limitations of any graph, which we will point out at the end of this section), but in this case we cannot place interest, which in our theory is the price of credit, in the ordinate.
- 2) But if we consider what Keynes said, with which we agree, when stating that with greater wealth you can expect to have a better situation in the future, then interest rates must go down; in other words it is the best situation for the economy, in the sense that a decrease of interest rates means in part greater present wealth. Said wealth is a limit to the quality of the present economic good, which is offered so that there can be credit, from where interest arises. Simply said, with the same demand for credit, we have a lower interest rate with greater supply of present economic goods. But evidently, this LM graph represents the opposite; therefore the graph we have seen up to here is only one version of Keynes’ proposal, the only one he visualized, because he believed there was no economic good that could replace money. Therefore, this graph does not represent credit, which again implies the impossibility of placing interest in the ordinate, which in our theory is the price of credit.
- 3) But Keynesians did not stop there and continued trying to interpret Keynes’ other part, where he considers money as virtual, and this could lead him to accept the possibility of negative interest rates (impossible in our theory, because this supposes economic time disappears and, because of TER, so does anything else having the same characteristics as the economy). They found this solution, the same as Keynes, “stipulating” that, because money is different from all other economic goods, it could never have a negative interest rate. So they established a “limit to the fall of interest rates”, and drew the LM curve as if above zero it were flat. Obviously, to come to this flat curve they inadvertently had to go through the transformation of money into credit.

We then come to the complete model, when we have the final graph of the IS-LM curves:



Laidler's comment: "*Determination of levels of equilibrium of interest rates and income in the complete model*".

We can clearly see why this model does not represent economic reality, and not because of statistical observation errors –as certain passages of Laidler's work seem to insinuate- but because they are not based on a more efficient theory as a guide for research.

In short, with these graphs we confirm that Keynes went in search of the behavior of interest rates in the money market to complete his “real model” (since he too was immerse in the dichotomy of prices), not realizing he was “tinkering” with economic time of which credit is its accurate representation (we can see he was trying to find the temporal solution for the economy in a present economic good, not recognizing TER). But since he sometimes confuses money with credit, one part of his theory works and the other does not. However, it is hard to see it without understanding the whole theory presented in this work.

The reader can reread this chapter to see our criticism of Keynes' theory is the same we present here, so we consider there is no doubt that the graphs are representative of his ideas. Our criticism of the IS-LM curves should not come as a surprise, because they are the graphic expression of price dichotomy, IS being the “real sector” and LM the “monetary sector”. That is why our graphs (those we present here and the ones that can be derived from them) are different not only from the Samuelson 45 degree curves, but also the IS-LM curves, since we base both our physical and monetary equations on the same total wealth equation, as accounting does with the asset structure equal to net worth. The economic-accounting equation allows us to express all the physical and monetary expressions in economics with the same structure. Obviously, all this derives from the central biunivocal relation in our theory, “economic good-owner”.

Finally, and applying our theories of prices, of economic quality-quantity, and the causalities derived from them, we believe analyses based on graphs are very dangerous, especially relative to inverting causality, as is typically the case with IS-LM curves, using expressions such as “*a displacement of I implies...*”, not realizing interest is a price arising “as a result of” and, when referring to a price *as a result of*, we do so as information for economic calculation.

AGGREGATES

Those who support Keynesian theory, realizing the IS-LM model is unsatisfactory tried to move forward. And so they developed the concepts of aggregate demand and supply that consist essentially of incorporating *Keynesian asymmetry*, and which we will now explain along with their derivations.

Post-Keynesians try to explain how price variations affect the “real” economy, considering how far the economy is from full employment, concepts they replace with potential income. In simple form, we can say that when the economy starts from a situation of unemployment or has not reached its potential income, there will be an increase of production (quantities) and not of prices. Then they temper this aspect, until they come to say that in this stage the quantitative increase will be greater than price rises. In a situation of full employment or above the point of potential income, there will be the inverse situation, hence the asymmetry: any “expansion” will imply a greater rise in prices than in output.

Though we will not do an in depth analysis, we must present the theory synthetically and then compare it briefly with ours, as we have done up to here, to come to our final conclusion. We anticipate it by saying it is an *ad hoc* detour by Keynes, to come back to the beginning of the road from which he should never have deviated. In this case, we refer to the law of supply and demand already dealt with by economic theory, which is no more than a study of the variations of stocks from the point of view of our theory of economic quality and quantity and of the prices derived from them.

Though we will not transcribe Richard G. Lipsey's work “An introduction to positive economics” (1963) extensively, we will use his chapter 41 that contains central aspects of what we are trying to show.

Lipsey says:

“The fact of including a relation to determine price-levels poses the well known problem of closing the model (the Keynesian model)”.

Evidently this expression is in complete contradiction with our theory since in our view prices are a consequence of. Since Lipsey sees the problem in the Keynesian model, he introduces the idea that prices are not exogenous but endogenous to the economy:

“[...] we cannot consider price levels to be exogenous and, therefore, we cannot continue to suppose them constant as we have done up to here (not notwithstanding this correction, we see that though prices cannot be constant, he does not see the central error of causality in prices, that are a consequence of)”.

Then he says something that would be expected with our theory and the conclusions we drew from the IS-LM curves:

“But if price levels rise with income, this reduces real monetary supply, M/P , and produces a shift in the LM curve. This problem does not appear in the IS curve, since all its variables are defined in real terms”.

We believe this is the best recognition of the validity of our theory and the error in current ones, because it says:

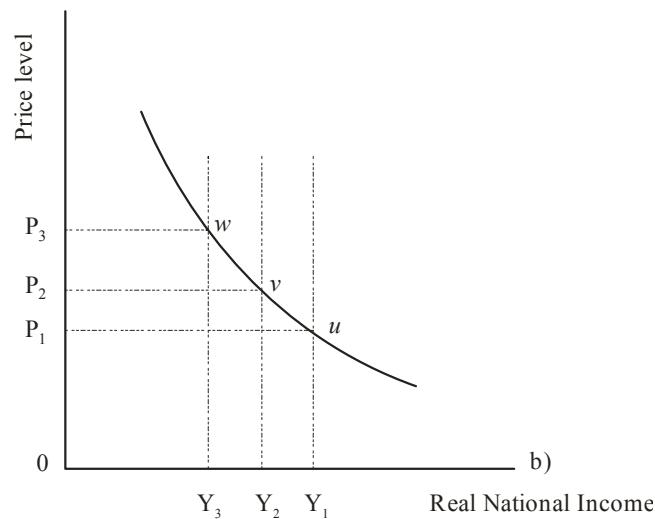
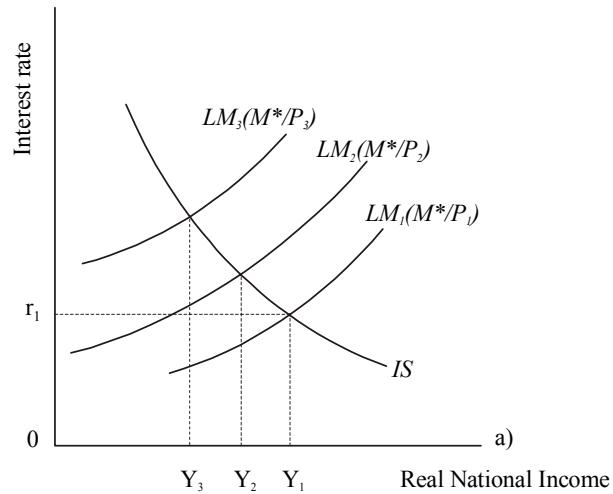
- 1) In IS-LM curves the dichotomy of prices is still present, implying the separation of real prices (our physical prices) from monetary prices (our prices expressed in an economic good chosen as currency of account for calculus), which means giving prices a virtual or non-real nature. It also means seeing prices as an element useful essentially for calculus, arising in a spatio-temporal point of exchange (intrapersonal or interpersonal).
- 2) The theoretical inconsistency of that dichotomy, that refers to real prices on one hand and monetary prices on the other, as if they were totally independent markets, the relations or dependencies of which we must find. As we can see, it is attempt to reunite what should not be separated in the first place.
- 3) Considering “this problem does not appear in” the IS curve is a logical consequence of its referring to the real economy. But it does appear in the LM curve because it is monetary, “not real”, which again shows the dichotomy on which this theory is based is unnecessary. Bearing in mind our criticism of the IS-LM curves, we see it is more severe relative to the LM curve, once we see the error of considering I in the ordinate in both curves.
- 4) There is an attempt to balance the real and the monetary world, simply multiplying by P (general price level) the “real” variables, which implies accepting Quantity Theory –with the implicit assumptions of homogeneity and proportionality- rejected by Keynes.

New *ad hoc* theories are added, in the attempt to come back to the starting point:

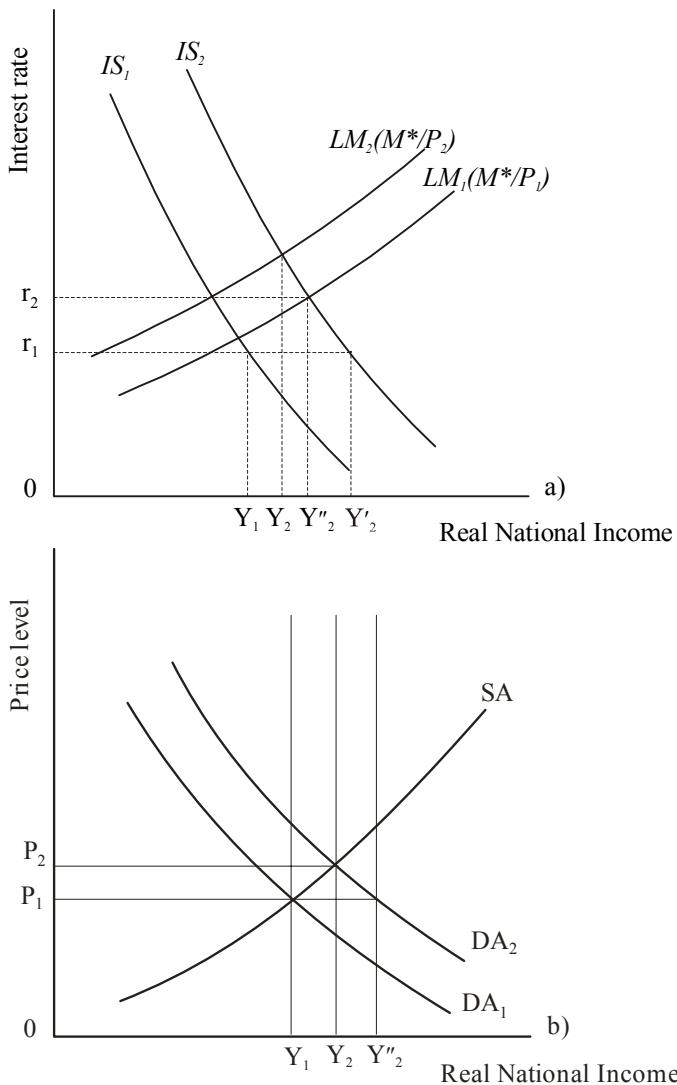
“To solve this problem we need new functions that do not shift when Y , r or P change. These are the so called aggregate supply and aggregate demand curves”.

To fulfill his purpose Lipsey has to include in his model the idea that prices are an endogenous variable but, as we said, he still inverts the causality of prices, when he does not consider them as “a consequence of” but that they can “induce to”. On the one hand, in the text of the chapter we have mentioned, he still considers expenses and monetary supply to be autonomous (exogenous), continuing with the positivist model he defends, modifying the endogenous or exogenous condition of the variable and/or datum he studies, according to the results he observes. He is trying to move forward without a theory built on solid theoretical grounds.

Avoiding details that are unnecessary for our purpose here, we present Lipsey's aggregate supply and demand graphs, both deduced from the IS and LM curves, as we can see in the figures he calls 41.2 and 41.6:



“Figure 41.2 Deduction of the aggregate demand curve based on the IS and LM curves”



"Figure 41.6 When the aggregate supply curve has an upward slope some of the expansive effects of the multiplier are not present due to a rise in prices" (what we most wish to stress here is the deduction of the aggregate supply curve based on the LM curve)

We can clearly see Lipsey tries to correct the error we detected in the IS-LM curves relative to the inconsistency of putting the I in the ordinate, and considering it the price of money instead of recognizing, in agreement with our theory, that it is the price of credit.

Lipsey commits the inverse error, replacing I with P, but he is wrong in considering credit as money. That is why we find in him the inverse inconsistency, but originated similarly in the IS-LM curves. In other words, with his theory of aggregate supply and demand Lipsey only changes the ordinate –an error in these curves we already pointed out- but he cannot build a consistent theory because he does not realize, especially in the case of currency, that now –replacing I by P- he is referring to the price of any economic good, and his curves are nothing more than the classical supply and demand curves. In other words, in Lipsey we find the inverse problems of the IS-LM curves, but this does not solve "Keynes' paradox". And this is so because he only replaces I with P, but still confuses money with credit in his theory. That is why when he pretends to produce new theoretical developments with these aggregate demand and supply curves applied to monetary theory, he again lapses into the typical inconsistencies derived from referring alternatively to money and credit, not realizing they are two different things.

We could call Lipsey's aggregate supply and demand curves an "inverted Keynes' paradox".

Emphasizing the monetary expression in the previous paragraph is essential, since the paradox is the result of trying to explain monetary theory assimilating money to credit, because the aggregate supply and demand curves are nothing more than the classical supply and demand curves.

In short, Lipsey, as Keynesians in general, tries to correct the IS-LM curves because empirical observations do not satisfy the theory implicit in them (Keynes' theory). They use new *ad hoc* theories to bridge the gaps. They try to correct the inconsistency of considering the i in the ordinate replacing it with P . But they do not see the basic error of assimilating money to credit. And so they only validate the error by an inverse route. This leaves us with two options.

- 1) If we consider the aggregate supply and demand curves refer to currency, replacing i with P in the ordinate will leave us with theoretical inconsistency alternating the reference to money and credit, inversely to what we saw in our criticism of IS and LM.
- 2) If we consider the aggregate supply and demand curves as the supply and demand curves for any economic good, we are only referring to the classic curves of supply and demand, supposing the aggregates are the sum of the homogeneous elements of the economic agents. As a result, we see that what Lipsey presents as the behavior of prices (increases or decreases) as a function of being closer or farther from "potential income", is no different from what a manager in a company does when observing an increase in demand of his stocks relative to existences that are being exhausted: he raises his prices. If he did not, he would not be a good entrepreneur, because he would be forfeiting the opportunity to get better prices. In the inverse situation, he would lose sales if he does not lower his prices.

Once again, the error in monetary theory is visible, from the precise point where it departs from Menger's concept of money. From that point on theory lost its way, as can be seen in what we will now study, unemployment.

Underlying this commentary –comparing Keynesian postures and ours- is Hayek's correct criticism of Keynes, in the sense that company profits can rise without an increase in prices. An error present in the aggregate *monetary* supply and demand curves.

PHILLIPS CURVE

Still in the framework of Keynesian theory, there is another *ad hoc* idea derived from it that tries to explain employment-unemployment of an economic good. Though it is generally applied to employment of labor, we can generalize and apply it to any economic good. Our theory says that the economy always fully employs all economic goods. In other words, there is no such thing as an unemployed economic good, though we can say a thing can go from not being a good to being an economic good at a certain point, and the opposite also holds.

Nevertheless, we are going to present a brief synthesis of what the theory of unemployment has to say on this and make a simple comparison with ours.

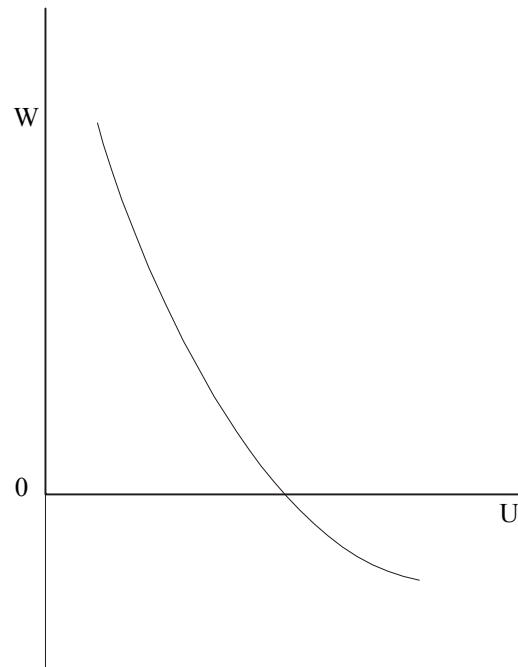
Keynesian theory in general says the economy can be in a state of unemployment or inflation, which generates what we have called the Keynesian asymmetry. As a result, it presents two options: things in the economy are adjusted by quantity or by prices, in complete contradiction with our theory of economic quality and quantity and of the synthesis of both in prices, when there is exchange (intrapersonal or interpersonal).

Comparing this new derivation of Keynesian theory, we see it brings nothing new to economic theory. Rather, we are again on the road back to the theories from which it should never have departed.

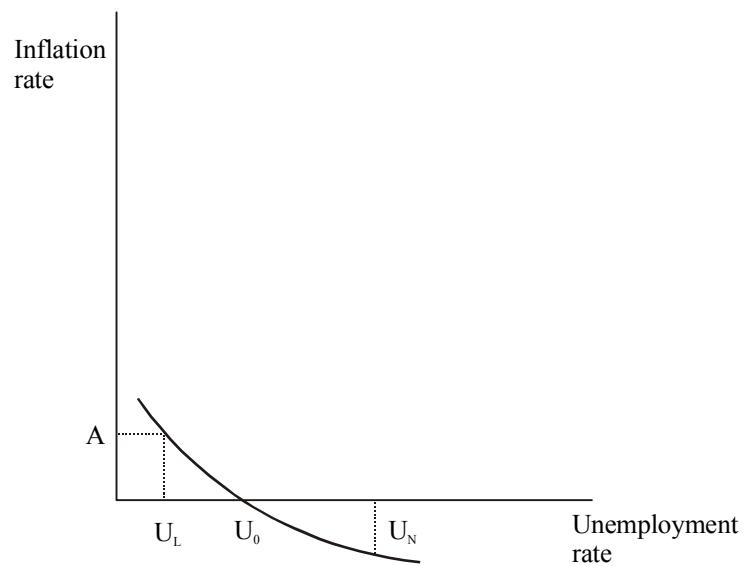
Phillips began the empirical study that related wage variation rates with unemployment rates. Later, the variation rate of monetary wages was replaced with price variations or inflation level. Evidently, this "discovery" was a very adequate *ad hoc* theory in terms of Keynesian aspirations to explain the behavior of prices and quantities, obviously within the framework of

the dichotomy of prices, trying to prove unemployment was the “adjustment variable” to reach equilibrium in real and monetary markets and between them.

Since statistical data did not show what the theory said, this positivism led to the idea of a natural unemployment rate, a palliative that does not explain reality either. Then came the theories of rational expectations, and so on to the present day. Let us see in simple form the graphs that express those theories and compare them with ours, as we have been doing, to see, contrasting them with empirical facts, why those theories are also condemned to failure. We can draw the Phillips curve in its different variations.

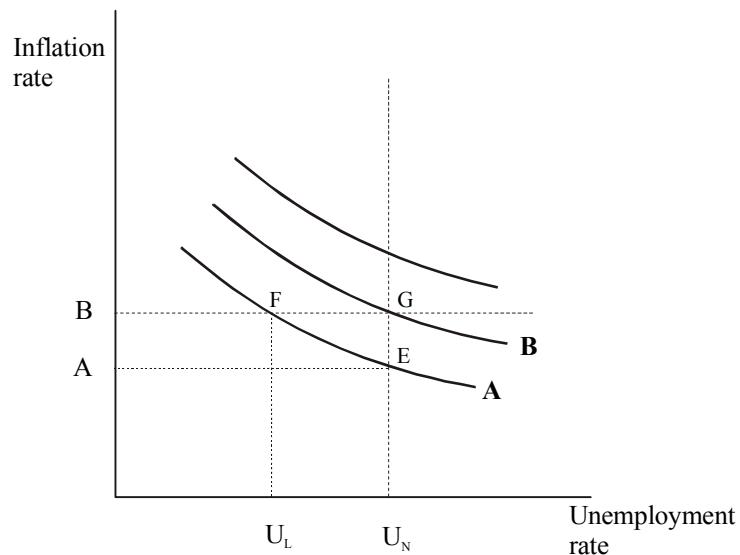


In the ordinate, we see the level of variation of monetary wages, and in the abscissa the unemployment rate. The relation is negative: as monetary wage variations increase, unemployment decreases, and when monetary wage variations decrease, unemployment rises.

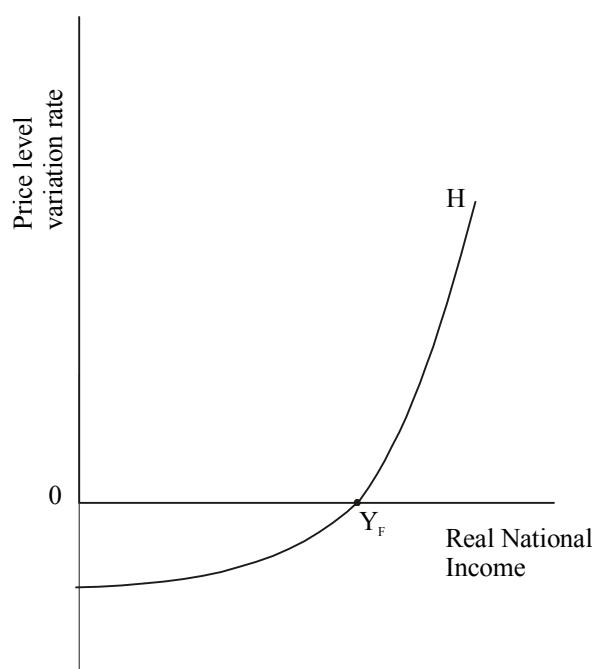


With this graph in which monetary wage rate variations are replaced in the ordinate with price or inflation variations, we see the same correlation: the higher the inflation, the lower the unemployment, and the lower the inflation the higher the unemployment, which reflects the idea of Keynes' asymmetry.

However, confronted with the empirical evidence that there is no stable relation between the inflation rate and unemployment, the Phillips curve is left aside and it is replaced by the Friedman-Phelps theory, from which the following graph derives:



Here we see that because expectations anticipate events, there is unemployment without inflation needing to be zero (it is the previous graph displaced upwards adding a constant, the "natural" unemployment rate). In other words, it is a way of distancing the curve from the original concept. This conclusion is the result of empirical evidence. And it could not have been otherwise, because it has the same theoretical base as what was called the "natural" interest rate. Could this be the reason why the term "natural" unemployment rate is assigned to this theory?



In this case, in the ordinate we see the inflation level and real national income in the abscissa, with the subindex F meaning we are in the presence of Lipsey's potential income. Here we observe a positive relation between an increase in prices and in real income, in line with Lipsey's *monetary* aggregate supply curve. Which in turn, is in agreement with Keynes, when he says profits –new wealth- requires prices to go up, to stimulate businessmen, which Hayek correctly rejects.

All the alternatives of the Phillips curve are nothing more than a reflection of the Keynesian concept that the prices of economic goods tend to rise or fall with greater or lesser intensity, according to stock levels relative to demand variations. This is no more than an expression of supply and demand or a price theory, now seen from the point of view of considering stock variations, based on price variations relative to disposable stocks. In other words, it is no more than a study of prices with the traditional supply and demand curves, in which Marshall's prices are replaced in the ordinate by their variations.

Once again, this is the road back to economic theory, after resorting to a mistaken monetary theory.

Before ending this section, we must reiterate all this is contemplated in the theory of economic quality and quantity, and its synthesis in price theory. Of which the Phillips curve is a deviation, with its inconsistencies compared with empirical evidence. It is not difficult to see these deviations are the result of confusing money with credit. In other words, it is one more case in which observation does not agree with theory, because it does not define correctly the quality of the entities being observed –considering money as credit-, which brings "Keynes' paradox" to the Phillips curve (with the i in ordinate of the IS-LM curves) and the "inverted Keynes paradox" (with P in the ordinate of the monetary aggregate demand and supply curves).

In short, we can say the theoretical endeavor behind the Phillips curve, derived from Keynesian theory, is part of the study, at a more general level, of what we have called economic goods, arising from comparing the prices said goods bring in interpersonal exchanges. From another perspective, this study is very commendable because it allows us to understand the "expectation" of economic agents relative to the future behavior of prices, which in turn reveals what economic agents believe will happen with disposable stocks of economic goods. In other words, it is a tool for the economic-financial analysis of each economic good. Of special interest is the study of variations of credit as an expression allowing us to study different levels of "saturation" of interpersonal exchanges of present for future economic goods, and the higher or lower risk in different economies as a result of the greater or lesser consolidation of the institutions that assure their growth.

Finally, we reiterate that if by full employment we understand the state in which demand of labor is equal to supply, which the Phillips curve refers to, we can only conclude this is the general concept economic theory has of the employment of any economic good. We will not expand on this concept, having already explained the two aspects in it: first, that supply and demand are a partial aspect of what we have called "total demand", in the sense that what are considered supply and demand, and which form interpersonal prices, arise from the interpersonal exchange of economic goods, not considering demand and supply of economic goods not interpersonally exchange; second, in our theory it makes no sense to speak of employed or unemployed economic goods, they simply are or are not economic goods.

KEYNES UNDERCONSUMPTION

In Keynes theory there is an essential aspect referring to situation in which there is insufficient demand and this leads to underconsumption, which implies unemployment. Evidently, this is Keynes theoretical synthesis, leading him to propose a theory to compensate for underconsumption and unemployment. He had to resort to this element because he was trying to solve a problem that does not exist, which we identified as the *equilibrium solution*.

Relative to this position, we reiterate it is deficient from the moment it ignores the total wealth equation that shows there is no such thing as underconsumption or excess demand relative to supply –other than what is implicit in the concept of scarcity- or economic imbalances, etc. In other words, the partial wealth equation underlying Keynes' underconsumption theory (demand deficiency) is the origin of his theoretical inconsistency. Our criticism of Keynes' underconsumption theory differs from Hayek's, because he presents a very weak position, also based on the partial wealth equation. This puts Hayek in a dubitative position relative to the *equilibrium solution*. At the end of his life he expressed his doubts that any such equilibrium exists, an intuition derived from his dissatisfaction with the theory, showing at the same time his great intellectual honesty. Our theory offers a more general and forceful critique, making equilibrium irrelevant from the start, replacing the partial equation –which both Hayek and Keynes accept- with the total wealth equation. That is why it was very difficult for Hayek to debate theoretically with Keynes. Because Hayek' criticism was based on the same partial wealth equation that sustained Keynes' consumption paradox. In this manner, we can see both accepted not only the concept of virtual money, but also the erroneous concept of the partial wealth equation –leading to the search for an nonexistent equilibrium. All this appears as a synthesis of the central errors on which current economic theory is based, since both currents represent the whole spectrum of current economic thought.

Chapter XVII

HAYEK

Just as we dedicated a chapter to comparing our theories with quantity theory and another to compare them with Keynes' theory, Hayek's influence on the economic thought of the twentieth century makes it imperious for us to refer to him. And we do so with the same criterion, presenting his hypotheses synthetically and comparing them with ours.

Just as we explained in simple form the inconsistencies in Keynes' theory (assimilating money to credit, and adopting the idea of the existence of two worlds –real and “virtual” monetary-, that must be balanced individually and together to solve the problem of *equilibrium*) in the same manner we are going to show where Hayek's theory presents monetary substitutes as money and not credit, and from there we will see how he derives his inconsistent hypothesis, that become mere *ad hoc* theories. Hayek takes Mises' error as his starting point, when he deals in the same fashion with monetary substitutes and money.

Though in some passages he says they are different, his theory deals with them as if they were the same, considering they “have the same functions”. Since we have already referred to this error when speaking of Mises, we suppose the reader already understands what was said there. Clearly Hayek tried to continue developing economic theory based on Mises' error. As we see, Hayek started on the same erroneous path as Keynes (money equal credit and economic world versus “virtual monetary” world). And that is why he also had to resort to *ad hoc* theories. Another consequence of having started from the same point is that they were unable to see their differences clearly; they debated over simple details and terminological questions, believing to be in a profound discussion.

Taking this as our starting point, we will show when and how Hayek concretely adopts the original error of confusing money with credit or, more precisely, where he emphasizes the concept of effects produced by money when he is really referring to irregular credits, which he identifies, in agreement with Mises, as different types of money or money substitutes.

Before continuing with Hayek, we believe it is useful to present a forceful example of why we say Austrians, Keynesians, and Quantitativists, agree. For this, it will suffice to show that current economic theory has incorporated the following concept, that Campbell R. McConnell and Stanley L. Brue, in their work “Economics”, present saying:

“*What is money? Money is as money does [...] It has three functions...*”

It is like saying a cart is a car because both transport us.

This concept is shared by the whole spectrum of economic science of the three currents that appear here as one, which we can call “virtualist”, because they accept the creation of money and/or credit from nothing or based on non-present economic goods. We must alert that this position is not in conflict with Popper's theory and his inclinations –though this does not mean he explicitly accepts it-, when in his work “Quantum Theory and the Schism in Physics” he says, “you can get something from nothing”.

To deal with Hayek we must understand his work was very voluminous, and with changing ideas (though he insisted this was not so), and not being able to find an adequate monetary theory –his intellectual honesty led him to recognize this on different occasions- he resorted to practical suggestions, which we believe did not produce good results, because they lacked solid theoretical foundations. Because of this, we have considered adequate to refer to Hayek taking each subject and verifying if he changed his mind as time went by, and then comparing his theory with ours.

HAYEK'S THEORY

Barter and money

Hayek begins by pointing out the “unobjectionable” difference existing between direct exchange or barter and indirect exchange, with the use of an exchange medium (money); and from there derives his acceptance of current monetary theory. He applauds Mises for his efforts to “prove” that the theory of subjective value is valid for money, his money regression theory, etc. Evidently, this leads us directly to the Hayek that believes in virtual money (which Mises alludes to with PC and FM).

Virtual currency and the dichotomy of prices

Hayek accepted all through his scientific career the existence of two worlds, the real and the monetary-virtual. To show this it is sufficient to mention an answer to a comment by John Hicks on his work “Monetary nationalism and international stability” in “Essays on Monetary theory II”

“I suppose that if the last phrase of this paragraph (‘relative prices will continue to be determined exclusively by real causes’) were true, all the rest would follow as a consequence. But it cannot be true”.

He is obviously in complete contradiction to our theory, for which the physical and the monetary are both real, and when he says “all the rest” depends on that assumption. In this paragraph we can see Hayek as a virtualist relative to money.

Hayek continues:

“As you know, it has always been difficult, to assign a clear and precise meaning to the concept of a price structure determined “only” by real factors [...] In such a situation, the continuous injection of new money (in the sense that it is not received from previous sales) (money not arising from interpersonal exchange?) I believe to be one of the determining factors of price structure [...] I consider necessary to think of a fluid equilibrium which is different from that exclusively determined by real factors”.

In Hayek, there is the underlying problem of assimilating credit with money. When he says “*new money (in the sense that it is not received from previous sales)*” evidently he is referring to credit since, if in an interpersonal exchange somebody delivers a present economic good and does not receive another one in exchange, he is granting a credit or a donation, which is not what Hayek refers to. We can then conclude Hayek is referring to Mises’ monetary substitutes –which he considers money-, or to virtual credit in so far as, again agreeing with Mises, it appears “with no sacrifice”.

In short, from these two paragraphs we see that underlying all of Hayek’s theory are virtual money and credit, and at the same time the confusion of assimilating credit and money. We know both cash and credit require present economic goods (in credit to be exchanged for future economic goods), and so we conclude his theory is within the realm of the two worlds: the real and the virtual.

In many passages of his theory Hayek says it is essential to differentiate direct from indirect exchange, and that the unique and unrepeatable act of interpersonal exchange must be divided into purchase and sale. Obviously “his” world of barter is totally different from the world with money, deriving from this all the “peculiarities of money” and the need to dedicate a very “special” study to it. Thus, he followed the same road as current theory, which tells us of a real economic world and a monetary-virtual one. That is why he always sought to study how both worlds could be made compatible, the same that inspired Keynes and the Quantitativists, an aspect that will be clearly visible as we refer to the different aspects of economic theory he dealt with.

Hayek's monetary theory

The best way to summarize Hayek's many contributions, in which he changed his mind at different times, is to refer to his last works. In this manner, we will have the opportunity to refer both to his new and his old ideas. To do this we will follow the story he presents of his "new" monetary theory and its derivations, under the title "Denationalization of Money" (using the second edition by The Institute of Economic Affairs, 1978)

It is very interesting to stress that Hayek's intellectual endeavor in this case is the result of his theoretical inconsistency. In his own words, from the introduction (p. 13):

*In my despair about the hopelessness of finding a politically feasible solution to what is technically the simplest possible problem, namely to stop inflation, I threw out in a lecture delivered about a year ago a somewhat startling suggestion, the further pursuit of which has opened quite unexpected new horizons. I could not resist pursuing the idea further [...] The further pursuit of the suggestion that government should be deprived of its monopoly of the issue of money opened the most fascinating theoretical vistas... (we will have the opportunity to appreciate, as we progress in our analysis of his proposal, that his intellectual effort is evident, but he was not able to see the existence of TER, and continued in his endeavor of trying to show how "special and different money is", in other words, he did not discover the underlying error in "virtualist" monetary theory; his task will be to search for new *ad hoc* theories, the same path taken by Keynesians and Quantitativists).*

In section I Hayek says:

The concrete proposal [...] is that the countries of the Common Market [...] mutually bind themselves by formal treaty not to place any obstacles in the way of the free dealing throughout their territories in one another's currencies (including gold coins) or of a similar free exercise of the banking business by any institution legally established in any of their territories. This would mean in the first instance the abolition of any kind of exchange control or regulation of the movement of money between these countries, as well as the full freedom to use any of the currencies for contracts and accounting.

Said proposal is no more than a plea for free commerce, but it acquires the nature of an innovation in his writing because "money is something special", as if it were not just another economic topic among many, "as if money were virtual or extra-economic".

Then he says free monetary commerce will allow good currency to displace bad currency (Gresham's law) and those issuing money will have to keep its value stable, a topic to which we will return.

He continues:

Free trade in banking. The suggested extension of the free trade in money to free trade in banking is an absolutely essential part of the scheme if it is to achieve what is intended. First, bank deposits subject to cheque, and thus a sort of privately issued money (no, they are a type of irregular credit), are today of course a part, and in most countries much the largest part, of the aggregate amount of generally accepted media of exchange (we agree, but as IC in the form of PC and FM, with the consequences derived from considering them as such).

Secondly, the expansion and contraction of the separate national superstructures of bank credit are at present the chief excuse for national management of the basic money (here we dissent because his "basic money" is our IC in the form of PC, with the consequences derived from considering it as such).

As we can see, Hayek separates both cases clearly, PC and FM, but he does not see the specific differences, their importance or why it is important to single them out. Everything is derived from considering everything that has the function of "money" to be the same:

Then he says:

...Preventing government from concealing depreciation [...] The main advantage of the proposed scheme, in other words, is that it would prevent governments from “protecting” the currencies they issue against harmful consequences of their own measures, and therefore prevent them from further employing these harmful tools. (if Hayek refers to competition to issue money as a present economic good, there is no need to innovate, only to apply the law of certificates of irregular deposit, and if he refers to avoiding the existence of IC, both as PC and FM, there is also no need for innovation, just to identify them as credits, and the law knows how to operate with unrecoverable credits or frauds resulting from breaches of contract).

From the preceding commentary we derive that it is perfectly possible for a zone with one type of PC to cohabit with sub-areas with different systems of FM. In other words, PC and FM, are two types of IC, that can have different combinations, and so the euro as the currency of European Economic Community is the “logical” result of current theory.

Hayek’s underlying idea –though he was not conscious of it– is subjecting IC to free competition and not to state monopoly: allowing Keynes’ “green cheese” to be produced by anyone and not only governments.

Here, it is important to stress, methodologically we have a “laboratory positivist” in Hayek, trying to find a theory through observation, because he could not find a more consistent theory than current ones and then subject it to corroboration.

Then he presents a historical narration of how metal-money was replaced by paper currency, and here we wish to emphasize the following typically “Keynesian” passage (pp 27-28):

*The value of paper money obviously can be regulated according to a variety of principles (also proposed by Mises, not only Keynes). [...] Though historical experience would at first seem to justify the belief that only gold can provide a stable currency, and that all paper money is bound to depreciate sooner or later, all our insight into the processes determining the value of money tells us that this prejudice, though understandable is unfounded. The political impossibility that governments will achieve it does not mean there is reason to doubt that it is technically possible to control the quantity of any kind of token money so that its value will behave in a desired manner, and that it will for this reason retain its acceptability and its value (in the style of Lamarckian genius and its Keynesian spirit). It would therefore now be possible, if it were permitted, to have a variety of essentially different monies. They could represent not merely different quantities of the same metal, but also different **abstract units** (bold type added, to show the virtualism present here) fluctuating in their value relatively to one another.*

Here we find Hayek unable not only to adequately differentiate money from credit, but also PC from FM, also he supposes currency (money and/or credit) can appear without the existence of a present economic good. Obviously, Hayek refers to our IC when he speaks of “abstract units”, like Mises’ “credit without sacrifice”.

He ratifies all this when saying (p. 32).

The reason that should make us refuse any longer to tolerate this irresponsibility of government is that we know today that it is possible to control the quantity of a currency so as to prevent significant fluctuations in its purchasing power (inverts Keynesianism, since where Keynes imposed a cost on free money, Hayek avoids its becoming free).

Evidently, he follows Mises footsteps, since we saw he accepted the theory that we can and should control the quantity, and therefore the price, of currency; they also agree on the idea of “seeking” the value of money in its purchasing power. Hayek also introduces in his theoretical “innovation”, resulting from his practical idea, the concept of a “constant” value, price or purchasing power of money, as one of the advantages of the money people would opt for, a topic we will opportunely refer to.

Then he approaches the concept of legal tender currency, stressing it is compulsively imposed by governments as money to be used in cash and credit interpersonal exchanges (for him they were the same since he assimilated money and credit). In our theory, legal tender is a legally binding IC and, more specifically, PC is given legal standing as money. But economists should not be surprised by this, since current theory assimilates IC to money, the authorities and justice act “according to science”, and rogue authoritarians abuse this to the degree the cultural maturity of their people allows them.

Hayek correctly says, “*Legal tender creates uncertainty*”, but we cannot agree with his theoretical explanation. For us this relates to the uncertainty of the future, and credit is that, precisely. But he does not realize it and assigns special traits of uncertainty to legal tender, not seeing this results from the fact that it is credit, to which irregularity is later added. In other words, eliminating the category of legal tender does not mean eliminating uncertainty from currency in the form credit, nor does it eliminate irregularity.

Then he introduces an aspect of economic theory considered very special –as important for economic theory as money- that is Gresham’s law, not realizing what is special is economic time, which theory tried to explain –as we do here with TER- but in the act of interpersonal exchange it is represented by credit and not money. Nevertheless, it is correct to deal with this law considering Hayek’s discovery of an error in its application.

Gresham’s law according to Hayek

This law says bad money will displace the circulation of good money. Because some economists denied this, trying to justify state monopoly in the issuance of currency, Hayek says this law “*is not false, but it applies only if a fixed rate of exchange between the different forms of money is enforced*”. In other words, Gresham’s law applies when there is legal tender and a law that makes us accept as money what is not so. It is important to observe we do not mention the “*fixed rate of exchange*” and this is so because it is included in the more general concept of legal tender.

In our theory this problem does not arise, since if we refer to currency in the form of money, this is a present economic good competing in its economic level (price and value) with other economic goods; and if we refer to currency in the form of credit,, then it is subject to the same laws as all other economic goods and because it is representative of economic time it is subject to TER (economic time is the only economic good that materializes inevitably in other present economic goods).

Our position states that the general principium of the marginal relation of substitution among economic goods applies here. Simply put, this means every economic agent will tend to exchange interpersonally the less valuable economic goods in their possession (the essence of interpersonal exchange, to obtain benefits ceding economic goods of less value in exchange for the same quality and quantity of other economic goods), but this holds not only for currency, in the form of money (different types of money) or credit (different types of credit). In other words, the currency used in interpersonal exchanges is not subject to different laws from other economic goods, except in the form of credit, subject to TER because it is economic time, which is not true for money.

Credit replaced money as currency because it is cheaper under certain circumstances for economic agents. This situation arises when credit is very trustworthy and economic agents accept it as if it were a CID, which allows us to avoid incurring in the higher costs of using money.

It is clear, then, that all economic agents will prefer to keep in stock the economic goods that are of greater value to them if they can use economic goods of lesser value for interpersonal exchange.

Implicit in Gresham’s expression was the problem of confusing money with credit, especially with PC subject to flexible materialization, which made people prefer to use it instead of real money; in other words, it was the result of a disorienting observation, the result of an inadequate theory.

We deduce from all this, that Hayek’s explanation, that legal tender is essential for Gresham’s law to fully apply, is also inadequate, because he still insists on a special explanation when

dealing with money. The essence of the problem is confusing money with irregular credit; once this is cleared up there is no need for a special law such as Gresham's to explain the reason why economic agents prefer to interpersonally exchange some economic goods instead of others, retaining the most valued economic good, which is true for all economic goods: On the other hand, the legal tender factor Hayek tries to introduce is included in our definition of irregular credit with flexible materialization. Finally, legal tender is similar to any monopoly (by the state or otherwise); currency is no special case.

In other words, if Hayek had seen PC is an IC and noticed the existence of TER, he would have realized that these more general theories make Gresham's law unnecessary. We can conclude that Gresham's law represents the effects of "our" financial crisis considering it states people go back to money when credit is discredited, or replace bad credits with good credits; this is a situation in which the poorest economic agents are the ones that have less resources to buy better currency, and that is why they are the most affected by the chain of irregular credits.

Continuing with Hayek's monetary theory

Then Hayek introduces his concrete proposal of money subject to private competition, the analysis of which is very important because it is the opportunity to understand the theory underlying this proposal. It is a source of rich theoretical analysis, not just a practical exercise, where he tells us what he would do if he had to offer the market a type of money:

*... I would announce the issue of non-interest bearing certificates or notes (if they are money there is no need to say so and if they are credit there is always interest; a synthesis of his confusion), and the readiness to open current cheque accounts, in terms of a unit with a distinct registered trade name such as 'ducat'. The only legal obligation I would assume would be to redeem these notes and deposits on demand with, at the option of the holder, either 5 Swiss francs or 5 D-marks or 2 dollars per ducat (he is still within the dangerous irregular credit chain when he proposes convertibility of one IC to another). This redemption value would however be intended only as a floor below which the value of the unit could not fall because I would announce at the same time my intention to regulate the quantity of the ducats so as to keep their (precisely defined) purchasing power as nearly as possible constant (a definition of the business he is proposing, an aspect we do not oppose, similar to the special characteristics advertised for any economic good, though key questions appear at this point: constant relative to what?, physical or price stability?, if it is price stability, relative to what prices?; what follows is an answer to these question) [...] And I would announce that I proposed from time to time to state the precise commodity equivalent in terms of which I intended to keep the value of the ducat constant (why not issue a CID?), but that I reserved the right, after announcement, to alter the composition of the commodity standard (obviously, he is referring to IC in the form of PC) as experience and the revealed preferences of the public suggested. It would, however, clearly be necessary, though it seems neither necessary nor desirable that the issuing bank legally commit itself to maintain the value of its unit (Immediately we have the question: what does maintaining the value of its unit mean?, relative to what?; the fact that we come back to the same question shows Hayek is confused), it should in its loan contracts specify that any loan could be repaid either at the nominal figure in its own currency, or by corresponding amounts of any other currency or currencies sufficient to buy in the market the commodity equivalent which at the time of making the loan it had used as its standard (if we add to this the initial imposition of not paying interest, it is obvious he is now trying to give his IC the condition of a CID; in other words it is "Keynes' paradox" from another point of view). [...] **Constant but not fixed value** (in bold type because it is a subtitle. There evidently is a contradiction in the title itself, which shows the foundations of his monetary theory were not solid) It might be expedient that the issuing institution should from the outset announce precisely the collection of commodities in terms of which it would aim to keep the value of the 'ducat' constant (the value of an economic good cannot be constant, as we saw, independently of the economic good being simple or compound). But it would be neither necessary nor desirable that it tie itself legally to a*

particular standard (his confusion makes him wander from money to IC, but he does not realize this because of the weaknesses of his theory, which in turn leads him to give legal standing to an IC). *Experience of the response of the public to competing offers would gradually show which combination of commodities constituted the most desired standard at any time and place* (he leaves the Lamarckian genius' task to the banker). *Changes in the importance of the commodities, the volume in which they were traded, and the relative stability or sensitivity of their prices (especially the degree to which they were determined competitively or not) might suggest alterations to make the currency more popular. On the whole I would expect that, for reasons to be explained later, a collection of raw material prices, such as has been suggested as the basis of a commodity reserve standard, would seem most appropriate, both from the point of view of the issuing bank and from that of the effects of the stability of the economic process as a whole.* (All this can be solved with the futures markets and investment funds).

Hayek presents different options relative to what would be the most competitive currency in a market with free competition, not realizing he has already left money aside (gold or CID) and is referring to PC. What Hayek shows is the natural process of selection of a currency, only here he says a basket of economic goods would be convenient instead of a special one, to satisfy the need for stability in the currency's value, which supposedly will be its most valued trait. As we can see, it is simply a futuristic anticipation of what Menger said about the past, that money was first an economic good which was later assigned the role of medium of exchange, and so people opted for gold, silver, coffee, tea, etc. In other words, Hayek makes no contribution to monetary theory, he only said people would choose a basket of economic goods so there could be a stable value. He does not say gold was first good money but then it was no longer so because of human progress and interpersonal exchange, resulting in the fact it is difficult for "only one good" to satisfy the criterion of having a constant value. In short, Hayek tries to say the monetary price must be constant, and for this to be so the quantity of economic goods in the basket must vary, which is a type of IC or "inverted PC", a concept we will refer to specifically.

Then he continues in his attempt to clarify all this and in his progress, full of implicit *ad hoc* theories, he says.

Control of value by competition (in bold type because it is a subtitle) [...] *Competition would certainly prove a more effective constraint, forcing the issuing institutions to keep the value of their currency constant (in terms of a stated collection of commodities) (again the need for a constant value of economic goods), than would any obligation to redeem the currency in those commodities (or in gold) (there is no doubt that "his" currency is PC). And it would be an infinitely cheaper method than the accumulation and the storing of valuable materials (virtual money, because it is not composed of present economic goods).*

Hayek's healthy intention to avoid inflation is evident here –and he expresses it at the beginning of the text-, but at the same time, it is very useful to show the fragility of current monetary theory, of which he is just another exponent, honoring virtualism to the last:

- 1) He tries to combat the completely irresponsible way in which the irregularity behind PC (also, in a confused way, FM) is dealt with, resorting to competition. In light of our theory, what should be done is penalize the issue of IC, which is what the law does when there is default on any credit. With this, we mean economic theory's task is to say to the authorities: "PC and FM are irregular credits". The attempt to solve the monetary problem with free competition, not seeing the presence of IC, is like allowing free competition in the supply of virus harmful to peoples' health; We are not using the example of forbidden drugs that harm peoples' health, because there can be a solution for them in free competition in the market.
- 2) As a result of his proposal for the free and competing issue of money (he did not realize his money was IC), -our theory states this from the beginning, saying that anyone possessing present economic goods can issue CID on them- he has to renounce (*ad hoc*) one of the pillars

of economics he defended so much: that prices vary intertemporally and that they cannot be constant, the same as the quantity of an economic good cannot be constant –both in absolute terms and relative to other economic goods. He used this concept at a certain point simply as an “assumption” in his writings, to prove precisely that prices are not constant. This observation is very important, because generally the fact that it is not clear if Hayek refers to a constant “monetary” value of the economic good “basket”, or a constant physical composition of the basket of economic goods (an option that does seem the correct one), is presented as a simple confusion. However, we must bear in mind any proposal of constant prices is theoretically wrong, no matter if it refers to a simple or compound good, or to real or monetary prices, since we must reject the dichotomy of prices. We can also express this criticism of Hayek saying his theory goes against what has been said here about economic quality and quantity that are synthesized in prices, deriving in the fact that we cannot manipulate one of these economic entities without affecting the whole. This critique is not only valid for Hayek.

With the following paragraph any doubts relative to what is behind Hayek’s “virtual money” disappear, showing this whole work is a vain attempt to distance himself from it

To achieve its announced aim of maintaining the purchasing power of its currency constant (here he shows what he wanted to keep constant, purchasing power, which is another way of expressing his confusion, this time with a synthesis of “virtual money” that must find its value and price in the future, showing he again went from money to credit, as in Keynes passage where he referred alternatively to money and interest as if speaking of the same economic good), *the amount would have to be promptly adapted to any change of demand* (equivalent to the Keynesian position he rejected in other texts), *whether increase or decrease. Indeed so long as the bank succeeded in keeping the value of its currency constant...* (again, constant).

Then he explains the benefits of his proposal, the same benefits competition always brings with the best possible information, insisting that the market would prefer a currency with “approximately constant” value, by which he means “purchasing power”, a topic that we have sufficiently addressed. What interests us in this respect will be explained when we consider his idea of applying “inverted flexible materialization”.

We wish to stress here we are against offering money with “constant purchasing power”. What our theory stresses is individuals must be protected against IC, be they public, private, monopolistic or competitive. In other words, the agent selling an economic good must take responsibility for what he offers and the one purchasing the good must take responsibility for what he receives and from whom: we are referring to interpersonal exchanges in a free market framework and with no compulsive acts.

Hayek's money

In the following section Hayek refers to what he understands by money and, though we have already presented his concept of virtual money, it is important to include some paragraphs in which he deals with the definition, the concept, or the attempt to specify what money is.

Under the subtitle, “**X. A digression on the definition of money**”, he says:

Money is usually defined as the generally acceptable medium of exchange (In Menger's best style, only he referred to a present economic good, saying it previously had to be an economic good; Hayek also inadvertently includes credit. We can say this definition is more appropriate for currency than money), *but there is no reason why within a given community there should be only one kind of money that is generally (or at least widely) accepted. [...] different kinds of money can differ from one another in more than one dimension...* (We agree if we are referring to “monies” as present economic goods and we consider a generic concept of species such as gold, silver, metal, rice, etc.; otherwise we are referring to credit, used as currency).

Then he introduces a subtitle that clearly shows his concept of money (p. 52)

No clear distinction between money and non-money: It also means that, although we usually assume there is a sharp line of distinction between what is money and what is not –and the law generally tries to make such a distinction- so far as the causal effects of monetary events are concerned, there is no such a clear difference.

The distance with our theory is evident, since the subtitle “*No clear distinction between money and non-money*” by itself shows he defines money with the general criterion described by Campbell R. McConnell and Stanley L. Brue, when in their work, “Economics” they say “*money is as money does*”, which assimilates credit –that is used as currency- to money. Hayek ratifies this with greater depth when he ends the paragraph saying: *so far as the causal effects of monetary events are concerned, there is no such a clear difference*. In other words, for current theory in a “monetary” sense, a present economic good is the same as the future economic good. When he says “*and the law generally tries to make such a distinction*”, he does nothing more than blame the law for economic theory’s weaknesses. The law has to proceed in this manner because it has to deal with reality, not possessing an absolute truth. It also needs to establish some type of truth to be able to administer justices. It is precisely in monetary matters we see justice already established the penalties that must be applied to the economic agent that does not honor his commitments derived from interpersonal exchanges. But economic theory does not offer scientific means to establish if we are in the presence of cash or credit exchange, of a present or future economic good, if the credit was cancelled or if the credit chain continues (canceling with PC and/or FM), etc. It is essential to emphasize Hayek’s erroneous idea in this paragraph that it is not important to clearly specify or define precisely –at least to the point economic science needs- what money is. Criterion that, in turn, is totally opposed (another contradiction in Hayek) to the argument with which he criticizes the quantity theory of money.

Then he says (p. 54):

Meanings and definitions [...] It will have become clear that in the present connection it is rather more expedient to speak of “currencies” than “monies”, not only because it is easier to use the former term in the plural but also because, as we have seen “currency” emphasizes a certain attribute (an explicit admittance of his confusion, since this is nothing more than an *ad hoc* resource to include credit and money in monetary matters, not bothering to differentiate them; in other words, it is just like hiding the problem under the rug). We shall also use “currency”, perhaps somewhat in conflict with the original meaning of the term, to include not only pieces of paper and other sorts of “hand-to-hand money”, but also bank balances subject to cheque and other media of exchange that can be used for most of the purposes for which cheques are used (evidently we use the concept of currency in the same way he does, only both money and credit can be used as currency, completely different economic goods he assimilates, in agreement with current theory). There is however, as we have just pointed out, no need for a very sharp distinction between what is and what is not money (if we add to my previous comment, that we use the same concept of currency, this new concept from Hayek, we see we have a different concept of money, since for us it is essential to establish for money the condition of being a present economic good, as opposed to credit –which can be currency, because it satisfies liquidity- that refers to future economic goods). [...] The term “rate of exchange” will be used throughout for rates of exchange between currencies (in our theory the rate of exchange is the price –in its different categories- of an economic good; Hayek shows his confusion when using the same term, rate of exchange, to define the rate of exchange between currencies). [...] “money substitutes when we have to consider borderline cases in the scale of liquidity –such as travelers’ cheques, credit cards, and overdrafts- where it would be quite arbitrary to assert that they either are or are not part of the circulation of currency (he is clearly referring to Mises’ monetary substitutes, which we have already spoken of, and the expression “currency circulation” –as an *ad hoc* way out- appears because for him it was unnecessary and/or impossible to differentiate money –he is only interested in the possibility of using it as an exchange good. For Hayek, referring to that term was the most convenient thing to do, to “avoid problems”,

both theoretical and practical, “we include the concept of broad monetary base and all inconveniences are eliminated”).

We believe this puts Hayek among the economists we have called “virtualists”, in the sense that for them there can be money and/or credit that are not derived or based on present economic goods. We wish to stress “virtualists” is not a derogatory adjective; its only intention is to differentiate in a practical manner different positions, corresponding to Austrians, Keynesians and Quantitativists, that have similar ideas, and are different from our “relativistic” theory.

Then Hayek introduces the subject that has us so worried, the constant value of currency (p. 55 y ss.):

XI. THE POSSIBILITY OF CONTROLLING THE VALUE OF A COMPETITIVE CURRENCY *The chief attraction the issuer of a competitive currency has to offer to his customers is the assurance that its value will be kept stable (or otherwise be made to behave in a predictable manner) [...] To assure the constancy of the value of its currency the main consideration would have to be never to increase it beyond the total the public is prepared to hold (all money is always “held” by someone, the only one that is not is “virtual-money”; this expression again shows Hayek works with a partial wealth equation) without increasing expenditure in it so as to drive up prices of commodities in terms of it; it must also never reduce its supply below the total the public is prepared to hold without reducing expenditure in it and driving prices down. [...] The crucial factor: demand for currency to hold* (subtitle) *The crucial point... will be not the demand for borrowing it but the willingness of the public to hold it (savings). [...] XII. WHICH SORT OF CURRENCY WOULD THE PUBLIC SELECT? ...I must now examine the process and the criteria by which such a selection (of currency) would take place [...] Four uses of money* (subtitle) (i) *Cash purchases...* (if he considers IC –future economic goods- as money, obviously he does not agree with our theory) (ii) *Holding reserves for future payments...* (the same observation as before, because we are still in the chain of IC) (iii) *Standard of deferred payments...* (same observation) (iv) *A reliable unit of account* (with accounting that separates physical units in a very concrete manner, expressing things in monetary units it is a mere arithmetic calculus; in balance sheets you have to mention the date, the period for which you want the results and the currency they are expressed in, according to current accounting norms).

The common denominator serving the four uses we have already referred to in our theory, is preserving value, otherwise the four uses emphasized here would not exist. Our theory’s answer to Hayek’s position is that, except for the use as unit of measure –which is the foundation of “monetary economics”, i.e. physical accounting expressed in the units of economic good of common use called currency-, all the rest are properties every economic good must have, since if it is otherwise, it will be of no interest for the economy in general and, in that situation the fourth use, unit of measure, will simply disappear. In other words, this matter requires a more general study to determine if things have the *status* of economic goods –without which there is no value or economic prices- and the level or degree of each one compared to all the rest. Again, quality, quantity and prices as part of an economic whole. Then (on page 65) he says:

“XIII WHICH VALUE OF MONEY? [...] (p.66) Two objects may keep a constant relative value in terms of each other, but unless we specify the other, the statement that the value of something is unchanged has no definite meaning (he believe he refers to prices instead of value, but even so, we know our concept relative to temporally constant value and prices) [...] **Balancing errors** (under this subtitle he tries to say that, using statistical averages, it is possible to obtain a currency represented by a basket of goods, in which variations balance out, in such a way that we will have certain average stability; this is based on the concept of regularity of what is big and diverse. If things are this way, then it will suffice to use a price index –which he so ardently opposed- adding future prices to the equation) [...] **A few banks**

... might continue to try and refine the precise composition of the standard “basket” of commodities whose price they tried to keep constant in their currency (ratifying what he said immediately before this).

Hayek and quantity theory

He then tries to present his theory as opposed to the quantity theory of money, not realizing this is in contradiction with what he said up to this point; let us see:

“(p. 72) XIV. THE USELESSNESS OF THE QUANTITY THEORY FOR OUR PURPOSES.

The usual assumptions of monetary theory, that there is only one kind of currency, the money, and that there is no sharp distinction between full money and mere money substitutes, thus disappear (evidently, he is trying to say that he does confuse money with substitutes, but we know for him they are the same as long as they have the same function, means of exchange, not differentiating money from credit –because he does not perceive it-, so he cannot disqualify quantity theory because it requires an only expression of money. He has said it is impossible and unnecessary to define money, which ratifies that he confused money with credit when both satisfy the human need to dispose of an exchange good of common use). *So does the applicability of what is called the quantity theory of the value of money [...] The quantity theory presupposes, of course, that there is only one kind of money in circulation within a given territory, the quantity of which can be ascertained by counting its homogeneous (or near homogeneous) units. But if the different currencies in circulation within a region have no constant relative value, the aggregate amount in circulation can only be derived from the relative value of the currencies and has no meaning apart from it. [...] (p. 73) The decisive consideration to keep in mind for our present purpose is that in a multi-currency system there is no such thing as the magnitude of the demand for money... these distinct demands cannot be added up into a single sum ...* (which is correct and implies the uselessness of his whole theory, which begins by stating *erroneously* that money is always the same in the sense that it satisfies the same need, underlying which is the concept that money is the same as credit because they are both currency, concluding *correctly* that they cannot be added because they are different. We can only add that economic calculation in general, and accounting specifically, homogenize information using a common unit of measure –when considering heterogeneous entities).

Not only does Hayek contradict himself in terms of what he considers money in different parts of his text, he does not consider the more general aspects of the economic theory we have presented under the concepts of quality and quantity in economics and prices as a synthesis of both; let us see:

- 1) According to our theories, first, we must define the quality and then we can refer to quantity, and what you can add and subtract are cardinal units, not the ordinal ones. Therefore, what Hayek considers inconsistent in quantity theory is of a general meaning and not specific to it. In other words, our theory of quality, quantity, prices and levels of economic goods, does not need special considerations for money.
 - 2) Deriving from the previous point, what quantity theory wants to study, as we said in our criticism of it, is the stock of financial analysis of any economic good.
 - 3) We can agree with Hayek when he says: *“But if the different currencies in circulation within a region have no constant relative value, the aggregate amount in circulation can only be derived from the relative value of the currencies and has no meaning apart from it.”*, but because this is presented as part of the theory in the previous sections, he forgets a need can be satisfied by several different economic goods; we can say therefore that the hunger (generic need) of a group of human beings in a certain period was satisfied by “x” quantities of potatoes, “q” quantities of carrots and “r” quantities of meat, but we do not proceed to add the potatoes with the carrots or the meat. Though we do have a concrete idea of how each economic good was involved in satisfying the hunger need.
- Towards the end of the paragraph he says: *The decisive consideration to keep in mind for our present purpose is that in a multi-currency system there is no such thing as the magnitude of*

the demand for money... these distinct demands cannot be added up into a single sum ..." This is not exclusive of money either and does not justify a special theory. We can see once again what they are trying to do is present money as something mystical, very special, not realizing that economic time is special because it is subject to TER and the "general" laws of economics. We reiterate our commentary at the end of the quotation: *We can only add that economic calculation in general, and accounting specifically, homogenize information using a common unit of measure –when considering heterogeneous entities.*

Then, continuing with his disqualification of quantity theory of money, he says:

[...] (P. 74) ... and the velocity of circulation The difference is important. The cash balance approach directs attention to the crucial causal factor, the individuals' desire for holding stocks of money. The velocity of circulation refers to a resultant statistical magnitude [...] But which is often misleading because it becomes so easily associated with the erroneous belief that monetary changes affect only the general level of prices. (When dealing with Hayek's theory of economic cycles we will present our position relative to the topic of homogeneity and proportionality in the monetary transmission mechanism).

We could conclude our criticism of the theoretical arguments on which Hayek bases his rejection of the quantity theory of money as follows:

- 1) We have dealt extensively with the fact that we do not refer to a unique and homogeneous money that can be added and so obtain a number representing the demand for money. But we wish to add the following: if we use the compound money he proposes, made up of a basket of goods, this money is a homogeneous economic good, and once the fact that it is a compound is accepted, we can refer to it as a unique money, and apply the quantity theory he rejects. This criticism is valid both in the alternative of his "compound money" having a constant "value" (though he refers to purchasing power, which indicates IC and not money) based on a permanent variation of the "physical" composition of the goods that compose it, or in the case where the physical composition of goods is constant and the "value" changes. This is a very sensitive topic, which we will refer to below under the subtitle "Inverted PC".
- 2) Hayek also refers to heterogeneous money because he defines money the same way current theory does: everything that has the function of money is money; this is a consequence of his strict adherence to Mises' theory.
- 3) We will refer to the non-proportional effects of "monetary policy" on the business cycle when we deal with Hayek's business cycle, where we shall see his proposal does not avoid the economic cycles derived from the "virtual monetary world", because he validates IC.

However, based on what we said when referring to quantity theory, we reiterate the central critique arising from our theories is that it is based on the partial wealth equation, which imposes conditions (they must be constant and exogenous) on economic variables for them to be valid. Among those conditions, we can include Hayek's reference to homogeneity, which is not necessary, because it is part of the essence of any economic (and non-economic) entity, not only money or currency.

Hayek's "inverted PC"

As we have said, there are several possible interpretations of Hayek's proposal of a basket of economic goods as "compound money" but, in reference to the theory underlying it, we are interested in the following conclusions:

- 1) If what he means is that his currency must have an "approximately" constant value, we must deduce the term "value" refers to its "purchasing power", a feature we have said does not correspond only to money but to all commodities in general.
- 2) If he pretends that an economic good, simple or compound, have a constant value, it is surprising that Hayek reneges on his posture relative to the intertemporal change of prices in

search of a “monetary solution”. This allows us to see the inconsistency of his monetary theory, which follows the precepts of current theory, which is the reason why he needs *ad hoc* ways out. Evidently, he should not have abandoned his correct theory of the intertemporal variation of prices. Instead, he should have corrected his monetary theory or even the more general theory of economic time.

3) If what he is trying to say is that the basket of currencies is composed of present economic goods, and that its qualitative and quantitative composition is rigid, we simply have money with a mix of present economic goods, the same as saying the CID is composed of 50 grams of silver and 50 grams of gold, instead of a CID representing 100 grams of silver.

4) If what he pretends to tell us –and we believe this is his posture- is that he is seeking for a basket of economic goods that have a relatively constant currency value (constant purchasing power), then we are in the presence of what we have called “flexible materialization”, and he adds a “guide” to control that convertibility, which is simply a Fisher and Friedman style price index –something he has criticized. We call this posture “**inverted flexible materialization**” or “**inverted PC**”, because flexible materialization has generally appeared as a result of issuing, on a specific stock of “reserve” economic goods, PC in increasing quantities, and its “value or purchasing power” is the consequence. Instead, with this proposal, first he tries to define “purchasing value” and then the physical composition of the economic goods in the “reserve”.

We could continue with this exercise of giving Hayek’s proposal different interpretations, but what is clear is that he remains within the boundaries of the theory of IC and his attempt to consider them money. As long as he remains within this framework, he will not be able to solve his “currency problem” and will persist in the attempt to make his *virtuality* more realistic, just as monetary in general does.

Introduction to Hayek’s monetary cycles

In the text, we now find Hayek’s theory of economic cycles. We introduce it here to see how it relates to our theories (p. 83-84)

The supply of currency, stable prices, and the equivalence of investment and saving

(subtitle) *While the modern author who first drew attention to the crucial importance of these divergences between investment and saving, Knut Wicksell, believed that they would disappear if the value of money were kept constant, this has unfortunately proved to be not strictly correct* (in our total wealth equation –that can be perfected- they are not even non-strictly equal). *It is now generally recognized that even those additions to the quantity of money that in a growing economy are necessary to secure a stable price level* (the Hayek of stable prices) *may cause an excess of investment over saving* (the Hayek of equilibrium saving and investment). *But though I was among those who early pointed out this difficulty* (In “Monetary Theory and the trade cycle”), *I am inclined to believe that it is a problem of minor practical significance* (his cycles are no longer that monetary?; or are the monetary cycles no longer that important?). *If increases or decreases of the quantity of money never exceeded the amount necessary* (in the best style of Fisher and Friedman’s price indexes) *to keep average prices approximately constant, we would come as close to a condition in which investment approximately corresponded to saving as we are likely to do by any conceivable method* (here is where we must criticize Hayek for not considering storage, since the only economic goods included in present wealth are those for consumption and investment or those for saving and investment, the same partial wealth equation as in Keynes. This is derived simply because they are the only goods that define or form prices in his theory, though in other parts he refers specifically to storage as having incidence on prices. Thus, his theory of economic cycles is based on a wealth equation that is just as partial as Keynes’ equation). *Compared, anyhow, with the divergences between investment and saving which necessarily accompany the major swings in the price level, those which would still occur under a stable price level would probably be of an order of magnitude about which we need not worry.* (Hayek is speaking already of the more or less serious “degree” of monetary effects; he does not realize he is

having the same problem as those he criticized for trying to control simultaneously price levels and rates of exchange. The same happens to him with price levels and saving and investment equilibrium, though with another cause: according to him, price levels – specifically their stability- are determined only by investment and saving goods –more concretely the “equality” of their variations. He is within the framework of the equilibrium theory he is trying to reject, when proposing that price stability –that does not exist- shows equilibrium between saving and investment).

It was inevitable that, based on this, he should come to the neutrality of money. That is why he again introduces (he has done it in previous works) neutral money. We mention it here because it shows his position on the dichotomy of prices and virtual money. And it introduces his theory of economic cycles.

'Neutral money' fictitious (subtitle) *That perfect matching or correspondence of the individual plans which the theoretical model of a perfect market equilibrium derives on the assumption that the money required to make indirect exchange possible has no influence on relative prices [...] I have long since come to the conclusion that no real money can ever be neutral in this sense...*

Though we have already expressed our position on neutral money and the contradictions it presents, we believe what we said is completely valid for Hayek; in this small paragraph he shows several things:

- 1) Hayek is starting to exclude from his theoretical arsenal the concept of economic equilibrium. He will later reject it completely and replace it with “spontaneity”. We need to stress why he distances himself from this concept: because it only exists in an “imaginary” perfect model.
- 2) He does not realize that he is replacing the virtualism of equilibrium he rejects with the virtualism of money implicitly included in his theory. He tries to fix this when saying, “*I have long since come to the conclusion that no real money can ever be neutral in this sense...*”, thus validating virtual money.

Then Hayek (pp. 84-85) surprises everyone (though not if we have our theory) when he agrees with what we have called “Keynes’ paradox”.

Increased demand for liquidity (subtitle). *To dispel one kind of doubt which I myself at one stage entertained about the possibility of maintaining a stable price level, we may briefly consider here what would happen if at one time most members of a community wished to keep a much larger proportion of their assets in a highly liquid form than they did before. Would this not justify, and even require, that the value of the most liquid assets, that is, of all money, should rise compared with that of commodities?*

The answer is that such needs of all individuals could be met not only by increasing the value of the existing liquid assets, money, but also by increasing the amounts they can hold. The wish of each individual to have a larger share of his resources in a very liquid form can be taken care of by additions to the total stock of money. This, paradoxically, increases the sum of the value to the individuals of all existing assets and thereby also the share of them that is highly liquid. Nothing, of course can increase the liquidity of a closed community as a whole (a Hayek surprisingly in favor of aggregates), if that concept has any meaning whatsoever (the Hayek that realizes what we observed), except, perhaps, if one wishes to extend its meaning to a shift from the production of highly specific to very versatile goods which would increase the ease of adaptation to unforeseen events. (Referring to credit, since future implies it, only he does so with a “strangely complicated” language, because Hayek realizes how inconsistent the terrain is; in other circumstances this would lead him to express he is not very clear on where “the monetary road” takes him).

In this paragraph, we have the same approach as in Keynes, when saying the greater need for the “barbarous relic” (gold) was in step with the permanent increase in its value because supply does not respond in the same manner. Later saying its quantity had to be regulated to avoid its value falling to zero, at which point he leaves money aside and refers to credit. In other words, Hayek proposes the same situation we called “Keynes’ paradox”.

What we have said, that Hayek is in Keynes’ same theoretical territory and so stumbles into the same paradox can be no surprise in the framework of our theory, because both believe in the existence of virtual money, confuse money –that has a price, being a present economic good- with credit –the price of which is interest, subject to TER-, both alternatively interpret their theoretical discourse in the same sense, when speaking of different things (money and credit), not realizing this is so.

If we consider these positions are similar relative to virtual money, the dichotomy of prices, assimilating money and credit, pretending that money plays the special role of credit as representative of economic time in TER, and equilibrium theory, all this leads us directly to the IS/LM curves, of aggregate supply and demand and the 45 degree curve, “exclusively attributed to Keynes”.

Further on (p. 91) Hayek says:

It is of course taken for granted here that the average prices in terms of a currency can always be controlled by appropriate adjustments of its quantity (the authoritarian Lamarckian genius is introduced).

This paragraph says a lot; if we confront it with our theory of quality and quantity in economics and prices as the synthesis of both, and that price levels refer to comparison among different economic goods, it says nothing special relative to quantity being an elementary part in determining prices, but not isolated or independently from the quality of the economic good. The relation is biunivocal: quality means quantity and viceversa, a relation that appears in the concept of price, which appears because of that indestructible biunivocal relation. What worries us in Hayek is that here he again appears supporting “aggregates” and, indirectly, virtual money, which finds its value in future purchasing power. He seems to refer to the importance of studying quantity in economics without previous specific reference to quality. This is why he refers to inflation; we know what it means in our theory.

Then Hayek says (p 97)

We indeed begin to see how completely different an economic landscape the free issue of competitive currencies would produce when we realize that under such a system what is known today as monetary policy would neither be needed nor even possible.

Hayek does not see the existence of what we have called IC, that are used as currency, and the difference of these with money because, as long as IC can be issued there will be monetary policy of the type he wants to eliminate. There would be no monetary policy in a world where IC does not exist. All this has to do with the fact that there are very strong economic interests that, in connivance with government, can continue to manipulate private money. In other words, the monopoly in the hands of the government would simply be replaced by the monopoly or oligopoly in the hands of the private sector acting in connivance with the government.

What we mean is that, according to our theory, redistribution of wealth through “monetary policy” can only be avoided penalizing the issue of IC. And we say penalize categorically, because just as it is impossible to avoid sin, it is impossible to avoid non-collectables because of the existence of IC.

Other theoretical derivations in Hayek

Further on Hayek says (p. 99)

No more balance-of-payment problems (subtitle) (we already know our position on balance-of-payments is more general) *People who grew richer would have more money and those who grew poorer would have less [...] Indeed it would be discovered that “balance of-payment problems” are quite unnecessary effects of the existence of distinct national currencies, which is the cause of the wholly undesirable closer coherence of national prices than of international prices.*

What Hayek proposes is that the use of only one currency avoids the complications derived from the existence of different PC, which we cannot deny; instead, our theory says the existence of PC is negative, even if there is only one.

Evidently, this is not in line with our theory that says the reason for the existence of the balance-of-payments problem is flexible materialization. If not, we would be speaking of simple commercial current accounts instead of commercial current accounts vitiated by accepting IC and not money to cancel credits. This situation is what we have called one of the forms of the irregular chain of IC. In other words, “the balance-of-payments problem” will exist as long as irregular credits are accepted for canceling credits instead of present economic goods.

More simply put, without the existence of IC there would be what we commonly know as commercial current accounts or regular credit transactions.

We believe a paragraph in which Hayek inadvertently goes from money to credit and viceversa is when he says (p. 102):

What is necessarily scarce is not liquidity but buying power –the command over goods for consumption or use in further production (so what is liquidity?), and this is limited because there is no more than a given amount of these things to buy (do we have here the Keynes that discovered in money the synthesis of the whole economy, the reductionist Hayek?). So far as people want more liquid assets solely to hold them but not to spend them, they can be manufactured without thereby depreciating their value (a very unfortunate expression because it implies the validity of the partial wealth equation, where there is no demand –or it has no economic meaning- for stocks, what Hayek calls to hold them but not to spend them). But if people want more liquid assets in order to spend them on goods, the value of such credits will melt between their fingers (here we are in the presence of the PC or FM on a shelf in our theory, i.e. as long as they do not enter the circuit of interpersonal exchanges they will produce no effect, as long as they are in the hands of the issuer and have not been circulated, or when circulated they are IC that will be un-recoverable –totally or partially. We must stress he is right to call them credit, though he deals with them as if they were money).

Evidently, the “control” of the quantity (and price) of circulating currency in the form of IC by economic authorities today is based on this reasoning from Hayek and theory in general, not realizing that “contracting or reducing the quantity of money” with credit is a credit in itself, together with the fact that they are payable in irregular credit. In short, it is a way of making the chain of irregular credits even more complicated with the resulting improper appropriations of wealth.

It is very important to consider the last paragraph we have quoted, because it shows us Hayek’s enormous intellectual effort to discover how time works in economics and its relation with the theory of prices. It shows his permanent effort to relate prices to time, and his attempt to understand how prices relate to the period in which economic goods are in stock, erroneously believing money represents economic time, and the way he emphasized indirect exchange –that uses money, as something different from barter- is what motivates his permanent theoretical search, as we have already stressed in Keynes. But both were on the same road, the same as economic theory in general. We can only say -the same as with

Keynes- how close Hayek came to discovering TER. He only had to discover credit had displaced money in its temporal function and that, since this is the new currency, its prices are what we use as reference. That is the relation of interest to all other prices, but because it is economic time, it materializes inevitably in present economic goods. This is the same as saying that the price of economic time, interest, materializes in the prices of other economic good, but there is not an own interest rate for each economic good. Here we clearly see the real economic causality between interest and prices, something much more direct and understandable than the confused and still not explained “transmission mechanism” or “indirect mechanism”. If there is something “indirect” we must refer to, it is TER, which states that the economic good time materializes inevitably *indirectly* in a present economic good.

Then Hayek says interest rates should not be determined “compulsively”, with which we agree. But, in our case, interest rates do not appear as the price of money but of credit.

Then Hayek introduces the topic of rates of exchange and tries to explain that his change of heart from fixed to flexible rates of exchange is not contradictory, saying (p. 104)

XIX. A BETTER DISCIPLINE THAN FIXED RATES OF EXCHANGE Readers who know of my consistent support over more than 40 years of fixed rates of exchange between national currencies... (we know that in our theory rates of exchange are the prices of economic goods, and there is nothing special in money so that we should call it “rate of exchange”; it is something similar to what we have said about balance-of-payments) [...] will probably feel at first that my present position is in conflict with, or even represents a complete reversal of, my former views. This is not so. In two respects, my present proposal is a result of the further development of the considerations which determined my former position.

In the first instance, I have always regarded it as thoroughly undesirable that the structure of the prices of commodities and services in one country should be lifted and lowered as a whole relatively to the price structure of other countries in order to correct some alteration in the supply of or demand for a particular commodity. (the inverse causality of prices is implicit here) [...] (p. 105) Secondly, I had regarded fixed rates of exchange as necessary for the same reason for which I now plead for completely free markets for all kinds of currency, namely that it was required to impose a very necessary discipline or restraint on the agencies issuing money (idea of exogenous money).

The reader can accept Hayek’s “explanation” relative to changing from fixed to flexible exchange rate or not. We have no doubt, because we understand the two theoretical aspects underlying his explanations: in the first case, he honors his idea that prices orient economic calculation and that “extraneous” interventions must be avoided; in the second aspect he stresses that there should not be a state monopoly in the “issue of money”. We see in both points he refers to avoiding “exogenous” interferences with money, which we consider cannot even exist because under no point of view can we see a money that is exogenous to the economy, because this implies accepting the partial wealth equation and/or virtual currency. In other words, this is another step by Hayek in agreement with his *ad hoc* theories based on the original error of current monetary theory. Hayek goes into this territory because he does not see our monetary theory, but we have no doubt that his scientific intentions were correct, because it was one more attempt to discover a correct theory of economic time.

Then Hayek says *better than gold*, “the “wobbly anchor”, which is similar to Keynes’ reference to the “barbarous relic”; he continues with “*Competition would provide better money than the government...*” which ratifies what he said in the previous paragraph seeking to “limit the damage”, and this is so because he does not see there is a theory that would allow him to eliminate the damage altogether.

Then he says the following:

(p 111) **Stable national price level could disrupt economic activity** (subtitle) and (p. 112) *As we have seen (Section XII), there might develop different preferences as regard the commodity equivalent of the currency that should be kept constant.*

This phrase belongs to a general title that questions whether there should be different areas; it is understood he refers to what was later developed as monetary areas, an aspect that should be determined by free commerce; what is of interest to our theory is if we are dealing with a currency that is money, regular credit or irregular credit. What we need to stress is that with the subtitle, Hayek is trying to say that a stable national price-level disrupts economic activity, but a stable price-level for the currency would not. Evidently, he uses one economic theory for the economy in general and another for a sector of it, money, not even realizing he considers money, just like Keynes, as if it represented the economy in general (the monetary reductionism we have criticized). It is obvious in both cases we have the Hayek of the aggregates, of price-levels.

Then Hayek says with complete clarity that governmental maneuvers that are hidden behind public expense, stealthily carried out with monetary tricks, must be avoided, because that means simply taking advantage of information hidden from the public, in the sense that the origin and destination of state resources is not known. We agree with this idea, only adding he goes half-way with his good intentions, because he does not realize the origin of this is essentially in IC and the pernicious chain built with them, and which he does not eliminate in his proposal because he does not see it.

Now we come to the final part of the text we are following (p. 126)

XXV. CONCLUSIONS. *The abolition of the government monopoly of money was conceived to prevent the bouts of acute inflation and deflation which have plagued the world for the past 60 years. It proves on examination to be also the much needed cure for a more deep-seated disease: the recurrent waves of depression and unemployment that have been represented as an inherent and deadly defect of capitalism (Keynesianism). Gold standard not the solution* (subtitle) *One might hope to prevent the violent fluctuations in the value of money in recent years by returning to the gold standard of some régime of fixed exchanges. I still believe that, so long as the management of money is in the hands of government, the gold standard with all its imperfections is the only tolerably safe system. But we certainly can do better than that, though not through government. Quite apart from the undeniable truth that the gold standard also has serious defects, the opponents of such a move can properly* (underlined by us) *point out that a central direction of the quantity of money is in the present circumstances necessary to counteract the inherent instability of the existing credit system* (he evidently assimilates PC and FM). *But once it is recognized that this inherent instability of credit is itself the effect of the structure of deposit banking determined by the monopolistic control of the supply of the hand-to-hand money in which the deposits must be redeemed* (which means there is also a virtual money), *these objections fall to the ground...*

This and what follows show us the synthesis of Hayek's "final" thinking:

- 1) He opts for metal gold instead of PC, monopolized by the state and, at the same time, is in favor of competing issues of PC instead of metal gold or CID (citing in this case practical questions, not realizing these appear because of theoretical inconsistencies). All this is based on gold being disposable because of "Keynes' paradox", not realizing –just like Keynes- that credit replaces money as a means of exchange.
- 2) What is most surprising is the explicit renunciation by Hayek to what he supported all his life as the origins of economic cycles: their monetary origin. Here he tries to give a recipe of how to eliminate depressions, an aspect always considered absent from his theory. To solve the *monetary problem* he proposes a *monetary solution*. It is the same as proposing that the best way to eliminate a sickness is to have more of what originated it, solving with bad currency what bad currency destroyed or put out a fire adding more wood. In other words, he accepts "state-controlled" currency (though he literally says money and to us this is "virtual currency", that does not exist, so we should speak of currency in the form of money or credit) instead of "real" currency (which to us is the only one in the economic sphere, be it money or

credit) to solve the problems created by “virtual currency”. Evidently this is in line with Keynesian ideas, which Hayek would adopt as the “lesser evil”.

After the work we have been quoting, Hayek expands his proposal in a conference published under the title “Toward a free market monetary system”. In the first part he says

I think it is quite as legitimate to say that under a gold standard it is the demand of gold for monetary purposes which determines that value of gold, as the common belief that the value which gold has in other uses determines the value of money.

Evidently, he derives his monetary theory from Mises but, as we have extensively shown, Hayek does not understand money is just another economic good, in the sense of interpersonal prices, and its level also depends on the multiple capacities of economic goods to solve different needs, and these are “additive” capacities, acting together to form value and price.

Later on, he presents the idea that governments traditionally have appropriated “the greater value gold acquires with its function as money”, an aspect that is better defined saying governments have committed abuses in the amount represented by the direct and indirect appropriation of wealth derived from IC, in connivance with privileged groups.

Later, in agreement with the previous expression, though it seems a different or broader opinion, he says:

I have said that it is an erroneous belief that the value of gold or any metallic basis determines directly the value of money.

His expression, together with the previous quote, can be interpreted in two ways: a) that he refers to a very special concept of money, which justifies our critique relative to the previous paragraph or b) he is referring to paper currency with flexible materialization, in which case he is not speaking of gold as money but instead of irregular credit.

Now we will deal with the improvements he presents in his proposal, which are extremely useful because it clearly shows the difference between his monetary theory, which is the general theory, with ours.

In this second edition (he is referring to the text “Denationalization of money”) I have arrived at one or two rather interesting new conclusions which I did not see at first. In the first exposition in the speech two years ago, I was merely thinking of the effect of the selection of the issuer: that only those financial institutions which so controlled the distinctly named money which they issued, and which provided the public with a money, which was a stable standard of value, an effective unit for calculation in keeping books, would be preserved. I have now come to see that there is a much more complex situation, that there will in fact be two kinds of competition, one leading to the choice of standard which may come to be generally accepted, and one to the selection of the particular institutions which can be trusted in issuing money of that standard.

Then he says gold will not be chosen as money because of “Keynes’ paradox”, which would make the value of money increase continuously. Now he opts for money with “stable value” or “stable purchasing power”, “*in terms of a specific price index...*”

What the paragraph shows very well is that Hayek does not realize the existence of TER and the different versions of IC, trying to say monetary theory’s problem is in PC and FM, aspects our theory considers from the start. With which we come to the fact that the simple solution is to have legislation for IC, which already exists. What economic theory needs to do is offer greater precision in establishing what is money and credit, so that justice can act consequently. But clearly Hayek did not see our theory, saying not only the standard (money) has to be freely chosen, but also the issuing institution. With this he is saying that for him gold, gold standard, the PC and FM are all money. If this were not so he could simply say PC

and FM are irregular credits and whoever defaults on them should be punished. This need no special analysis different from the one used when there is default on regular credit. In other words, it is enough to say that PC and FM are credits so that people will be alert when they receive one of them and know they are receiving a credit instead of a present economic good. And then apply the laws that punish default to them.

Using different words, in the last passage Hayek realizes he should have considered two aspects in his original proposal of a basket of goods: The choice of economic good and the choice of issuer. Evidently based on his theory he could not see that in the first case he was speaking of money and of credit in the second, since the only worry when choosing an issuer is if he will fulfill his future commitment. If not, there is no worry whatsoever.

In a more general theoretical sense since we are assimilating Keynesians and Quantitativists, in the following passage we can say these are Keynes ideas, even though the text belongs to Hayek.

Ever since the development of capitalism it has never been allowed to produce for itself the money it needs (and since everything boils down to money, we can solve all economic problems); *and if I had more time I could show you how the whole crazy structure we have as a result, this monopoly originally only of issuing gold money, is very largely the cause of the great fluctuations in credit, of the great fluctuations in economic activity, and ultimately of the recurring depressions* (again we alert readers this paragraph is from Hayek, not Keynes).

He presents this desperate reflection in defense of human civilization with Keynes' same wrong theoretical resources, because he does not see that underlying all this is the simple authorization of IC in all their versions, since credit displaced or, better still, appeared before money as the solution for satisfying the temporal need, economic time, of which liquidity is a partial expression. In short, the correct thing is to state that what did not allow us to solve the problem represented by economic time was irregular credit being allowed on the scene. This is what Hayek does not see, because he is within the framework of current theory that limits the temporal aspect to money. He was confronted by the same situation as Keynes: the world was coming to its end because the problem of liquidity was growing "exponentially" (in the style of the Malthusian Apocalypse of the "barbarous relic"). He did not see that credit was the more efficient solution to the problem presented by economic time in general, not only liquidity.

Hayek came back to this topic in a conference with the title "The future unit of value" which we will only refer to relative to the aspects related to our purpose of showing Hayek ratifies current monetary theory, which he shares with other "schools" (Quantitativists and Keynesians).

"*When you have perfect liquidity you have what we call basic money (underlined by us)*".

Evidently, in terms of our theory he is referring to cash, i.e. the interpersonal cash exchange carried out through barter (first optimal option of interpersonal exchange) or money (present economic good). Other than this, we can say credit is better positioned to satisfy liquidity, considering that, first, nothing is perfect and, second, the idea of perfect in economics goes hand-in-hand with the price-level of the economic good we are referring to: credit has replaced money when it comes to solving the scarcity of economic time because it has a "lower cost". In other words, credit is "more perfect" than money in terms of solving liquidity, it is "temporally" more basic than money, in Hayek's terms.

Then Hayek ratifies what interests us as much as him in general theory, only coming to different conclusions.

Often it is accepted that good money should have an approximately constant purchasing power. This means it should be approximately constant in terms of an average of prices. Sixty years ago, when I began to study monetary theory, I did so questioning this belief, then accepted by everyone, but since I have been convinced that a money with stable value is the

best we can expect [...] people accept it [...] In my view this justification is as follows. People want, as a means of exchange, something that reduces to the greatest possible point the incertitude of future prices. It is inevitable, however, that prices change, including that they change in an unpredictable way.

Evidently, we are in the presence of Hayek trying to reconcile “his” first with “his” last postures. In his beginning his banner was intertemporal variation of prices. Now on the one hand he supports it, but on the other he speaks to us of a stable price (purchasing power), what we have called “inverted” flexible materialization, as if money were something extra economic not subject to temporal variation of prices, when, like Keynes, he assigns it the capacity to “synthesize or reduce” everything economic. We believe Hayek’s idea that humans try to protect themselves the best they can relative to the unpredictable future is completely praiseworthy, but for this we only need to have the adequate insurance, e.g. establishing future prices of economic goods (agreeing in the present the price of the economic goods which will be present in the future) instead of manipulating the redistribution of wealth through IC. Each one should be able to create his own basket of future economic goods, but what should not be allowed is the infringement on private property behind IC.

The theory that corresponds to Hayek’s good intentions is the one that says that the adoption of credit as currency implies accepting the uncertainty of the future and that the best thing to do is not add more uncertainty with IC and the chains derived from them. Hayek, inadvertently, when he tries to speak of constant values or prices of currency, is in the framework of the philosophical determinism he rejected with all his might. Which indicates once more why he was unsatisfied with current monetary theory. The same can be said in the sense that if he had realized the existence of TER and the consequence of improper appropriation of wealth behind IC, he would have adopted the same position held here.

Then he says:

All that we can expect is that the increase in the quantity of money distorts as little as possible the guiding function money has in determining prices (inverse causality of prices).

His road is full of good intentions, but with our theory of prices, we cannot accept that currency (he specifically says money) guides the determination of prices, when it is the other way around: prices are the indicators, the data, for economic calculation, with which decisions on the stocks of all economic goods in general are made, and currency is just one more among them, in the form of money or credit (in this last case we must consider it is subject to TER, because it is the economic entity in which economic time is expressed in interpersonal exchange).

Then he tries to soften what underlies his “monetary practical proposal of the lesser evil”, which makes us suspect he is going against his theoretical “intuitions”:

“To the question if money with a stable purchasing power really is the ideal, I should now respond that it may not be the ideal, but is instead simply one of the tricks we have for finding a practical solution to the monetary problem”.

We believe this expression shows what the situation is: Hayek is not satisfied with the monetary theory developed up to that point, proposes a solution in the style of a faith healer and may God protect us. Then he ratifies

In short, the best we can expect is money that preserves its average purchasing power.

Now he says he also renounces intertemporal variation of prices, in the name of money reductionist of all things economic with his “inverted” flexible materialization, because the dissatisfaction with “his” monetary theory is directly related to “his” price theory –inverted causality. In short, Hayek is just one more representative of current economic theory that

relates prices directly to money, or more generally with currency, and so economic theory reduces everything to the study of currency that, because of this, is transformed into “something very special”.

We can express this in the following way: the dichotomy of prices arises from the belief that currency can be virtual, indistinctively in the form of money or credit. That state of things is the framework for reducing the economy to currency, because that virtualism must become something real. And the whole theory embarks on the road to converting all things from virtual to real: converting “virtual” monetary prices into real prices. That is why price-levels are confused with the price of currency and the price of money is thought to be found in the prices of all other economic goods, in terms of the future with the concept of purchasing power and of the past with Mises’ regression, not realizing TER offers a direct road. Interest is considered the price of money and not of credit. There is the search for a transmission mechanism relating prices with currency and interest and all the other weaknesses in current economic theory that we modestly try to correct.

This reference to Hayek’s final writings would be incomplete if we did not stress once more his intellectual honesty. This last quotation clearly shows it:

Our money is just a gear, still imperfect, in the self-governing mechanism of the market and we should learn how to make it work better.

We can only add that what Hayek proposes can only be reached with a better theory, which is one of the purposes of this work.

Hayek’s theory of cycles and prices

Though we have referred to this topic, we need a more concrete and precise reference here. Readers may be surprised to see we included the theories of cycles and of prices, together, but we will show that the one is related to the other in Hayek’s thinking.

Hayek was especially worried about currency altering the normal development of relative prices. He said “exogenous” manipulations of the quantity of money would affect interest rates and that would have incidence on the dispute between consumption economic goods versus capital economic goods. That situation would show the inverse process when the “exogenous” intervention on money was terminated. That is what his theory of economic cycles essentially says: that their origin is in the money market –a Keynesian reasoning- that does not respond to the free will of economic agents but to “virtual currency” –which he does not see as such, or does so hazily.

We can add that on several occasions he supposes full-employment, which leads him to maintain that the relative prices between consume goods and investment will vary, and that the situation would be different if we had full-employment. This tells us that Hayek’s monetary effects will always appear, following our concept of full-employment, or that his position is Keynesian because he accepts the concept of unemployment and what we called “Keynes’s asymmetry”.

We could continue analyzing his theory of economic cycles, but for our purpose here – showing Hayek is within the framework of Keynesian theory, though he does not realize it, the same as economic theory in general- it is enough.

- 1) If cycles are produced by currency and not real variations, evidently his currency is virtual.
- 2) If he focuses only on competition between consumer economic goods and investment, his economic wealth equation does not differ from Keynesian equations: $Y = C + I$ along with $Y = S + I$, from where the equilibrium $S = I$, which is the same as adopting the partial wealth equation, from where comes *the equilibrium solution*.
- 3) He agrees with the concept that the economy must be balanced –a concept he would reject later on intuitively but without a theoretical basis. Equilibrium in Hayek means that price stability will result of putting an end to the dispute between consumer economic goods and investment –that originate economic cycles due to the forced expansion of money- at which

point the equation $S = I$ will be true. Hayek refers to the “trends” of that equation, and Keynes refers to the same but, in terms of stocks or as a trend, we already saw the probability of S being equal to I is practically zero, because it is a partial wealth equation, opposed to our total wealth equation which will surely be further developed through the progress of taxonomy.

4) The attempt to relate the variations in the quantity of money with prices through interest rates, assigned alternatively to real or virtual money, not realizing it is the price of credit – subject to TER- took both to what we have called “Keynes’ paradox”, which is clear demonstration of their common error, which is obviously shared by all economic theory.

5) Both in Keynes and in Hayek a central topic is their attempt to explain the whole economy through the central role of money, which is a scientific reductionism. This, added to their basing economics on virtual money, puts them from the beginning on a false theoretical road. And from there each one presents *ad hoc* theoretical novelties, which though they may seem different, in essence are only the result of their dealing with different topics believing they are the same or when they deal with the same matter they suppose it is a different topic. Whatever they do, both always come to the same conclusion, admitting the need to continue investigating, which is true for all science, but in them it means going back on their footsteps because they couldn’t prove anything consistently. We reiterate our observation: their first error is abandoning primitive terms and replacing them with paradigms.

6) This similitude could not be otherwise, because both start from the same dichotomy of prices attributed to the classics, when these were not interested in this topic because in their economics there were no virtual prices. Once the two “economic” worlds, the real and the virtual appeared, the search began for a way to relate them.

7) With all the preceding considerations, clearly all the models attributed to Keynes, such as IS-LM curves, Lipsey’s aggregate demand and supply, and Samuelson’s 45 degree curve (this being a reflection of the partial wealth equation) represent not only Keynes but all current thinking; the fact that it is “inoperative” or that it simply is not used clearly shows the inconsistency of current economic theory which is scientifically criticized in this work.

In short, Hayek’s theory of cycles is partial and part of the attempt to balance the real and imaginary worlds of current theory. That is why the dispute with Keynes was only a question of degrees in the attempt to make the “imaginary” monetary world compatible with the real world. One believed the “green cheese factory” should be in the hands of the government and the other thought it should be in private hands. But both fabricated “green cheese” (the same as Mises and modern Quantitativists).

Hayek’s proportionality and neutral money

Hayek defended Cantillón’s and Hume’s posture against Locke, saying variations in the quantity of currency did not produce homogenous and proportional variations in all prices. That explained why the initial benefit would be for those the expansion reached first. His economic cycles would derive from this as we have seen, only within the framework of his partial wealth equation consumer goods and investment.

But the topic is not limited to that simple relation of disproportionalities –derived from quantity theory, or that originated quantity theory-, instead it implies once again that money is created exogenously to the economy, which is the same as saying that currency is virtual. In this sense we refer to currency more than money, because no matter if it has the form of money or credit, including irregular credit, it never is exogenous to the economy. Accepting that would mean accepting “virtual currency”.

Relative to the theory implicit in this simple reasoning on the diffusion of currency variations being proportional or not, we must say that presenting this question directly means accepting the existence of “virtual currency”, and because of this we again reject the concept of neutral money.

This aspect is of transcendental importance, because, apart from rejecting as problems topics that have greatly distracted economic scholars –with nefarious theoretical and practical consequences-, it points to the center of the debates among Keynesians, Austrians and

Quantitativists. The differences among these different schools only appear relative to the level or intensity of monetary “expansions”; in the end they are all from the same quarry. Finally, to speak of homogeneity and proportionality related to prices, is the same as alluding to their being stable or invariant in time, to which we have amply referred.

Different interest rates

Hayek accepts the existence of a monetary interest different from real or natural interest, and claims that equilibrium is attained when both agree. I’d like to point out that I don’t remember Hayek ever denying the existence of a single type of interest for every economic good, as Wicksell did.

As we can see this is another approach for the theory that states the existence of virtual money and that interest is the price of money, hence the proper expression of “equilibrium” is that real interest is the same as virtual interest.

We can say that the search for the coincidence between real or natural interest and “virtual” or monetary interest, along with the assimilation of interest as the price of money are the “golden ribbon” of the theory we could call “equilibrium virtualism”, the point at which the paradise of equilibrium is attained, which once attained shouldn’t change, thus ending time.

Stages of monetary theory according to Hayek

In his work “Prices and production”, Hayek says what the stages of monetary theory were in his view, and he presents them in Lesson I under the title “Theories of money’s influence on prices”. With a good historical outline of monetary theory, Hayek says:

The fact that monetary influences (our general concept of currency, be it money and/or credit, and this is what we will consider it in his commentary) have a dominant role in determining both the volume and the direction of production is a truth probably more familiar for the present generation than for any other in the past (though Hayek wrote this in 1931, it is still true) [...] through the contraction of monetary circulation they have given abundant proof of how any productive activity depends on money (supposing that with money he refers to currency –money and credit-, here he shows an inverted order of causality, since, against what he says, currency appears as the result of satisfying a need –liquidity- just as with all economic goods; and relative to currency limiting productive activity, this refers to its condition as an economic good, otherwise we would be leaving aside the primitive term scarcity) [...] (first stage) the resurrection by Irving Fisher, some twenty years ago, of the more mechanist forms of quantity theory of the value of money... (Hayek criticizes said theories from a very confused point of view, at times considering money real and at others, virtual, a consequence of not realizing what was behind his theory of currency) [...] (second stage) As could be expected, the second stage arises from discontent with the first [...] Richard Cantillon [...] The conclusion is that only those who see their income rise first are benefited by the increase in the quantity of money, while those for home income increases later, the monetary expansion is negative (underlying this is the idea of the improper appropriation of wealth, but with little theoretical consistency, a kind of “intuition” as to which would be the path to take) [...] (third stage) [...] I am referring to the doctrines on the influence of the quantity of money on rates of interest, and through them on the relative demand of consumer goods, on one hand, and production or capital goods, on the other [...] they were finally incapable of recognizing there was any relation between the rate of interest and the value of money [...] (we are in the presence of two central errors in economic theory, assigning interest to money without adequately separating money from credit, and the partial wealth equation instead of the total or complete wealth equation. In this stage he refers to Wicksell, whose theory included the concept of rates of interest according to the economic goods in existence, along with natural and monetary or virtual interest, and everything deriving from that in our theory, in the sense that, from here on, theoretical endeavors seek to reconcile both worlds, the real and monetary-virtual, based on the direct-indirect exchange distinction, etc.) [...] (fourth stage) [...] I believe the fourth great stage in the progress of

monetary theory is being built in part on the foundations established by Wicksell and in part on criticism of his doctrine [...] (Hayek's arguments to prove there is a fourth stage are very confused, because he adopts Wicksell's postulates underlying current monetary theory, and his criticism of Wicksell is completely irrelevant relative to those we present here. In other words, Hayek persists with the idea of the two worlds that have to be reconciled, and the partial wealth equation).

Hayek correctly presents the development of monetary theory up to our time. If you have understood our “relativist” monetary theory, you will see that Hayek’s stages are different from ours, that are basically as follows:

First stage: Menger’s theory of money, identifying the spontaneous process of its first appearance, and that its origin derives from the need to expedite interpersonal exchanges and that before being money it was a commodity. Our theory is more general in that it only must be a present economic good, which allows the existence of money made up of several present economic goods. We will quote some passages from Menger’s “The origin of money”, ratifying this synthesis:

The fact of certain commodities (this ratifies our position that commodities are a more general case of economic goods acquired for interpersonal exchange and that money is a special case among them, characterized by its greater liquidity/salability; money would then be a commodity with greater salability) becoming universally acceptable media of exchange. [...] Nor do even the theorists above mentioned honestly face the problem that is to be solved, to wit, the explaining how it has come to pass that certain commodities (the precious metals at certain stages of culture) (this validates the enormous relevance of the cultural aspect and its influence on the use of currencies according to their development, only he did not see the possibility of credit as currency, that is why he did not develop his theory further, or at least did not discover TER and because of it he did not understand how credit that is not money could be used as currency. Given Menger’s intellectual honesty, it does not surprise us that he did not write about topic on which he had nothing to offer. From there on theory followed a complete wrong course, based on the initially good foundations of monetary theory. But it was incapable of showing with precision that culture itself would replace money with credit as currency or means of exchange) should be promoted amongst the mass of all other commodities, and accepted as the generally acknowledged media of exchange. [...] The theory of money necessarily presupposes a theory of the saleableness of goods. (We adopt this principle but in a more general form and because of this we replace money with currency in Menger’s expression, which allows credit to satisfy liquidity. On the other hand, in our theory on liquidity it also is a partial aspect of the theory of economic time; as we can see, in both aspects Menger’s theory is included in ours, as a special case, which is no surprise because ours starts from his and develops it further) [...] an obvious difference exists in this connection between commodities. Nevertheless, and in spite of its great practical significance, it cannot be said that this phenomenon has been much taken into account in economic science. (Menger refers to the salability that differentiates money from other commodities. If he had discovered TER he would have realized that liquidity satisfied with money would lose in relevance relative to liquidity satisfied with credit).

Second stage: of virtual money or, more generally, of currency or virtual currency, since it not only includes money but also credit as virtual, along with confusing money and credit. That is why our theory states that monetary theory deviated immediately after Menger. Historians will have to study why Menger did not develop his theory of money further, possibly because he was conscious that his theory from then on was no longer consistent, that he had not found TER and did not see that credit would replace money as the currency of exchange. Whatever the cause, ignorance or prudence, evidently Menger did not take any erroneous steps in monetary theory as his disciples and currency theoreticians in general after him did. At the same time, we know the whole spectrum of economic science constantly

repeats current monetary theory is unsatisfactory. We could pose the following question: did Menger see the possibility that monetary theory in its development could breach primitive terms, and because of it he abstained from publishing his ideas? If so, we can only applaud his respect for epistemology.

Third stage: this begins with the theory of economic relativity and the total or complete wealth equation we present here and its difference from current theories is that it has a different theory of economic time. Evidently this third stage begins with Menger and is an expansion or continuation of his theory, so that his becomes a particular case of TER, based on the fact that the currency of exchange is the economic good satisfying interpersonal exchanges –the origins of currency that Menger establishes very precisely- of which liquidity is a special case, that interpersonal exchanges can be carried out with money or credit, and that cultural-institutional development has great incidence in communities' decisions to adopt one or the other, according to their having developed or not.

We can summarize the stages of monetary theory we propose saying we skip the second stage, because it is where there is error, and the third is merely a continuation or a greater development or evolution of the stage initiated by Menger. The theory of currency began with Menger, and TER, together with the total wealth equation, is a more evolved theory from the moment it includes credit in monetary theory, leaving Menger's theory of money as a special case of the theory of currency. In other words, it would be no mistake to say TER allowed us to go from Menger's "**theory of money**" to the "**theory of currency**" based on TER.

Garrison's graphs

We will not extend on their contents –they pretend to compare and differentiate the Keynesian "model" from Hayek's Austrian "model"- inserting in one graph Hayek's famous "triangles" with the S and I Keynesian curves, trying to show the differences and inconsistencies in the Keynesian scheme. Which, as the Austrians say, is characterized by *expansion of credit without the backing of previous savings* –an idea we must reject because it implies virtual credit, not realizing somebody always contributes the present economic goods.

But we do wish to stress that the fact that Garrison includes Hayek and Keynes in the same graph is clear proof that this can be done and it implies they have the same theoretical foundations –something reiterated in our theory-, otherwise both theories could not be compared with the same tools.

Keynes' error should not be rejected because graphs derived from it were well received in academic circles, but because of the inconsistency of his theory; if this methodology is necessary for teaching, than so be it, but not based on the acceptance on inadequate theories, especially when this means leaving aside the primitive terms on which science should be built.

Part V

Solution to MONETARY CRISES

Chapter XVIII

DIAGNOSIS OF MONETARY CRISES

To begin this last part of the book, we wish to alert the reader that he should not be surprised by the fact that it is so short, considering it refers to how to diagnose and deal with a topic that has troubled humanity so much, and led theoreticians and politicians to dedicate extensive efforts to it. We humbly believe this is the result of the fact that the theories presented here – which are the basis for the diagnosis and treatment of monetary crises we propose- are useful to this end. It is the simplicity and comfort you find when trying to solve a problem with theories that are more adequate.

Considering perfection is the best alternative we have at each instant –another way of saying we are fallible relative to time- we enter the last part of the book convinced that the theories presented here are superior to current ones.

A study of crises must begin by identifying what is considered as such and what are the reasons for their occurrence, their roots.

It is essential then to apply our arsenal of theories to the purpose proposed here, identify what we understand by monetary crises and then concentrate on the factors originating them. In the next chapter, we will refer to the adequate treatment according to the characteristics of each case, considering the general features present in all crises deriving from the same “monetary” branch.

Generation of wealth

We refer specifically to the wealth of each individual that belongs to a certain community with division of labor, which implies private property, with institutions allowing greater or lesser economic freedom, i.e. free disposal of what each economic agent can create in terms of wealth. We also refer to the wealth a community, country or the whole world can generate. In short, we allude to the best way for generating individual or collective wealth, the distribution of which allows a state of wealth in peace. To reach this noble goal –each individual and all together living better in economic terms, which implies different economic individuals-, the following basic economic principles must be considered, separating orientation problems from organizational ones, which are the only two topics relative to which any entity should avoid committing mistakes.

So we have:

1) Orientation: It points to the objective or mission we pretend to accomplish, which in economics we can define as the state in which *each and every one is economically better, as we become more, being different*. It is of vital importance here that each one do his best, acting together. Economic science has corroborated societies where each individual is allowed to develop more fully or with greater freedom his or her “**individual**” **comparative advantages** (what we have called “economic calling”) succeed in making the best result for each individual into the best result for the social setting to which he belongs. To reach this goal it is essential to have the most efficient organization. We can say that with orientation we answer the question ‘what?’ and ‘what for?’, that in economic terms means wealth and its just distribution.

2) Organization: Answers the problem of how to reach the objective, which economics means considering the following aspects:

- a) A solid institutional structure, allowing economic agents to fully exercise property over wealth, in a fertile soil for the basic seed of the economy, the biunivocal relation “economic good-owner” to sprout. Obviously, the full exercise of property is the condition for free disposal of economic goods, and their free exchange with other economic agents.

- b) An institutional framework promoting free competition among economic agents.
- c) A solid institutional structure, promoting the development of the economic good par excellence in societies, interpersonal exchange. It is impossible to reach the enormous potential of wealth in the “economic calling” of each individual, if he is not allowed to exchange his results with other members of society. If this were not so, nobody could progress individually in a society based on his or her economic calling. We reiterate that our theory considers that where there is division of labor there is distribution of property. If not, there is no freedom, nobody can develop his or her economic calling, or there is imposition, which goes against individuality. This could possibly be the scientific way to refer to Adam Smith’s “invisible hand”, or it could mean that with scientific progress we see the hand was not all that invisible.
- d) Finally, always relative to interpersonal exchange, there must be an adequate institutional framework to defend the economic instruments acting as means of exchange in interpersonal exchanges, including the protection of currency or means of exchange of common use and the unit of measure for economic calculation. Though this is included in the preceding point, since it is part of the institutions in general, we emphasize it separately, considering we will refer to it specifically relative to economic and especially monetary crisis we focus on here.

We believe the economic theory presented in this chapter in a simple and incomplete form has been totally corroborated in the laboratory of history:

Collectivism: it has shown slow economic progress without monetary crisis. We can consider that they did not appear because irregular currency was not allowed to exist or was extremely limited, and not because there were no prices.

Capitalism: we have seen accelerated economic progress with monetary crises. Following our theory, we can consider monetary problems are the result of allowing irregular currency.

We do not believe there is a need for an in depth analysis of the differences between both types of institutional organization. Only to stress that in collectivism private property is restricted, the opposite of what we see in capitalism. We see that in all cases the focus is on the degree of economic freedom and of economic equality, which can be equated with the obsession for having stable prices.

We could say that both had some defects, but the most important factor is freedom, considering capitalism could prosper in spite of the monetary error, but collectivism did not reach a similar prosperity because it did not take the road of freedom for a better development of the basic economic cell of a community, the biunivocal relation “economic good-owner”, the basis for “economic calling”, from which derive the other necessary elements in an organization striving for the economic objectives defined above.

These ideas expedite the study of monetary crisis that arise from the existence of currency. Currency appears in turn with interpersonal exchange. Because of this simple chain of economic causality, there is less possibility of monetary crisis in collectivism, because there is less freedom or less ground for interpersonal exchange to grow. It is no surprise then that some people believe that to destroy capitalism you only need destroy its currency. But the bottom line is the private property or interpersonal exchange system –once again we refer to the basic economic cell, the biunivocal relation “economic good-owner”. It is essential to understand that it is interpersonal exchange that generates wealth –allows the expansion of economic calling-, currency helps to satisfy the needs interpersonal exchange generates.

We could conclude this introduction saying that to diagnose the economic health of a community we need to analyze the institutional aspects that allow that community to reach the goals established by its orientation –each one better, and since the whole is the summation of each, all are better off. This is the result of an organization that allows the greater degree of freedom to develop individual comparative advantages in a framework of free competition and institutions promoting interpersonal exchange required for the materialization of “individual callings”.

Identifying the problem

From what we have said in the previous section we clearly see the origin of economic crisis in communities where private property is prevalent is interpersonal exchange (where currency is an essential factor), acting as a detonator that alters the generation and distribution of wealth in the economy. The study of monetary crises is important considering they alter the fundamental order of economic causality, considering the importance of interpersonal exchange. We can easily summarize the causal chain: interpersonal exchange-currency-progress, where we see the relevance of currency as a key link for the progress of interpersonal exchange.

In other words, the freedom arising from the dominance of private property imposes on human beings the need to adopt a means of exchange of common use to allow a more efficient interpersonal exchange. This is the simple chain of causality that must be investigated to solve monetary problems. But the starting point must be to obtain a mechanism that promotes interpersonal exchange, which is the generator par excellence of wealth in societies, the motor for “economic calling” in free competition.

We must look after the health of interpersonal exchange in community economies. **The problem is exchange, because currency appears because of it.**

We use the general term “exchange” because we must also consider intertemporal exchanges, including intrapersonal exchange, because these suffer crises when the economic agent sees the currency he used is in a crisis, as part of a general feedback process. If there is doubt relative to the elementary conclusion arrived here, we can simply analyze countries where there are “monetary” crises. The first process that is paralyzed is the generation of wealth from interpersonal exchanges and this is the result of the fact that the instrument that was used is no longer useful. Because of this, the whole mechanism of generation of wealth derived from exchange will come to a halt until a new instrument appears or the health of the monetary system is restored. In other words, it is essential to recreate an adequate currency to regenerate the wealth produced by interpersonal exchange before the crisis (obviously, it will not be the same). We can see there is no miracle in an economy recovering after a currency in crisis is restored, since there is a restoration of the wealth that had disappeared because of the interruption of exchanges; it is as if a cable that had been cut was welded or replaced.

Therefore, countries will emerge in better or worse condition from a crisis, according to what has been done relative to orientation and organization, as was described above. We will return to this when dealing with the treatment for monetary crisis.

Types of monetary crises

Once we have seen that currency is the tool that promotes more economically efficient interpersonal exchanges, which are essential for generating wealth in a community, we can focus on studying currency and generate theories to explain the facts. Considering the theory developed in this text, we can summarize by saying human beings first used money (we should bear in mind that credit came into existence at the same time or previously) as currency (in its different expressions, gold, silver, coffee, etc.) and when things got to the point where money was too costly to use for interpersonal exchange, humanity resorted to credit.

We cannot rule out the possibility that credit functioned as currency before or at the same time as money, but that this was not known because if it was so, it happened in closed circles –tribes- considering the trust factor –knowing the debtor- required by credit, something modern civilizations solved through adequate institutional systems. This reflection would be in line with Popper’s view of the transition from the tribal community to current civilization, in this case in the economic field. So it is not incongruous to reiterate here that the evolution of credit goes hand in hand with the degree of civilization and economic development.

Therefore, we can say that there are two types of monetary crisis, with money or credit being used as currency:

1) Monetary crisis with money

This has to do with metal money and rigid materialization with a gold standard. Typically, we believe the origin of a permanent rise in the price of money is the result of the economic good adopted as such constantly increasing its relative scarcity, to the point where it severely restricts interpersonal exchange (the “barbarous relic”).

This is the reason why humanity has sought very commendable theoretical solutions, such as those Hayek proposed in terms of a basket of goods, with different variations (with or without stable purchasing power; with or without constant physical units; etc.).

These theories did not find a positive explanation because they did not consider TER, or the fact that money and credit are different things that cannot be treated as if they were the same. This generated the Gibson and Keynes paradoxes, and other aspects we have already pointed out.

In other words, to solve the problem of the “barbarous relic” it is valid to replace present economic goods that represent money, as humanity has done in the course of history. But we also know there is another economic good, credit, that can expedite interpersonal exchange, which leads us to think it is always possible to find a combination of money and credit through financial analysis to solve the central problem, which is interpersonal exchange as the essential factor for generating wealth in societies.

2) Monetary crisis with credit:

We already know the future implies uncertainty, insecurity, fear and several other things. We can summarize by saying the future is the essence of fallible man relative to transcendental time, because if there is no future, it is the equivalent of saying there is no time and everything derived thereof.

This shows how sensitive the economic life of human beings is, which implies adopting the future as currency for interpersonal exchanges, i.e. adopting credit as currency.

It is essential to bear in mind everything that has been said in the preceding paragraph, since we could conclude that when credit is used as currency, interpersonal exchange is carried out with credit as currency, which means that humanity is interpersonally exchanging future in general. This is the highest expression of TER, the highest degree of monetary development known to this day. It was possible to achieve this through the free development of the economic callings of individuals in a framework of full trust, which is the origin of credit. In other words, the development of human wealth is in direct relation to human freedom, because this is what drives from the economic chain of causality described here: creating wealth with interpersonal exchange more efficiently in economic terms with the use of credit instead of money. But credit arises from trust based on cultural and institutional development, it is the chain of economic solidarity that leads us to a condition of “each and everyone better, as we become more and different from each other”.

The next step is to consider our theory of the different types of credit and the benefits or damage they can cause because of possible default, and not only each one separately, but when they act as a chain.

We already know the essential differences among different types of credit result from the irregularities they can present, relative to the key elements defining a credit as regular. We identified the following as the essential requisites for a credit to be considered regular.

Agent identification: it is essential to identify the agents involved to be able consider their corresponding responsibilities and degree of compliance in every type of interpersonal exchange. We will show the enormous damage generated when there is what we have called “the unknown debtor syndrome”.

Economic goods: another key is the economic goods in which the initial and final materialization will occur, in qualitative as well as quantitative terms. In other words, it is essential to identify the present economic goods at the time the credit originates and when the commitment to pay is fulfilled, i.e. on cancellation.

Time: another key element is represented by the time of initiation and ending of the credit. This does not necessarily imply that maturity cannot be indeterminate, as in the case of at sight credit. The important thing is that conditions for maturity be properly established. If it is at sight, that condition must be perfectly established. We know that if it is at sight it is still credit. That condition only says the liable agent may be made to cancel the credit at any time. The essence of credit is that present economic goods are exchanged for future economic goods, which implies that at sight credit means there is at least a minimum period of time involved. This originated FM based on technical balances (bank multiplier), which are used as regular credit or money even though they are at sight credits.

Others: Contracts specify legal requisites, such as the place where the contract is signed and where it will be cancelled, the interest rate, etc. These are accessories here; among these factors, interest rates are the most important.

The most common irregular credits are those that acquire the status of currency: flexible materialization (PC); the lack of a precise identification of the granting agent (i.e. the agent providing the present economic goods, necessary for any credit); indefinition of the maturity of credit (FM); the dangerous chain created in the banking system with the concatenation of FM “payable” in PC; local and international current accounts (“Balance of payments”) “payable” in PC; regular credits “payable in PC”, etc.

This clearly shows that the financial analysis of a community using credit as currency is more sensitive than when money is used as currency, considering credit is future, risky by nature. The risk grows when credit is irregular in some of the senses studied here, since these derive in direct or indirect improper appropriation of wealth. This is the result of credit being economic time materialized in present economic goods, which constitute present wealth.

We can summarize here by saying that for an economic agent to be worthy of credit, he or she must be a person true to his or her words, and this is the best expression showing that in economics there is an underlying “metaphysics”, in Popper’s sense, considering it generates theories. Here it generates economic wealth.

The agents responsible for monetary crises

We can easily conclude from here that monetary crises go hand in hand with the economic, cultural and institutional development of the peoples that suffer them. The main expression of said development is the quality of the authorities, which defines the responsibilities of those whose actions affect the economic lives of many human beings.

As long as we did not have an adequate monetary theory, it was easy to use this as an excuse to justify political and legal conducts based on this inconsistency. Our humble wish is that the contribution we make here be useful for changing this state of things. We believe the economic theory presented here has reached a degree of corroboration sufficient to cover the gaps in current economics, until another and better theory appears.

The relation between monetary crises and economic progress can be concretely expressed in the sense that economic progress is the perfect reflection of cultural development in a society, because culture is the basis for solidarity, without which economic development cannot exist. We believe it is easy to discover the relation between culture, religion, education, morals, ethics, politics, and in general all human points of view, and economics, present in all of them. Forgetting this implies ignorance or authoritarianism imposed on ignorant or impotent serfs.

It is inappropriate for a country to adopt credit as currency if it does not have an adequate institutional order, especially when it acquires the form of IC; such a country will be condemned to use the “barbarous relic”, and at the same time will have severe limitations to establish a democratic institutional order, even if this situation is disguised with regular elections.

Chapter XIX

“Human fallibility that condemns us to scarcity is not an impediment for each and every one of us to improve our situation every day, as the population and diversity grow”

Carlos A. Bondone

TREATMENT OF MONETARY CRISIS

Everything we have said in this book clearly shows that the best way to promote interpersonal exchange –the main factor for generating economic goods more fairly in a society with the full development of free competition of individual comparative advantages- is to adopt a system where there is freedom for issuing currency in the form of money and/or regular credit.

Such an economy will evolve in a more *efficient* manner (because each one will develop his or her economic calling with the currency he or she believes best for his or her needs) and more *safely* (because of the law of large numbers that prevents all economic agents from being wrong at the same time and in the same way; and if they must act in this way – circumstantial collectivism- due to some specific catastrophe, they should do so voluntarily and not because of state compulsion).

On the other hand, the free interplay of economic callings, in a framework of many economic agents interpersonally exchanging the fruits they have obtained, will determine the quality and quantity of the currency they need (money and/or credit). Evidently, if the price of credit is lower than the price of money (according to the level of cultural development), credit will be preferred, but if a certain credit is not trustworthy economic agents will opt for another, more trustworthy, credit and, in the last instance, if no credit is trustworthy, the option will be money. As we can see, if the process reaches a dead end, the way back is simple: one bad credit will be exchanged for another and so on until we return to money; without credit – institutionalized trust- we fall back on the “barbarous relic”.

The conclusion is that if there is trust, credit replaces money in interpersonal exchange, but since credit must be regular –to avoid improper appropriation of wealth- it must always be expressed in the present economic goods in which it will materialize (TER) and, among them, the one acting as “common denominator” is money. That is why it is consistent to suggest that the basic solution is the existence of regular credit on money, or payable in money, with credit acquiring -or not- the status of currency.

Therefore, the best situation for an economy driven by the growth of interpersonal exchange of economic goods is to promote exchange with the use of money (CID with rigid materialization and divisible physical units) and regular credit payable in money. Many credits will thus reach the status of currency.

This monetary combination eliminates the ghost of the “barbarous relic” and at the same time prevents improper appropriation of wealth resulting from the use of IC. On the other hand, existences of currency will be determined by the needs of economic agents, according to the total supply and demand of economic goods, including interpersonal exchange.

This situation will generate greater acceptance of credit, because it will not have the flaws of irregular credit and it will be circulated with no additional cost, simply by endorsement. This leads to the situation Mises referred to when trying to explain why some credits have the same price as the money in which they are payable.

The problem originated by the relative shortage of money (due to the inelasticity of its production that makes its price rise) will not appear, because credit and money will act complementarily to solve the need for liquidity. Financial crises will appear when the

requirements of money derived from the sum of the factors that make up its demand (canceling credits, storage, requirement of new credits, cash exchanges, industrial demand, etc.) are much higher than the real supply (negative savings, renewal of credits, etc.). This is the equivalent of the crisis with any economic good (including credit) subject to sudden variations of supply and demand, i.e. stock crises of any economic good, called financial crises in the case of currency.

General monetary crises in a regular currency regimen are *individual* financial crises of particular economic agents, and this avoids the damage produced by irregular currencies, which materialize not only in improper appropriation of wealth, but also in the destruction of the whole system of interpersonal exchange, affecting in turn the composition of economic goods, in terms of the total wealth equation. Therefore our theory acquires a greater generality than Hayek's, and his theory becomes a special case of ours, since he only related the effects of monetary crises on relative prices between consumer goods and investment to collateral overflows.

All this explains why money is displaced by credit as the currency of exchange; but if the monetary combination proposed here were adopted it would not lose its place as unit of measure. It would still be the currency in which economic calculation were made, including the price of credit used as currency, since it would be the present economic good into which it would be physically converted on maturity. The reader can now see why we had to deal with the currency of exchange separately from the currency of account, even though we could suppose that adopting one for exchange inevitably implied adopting it as a unit of measure. To show that the combination of healthy monetary ingredients, including money and regular credit, would produce the result described here, we only need to see what happened in the laboratory of real life:

- 1) The price of gold no longer rose when it was displaced by irregular credit (PC) as currency of exchange; it did not become a "barbarous relic" and it can still be a "venerable and healthy unit of measure", which does not mean we reject alternatives such as a basket of economic goods, as long as they fulfill the requisite of physical rigidity, i.e. constant physical quantities of economic goods as components of the "composite currency".
- 2) Credit solved the problem of the constant rise in the price of interpersonal exchanges with money, but derived in the problems resulting from irregularity, which were palliated limiting the use of the different forms of irregular credit (PC and/or FM). In those cases where it was not so, there were extreme crises, deriving in the interruption of interpersonal exchange and its logical consequences.

The conclusion is that credit replaced money and the irregularity it represents was not understood or only partially (what we have criticized in this text); this situation has been confronted with homemade remedies, according to the symptoms. But we also know this situation led to the recognition by a whole range of economic theorists that we did not have up to now a consistent monetary theory that could explain the facts. This work is an attempt to find the missing solutions.

One currency

There would be no reason for the existence of multiple types of currency (in their different expressions) because globalization has determined that the aspect of common use required by currency could be perfectly established on a world, not just a regional scale. Nevertheless, if some countries wish to have their own money, there could be two alternatives, that they use the same economic good as money, and here the only difference would be in converting different units of measure –i.e. yards into meters- or, if they use different economic goods, we must add the difficulties arising from intertemporal variations of prices for each economic good.

As we already pointed out, with current monetary theory it was only logical that currencies should appear first; if the theories presented here had been present, very possibly the process would have begun by adjusting the monetary structure to what we have proposed here and, as

globalization developed, there would have been a convergence towards a universal currency. But because the process did not follow that road, it would be best for things to go towards the creation of tools that are more apt for interpersonal economic exchange, the main driving force for the creation and fair distribution of wealth, free from the flaws affecting the economy, as in the case of irregular credit.

Seeking for global and sustainable solutions, we continue analyzing what would be the best way to establish a single currency, starting from the current “irregular” currencies. We believe the most direct road would be to establish rigid materialization at a certain point for each of the existing irregular currencies, according to their market value –which should contemplate the assets of the state issuing the debt in PC, not only the central bank’s “reserves”. The first step is to admit that the state as a whole is responsible for debt, as our theory shows, and not only the central bank- in terms of the economic good chosen as money-, and continue expanding regular credit with institutional norms to support it adequately. For this, an institutional system of free interpersonal exchange must be in place.

As we know, irregularity in FM has two aspects: the first is that FM are payable in PC –which will not be irregular once the measures recommended above are in place. And the second irregularity derives from the at sight maturity of the FM, different from the maturity of the credits payable in PC issued by the banks. In other words, the banks must have sufficient assets to cover their debts, including those expressed in FM. This typical problem of debt refinancing, if not dealt with in this manner, produces immediate pauperization that spreads at the speed of light among the weakest economic agents. This aspect can be solved with refinancing. The longer it takes to rebuild trust, the more painful the process. The pain will decrease as reserves in the banks approach the voluntary technical minimum cash requirement. And once this level is reached, the process will never have to be repeated again. In short, we will have a more efficient and less painful process of adjustment if our goal is managing currency with regular credit combined with money, together with the possibility of developing individual comparative advantages in a framework of liberty and competition. The temporary adjustment problems of the imperfect structures of the total wealth equation arising as a result of errors in the orientation and organization process, must be solved with an adequate combination of fiscal policy –economic situation of the state- and regular credit, considering each particular situation in terms of the financial and economic statements of the community, wealth concentration levels, etc. “The unknown debtor syndrome” must be avoided.

Considering the theories presented in this work, one should anticipate serious difficulties in the attempt to unify currencies among states acting according to current theories, i.e. with irregular monetary systems. This is so because, as we have shown, it is impossible to have central banks really independent from political government in irregular monetary systems. In other words, adopting a single currency with irregular monetary systems means the countries forming the monetary union must have identical political systems. If this reality is not considered, there will be very serious political and economical conflicts among those countries in a very short time, which will be more or less important for each country and the union as a whole according to the relative weight of each country.

National currencies

The process for eliminating monetary irregularities present in national economies is what we have just described.

In the case of poorer countries there is a previous step that could be resorting to the PC of more advanced countries –replacing their “discredited” currencies with better credit- and then progress to the solution proposed here. This process could materialize in two ways: adopting this new currency directly, or establishing a rigid materialization of the countries currencies relative to the currency of the more advanced country. All depends on which tactic is better for each situation. But it would be no surprise that the best solution be taking responsibility for the debts in PC with the more advanced countries and directly generating a combination of money and regular credit as we have proposed here, which together with other structural reforms, would generate a very important development process resulting from national and

international interpersonal exchanges. These debts would be payable in PC that, as we know, because they are irregular, will progressively lose value and, if the maturity is long, they could be repaid with little sacrifice by the debtor countries adopting the healthy combination of money and regular credit. In other words, “pay” debts with “credits”, and better still if they are irregular. Evidently, this is the general idea when economic agents take on debt in irregular currencies and are able to get others to pay their debts (in part or in full), what is commonly known as “clever financial speculation” or “rational expectations”, and that our theory considers “*improper direct or indirect appropriation of wealth*”.

The pain of adjustment

Evidently, no adjustment and therefore no pain would be preferable. This could be possible because going from an irregular monetary system to a regular one only implies the following:

1) Immediate suppression of improper appropriation of wealth by those who have the power to do so –stop the spread of the infection- against the interest of the poorest agents. This will be so as long as the solution to the crisis is not that the state takes on the debt of a few –with the central bank as financial institution of last resort-, expressing it in PC and then applying flexible materialization through the process called “monetary devaluation”, with the state finally declaring default. A default that will be negotiated in a humiliating way and that the people will be made to pay, benefiting the few that profit with the monetary irregularities of the system we are criticizing. These individuals by then will have converted their wealth to other, more trustworthy, currencies and taken it out of the country. The debtors also appropriate wealth from creditors expressed in the corresponding PC. In short, the damage will be of small relevance as long as the **atrocities** referred to here are not allowed.

The laboratory of real life has given us concrete samples of these atrocities that show there is less pain where there is less sin. And now we have a theory to avoid or penalize monetary irregularities. Adding insult to injury, unscrupulous or extremely ignorant governments say that their adjustment programs are in the interest of the people. Our work seeks to create a situation in which they can no longer justify their actions based on economic theory.

2) When we avoid the damage resulting from converting PC to CID and solving the typical maturity problems of FM, we can conclude pain in this case only results from realizing society was not as rich as it thought, because it considered PC and FM as part of its wealth. In other words, it considers them as present economic goods. The total wealth equation is different from what traditional accounting proposes. Though the final numbers do not differ, we suggest using our equation for an adequate financial and economic balance sheet, considering both the individual wealth of each agent and the combined wealth of all economic agents in an economic community, at the local, provincial-state or national level.

The unknown debtor and the unknown family syndromes

We can then say that the first actions to deal with an irregular currency crisis should be avoiding what we call the “**unknown debtor syndrome**”, by which debts of a few economic agents become everyone’s burden. When this syndrome appears, those affected do not know who should be responsible for the debt: the government in any of its three expressions – parliament, executive or judiciary- or the banker.

Evidently, this improper appropriation of wealth is the result of anomalies in the chain of irregular credits we have analyzed, as we can see based on the fact that economic theory can establish correctly who grants bank credits. We must also consider that PC is credit and not money, so that when we suppose we have a present economic good in our pocket or our bank account, what we have is a credit with an unknown debtor and maturity. We are in a situation, in terms of TER, where we do not know how economic time, expressed in an irregular credit, will materialize or who will provide the present economic good in which it will materialize. Not realizing that, very possibly, we ourselves are going to provide that present economic good.

In short, the solution to economic crises derived from the use of irregular currencies is to eliminate them according to the financial and economic situation of each community, with the purpose of establishing a monetary chain of money and regular credit.

To solve the structural problems resulting from the existence of economic activities that could only have been carried out with improper appropriation of wealth, it is necessary to have adequate fiscal policies and regular credit systems. This should be the main responsibility for international monetary institutions, developing modern “Marshall” plans for economic reform, and not running around like firefighters trying to cope with balance of payments and/or exchange rate emergencies, their present occupation that implies validating the original sin of supporting economies based on irregular currencies. In short, you cannot solve the problems derived from monetary irregularities upholding the irregularities that originate them, for the same reason you cannot put out a fire with gasoline.

We also wish to stress that it would be more efficient for international financial institutions to teach how to fish than to give away fish, a basic principle.

It is essential to try to overcome crises completely. We must bear in mind that the origin of poverty is denial of individual liberties that allow the free expression of individuals' economic calling and their interpersonal exchange. For this, a system of regular currency with access to free competition is essential. There is no sense in trying to solve a crisis resulting from irregular currency if the root evil is not eradicated. Any organism that overcomes a crisis will deteriorate again if the crisis reappears. No organism can bear undergoing treatment permanently.

Together with the error of an irregular monetary system –leading to improper appropriation of wealth- we should avoid the “*unknown family syndrome*”, a concept by which we refer to how an economically weak agent that is not responsible for his or her situation feels bewildered by not being able to identify what “family” should take care of him or her. In other words, this tells us that children should not be brought into this world with the idea that “some family” will take charge of them, generating “*the State as family of last resort*”. This shows us that along with the right to live, there is the responsibility over the life that is created. This should be analyzed in the framework of the “unknown family syndrome” to avoid the unjust situations contributing to its existence, as is the case of an irregular monetary system which promotes the totalitarian aspect of capitalism, derived from the “need” for a paternalistic state.

Financial and economic balance sheet

Accounting and financial experts know what we are referring to, but we can define these things here as follows.

Balance sheet: it shows the relation of assets to debts or, seen from another point of view, it says what part of the economic goods an economic agent has at his disposal is his property.

Financial statement: It shows if the economic agent can honor his debts on maturity, their amount and final materialization.

Economic statement: The capacity an economic agent has for generating wealth, referring to the creation of new biunivocal relations “economic good-owner”.

An economic agent can have a very good situation in one of the three aspects mentioned here, and a very bad one in the other two, and there can be different combinations. But there is no doubt that if his economic situation is very bad, it will end up complicating the other two; whereas, if the other two are in very bad shape, they can find a solution if the economic situation of the agent is sound. In other words, the secret is generating wealth, the secret is in profits, and knowing that interpersonal exchange is the main driving force for wealth in a social economy, and we can see that currency is the main-shaft for economic growth.

This simple study is valid not only for individual economic agents, but also for any group of agents. It can be done combining their balance sheets. Therefore, to see what the economic situation of a country is you only need to combine the balance sheets of the economic agents in it. This information can then be used to see the standing of a country in the world.

The combined statements can give you that information in the framework of a regular monetary system. We know the risks involved in the framework of an irregular monetary system, especially in terms of improper appropriation of wealth. In other words, the data produced by a balance sheet of a community with an irregular currency are more or less distorted, according to the degree of irregularity (chain of PC and FM; credits in PC; participation of economic agents relative to the degree of concentration of economic wealth and debt levels, etc.)

In short, in a regular monetary system, the study of the balance sheet and the economic and financial statements of an economic agent and those surrounding him are relevant. Social economics studies the incidence of economic agents and/or activities in each situation; i.e. the greater the relative importance of an economic agent and/or activity, the greater the damage their crises will cause. When there is an irregular currency crisis, the first thing you have to consider is the degree of concentration of wealth, since those that represent it can most easily create the “unknown debtor syndrome”.

The relevant aspect that relates each economic agent (micro) to an economic society (macro) is the framework of liberties allowing specialization or economic callings to flourish in a system with easy access to free competition, which is the ignition key of the powerful machine that generates wealth with fair distribution through interpersonal exchange of economic goods. This is the essential factor and that is why we have insisted in this work on the need to institutionalize a regular currency system, combining money and regular credit.

Underdeveloped countries

Finally, a recommendation or suggestion for the poorest countries. They should implement their economic reforms that seek to generate more wealth with better distribution, allowing their inhabitants to exercise their economic calling freely, thus promoting the interpersonal exchanges needed for a healthy economic order. A strategy for these countries should combine the following ingredients:

- 1) Promote the free exercise of their economic calling by all individuals in a framework of free competition, which implies being more capitalist than current capitalists.
- 2) Adopt a combined monetary system of money and regular credit. This will allow them to take advantage of the opportunities arising from the fact that some advanced countries have not implemented such a system.
- 3) Take advantage of the credit existing in richer countries, the price of which is lower there because there is more present wealth, which is the origin of credit.
- 4) Debt in irregular currencies (all advanced countries have irregular currencies nowadays) will lose relative value in terms of the regular currencies we encourage underdeveloped countries to adopt.
- 5) Underdeveloped countries should act as a group, demanding the elimination of all barriers to international interpersonal exchange of economic goods.
- 6) Propose an international framework for financing reforms. It should be based on the notion that wealth eliminates violence, considering that a human being that lives according to his calling does not need violence to appropriate what does not belong to him. This plan should be well orchestrated as to the amounts and repayment schemes, and based on the principle that all credits should be honored. However, if the situation has come to this point, there will really be no need to request credits. They will flow freely, except in emergencies. In that case, there must be aid at hand. If the crisis becomes chronic, it will be necessary to study what the pathology is. For example, if the needs presented as the reason for requiring aid exceed the capacity of those assuming responsibility. This brings us to the situation of agents wanting to satisfy their needs with no effort. Though there are obvious economic connotations, this has to do with the moral sphere. Another possibility is that economic agents who do not have the capacity to do business receive credit; the consequences resulting from this situation should only affect the creditor that granted the credit.

In short, we only need to create the conditions for generating wealth. The interested parties will appear.

Above all, what should be avoided is that governments use irregular monetary systems as tools to dominate ignorant and impotent serfs. Science shows ethics, morals, and politics, the way. Our work that began as a scientific treatise ends with a hymn to fair human progress.

The results we can expect from the diagnosis and treatment suggested here

Evidently, adopting a regular currency system with an institutional framework of individual liberties should result in greater wealth with more equitable opportunities, based on the following:

- 1) Those individuals wishing to better their economic situation will have to imagine how to generate more wealth instead of improperly appropriating it from others.
- 2) It is the adequate solution to avoid the evils of collectivism: lack of economic progress. Economic progress is the result of replacing current institutions with others that promote freedom.
- 3) It is the solution for capitalism that produces more wealth but generates inequalities, mainly as the result of improper appropriation of wealth underlying irregular monetary systems.

Taking stock of what the laboratory of life has shown us, we could say that, based on our theories, adopting the virtues and eliminating the problems of collectivism and capitalism, we could find a solution with the following synthesis: collectivism led to an economy without growth (compared with capitalism) but also without monetary crises, while capitalism led to an economy with growth (compared to collectivism) and with monetary crises. Adopting the benefits of both would lead us to economies with growth and without monetary crises; this could be attained based on capitalism with a regular monetary system, which would put us on the road to greater wealth and equality.

This is currently the purpose of science in terms of finding a solution to human suffering related to economic goods. In this sense, we believe it is correct to say economics is the science that studies equity in the biunivocal relation “economic good-owner”, which is the origin of the theory presented here.

Sustained growth without monetary crises

With the “money-regular credit” chain, in which regular credits are currency, we are in the presence of the most efficient economic-monetary system human beings can aspire to today. It leaves behind the “barbarous relic”, adopting at the same time the most efficient monetary system, using the most economic expression, credit based on greater wealth -because it generates the greatest possible wealth- and trust –institutions that promote and protect it. In short, the best combination is to have a monetary mix of money and regular credit.

Is a regular monetary system *the equilibrium solution* posited by Keynes, in the sense we have defined in this work? We believe so, since it eliminates the ghost of the “barbarous relic”, and gives us a solution to the problem he presented, in the sense that the greater the wealth, the more need there is for money, which could not be produced in the necessary amounts so that its cost would decrease. On the contrary, greater demand resulting from an increase in interpersonal exchange leads to a permanent increase in the price of money.

Regular credit is the currency that offers the solution, already defined by what was called “**classical adjustment**” –the passage from niche to cost- in which competition drives its cost down. And if there is any doubt, we only need to point to the **factors drive down the price of a currency**, interest in this case:

- 1) Greater wealth: greater wealth promotes wealth. Evidently, this avoids the problem of the “barbarous relic” (inflexibility of the supply of currency as demand grows).
- 2) Trust: arising from a state of equity and progress. That is why credit must be institutionalized insuring the greatest possible trust.

Reader must understand that greater wealth and trust are two factors that help reduce the price of currency-credit, and both generate greater wealth with peace, which generates greater trust and more wealth.

We wish to stress at the end of this work the consequences deriving from our theories, in terms of progress with peace for humanity, which leads us to be very optimistic about the economic future, rejecting apocalyptic theories. The institutional structure must be changed where things do not flow in this general direction.

We can conclude then that ***it is possible to think in terms of sustained growth without monetary cycles.*** This will be possible in a situation where there are more people everyday, which clears from the horizon the apocalyptic Malthusian perspective. It is the inverse of the Malthusian apocalypses: the more we are, the better, because the surplus of economic goods arising from the free exercise of our economic calling can be interpersonally exchanged with our fellow men and women.

As a final reflection, we wish to stress that a better world does not mean a world without needs. It means that it is possible to have a more pleasant world tomorrow.

We must bear in mind that everything is in constant change –because of time- in a world where we are all different. This can be summarized in the need for each and everyone to be better off. If this is not so, the implication is that the institutional structure does not guarantee equal rules for each and everyone, allowing us to be different.

Human fallibility that condemns us to scarcity is not an impediment for each and every one of us to improve our situation every day, as population and diversity grow.

APPENDIX

ECONOMIC INSTITUTIONS

An aspect that could not be absent from this text is how the economic theories present here affect current economic institutions and how substituting an irregular monetary system with a regular one would affect institutions in general, within a capitalist context, where personal freedom is dominant.

Since this has not been the focus of this treatise, appearing here instead as a byproduct – though extremely important-, we present now a very brief synthesis of the central ideas that we believe could be a basis to work on. Further elaborations would demand a book as extensive as this has been and possibly one for each institutional structure, considering tactical aspects involved.

Thus, we will offer a brief commentary on each institution and the basic consequences implied by our theories for their functionality.

The State

Considering our definitions relative to the orientation and organization of economies composed of individuals in society, compelled to configure a State responsible for the institutions that allow them to fulfill their purpose, we must briefly define the pillars on which its structure and functionality should rest.

Since the “economic purpose” of life in a community is attaining welfare for everybody, summarized in the phrase *wealth with equality*, based on an institutional order that promotes the highest possible development of the potential of the economic calling of each individual (individual comparative advantages), this implies striving to attain the highest degree of freedom and its benefits. The greater the number of citizens, the higher the need for the State to promote the free development of individual callings of each and every member of society. This is the result of an institutional framework that promotes free competition, and the interpersonal exchange of products and wealth deriving from individual callings. This can only be achieved with an institutional framework promoting a regular monetary system, in which there is no improper appropriation of wealth.

Another subject related to the State and its role in the economy derives from the theory we have called the “total or complete wealth equation”, which says there is no such thing as an insufficient demand or a paradox of savings, as Hayek showed. This only exists based on a theory that adopts the partial wealth equation. This means the State should only act to solve the “problems of insufficient demand” represented by people circumstantially unable to act as economic agents, which should be the exception, with a good social security system in place for emergencies –operating like any good insurance system, based on the law of large numbers.

We have already referred to State intervention related to issues such as balance of payments, foreign exchange control, rates of exchange, etc., so we will not extend on them here.

Thus, we see what the role of a State in a community of individuals should be, promoting greater wealth and equality, each and everyone better off, within the concept that perfect means the best alternative at each point.

We also expressed that the people must avoid another cause leading to excessive State intervention, which is the high degree of hedonism and selfishness shown by politicians that promote idolatry, exercising power on their idolaters, keeping people ignorant and limiting freedom. Authoritarians can even use humility as their instrument. This is the greatest source from which economic theories that situate the State as an exogenous entity that can influence the economic sphere can derive. This is similar to virtual money that is not virtual. The State is considered above fallible man and does not accept responsibility for its actions, because it

does not belong to this (economic) world of sinners, residing in heaven –the virtual world– and all those designated to live in it are above and beyond any responsibility.

In short, we can say that what must be avoided are authoritarian institutional states that hinder the free growth of the basic cell of the economy, the biunivocal relation “economic good-owner” that develops best with interpersonal exchange of the economic goods generated by the economic calling of individuals in a framework of freedom. If not, we are confronted by the typical problems of totalitarian regimes or their partial expressions: slow creation of wealth and/or unjust distribution, that as we know breed violence. The worst scenario is *collective poverty* -non generation of wealth- and *inequality* –improper appropriation of wealth, which means a “rich” State and a poor people.

We will now show what institutions are needed to generate a regular monetary system, which should basically be responsible for the health of a fluid exchange system (interpersonal and intertemporal) free from imperfections, considering that the future is uncertain and it is more so if currency is irregular credit, in free competition, with “special licenses”.

Central Bank

The essence of its task is to watch over a regular monetary system. It is the institution in charge of avoiding monetary irregularities. The term “safety mechanism” applies here, since it should be in charge of preventing the crime of improper appropriation of wealth derived from irregular currencies (direct and indirect), which means altering the way the theory of economic relativity is applied.

The community will thus have a healthy monetary system, which will allow interpersonal exchange to create greater wealth and equality. Currently the central bank is the institution with the responsibility of committing the monetary irregularities denounced here, with the specific mission –misguided by economic theory- of “regulating” the damage produced by an irregular system.

There would be no objection to the central bank being a mere depositary of CID if there were free competition. This is not so.

Considering the theories presented here, a central bank is limited to two options: *within an irregular monetary system, a central bank cannot be independent from political institutions, and within a regular monetary system, there is no need for a central bank*.

Banks

Evidently, their function will be to act as intermediaries in credit. To do this they will have to concentrate on putting the resources of those less able to generate wealth in the hands of those that are more able, but voluntarily and not compulsively. In other words, their purpose will be to profit as intermediaries, which they do now but not on a permanent basis. We must bear in mind that only present economic goods can be lent. We must find a way for credit to be regular instead of irregular.

Bankers should study the total wealth equation of each economic agent, their share in the economy as a whole and their patrimony and detect where there is surplus wealth that can be used by those with insufficient resources, within a situation of permanent relative partial or total shortage.

The institutional changes needed will occur immediately if the theories presented here are accepted, since we only need to change the legislation. The only ones affected in a negative sense will be those that cannot continue appropriating other agents’ wealth. We have already shown that this leads to a situation where each and everyone is better off. It is only a matter of time with a regular monetary system, depending on how convinced the community is of the need for this change. This in turn is often related to the damage caused by the irregular monetary system and how long people are willing to accept it instead of trying to change it. It is convenient to solve the problem when it still only produces a little pain, that can be cured with an aspirin, instead of waiting for it to become a full blown crisis that demands surgery and painful, complicated and prolonged treatment.

Evidently knowing the irregularities that affect humanity is a powerful tool, and that is the purpose of this work when explaining the crises deriving from irregular monetary systems and how to confront them in accordance with the development reached by each society.

In an irregular monetary system it is impossible to avoid “connivance” between the political authorities and the banking system.

Exchanges

These should be the main institutions in a regular monetary system based on interpersonal exchange of economic resources.

This is the best resource to relate the agents present in the “*real* monetary market”, the only one that exists. They should also have a decisive role in defining the economic goods that should be used as money and the credits that should act as currency, which will lead to a regular monetary system with an adequate mix of money and regular credit.

FINAL WORDS

A very brief summary of the conclusions of our scientific research will show why at the beginning of this book we quoted José Antonio Aguirre. We repeat that text here with our own comments as a corollary:

“Everything seems to indicate that the most urgent task in the coming years will be to probe how we can reestablish the three pillars of economic policy that were subverted (after Menger and beginning with Wicksell) by the scientific optimism of these years (impeccable warning on fallibility, in this case referred to dissatisfaction with current economic theories), these being: a) monetary discipline (a regular monetary system to avoid monetary crises), b) fiscal discipline (a State with a healthy economic situation), and c) commercial discipline (an institutional framework promoting individual comparative advantages –economic calling-, their fluid interpersonal exchange, with access to free competition). This is a congruent totality that survives as a whole when its three elements are engaged or inevitably collapses when any one of them is disengaged”.

Thank you

GLOSSARY OF CONCEPTS

NEW CONCEPTS

Accounting as the model for economics: a concept based on accounting being the true expression of the economic basic cell –the biunivocal relation “economic good-owner”- expressed in accounting with assets (= economic goods) and patrimony (owner); it allows us to study wealth, both in its static aspect as stock and its dynamic aspect as a flow (variations of stocks); its technique of accounting consolidation allows the study of micro and macro in economic. It allows us to study the composition of wealth and specifically the wealth arising from interpersonal exchange. Its statements present reliable information for studying the general, financial and economic situation of economic agents. Many other aspects of economic science can be studied with greater precision thanks to the technical, mathematical, and scientific rigor of accounting. We can say that accounting principles express the pure application of the postulates of economic theory. We can say accounting expresses economic theory in many aspects and that this was not recognized up to now because of the errors of current economic theory.

Accounting consolidation: consisting in a summation of all the quantities corresponding to the same titles and eliminating those arising from sales and purchases and reciprocal credits and debits among economic agents whose statements are being consolidated. With consolidation, we consider all the agents included, as in the case of society, as a new economic agent that owns all the existing wealth. Canceling out purchases and sales and credits and debits is what defines this situation. It also ratifies the concept of interpersonal exchange as an only event, eliminating the categories of purchase and sale. This reduces the situation to the extreme case of (intertemporal) intrapersonal exchange of an only economic agent. In short, accounting consolidation shows the economic activities of several agents as if they were one, since it cancels interpersonal exchanges among them.

Cash: interpersonal exchange of present economic goods.

Credit: interpersonal exchange of present for future economic goods. It is the interpersonal exchange of economic time.

Currency: exchange economic good that satisfies liquidity.

Direct appropriation of wealth: a mechanism by which there is final flexible materialization of wealth with the use of irregular credits.

Economic agent: a group of human beings with one or several common spatio-temporal needs related biunivocally with economic goods.

Economic calling: when each economic agent produces that in which he is relatively more efficient than other economic agents; similar to David Ricardo's comparative advantages, applied to individuals.

Economic causality: a set of economic terms ordered according to cause and effect.

Economic equation: see **total wealth equation**.

Economic good Future: an economic good that will be the property or possession of an economic agent in the future.

Economic good, Present: an economic good that is the present property or possession of an economic agent.

Economic good, Past: a past economic good is an economic good that was part of the patrimony of an economic agent in the past.

Economic good-owner: biunivocal relation expressing that there is no economic good without an owner or an owner without an economic good. It is the basic cell of economics. In set theory, this means an economic good implies the inevitable existence of an owner and vice versa.

Economic reductionism: epistemology that tries to explain all economic phenomenon by the behavior of one entity, generally money or, more generally, currency.

Economic time: scarce time; all human needs could be satisfied if time were not scarce.

Economics: science that studies the quality and quantity of economic goods and their exchanges.

Economy without money: refers to the relative loss of weight of money in developed economies compared with the use of credit as currency. Credit replaces money as a means of exchange as economies progress.

Eliminated economic good: an economic good that loses this condition in its last intervention in the biunivocal relation “economic good-owner”, not deriving from interpersonal exchange, i.e. it does not disappear from the patrimony of an economic agent through sale.

Final credit materialization: an act finalizing a credit through delivery of present economic goods at maturity.

Gibson's paradox: a theory that cannot explain the correlation between prices and rates of interest, based on the theoretical error of assimilating money and credit, a concept that is related to *Keynes' asymmetry* and *Keynes' paradox*.

Incorporated economic good: an object that acquires the condition of economic good in the biunivocal relation “economic good-owner”, not deriving from interpersonal exchange or purchase.

Indirect appropriation of wealth: a mechanism by which an economic agent, using irregular credit, loans present economic goods that belong to another economic agent as if they were his.

Initial credit materialization: an act that originates the loan of present economic goods.

Interest: is the price of economic time, which is subjected to the TER and when interpersonally exchanged forms the credit. Out of this causality is how the interest is commonly known as the price of credit.

Interpersonal exchange: is the exchange of economic goods between different economic agents.

Intertemporal exchange: the exchange of present for future economic goods.

Intrapersonal exchange: is the intertemporal exchange of economic goods by an only agent.

Inverted Keynes' paradox: the pretension to solve *Keynes' paradox* replacing interest with prices in the Keynesian economic model.

Irregular credit: credit that lacks at least one of the characteristics of regular credit, i.e., it does not specify quality and/or quantity of the present economic goods with which the credit begins or must be cancelled and/or maturity and/or the economic agents involved.

Keynes' asymmetry: a concept with which Keynes explained the passage from an extremely high value (his “barbarous relic”) to a zero or even “negative” value (“liquidity trap”).

Keynes' paradox: a theory pretending to solve an nonexistent problem: how can money, that becomes systematically relatively scarcer, become cheaper? We are in the same sphere as the concept of *Keynes' asymmetry* and *Gibson's paradox* (that Keynes pretended to solve); due to confusing money and credit.

Liquidity: the need for quick salability at an economic price (without a significant loss of value in the act of purchase or sale).

Materialization of economic time: an economic procedure through which economic time is converted, transformed and/or expressed in present economic goods, without which time has no economic entity.

Monetary crisis with credit: a crisis arising when irregular credits are adopted as currency, which derives in direct or indirect improper appropriation of wealth. Credit monetary crisis are typical of irregular currencies.

Monetary crisis with money: crisis that are the result of money becoming dearer because of the increase in interpersonal exchanges. This led to Keynes' famous reference to the “barbarous relic”.

Monetary system, Irregular: economic system that adopts irregular credit as currency.

Monetary system, Regular: the economic system that adopts money and/or regular credit as currency.

Money: present economic good used as currency.

Paradox of interest: theories that sustain the need to increase the price of a good to make it scarcer. The “paradox” is the result of pretending to solve the economic problem of shortage promoting greater shortage, i.e. trying to put out a fire with fuel. We call it the “interest” paradox, because the most common practical expression is raising interest rates.

Partial wealth equation: the equation of current economic theories operating with the equation $Y = C + I$ and $Y = S + I$, from where the erroneous conclusion $S = I$. This name arises from comparing it with the total or complete wealth equation, used in accounting.

Price: exchange of quantities of different economic goods.

Price, Interpersonal: price generated by interpersonal exchanges.

Price, Intrapersonal: the price generated by an economic agent in time.

Price, monetary: the prices expressed in currency.

Prices, absolute: prices that do not arise from the exchange of quantities of different economic goods, i.e. prices that by definition do not exist.

Prices, future: the prices that will form in the future.

Prices, past: the prices obtained in the past. They generally orient economic calculation until new ones appear.

Prices, present: arising in each spatio-temporal present instant, obviously, their duration ephemeral.

Prices, relative: see **price**.

Primary biunivocal relation of the economy: “economic good-owner”, is the basic cell of the economy, in terms of the main requisite for the existence of economic entities. It means there are no economic goods without an owner, or an owner without economic goods. Accounting reflects this primitive term par excellence of the economy with its accounting equation Assets = Wealth.

Real credit: credit with initial materialization.

Regular credit: credit in which quality and quantity of the present economic goods in which it must be cancelled along with maturity and precise identification of the parts involved are established. In other words, initial and final materialization are clearly defined, along with maturity and the intervening economic agents. It is the most legitimate expression of the essence of credit in terms of compliance with commitments.

Savings: A set of present economic goods not consumed. See the similitude with **wealth**, since it is the same from another point of view.

Situation, Economic: the capacity of economic agent for generating wealth that is his property; the creation of new biunivocal relations “economic goods-owner”.

Situation, Financial: the capacity of an economic agent to cancel debts according to maturity, amounts and final materialization.

Situation, Patrimony: the asset-debit relation of an economic agent; from another point of view it shows which part of the economic goods an economic agent has at his disposal are his and which belong to third parties.

The dangerous credit chain: a consequence of accepting cancellation of credits with irregular credits and of the theoretical confusion of assimilating money and credit. The typical case is considering a credit cancelled with paper currency or a fiduciary instrument.

The equilibrium solution: a scheme pretending to balance the real and the monetary or virtual worlds, individually or as a group.

Theory of Economic Relativity (TER): theory that states that economic time materializes inevitably in present economic goods.

Total demand: demand that includes all existing economic goods, a concept deriving from the biunivocal relation “**economic good-owner**” (see concept). Demand of economic goods is composed of all existent economic goods, be they needs –*demands*– for consumption, investment, storage, commerce, liquidity, etc, what is known in accounting as an asset, equivalent to wealth in economics.

Total or complete wealth equation: is the biunivocal relation “economic good-owner” of an economic agent or group of agents. In accounting terms, we can say it is the equation of Assets = Wealth, where credits express the exposure of present wealth to the future. This term arises from comparing it with the economic equation of current theories operating with the equation $Y = C + I$ and $Y = S + I$, from where the erroneous conclusion $S = I$.

Unknown debtor syndrome: the result of an irregular credit that does not include a precise indication of the economic agent responsible for canceling it.

Unknown family syndrome: the result of the lack of a duly identified economic agent responsible for an economic invalid.

Value of economic goods, objective: the magnitude incorporated in an economic good to satisfy needs. It is the antithesis of subjective value, in which the value is assigned by the agent demanding the object. The human being that has the need assigns an ordinal value to the economic good; otherwise, it has no value.

Value of economic goods, subjective: the ordinal magnitude of satisfaction of needs assigned by a human being to an economic good. It is the antithesis of objective value, because value is assigned by the offering agent as incorporated in the economic good, considering it has a value of its own, with no need for subjective valuation by a human being.

Virtual credit: credit with no initial materialization. This means there is no credit.

Virtual money: a metaphor referring to money that is not such because it is not a present economic good. It contradicts the definition of money, money that is not money. This concept is useful for showing the difference between money and credit.

Wealth: the set of all present economic goods. We could define future and past wealth just as we did with economic goods.

CRITICIZED CONCEPTS

45 degree curve
Balance of payments
Credit (in all versions)
Currency
Demand
Devaluation
Direct exchange versus indirect exchange
Distribution theory (Not fully developed)
Economic aggregates (Lipsey's aggregate supply and demand curve)
Economic equilibrium in its diverse expressions: $S = I$, real and monetary prices; etc.
Economic models
Economic unit of measure
Economy without money.
Employment and unemployment.
Endogenous and exogenous money
Exchange rates
Garrison's graphs
Gibson's paradox
Gresham's law
Inflation
Interest
Interest, different types according to each economic good (criticism of Wicksell)
IS-LM curves
Keynes' "barbarous relic"
Liquidity
Liquidity trap
Locke's problem
Monetary economic cycles
Monetary theory
Money
Money Regression Theorem
Money substitutes
National currencies
Negative interest
Neutrality of money
Phillips' curve
Price
Price Dichotomy
Prices in collectivism
Proportionality and homogeneity theories derived from the existence of currency
Quantity theory of money
Real versus monetary economy
Real versus monetary interest, or natural and monetary interest, equilibrium interest, etc.
Say's law
Supply
Transmission mechanism (the relation between the quantity of money, interest rates and prices)
Underconsumption theory or of deficiency of demand
Wealth

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THEORY OF ECONOMIC RELATIVITY

The present work can be considered under two different aspects:

SCIENTIFIC: it reveals the mistakes of current monetary and macro-economic theories that prevent them from solving monetary crises adequately. This unsatisfactory state of things is admitted by all scientists and specialists.

In the theories presented here you will find a new theoretical framework that corrects the mistakes of monetary theory, which appear -after Menger- with Wicksell, and include the works of Mises, Hayek, Keynes, Friedman, and others.

SOCIO-POLITICAL: this work proves that popular dissatisfaction is right in repudiating a national and international financial order that promotes "speculation" against "production". Also, it reveals the huge danger underlying democracies that allow totalitarian practices in the national and international financial order, promoted by the errors of current economic theories. The theories expounded here are superior to all others in existence, and at the same time help discover a new path to achieving the goal of "each and all, better off".

THIS WORK IS OF INTEREST TO: scientists, economists, advisors, politicians, businessmen, executives, jurists, ("devaluation"- "frozen-deposits"- "pesification"), teachers, students, and in general all those involved or interested in economic problems.

A great scientific discovery for democracy and freedom!

A scientific blow to totalitarianism!

An economics for generating wealth with equality!

In an irregular monetary system it is impossible for the Central Bank to be independent from political authorities, and in a regular monetary system its existence is unnecessary!

Scientifically discover the connivance of banks-politics!