On International Monetary Dynamics

Balance of Payments, Sovereign Debt Formation, and Institutional Setting

A Governing Quantum Macro Monetary Strategy for Argentina in the 21st Century

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With eternal gratitude, to my beloved father
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In Memoriam (1940-2022)

With the greatest love, to my newborn daughter
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Abstract

The following research addresses the existing international macroeconomic problem of sovereign debt formation in the global economy in general, and in Argentina in particular. The very concept of sovereign debt is commonly misunderstood, wrongly mixed up with the notion of public debt. This investigation dives into the nature of this problem, sustaining that it is a direct consequence of the lack of a proper system of international payments which would facilitate cross-border settlements using a neutral international means of payment under an international clearing house. The absence of such order produces strong exchange rate fluctuations, high currency volatility, and global imbalances, allowing the formation of financial bubbles followed by economic crises and collapse in the world economy as seen in 2008; under the current monetary status quo this process is bound to repeat itself.

For developing countries, such as Argentina, this macroeconomic pathology is self-reinforcing and, therefore, degenerative of their macroeconomic conditions, blocking economic growth and human development. Additionally, for the current world international liquidity provider, i.e. the United States, this monetary status quo embodies a self-defeating mechanism of a debt time-bomb that, sooner or later, will have to be deactivated, i.e. a deleveraging process, which may trigger a major global debt crisis, impacting on the international status of the U.S. dollar, as well as on the world economic and financial stability, with unpredictable consequences.

This research aims to, firstly, acknowledge this current international monetary pathology for both, emerging countries and developed ones (including the United States), understanding its genesis, nature, characteristics, and consequences. In order to attain the latter, a historical background is presented, going back to the post Great War times in the 1920s, the Bretton Woods Conference in 1944, and the origination of the pure fiat money big flooding in 1971, identifying parallels from the past and recognizing the origin of the current problematic international monetary institutional setting. It is also presented a brief theoretical framework to summarize a conceptualization and understanding of the macro-fundamentals underneath this macroeconomic monetary dynamic.

Secondly, this work proposes specific structural and operational changes in the particular case of the monetary institutional-arrangement of Argentina in order to neutralize this pathological dynamic until a comprehensive, global solution can be implemented. In this regard, it is offered a novel monetary institutional-architecture to be implemented into the Argentine central banking practices to provide a remedy for this macroeconomic problem. Moreover, this work shows Argentine statistical data supporting its macro analysis and policy proposal, along with theoretical and policy implications of this solution.

Finally, some related epistemological and geopolitical considerations are discussed, offering a brief geopolitical analysis focused on the existing currency statecraft trends, analyzing prospective international scenarios, and framing the Argentine strategic options.

The macroeconomic theoretical framework applied in this work, as long as its pertained analysis, subsequent diagnosis, and ulterior proposed strategy, are based on the *Quantum* monetary macroeconomic approach initiated and developed by French economist Dr. Bernard Schmitt (1929-2014), who dedicated his entire academic life to this pathbreaking intellectual endeavor.

This research project started to materialize back in 2014 after the inspiration produced to the author by reading the book of University of Lugano's professor, Dr. Alvaro Cencini, *Macroeconomic Foundations of Macroeconomics* (2005a). After requesting him a personal interview in Lugano, Switzerland, in that very occasion, the author asked Professor Cencini his support and supervision to begin doctoral studies on international monetary macroeconomics under the *Quantum* analysis, applying it to the author's home country, Argentina. This triggered a research activity on the nature and dynamics of the Argentine sovereign debt formation in particular, and the sovereign debt formation problem in general. Throughout this path, the author had to retrace many of his macroeconomic understanding and ideas molded during his previous studies on mainstream economics.

All in all, this research seeks to make a relevant contribution to the ongoing debate among international monetary economic policymakers, practitioners, and scholars, in open economies in general, and in Argentina in particular. The ultimate purpose of this academic work is to understand how it should work a healthy international monetary order and, in the case of lacking it, how it could be executed a sound monetary and balance of payments management in Argentina

to inhibit sovereign debt formation; encompassing, in this way, external and monetary stability, economic growth, and social progress.

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"Man cannot contradict the Laws of Nature.
But are all the Laws of Nature yet discovered?"

Zanoni (1842)
Book II. Chapter VI.
Sir Edward Bulwer-Lytton (1803-1873)

Introduction

In 1842, British writer Sir Edward Bulwer-Lytton (1803-1873) published the *Rosicrucian* novel *Zanoni*. In it, as it is cited at the beginning of this work, it is stated that no man can be above the Laws of Nature, but not all these laws may be yet discovered. Macroeconomics in general, and international monetary economics in particular, may not be as incommensurable as Nature but certainly have their own laws, mostly based on the governing logic and order of human economic creations, i.e. human institutions and entities, as economic value, money, banking, international currency, production, and international economic relations. Maybe not all governing laws of these human creations and institutions are yet learned, as in Nature. This hypothesis is plausible as, otherwise, the economic and monetary reality of countries would be significantly different. Economic pathologies and disequilibria as sovereign debt crises, chronic balance of payments imbalances, inflation, explosive boom and bust bubbles, global financial crises, stagnation, economic struggle and depression, would not be a reality decade after decade.

Clearly, at analyzing global monetary relations, something is missing. Probably we have ignored the logic and the governing laws of these human economic institutions and relations for too long, or we are too enamored with economic models, many of them as sophisticated as they are useless; as professor Cencini sustains: "[…] *macroeconomics has its own foundations, which are by no means microeconomic, and that the introduction of money requires economics to be interpreted conceptually and not mathematically*" (Cencini, 2005a. Pp. 1).

This work, which has its genesis in the readings of Cencini (2005a), is basically a study based on the analysis of international macroeconomic and monetary logic, and the economic and monetary history, along with the examination of the empirical evidence, and the nature of monetary institutions (e.g. money, commercial and central banking, international payments, etc.). Consequently, this work is not grounded on a development of mathematical models (e.g. dynamic stochastic general equilibrium, dynamic optimization, recursive macro models, or applied macroeconomic micro-foundations) nor even econometric-based explanations. Even though the author has been working with these tools since his undergraduate years, after decades of studying and years of teaching economics,

he does not judge these tools as effective to understand and explain the nature of the problems this work envisions to provide a solution to. A profound discussion on epistemological problems of modern macroeconomics is beyond the scope of this work, nevertheless, its author has made a methodological decision at its onset, as every scholar does -consciously or not- at the beginning of every research program. Whether this decision was a correct one it may be judged by the reader.

As a closing remark on the latter, let us remember the great Austrian economist Ludwig von Mises, when in his magnus opus *Human Action. A Treatise on Economics* (1949) explains the epistemological problems of the economic science, quoting the scientific genius Albert Einstein: "*It is customary in the treatment of the epistemological problems of economics to adopt one of the solutions suggested for the natural sciences[…] Einstein raises the question: "How can mathematics, a product of human reason that does not depend on any experience, so exquisitely fit the objects of reality? Is human reason able to discover, unaided by experience through pure reasoning the features of real things?". And his answer is: "As far as the theorems of mathematics refer to reality, they are not certain, and as far as they are certain, they do not refer to reality". However, the sciences of human action differ radically from the natural sciences. All authors eager to construct an epistemological system of the sciences of human action according to the pattern of the natural sciences err lamentably*" (Mises, 1949. Pp. 39).

This work is structured in seven chapters. Chapter I provides a historical background of international monetary issues since the *German Transfer Problem* in the 1920s after the Great War, going through the global monetary reform of Bretton Woods in 1944 and the Nixon Shock in 1971, until our days. Chapter II summarizes a conceptual and theoretical framework under the *Quantum* macroeconomic approach related to both domestic and international economics. Chapter III synopsizes current World monetary problems with focus on the lack of a system of international payments, international clearing house, and international currency. Also it relates to balance of payments discrepancies, exchange rate fluctuations, and global imbalances. Chapter IV provides a traditional analysis on public debt, focusing on Latin America and Argentina, also providing a brief history of the Argentine external debt. Chapter V develops a *Quantum* monetary macro strategy specifically for Argentina, proposing changes in the monetary institutional framework with a novel architecture within the Argentine central bank in order to neutralize the sovereign debt formation under the current World monetary conditions. Chapter VI discusses theoretical and policy implications of this proposal, going back to monetary theory and policymaking practices. In this section it is also presented Argentine statistical

support to previous problem diagnosis. Finally, in Chapter VII first it is discussed some general epistemological aspects of the *Quantum* analysis, and second, geopolitical considerations with emphasis in the current status of the global currency statecraft and its related Argentine strategic international positioning.

Sourcing inspiration, once again, in the reflections of the great Austrian economist, Ludwig von Mises, let us evoke his words: *"Man is not infallible. He searches for truth, that is, for the most adequate comprehension of reality as far as the structure of his mind and reason makes it accessible to him[…] The economist must never be a specialist. In dealing with any problem he must always fix his glance upon the whole system"* (Mises, 1949. Pp. 68-9).

Effectively, this work does not claim to provide infallible revelations, but to analyze and describe monetary *realities* in the most faithful manner, with a systemic approach, *fixing*, in this way, our *glance upon the whole system* in order to improve it.

Chapter I
A Historical Background

"The master-economist must possess a rare combination of gifts. He must be mathematician, historian, statesman, philosopher - in some degree. He must understand symbols and speak in words. He must contemplate the particular in terms of the general and touch abstract and concrete in the same flight of thought. He must study the present in the light of the past for the purposes of the future. No part of man's nature or his institutions must lie entirely outside his regard. He must be purposeful and disinterested in a simultaneous mood; as aloof and incorruptible as an artist, yet sometimes as near to earth as a politician"

John Maynard Keynes
British economist
"Alfred Marshall 1842-1924"
(1924, The Economic Journal. No. 34. Pp. 322)

Properly understood, sovereign debt is a macroeconomic debt, i.e. a debt affecting a given country as a whole, including all its residents, both private economic agents (households and firms) and government (which is by itself an economic agent). Sovereign debt is such because it is carried by the country considered as a whole. It is the settlement of a debt due by a resident economic agent to a non-resident one, regardless of whether this debtor agent is a government or a private agent, which causes the sovereign indebtedness of their country. As a matter of fact, the external debt incurred by any private or public agent should never generate an additional foreign debt of the country. Once paid by the indebted residents, the external debt should be extinguished, and no sovereign debt should see the light. Yet, this is not what happens today. Because of a lack of a true system of international payments, the foreign debt incurred by the private and the public sector of any given economy gives rise to an additional debt of the country -a sovereign debt- as soon as it is paid by the indebted residents. The concept of sovereign debt does not exclusively correspond to the government, as any private economic agent incurring in a debt with a non-resident agent is adding to sovereign, macroeconomic debt.

As a result, standard economic analysis applied to inter-regional (or intra-national) debt is not valid for international sovereign debt, as in the former the applied

monetary vehicle (currency) is the same for debtor and creditor, whereas in the latter it is not. This differentiation is not trivial, as explained by *Quantum* economists Alvaro Cencini and Bernard Schmitt: *"What mainly distinguishes regions from countries is the use of a common currency. Within a given country or a given currency area there is no problem of monetary substitution"* (Cencini and Schmitt, 1991. Pp. 15). It is the presence -or absence- of a common currency between debtor and creditor what makes the difference in terms of sovereign debt formation. As Cencini and Schmitt (ibidem. Pp. 19) explain: *"The international debt problem arises from the specific kind of relationship between national currencies that characterizes the actual monetary system of international payments. It is the existence of a multi-currency world that creates the problem, and it is within this context that a solution has to be found".*

Once we have established that sovereign debt is -always and everywhere- external debt between a country as-a-whole (counting all its residents including government) on one side, and non-residents of that country on the other side, then it is evident that -under the current international monetary status quo- creditors and debtors will have to address a currency exchange issue in order to find a valid common currency to settle this debt. Typically, a debtor country will have to procure the international currency (usually American dollars) in order to use it as international monetary vehicle to settle its sovereign debt.

Unless the debtor is the United States or, to a lesser extent, a member of the Euro area, this international means of payment is decoupled from the debtor's domestic production process; namely domestic productive process within the debtor country will produce domestic income denominated in, and monetized by, domestic currency, and not in an international one. Naturally, national economic production is domestic and it generates an associated income in domestic currency, even if produced goods and services are exported[1]. The point here is that domestic production is not capable of creating an income denominated in foreign currency needed as a means of payment to settle cross-border transactions. That is why debtor countries -if they are not net exporters- will need to purchase foreign currency (e.g. U.S. dollars) on the international currency markets. This, as we will see, poses a subtle but fundamental macroeconomic problem for nations.

[1] In *macroeconomic* terms the country as a whole will obtain a hard-currency inflow, but in *microeconomic* terms the individual exporter's income will be -at the end- denominated in domestic currency.

All in all, since for the debtor country it is not possible to pay its external debt with its own domestic currency, but in a so-called international currency (typically U.S. dollars), there is a necessity of obtaining this foreign monetary vehicle to settle external debts. Consequently, debtor countries will necessarily have to go to foreign exchange markets to self-procure the foreign currency needed to pay their net foreign purchases. Logically, this happens because nowadays there is not an international clearing and payments system; so each nation has to face on its own the task of self-providing international currency to settle its foreign purchases.

As it will be developed further in this work, the origin of the problem is not the sovereign debt per se, which is an effect and it should not even exist. The cause for that effect lies on the lack of a pure international currency to execute the payments of net (global) imports. Effectively, it is because countries have to purchase international currency in the market to face settlements of net imports (that is, when imports are higher than exports) without the possibility of having an international currency that the sovereign debt is formed in the first place. As said before, sovereign debt is the debt of the country as a whole with foreign residents, not necessarily public sector debt with non-residents. As explained by Cencini (2017a. Pp. 144) "*Once it is understood that the sovereign debt is nothing other than country's external debt, it should immediately be clear that it cannot be identified with the country's public debt. The State is merely an element of the set of a country's residents*".

In order to correctly understand the cause of the sovereign debt problem we need to understand its nature, which is given by one country's obligations to pay to the rest of the World exceeding those to be collected, i.e. payments from an external deficit country as a whole -including all its residents- of its net imports (commercial and financial). As Cencini (2017a. Pp. 144-5) describes "*The debt run by the State to foreign lenders may contribute to the formation of a country's external or sovereign debt, but is far from defining it. Debts incurred abroad by the private sector play also an important role in the formation of a country's external debt, which is best defined as the debt affecting a country as a consequence of the net foreign purchases of its residents, both of the public and private sectors*".

The reason behind the sovereign debt formation then -in presence of net imports- is given by the necessity of obtaining this international currency in foreign exchange markets. This is a purchase and, consequently, it has a price whose numerical expression depends on the exchange rate. This price will be added up to the original amount of debt, duplicating, in an illegitimate way, this original and

legitimate amount. This international monetary economics' anomaly was profoundly studied by the founder of *Quantum Macroeconomics*, French Professor Bernard Schmitt (1929-2014), who explained in detail the problem of the external debt service duplication faced by debtor countries. His seminal discovery (Schmitt, 1984) was the fact that there is indeed a duplication effect of the amount of money that debtors (commercial and/or financial net importer countries) have to pay, i.e. countries' net imports must be paid twice, firstly by country residents in domestic currency, and secondly by the country as-a-whole, typically by its central bank or other similar monetary agency at the moment of purchasing the international currency to settle the original debt. The latter is a macroeconomic, sovereign debt which is pathological and should not exit at all under a proper international system of payments. As sustained by Cencini (2017a. Pp. 145) "*Countries' sovereign debts are entirely illegitimate, the pathological result of a non-system of external payments that feeds the speculative financial bubble and is one of the main causes of the international financial crisis*".

This specific characteristic of international payments was first intuited by Lord Keynes after the Great War (1914-1918), as part of his economic debate on Germany's war Reparations with Swedish economist Bertil Ohlin and French economist Jacques Rueff.

I.I. Lord Keynes and *The German Transfer Problem*

After World War I (1914-1918) the victorious Allies led by France, the UK and the USA[2] imposed on Germany in the Treaty of Versailles (1919) the obligation to pay them war Reparations.

The first conditions established that these Reparations would have been uncapped, i.e. Germany would have paid as much as she could for as long as needed. In 1922 Germany defaulted amidst a hyperinflation. France retaliated

[2] The original Allies, or the Triple Entente, was composed by The French Third Republic, The British Empire, and the Russian Empire (until 1917). Later on, United States joined in 1917; Also Japan, Serbia, Montenegro, Belgium, Portugal, Italy, Romania, Hejaz (today part of Saudi Arabia), Greece, Siam (today Thailand), Republic of China, Liberia and Brazil. On the defeated side were The German Empire, Austria-Hungary, The Ottoman Empire, Bulgaria and other several, minor co-belligerent states.

invading the Ruhr Valley in 1923. In 1924, a committee of Allies chaired by American banker Charles Dawes studied and advised Germany. The Dawes Committee (1925) arranged a vast loan to Germany, which was oversubscribed in Wall Street and The City of London; as described by Chernow in his well-documented book about The House of Morgan: "*To give the loan international seasoning, half the issue appeared in New York and the other half in London and other European capitals. The $110-million New York portion was enthusiastically received and oversubscribed[…] For Weimar Germany, it was a turning point. It became the decade's largest sovereign borrower*" (Chernow, 1990. Pp. 250).

Capital inflows from the United States to Europe was not something extraordinary, as explained by American economist Barry Eichengreen: "*All through the 1920s capital flowed from the United States, where it was abundant, to Europe, where it was scarce. American banks arranged bond issues for European governments and corporations, denominating them in dollars so they could be marketed to American investors. They opened store-fronts to pitch them to retail customers*" (Eichengreen, 2011. Pp. 31).

In addition, war Reparations payments were capped to an annual fix amount plus a variable sum linked to the German macroeconomic performance. These payments would have been completed by 1988. Nevertheless, the Dawes Plan failed and, in 1929, another committee was put in place chaired by General Electric executive Owen Young. The Young Plan was basically a cosmetic version of its predecessor, and it also failed. Finally, in 1931 U.S President Herbert Hoover extended to Germany a one-year moratorium but the coming of the Great Depression caused the suspension of war Reparations in 1933.

British historian Robert Skidelsky wrote the most complete and detailed biography of Lord Keynes: *John Maynard Keynes 1883-1946. Economist, Philosopher, Statesman*. Originally published in three volumes, and then compiled in one single, 1,021-page book. In it, Keynes' biographer tells: "*The Paris Conference opened in January 1919. Keynes's main job in the two months preceding it was to prepare the* [British] *Treasury's position on the question of a German indemnity[…] In Keynes's first memorandum on the subject, dated 31 October 1918, a further point emerged: any reparation demanded of Germany for the damage it had caused must take into account its capacity to pay. It must not be so severe as to crush Germany's productive power; for, in the end, moveable property, gold and foreign securities apart, Germany could pay only by exporting goods to earn foreign currency*" (Skidelsky, 2003. Pp. 217).

Effectively, in 1929, as a consequence of these war Reparations[3] imposed on Germany, started in the pages of the *Economic Journal of the Royal Economic Society* an economic policy debate between, on one side, Cambridge economist John M. Keynes (1929a, 1929b) and, on the other side, Swedish economist Bertil Ohlin (1929a, 1929b) and French economist Jacques Rueff (1929). These discussions triggered theoretical questions, these questions being the first record in modern macroeconomics of a debate on the sovereign debt problem, which is the main topic of this work.

Keynes, even though a conspicuous young member of the Briton intelligentsia, was already a well-known critical analyst of the British public affairs of those days, as it is recalled in the meticulous 1,105-page Andrew Roberts' *Churchill, Walking with Destiny* -allegedly- the most exhaustive modern biography of Sir Winston Churchill: "*Keynes, whose The Economic Consequences of the Peace, published in 1919, had attacked the financial clauses of the Versailles Treaty, wrote three articles similarly attacking the return to gold which appeared in the Evening Standard in July 1925 and were then republished as a 32-page pamphlet entitled The Economic Consequences of Mr. Churchill* " (Roberts, 2018. Pp. 314).

The debate in those days addressed the question of whether Germany would be able to collect and effectively pay her war Reparations; nevertheless, it enabled a theoretical discussion on international monetary economics which called upon a theory of international payments, as Keynes (1929b. Pp. 404) recognizes "*the controversy[…] develops -originally with Professor Ohlin of Copenhagen and now with M. Jacques Rueff of the University of Paris- the worst of it is that it moves, quite inevitably, from the particular to the general, so that full justice cannot be done to the points which have been raised without embarking on the general theory of international transfers*".

Keynes differentiated German war Reparations in two issues namely (i) the *Budgetary Problem*: "*extracting the necessary sums of money out of the pockets of the German people*" (Keynes, 1929a. Pp.1), and (ii) the *Transfer Problem*: "*converting the German money so received into foreign currency*" (Keynes. ibidem. Pp. 1). The former was about

[3] Records of war Reparations in the ancient history have been found, like those imposed by Rome to Carthage after the First and the Second Punic Wars. In the XIX Century, after the Greco-Turkish War (1897) the defeated Greece was imposed a large indemnity to Turkey. Also, after the Franco-Prussian War the defeated France, by the Treaty of Frankfurt (1871), had to pay a war indemnity of 5Bn gold francs in a 5-year period. German troops stayed in France until the payment completion in September 1873.

whether Germany would be able to produce and collect, through taxes, the income in local currency (Deutsche marks) out of the pockets of her residents to pay these Reparations (ability to pay from national resources and income). The latter, instead, was about the real possibilities for Germany to convert this amount of Deutsche marks into international currency (e.g. gold or American dollars) and to transfer this money, to her creditors (ability to transfer in hard currency).

Keynes, Ohlin and Rueff, agreed that the *Budgetary* Problem could be solved, but for Keynes the *Transfer* Problem had no solution; in his own words: "*The Transfer Problem is paramount and, indeed, insoluble*" (Keynes, 1929a. Pp.2).

Referring to German war Reparations, Beretta (2017. Pp.106) sustains that "*Indeed, most of the considerations made for net interest easily match any made in the case of war reparations[…] the former involves a twofold loss of resources -the first, in domestic currency, represents the actual amount of the payment; the second is given by the (cost-bearing) monetary vehicle represented by foreign currency in order to convey the domestic income through the international monetary space*". The differentiation of these two concepts is not merely a word as there is a clear distinction between the ability to i) produce and collect an income within a country in national currency, and ii) exchange that amount to international currency and transfer it. As described by Beretta (ibidem. Pp. 107): "*Already in 1922 some economists were aware of the fact that Germany would need to not only find internal resources (ability to pay), but also retrieve a corresponding amount of foreign currencies in order to convey the residents' payment through the international monetary space (ability to transfer)*".

Keynes sustained that the priority was increasing German exports in order to firstly build international reserves in hard currency and then pay for Reparations, concluding that "*The solution of the Transfer Problem must come about, in the main[…] by the diversion of German factors of production from other employments into the export industries*" (Keynes, 1929a. Pp. 3). But, for Keynes, this increase in exports could not be achieved only by increasing industrial efficiency nor by a reduction in German consumption (imports) but also by reducing real remunerations of productive factors in terms of the currency to be transferred, i.e. gold or U.S. dollars. As Keynes (1929a. Pp. 4) explains "*The expenditure of the German people must be reduced, not only by the amount of the reparation-taxes which they must pay out of their earnings, but also by a reduction in their gold-rate of earnings below what they would otherwise be[…] The Transfer Problem consists in reducing the gold-rate of efficiency-earnings of German factors of production sufficiently to enable them to increase their exports*".

The latter is vital to understand the twofold aspects of the problem, as Cencini and Schmitt (1991. Pp. 24) describe: "*It is important to analyze the theoretical aspects of the controversy between the English economist and his critics. By stressing the importance of distinguishing the transfer from the budgetary problem, he recognized the double nature of the international debt problem in a way which seems to have been totally missed by his opponents*". This distinction between generating the needed income in local currency, and then transfer it in international currency, is a difference which "*Finds its raison d´être in the impossibility of identifying international and inter-regional debt problems. To pay its debt it was not enough for Germany to find a given amount of its national income through the payment of reparation-taxes by its residents*" (Cencini and Schmitt. ibidem. Pp. 25). International debts have to be settled in international currency, and the debtor country is not entitled to do so on its own, as this international currency must be purchased. As Cencini and Schmitt (ibidem. Pp. 25) boldly sustain "*This was precisely the case of Germany after World War I, and Keynes was perfectly aware that the payment of the residents had to be followed by the payment of the country itself".*

Ohlin and Rueff shared with Keynes this view of increasing exports, but, for them, Germany had first to decrease her domestic consumption and imports, i.e. going to an austerity plan, in modern words, and pay more in war Reparations. For Ohlin, this necessity of increasing German exports would only have been achieved by heavily reducing German external borrowing, as he assumed that this external borrowing was the direct fuel for German imports; therefore, in order to boost commercial surplus, it was needed to cut this imports' fuel, i.e. the external borrowing. Rueff also agreed on increasing exports, but he stated (using historical examples of France and Russia) that the change in the commercial balance was a consequence of changes in the balance of capital, and the equilibrium of the balance of payment will be "*always spontaneously restored without interference of any kind*" (Rueff, 1929. Pp. 398) with no need for further active measures.

For Keynes, instead, even though these Reparations payments required previous increase in German exports, the way of achieving this was not merely a question of reducing German consumption, as "*in so far as the Budgetary Problem has been already solved, the necessary reduction of consumption is already effective*" (Keynes, ibidem. Pp. 3). Keynes saw the importance of the reallocation (*diversion* in Keynes' words) of German factors of production from other activities into export industries; therefore, the *Transfer Problem* could be described as how to reduce the gold-rates of efficiency-wages in Germany relative to efficiency-wages elsewhere. In other words, how to reconvert the export industries into competitive ones (after

competitive costs and wages in hard currency) in order to enhance exports and generate trade surpluses and international currency inflows. As Keynes explains: "*If x is the percentage by which German efficiency-wages in terms of gold have to be reduced in order to develop an excess of exports sufficient to pay for reparations, x -we may say- is the measure of the gravity of the Transfer Problem*" (Keynes, 1929a. Pp. 4).

The difference between Keynes' and Ohlin and Rueff's approaches was significant. As explained by Cencini and Schmitt (1991. Pp. 27): "*On one side Keynes claimed that in order to service its foreign debt Germany had first to increase its exports, on the other Ohlin and Rueff maintained that it had first to increase its financial flows[…] the outflow of German capital would necessarily have increased its exports of domestic goods by increasing the foreign demand for these goods. The key of their argument is the assumption that through monetary movements, such as the German payments of war reparations, buying power could be shifted from one country to another, thus affecting the distribution of the demand for international goods*".

Keynes was also aware of the problem posed by currency conversion, a pure problem of foreign currency exchange and its impact on Germany's domestic currency exchange rate, as he stated: "*For I hold that the process of paying the debt has the effect of causing the money in which the debt is expressed to be worth a larger quantity of German-produced goods than it was before or would have been apart from the payment of the debt; so that the population of the debtor State suffers a loss of purchasing power greater than the original equivalent of the amount of the debt. Indeed, if the world's demand for German goods has an elasticity of less than unity, there is no quantity of German produced goods, however great in volume, which has a sufficient selling-value on the world market* " (Keynes, 1929b. Pp. 405). The depreciation effect on the debtor currency generated by the purchasing of international currency is not innocuous as Germany would not only lose part of her income but also would face currency depreciation and fall of purchasing power, in other words, the Germany's loss would not be "*equivalent to the amount of the external debt servicing, but twice as much, since their country had to contract a new debt in the exact proportion of it external debt payment [...] On one hand, German debtors had to find a sum of national income out of their savings […] They were suffering an additional loss of purchasing power due to the asymmetrical pressure exerted on their national currency*" (Cencini and Schmitt, 1991. Pp. 32).

Here it is the very nature of the *Transfer Problem*, namely that Germany not only needed to collect (pay) an amount of national income equivalent to the war Reparations but twice as much due to the fact that Germany had to issue new

debt in the exact amount of its external debt payment. As the national income (in national currency) is not valid for international payments, then a purchase of international currency in foreign currency markets is needed. The latter will produce an excess of demand of foreign currency which will offset a proportion of trade gains to the export country.

Keynes intuited, in the 1920's, that one thing was domestic income generation in domestic currency (inside Germany by Germans) and a very different thing was to convert and transfer this national wealth to hard-currency payments abroad. As explained by Cencini (2017b) "*Keynes's argument was with the failure of the system of international payments to provide a mechanism allowing for the cost-free conversion of payments between monetary sovereign countries, and not with the economic difficulties faced by Germany*".

By analyzing Keynes' rationale it becomes clear that, even if the Germans had succeeded in earning the war Reparations amount in domestic currency, still this amount would have had to be converted into international currency through a foreign exchange purchase, and such purchase would have duplicated the amount of Reparations (debt servicing). In this way "*The net increase in the demand of foreign exchange, in fact, would have led to a devaluation of Germany's domestic currency causing the money in which the debit is expressed to be worth a larger quantity of German-produced goods than it was before*" Cencini (2005. Pp. 251). That is, after the excess of demand from Germany, the relative price of the foreign currency (exchange rate) in terms of German money would have increased, lowering the foreign purchasing power of German currency.

This need of an international monetary vehicle placed in the center of the *Transfer Problem* was clear for Keynes, as he explains: "*Of course if B (Germany) can pay A (the reparation-receiving countries) in foreign bills expressed in the currency of a third country, there is no difficulty. But this is begging the whole question. The problem arises precisely because, on our hypothesis, Germany has no such foreign bills. Germany can only acquire such bills if she has already sold the necessary exports*" (Keynes, 1929b. Pp. 407-8).

The keystone of the analysis of Rueff and Ohlin is the possibility of transferring purchasing power from one country (in this case Germany) to another (the Allies) either by a reduction of German external borrowing or by an increase in war Reparation payments. If we accept that purchasing power can be transferred from one country to another, then the analysis of Ohlin and Rueff that financial flows could enable a dynamic of re-equilibrium between debtors and creditors prevails.

On the other hand, if purchasing power cannot be exported -as it will be further developed in this work-, then Keynes' intuition was correct as exports are a necessary condition -but not a sufficient one- for the positive servicing of external debt. As explained by Cencini and Schmitt (1991. Pp. 29): "*Neither Keynes nor Ohlin, then, were prepared to argue for a transfer of purchasing power brought about by flows of national currencies[…] Keynes was certainly the one who developed the more rigorous and updated analysis. His claim that, in order to pay reparations, Germany had first to earn a positive amount of foreign currency was perfectly in line with both empirical evidence and theoretical inquiry*". In Keynes' own words *"If Germany was in a position to export large quantities of gold or if foreign balances in Germany were acceptable to foreign Central Banks as a substitute for gold in their reserves, then it would be a different matter"* (Keynes, 1929b. Pp. 407).

Keynes was not the only one aware of this problem, also policymakers in the German side were conscious about it. Chernow (1990. Pp. 395-6) quotes Thomas Lamont, a J.P. Morgan executive and U.S. Treasury representative in Europe during those days, detailing his mail exchange with Hjalmar Schacht, *Reichbank* President (1933-39) and German Minister of Economy (1934-37). In these letters the German central banker put the problem into straight words, as Lamont himself explains: "*From Dr. Schacht's reply, it was clear that the usual norms of business behavior no longer applied in Germany[…] Schacht began by saying Germany's problem was not default but a transfer difficulty resulting from a lack of foreign exchange. Then he veered off into bombast and mad whimsy:*

> *'Whether you may threaten me with death or not will not alter the situation because here is the plain fact that I have no foreign valuta, and whether you may call me immoral or stupid or whatever you like it is beyond my power to create dollars and pounds because you would not like falsified banknotes but good currency'*".

As Schacht asserts in his letter to Lamont, it is the impossibility of printing *foreign valuta*, i.e. hard currency, the core of the *Transfer Problem*, as intuited by Keynes, which has to be tackled by any sovereign-debtor until today.

Interestingly, this problem of international monetary economics, which is a result of the absence of a proper system of international payments, has been barely studied[4]. The research question underneath is whether it is possible to transfer

[4] War Reparations and the *Transfer Problem* is not only an issue of the 1930's. E.g. After the First Gulf War (1990-91), on February 27th 1991, the government of Iraq accepted the United Nations Security Council Resolution 674, requiring Reparation payments. The *Transfer Problem* had resurfaced. For

purchasing power within a non-production economic space, like the international trade and finance sphere, which is a pure exchange locus. The answer seems to be negative -as it will be developed further in this work- like Schacht said: "*it is beyond my power to create dollars and pounds*" (Chernow, ibidem. Pp. 395-6).

In other words, the problem has its roots in the current asymmetry between international reserve and non-international reserve currencies, and the use, under the current (non)system of international payments, of certain national currencies (typically the U.S. dollar) as assets applied for payments, as indicated by the *Quantum* macroeconomic analysis: "*It is the existence of a multi-currency world that creates the problem, and it is within this context that a solution has to be found*" (Cencini and Schmitt, 1991. Pp. 19).

Unfortunately, the 1920's German *Transfer Problem* is not something from the past, as it is currently replicated in several countries, especially in the less developed ones (LDC's), generating a dynamic problem of sovereign debt formation. The underneath, logical foundations of this macroeconomic monetary pathology is the fact that it is not possible to transfer purchasing power from one country to another within a non-production economic space as it is the international trade. As sustained by Cencini and Schmitt (1991. Pp. 29) "*In reality, national currencies do not carry any purchasing power outside their monetary systems, so that international payments become effective only if they are carried out in kind. Currencies are simply an intermediary*".

It is true that Keynes set a precedent case with his analysis of the *German Transfer Problem*, sustaining that in order to pay war Reparations, Germany had first to get international currency through exports. However, he did not develop his insight further to extend it to the external payment of net interest and to the formation of the sovereign debt. As Beretta (2017. Pp.106) sustains: "*Indeed, most of the considerations made for net interest easily match any made in case of war reparations[…] the former involves a twofold loss of resources -the first, in domestic currency, represents the actual amount of the payment; the second is given by the (cost-bearing) monetary vehicle represented by foreign currency in order to convey the domestic income through the international monetary space. In economic literature the first flow has always been seen as the source of a budgetary problem (depending on finding sufficient internal resources representing the real content of the payment)*

details, see: Morrison, R. (1992) "*Gulf War Reparations: Iraq, OPEC, and the Transfer Problem*". Journal of Economics and Sociology. Vol. 51. No. 4. Pp. 385-399. October 1992.

and the second flow as a potential cause of the transfer problem, which evidently refers to the need to convey the microeconomic payment outside the national currency area".

The intellectual debate Keynes-Ohlin-Rueff has been rightly summarized by Cencini (2017b. Pp.5) as follows: "*The Swedish and the French economists failed to notice that Keynes's argument was with the failure of the system of international payments to provide a mechanism allowing for cost-free conversion of payments between monetary sovereign countries, and not with economic difficulties faced by Germany. They did not understand that international payments cannot reduce to inter-regional payments and that Keynes's analysis dealt precisely with the problem of converting domestic into international payments*". All in all, the *Transfer Problem* is a current problem of international economics, as the majority of net importer countries have to settle their debts in international currency (typically, U.S. dollars). In this way, as it was analyzed by Keynes for Germany in 1929, when a debtor country is facing such an international payment and it purchases international currency, it is paying twice, once by generating the debt amount in domestic currency, and again by buying international currency in the exchange markets (through the central bank). This second payment is "*the source of a net excess demand of foreign currency which has the annoying consequence of nullifying an equivalent part of the gain realized by the country through its commercial surplus*" (Cencini and Schmitt, 1991. Pp. 33).

I.II. The Battle for the Global Monetary Reform

World War II was well advanced when the United Kingdom realized that sterling was going to be replaced by the U.S. dollar as the raising monetary-star once the war was over. In 1941 Lord Keynes was asked to prepare a proposal which could limit the power of the United States to manipulate the international financial system in their own favor. Keynes prepared in some weeks a plan for a global central bank which would act as a World Clearing Union, so "*each country would receive a line of credit denominated in bookkeeping units known as bancor. Governments could use those credits to purchase imports. Countries would be prevented from running balance-of-payments deficits indefinitely by the fact that their credits with the Clearing Union were limited. But they would also be discouraged from running chronic balance-of-payments surpluses by provisions requiring them to turn over a portion of any bancor and foreign currencies they earned to the Clearing Union*" (Eichengreen, 2011.Pp. 46).

These *Bancor* units, issued by the proposed *International Clearing Union* and with a value directly linked to gold, would act as international currency circulating only among countries as a mean of payment and compensation for their commercial and financial international transactions, but not internally inside domestic economies. Member countries would commit to use and accept only these *Bancors* for international transactions.

As explained by Keynes himself: "*We need an instrument of international currency having general acceptability between nations, so that blocked balances and bilateral clearing are unnecessary; that is to say, an instrument of currency used by each nation in its transactions with other nations, operating through whatever national organ, such as a Treasury or a central bank*" (Keynes, 1980. Pp. 168). Without being explicit, the Keynes Plan was targeting the United States with penalties and charges on continued balance of payments surpluses: "*The proposal is to establish a currency union, here designated an International Clearing Union, based on international bank money, called (let us say) bancor, fixed (but not unalterably) in terms of gold and accepted as the equivalent of gold by the British Commonwealth and the United States and all the other members of the Union for the purpose of settling international balances*" (Keynes, ibidem. Pp. 170-1).

For Keynes, the *Bancor* would be a common denominator for domestic currencies used in international payments, but these domestic currencies would continue working as medium of exchange inside their respective countries. *Bancor* would work just as a free vehicle-instrument outside domestic borders to resolve heterogeneity as consequence of different domestic currencies, facilitating payments between residents and non-residents. This would permit a generalized usage of a banking-currency according to double-entry bookkeeping principles, being the transaction vehicle between different countries and, therefore, not affecting the financial system as a whole (equal debits and credits). As described by Cencini (2008. Pp. 387-8) "*Keynes sembra perfettamente cosciente della necessità di fornire al mondo un´unità di misura delle diverse monete nazionali, una forma comune capace di renderle omogenee, stabilendo tra di loro dei rapport di cambio assoluti. Al bancor egli affida il duplice compito di attribuire alle monete dei vari paesi una forma che consenta di risolvere il problema della loro intrinseca eterogeneità e di fare in modo che i pagamenti tra residenti e non-residenti possano essere veicolati al di fuori dei confine nazionali*".

Keynes's Plan, in this way, would use *Bancor* as universal currency for international transactions worldwide, acting as a vehicle of multilateral compensation (clearing), and providing member countries with the needed monetary liquidity as a vehicle

to carry out commercial and financial exchanges (Cencini, 2008). Keynes (1980, Pp. 171) clearly explains his plan as one "*to generalize the essential principle of banking as it is exhibited within any closed system. This principle is the necessary equality of credits and debits. If no credits can be removed outside the clearing system, but only transferred within it, the Union can never be in any difficulty as regards the honoring of checks drawn upon it* ". The plan of Keynes was -and still is- revolutionary as it works as a dynamic, i.e. inter-temporal, compensation mechanism between debtors and creditors providing both, at the same time, the necessary monetary vehicle to settle their commercial and financial transactions without having to purchase other country´s currency, that is, for free.

Nevertheless, the plan of Keynes understood the *Bancor* as endowed with a positive value based in a parity with gold. Here lies the limitation of the plan, as the Clearing Union would be emitting a gold-based currency -instead of only executing a pure compensation mechanism- and maintaining this relationship at a certain point would be incompatible with the needed international liquidity[5]. As Cencini (2008. Pp. 393) examines: "*Purtroppo* [Keynes] *non osò o non fu in grado di presentare nella sua integrità un piano di riforma fondato sull´uso veicolare di una nuova moneta internazionale di natura puramente bancaria*". That is, even though his plan was tremendously advanced, Keynes saw his proposed *Bancor* as a gold-linked asset and not only as a pure monetary vehicle. Why? The hypothesis of Cencini (ibidem. Pp. 393) looks plausible: "*Forse per convincere un piú vasto pubblico o per non alienarsi i suoi colleghi statunitensi, egli annacquò il suo progetto e vi introdusse elementi che finirono per snaturarlo. A causa delle reazioni suscitate dal suo piano di riforma e nell´intento di rendere accettabile il bancor, Keynes ne subordinò l'emissione alla creazione di un deposito in divise e oro presso l'International Clearing Union e trasformò l'emissione di bancor in un'operazione creditizia. Andava così persa l'originalità della proposta di creare il bancor come moneta veicolare internazionale*".

In this way, Keynes, altered his original plan based on a pure international compensation mechanism (clearing) using *Bancor* as a pure monetary vehicle, making it into a credit scheme, in which deposits are accepted in gold, wrongly reformulating the *Bancor* as a net financial asset, with a positive value based on a gold-parity, far from the original idea, i.e. "*Conceived as an international asset endowed with a positive purchasing power*" (Cencini and Schmitt, 1991. Pp. 109).

[5] As it will be soon analyzed, this issue is known as the Triffin's Dilemma (Triffin, 1963).

This incorrect confusion between money (vehicle) and the content of money (positive value within the vehicle, i.e. purchasing power) would prevail until today, even among many economists. But let's think about it: how would it be possible for the Clearing Union to create purchasing power? Is it possible to create a positive value-asset *ex-nihilo* without a productive process underneath? Certainly not. As Cencini and Schmitt (ibidem. Pp. 109) ask: "*The question arises of how the world purchasing power of bancor can be determined. The analogy with the working of national economies is of no help, since no international production is available to back the hypothetical value of bancor[...] Total indeterminacy, if not absolute arbitrariness, is therefore the only possible answer to our question*".

Still, the plan of Keynes was the closest attempt in modern economic history to have a true international clearing system, as analyzed by Piffaretti (2017. Pp. 123): "*The core innovation of Keynes was the generalization of the principle of national banking to international transactions, creating an international clearing system operating within the necessary equality of credits and debits very much similar to central bank clearing*". Even though imperfect, it could have been easily corrected. As Cencini and Schmitt (ibidem. Pp. 114) say: "*International economics is concerned only with pure exchange and, therefore, that the international standard issued by the Clearing Union cannot be associated with any real output. Thus, bancor never define a positive purchasing power; instead they* [would have been] *issued and used as pure vehicular money*". In this way, it would have worked as a real clearing house, a missed opportunity indeed.

On the other hand, Harry Dexter White, a Harvard economist from the U.S. Treasury Department, was in charge of the American proposal for the Monetary Reform. The White Plan, which he started to prepare right after Pearl Harbor in December 1941, obviously did not contemplate such penalties; instead, it substituted Keynes' taxes with ambiguous sanctions only against countries with chronic external surpluses. Keynes had proposed that countries were provided credit lines at the Clearing Union totalizing $26 billion, the equivalent today of $16 trillion, but the American feared that the financial resources of the Clearing Union would be used in full to purchase American goods, forcing them to effectively give them away. White finally forced down Keynes' $26 billion to $5 billion[6]. Additionally, the White Plan dismissed the *Bancor*, advising for a Stabilization Fund (instead of the Clearing Union) which lend national currencies

[6] According to Eichengreen (2011. Pp. 47) based on Robert Skidelsky (2001) "*John Maynard Keynes*". Vol. 3: "*Fighting for Freedom*".

previously deposited by governments in proportion to their quotas. Obviously, the United States would provide the single largest share of the Fund's resources (as it is still the case nowadays), in U.S. dollars, consolidating in this way the specific weight of the U.S. dollar in the post-war world economy, and giving birth to the International Monetary Fund.

Regarding White's plan, Skidelsky (2003, Pp. 696) reflects: "*White's economic plans were mixed up with political aims which Keynes did not share. Partly these simply reflected the fact that the Americans held all the trumps and could design post-war arrangements to suit themselves. Partly they reflected a personal agenda which remains to this day a matter of controversy*". For Skidelsky "*The Keynes and White Plans were based on different logics, which reflected different historical perspectives. Both sought to avoid the currency and trade wars of the 1930s -they wanted, that is, to recreate a liberal world economy in which stable exchange rates and free trade were the norm. For Keynes the main condition of this was that surplus countries be forced to liquidate (that is, spend) their surpluses[…] Keynes's Clearing Union, which pivoted on the single requirement for creditors to spend their surpluses, was conceptually more elegant than White's separation of lending functions into two institutions*" (Skidelsky, ibidem. Pp. 698-9). Keynes' main criticism to the U.S. Proposal was that it "*makes no attempt to use the banking principle and one-way gold convertibility and is in fact not much more than a version of the gold standard, which simply aims at multiplying the effective volume of the gold base*" (in Keynes' own words quoted by Skidelsky, 2003. Pp. 700).

In his speech in the House of Lords, on 18th May 1943, Keynes presented the arguments in favor of his Plan: "*Multilateral clearing –'in English', Keynes said, 'a universal currency valid for all trade transactions in all the world*" (Skidelsky, 2003. Pp. 706).

It was July 1944, and the final accord based upon White's proposal took place after two intense weeks at Bretton Woods, New Hampshire. Lord Keynes would die less than two years later, on April 21st, 1946.

I.III. Alternative Proposals: Schumacher, Triffin, and Rueff

In addition to the failed plan of Keynes at Bretton Woods in 1944, other proposals tried to set a new system of international payments with no success. We will summarize the ideas of Schumacher, Triffin and Rueff below.

Ernst Friedrich Schumacher was a young German economist fleeing from Nazism when, relocated in England, he wrote in 1943 a proposal for a multilateral compensation through an international clearing scheme. In it, countries would compensate themselves their credits and debits, regardless their domestic currency denomination, through the creation in every country of a compensation fund (which he called *pool clearing*). This *pool clearing* would receive and extend all international payments coming from residents, in domestic currency. After the end of every period (typically one year), once it was known which countries were balanced, which were debtors and which were creditors, the creditor countries would finance their own fund deficit by selling public bonds for the surplus amount, whereas debtor countries would buy public bonds for the deficit amount. In both cases the equilibrium would be achieved through open market operations. The balances of debtor and creditor countries would converge into the multilateral compensation system which assigned creditors the ownership of the debtor's compensation fund's balance.

This original proposal raised the attention of Keynes, who made the young Schumacher his protégée and recommended him for a teaching position at Oxford. Actually, Keynes proposal took many aspects of Schumacher's. The main difference between these two approaches was that the proposal of the German economist would work independently of each country's own currency as it would need no common international standard, e.g. *Bancor*, in order to carry out international compensations; working, in this way, as a multi-currency scheme: "*It will be clear that the International Clearing Office requires no finance of its own, nor does it have to create a new international currency*" (Schumacher, 1943. Pp. 153). Under this scheme, international payments at the end of the period would be made in kind, but not in currency. As Schumacher (ibidem. Pp. 154-5) explains: "*The Gordian knot is cut by making all the surplus countries the joint owners of the balances in all the deficit countries[…] No matter what is the technical set-up, every country must ultimately pay for what it buys, which means, in the long run, that it must achieve a position in which it can supply as much in goods and services to the rest of the world as it receives*".

The problem with Schumacher's proposal is the condition of long term balance between imports and exports. As Cencini (2008. Pp. 394-6) sustains, even though Schumacher's proposal transforms a bilateral system -arbitrary and discriminatory- to a new one multilateral, an equilibrium between inflows and outflows is only indispensable on the monetary aspects, but not on the financial one, since a country could balance its net imports issuing financial securities. In

addition, the problem with this proposal is that a given domestic currency cannot replace an international currency, which is indispensable for serving as a common and global vehicle of international payments among different countries with different domestic currencies.

In addition to Schumacher's critic to Bretton Woods Agreement, the Belgian-American economist Robert Triffin severely criticized the Bretton Woods system, highlighting the necessity of a reform of the international payment system which would provide proper liquidity without using any national currency. He sustained that international reserves are the fundamental element for international transactions and payments: "*Countries must still look today to their own monetary reserves as their first and most important line of defense against temporary deficits in their balance of payments*" (Triffin, 1961. Pp. 33). Triffin also sustained that the Gold Exchange Standard was incapable to provide an appropriate level of international liquidity without debasing the U.S. dollar; in other words, the U.S. gold reserves and the U.S. dollar cannot grow *pari passu* in the long term. Therefore, either the dollar gets debased pushing inflation on the international system or the international system gets not enough liquidity, pushing deflation. This was known as the *Triffin's Paradox* or *Triffin's Dilemma*.

The origin of the dilemma was a flawed system "*whose operation rested on the commitment of the United States to provide two reserve assets, gold and dollars, both at a fixed price, but where the supply of one was elastic while the other was not*" (Eichengreen, 2011. Pp. 50). Effectively, in Triffin's own words: "*The basic absurdity of the gold exchange standard is that it makes the international monetary system highly dependent on individual countries' decisions about the continued use of one or a few national currencies as monetary reserves[…] the gold exchange standard may, but does not necessarily, help in relieving a shortage of world monetary reserves. It does so only to the extent that key currencies countries are willing to let their net reserve position decline through increases in their short-term monetary liabilities unmatched by corresponding increases in their own gross reserves. If they allow this to happen, however, and to continue indefinitely, they tend to bring about a collapse of the system itself through the gradual weakening of foreigners´ confidence in the key currencies*" (Triffin, 1961. Pp. 67).

But global finance and geopolitics were changing in those days, as explained by Eichengreen (2011. Pp. 49): "*In the 1940s it had been possible to argue that the immensity of U.S. economic power, combined with the severity of postwar economic problems in other countries, made it impossible for them to obtain dollars without American help. Come the 1950s,*

however, Germany had shown that by investing and cutting costs it was possible to restart the export engine and accumulate all the dollars that might be required. This was something at which France also eventually succeeded by devaluating the franc[…] It was something at which Britain only finally succeeded in the 1980s with the advent of Margaret Thatcher". Effectively, the impact of geopolitical conditions proved to be crucial to understand global monetary conditions[7]. Triffin anticipated these problems ten years before U.S. President Nixon's Shock of August 1971, in which Nixon unilaterally suspended the convertibility of the U.S. dollar to a fixed amount of $35 per ounce of gold.

In effect, Triffin's proposal was based on changing convertible U.S. dollar to gold -as reserve of value- for a currency emitted by the International Monetary Fund, equivalent to gold and called *Bancor*, as Keynes did, but, in this case, its emission would be linked to each country's deposit into the International Monetary Fund: "*The IMF lending capacity would be based on the accumulation of bancor accounts -in the form of deposits with the IMF- by member countries as part and parcel of their total monetary reserves, alongside of gold itself and fully equivalent to it in international settlements*" (Triffin, 1963. Pp. 38).

Triffin's plan mistook the difference between monetary and financial intermediation, thinking that international liquidity is just an amount of financial assets as deposits' guarantee at the International Monetary Fund, and not just a vehicle working as a medium of payment. Additionally, the issue of how to enforce every country to accept *Bancors* as a reserve currency for their international payments was not clear. Triffin's correct intentions were trying to replace the Federal Reserve and the U.S. dollar for the International Monetary Fund and *Bancors*, in order to de-nationalize the management of international liquidity. As analyzed by Cencini (2008. Pp. 398): "*Triffin (1963) non sbaglia nel ritenere che il nuovo sistema debba garantire la copertura reale dei pagamenti internazionali, ma non si avvede che tale risultato è ottenibile senza ricorrere all´oro e senza attribuire al bancor lo statuto di un attivo*". But Triffin's proposal misses the macroeconomic perspective by which all international payments involve countries and not only residents, and a sound system of international payments should solve two different issues, namely i. To provide the needed currency as a vehicle for the international payment and ii. To provide real coverage for these payments (Cencini, ibidem).

[7] A current geopolitical analysis, and its global monetary implications, will be discussed further in Chapter VII.

Finally, French economist Jacques Rueff also started to alert -after the Conference of Genoa in 1922- about the problem of international payments and the adoption of U.S. dollar (convertible to gold) as international reserve currency. Rueff had worked at the Bank of France during the 1930's before the Vichy collaborationist French government. A fervent advocate of free markets and Gold Standard as a guarantee of no government intrusion, Rueff advocated for the necessity of an international means of payments and means of exchange which was not the U.S. dollar but a *neutral* currency, emitted by no country in particular and avoiding, in this way, what was later called the *Original Sin*[8]. The French economist denounced that the United States was able to run balance of payments deficits "*without tears*"[9] (Rueff, 1963. Pp. 322), i.e. had the capacity to pay for its purchase of foreign goods, services and companies using currency created *ex nihilo*, something that French Finance Minister Valéry Giscard d'Estaing described as an "*exorbitant privilege*" [10].

This anomaly was noticed by Rueff, who criticized the agreements of the Conference of Genoa (1922) and the international setting agreed in Bretton Woods (1944), and claimed that the U.S. dollars used by the U.S. importers will remain deposited within the U.S. banking system in which they were emitted. On the other hand, after its exports, the rest of the world will receive just acknowledgements of debt (IOUs) of the U.S. banking system, that is, just paper and not rights on real income. This problem is a direct consequence of considering a domestic currency (in this case, the U.S. dollar) as an asset, in and out of the United States.

[8] *Original Sin* was the name given by economists Ricardo Hausmann, Ugo Panizza, and Barry Eichengreen to the situation in which countries (typically developing ones) get indebted abroad in foreign currency (typically U.S. dollars) but, as they generate their national income in domestic currency, then they may face currency mismatch and financial trouble for repayment.

[9] In reality, the U.S. external deficits are not "*sans pleurs"* (without tears) as sustained by Rueff, because the increasing level of debt is self-reinforced by increasing positive interest accrued to an eventual unsustainable point. Additionally, the U.S. dollars outside the U.S. economy, i.e. Eurodollars, cause a global monetary pathology with effects on the U.S. economy, as it will be explained further in this work.

[10] The term *Exorbitant Privilege* refers to the advantages of the United States for having imposed their domestic currency, the U.S. dollar, as global currency (*moneta franca*). In the 1960's the term was coined -and used several times by General Charles de Gaulle- by the French Minister of Finance (and later President of the French Republic), Valéry Giscard d'Estaing.

In 1929, Rueff was involved in the Committee of the League's Gold, studying problems of the international monetary system. His report *Abnormal Fluctuations in the Purchasing Power of Gold* addresses the danger posed by the gold-exchange standard, warning that, whereas the effects of domestic economic policy mistakes were limited to a specific country, the nature of the reserve-currency system -such as the U.S. dollar- would transmit deflation or inflation on a worldwide scale. From 1930 to 1933 Rueff served as French financial advisor, based in London, in charge of the Bank of France's sterling reserves, warning about the deflationary collapse, i.e. glut, of the gold-exchange standard.

The problem with the United States assuming the role of central bank of the world is that the U.S. dollar is also a national currency subject to national public policies, and American banks are not a supranational organization. This mix between national and international functions creates a confusion which "*is bound to create serious difficulties for the dollar-exchange standard. The first is related to the use of the dollar as international unit of payment. In fact, if the American currency is certainly a perfect means of payment within the USA, things change radically when the dollar is used outside its domestic boundaries. Issued by the American banking system, the dollar is a claim over this very system*" (Cencini and Schmitt, 1991. Pp. 49). The latter means that, when a payment between Americans takes place, this is perfectly valid; nevertheless, when a United States' resident pays the rest of the world "*on the contrary, it sends abroad a simple promise since, outside its national economic system, the dollar defines the acknowledgment of debt of the whole American nation*" (Cencini and Schmitt, ibidem. Pp. 50).

This *exorbitant privilege* of the United States, importing goods and services in exchange of just paper-based IOU's which will rarely be paid, was sharply understood by Rueff in his time: "*This is how the gold exchange standard brought about an immense revolution and produced the secret of a deficit without tears, to the countries in possession of a currency benefiting from international prestige allowing them to give without taking, to lend without borrowing, and to get without paying*" (Rueff, 1963. Pp. 322).

The privilege is even more material, as most of the paper dollars never leave the United States. It is all about a bookkeeping procedure, as detailed by Cencini and Schmitt (1991. Pp. 50) "*When an American resident asks his commercial bank to pay his foreign creditor, the operation is not carried out by sending abroad part of the US domestic currency. Indeed, the foreign bank is credited by the US bank, which remains the monetary institution where the dollars paid are still deposited[…] The bank of the creditor obtains a claim over a deposit in dollars which will always be defined as a US deposit[...] The rules of double*

accounting are such that US payments are made without decreasing the amount of deposits of the American banking system. The United States do not lose the amount of dollars earned by the rest of the world, and it is hard to see how it could still be possible to claim for the validity of US international payments".

This flaw scheme was seen by Rueff, who fiercely opposed the international dollar regime. In Rueff own words: "*Everything happens as if these currencies had never been exported in the first place. Entering the credit system of the creditor country, but remaining in the debtor country, the claims representing the deficit are thus doubled*" (Rueff, 1963. Pp. 324). In this way, the United States is able to buy goods and services from the world by just doing a bookkeeping operation without losing a dime of their domestic purchasing power deposited in their domestic banking system. An exorbitant privilege indeed.

I.IV. American Dollar, an *Exorbitant Privilege*, and the Triffin's Dilemma

In 1944, the Conference of Bretton Woods fixed the convertibility of U.S dollars to gold at USD 35 per ounce giving origin to the era of the U.S. dollar as the sole international reserve currency. In this way, the United States would never have a crisis of balance of payments because they purchase imports in their own currency. As Barry Eichengreen explains: "*For more than half a century the dollar has been the world's monetary lingua franca(…) The fact that nearly three-quarters of all $100 bills circulate outside the United States attests to the dollar's dominance(…) The dollar is used in 85 percent of all foreign exchange transactions worldwide. It accounts for nearly half of the global stock of international debt securities. It is the form in which central banks hold more than 60 percent of their foreign currency reserves(…) About $500 billion of U.S. currency circulates outside the United States, for which foreigners have had to provide the United States with $500 billions of actual goods and services. Even more important is that foreign firms and banks hold not just U.S. currency but bills and bonds that are convenient for international transactions and at the same time have the attraction of bearing interest*[11]*(...) the interest that the United States must pay on its foreign liabilities is two to three percentage points less than the rate of return on its foreign investments. The U.S. can run an external deficit in the amount of this difference,*

[11] Foreign central banks hold more than USD 5 trillion in bonds of the U.S. Treasury and quasi-governmental agencies like Fannie Mae and Freddie Mac. (Eichengreen, 2011. Pp. 4).

importing more than it exports and consuming more than it produces year after year without becoming more indebted to the rest of the world" (Eichengreen, 2011. Pp. 1-4)

Actually, the United States is seriously indebted to the rest of the World as the U.S. dollar is an acknowledgment of debt of the American banking system and, therefore, an acknowledgment of debt of the country itself when credited abroad. Yet, -as explained- this external debt of the United States is purely monetary, since the U.S. benefits from the *exorbitant privilege* of paying its net imports with its own acknowledgements of debt (IOU's); This means to give a mere promise to pay in paper for real goods and services purchased abroad. Providing the United States is permitted to pay its net real purchases with its own national currency, its external debt will never actually be paid.

Two empirical discrepancies (or *puzzles*) on national accounts may provide evidence of this *Exorbitant Privilege*, namely i) the *income puzzle* of positive net income flows to the U.S. even as their net international investment position (NIIP)[12] is negative and substantial, and ii) the *position puzzle* of a sizeable gap between the reported U.S. negative net international investment position and the accumulated current account deficits in which NIIP is significantly smaller than the accumulated current account deficits (Curcuru et al., 2013).

The significative difference between the U.S. cumulative current account deficits and the negative U.S. net international investment position along with the United States having a positive income balance in spite of a severely negative NIIP (which is counterintuitive for having much more liabilities than assets and still earn an income higher than interest expenses) provide arguments for the hypothesis of the existence of a highly asymmetric financial system; due to the use of the U.S. dollar as international trade currency, which would unbalance the rest of the world's standard of living in favor of the United States by subsidizing American companies and residents.

[12] The net international investment position (NIIP) is the difference between the external financial assets and liabilities of a country. The external debt of a country includes government debt and private sector debt. The international investment position (IIP) of a country is a financial statement of the value and composition of its external financial assets and liabilities. A positive NIIP value indicates that a nation is a creditor nation, while a negative value indicates that it is a debtor nation.

Eichengreen describes the problem already foresaw by Rueff: "*The widespread international use of the dollar is similarly an advantage for American banks and firms. A German company exporting machine tools to China and receiving payment in dollars incurs the additional cost of converting those dollars into euros, the currency it uses to pay its workers and purchase its materials. Not so a U.S. exporter of machine tools. Unlike firms in other countries, the U.S. producer receives payment in the same currency, dollars, that it uses to pay its workers, suppliers, and shareholders*" (Eichengreen, 2011. Pp. 3). Furthermore, Austrian-School, American economist Mark Thornton adds that this asymmetry "*confers numerous benefits to individuals, companies, and government. Collectively, it also includes the ability to consume beyond our ability to produce*" (Thornton, 2013. Pp. 95). And, again, Eichengreen, states: "*it costs only a few cents for the Bureau of Engraving and Printing to produce a $100 bill, but other countries had to pony up $100 of actual goods and services in order to obtain one*" (Eichengreen, 2011. Pp.3). Clearly, French Minister and later president of France, Valéry Giscard d'Estaing, knew what he was saying when he coined the term *Exorbitant Privilege*.

However, being the central bank of the world under a fixed-exchange rate to $35 per ounce, like Bretton Woods established, was unsustainable and presented a dilemma, known as the *Triffin's Paradox* (or *Dilemma of Triffin*), named after the already cited Belgian economist, who arose a critique to the Bretton Woods system of U.S dollar fixed-value to gold. The dilemma between providing international liquidity or maintaining credibility on a fixed relation USD-gold was firstly stated in 1929 by Polish economist Feliks Mlynarski (1884-1972).

In 1960, Triffin testified before the U.S. Congress and alerted about serious flaws in the Bretton Woods system by which the U.S. pledged to convert their dollars at a fixed rate of USD 35 per ounce, which would produce a dollar-glut (deflation), or the accumulation of euro-dollars, that is, growing piles of U.S. dollars outside U.S. which caused, by 1960's, more U.S. dollars outside the U.S than gold at the U.S Treasury. Triffin predicted that this state of affairs was unsustainable because of a dilemma of maintaining either confidence in the U.S. dollar or global liquidity. If U.S. kept going providing liquidity then the confidence on the USD 35 per ounce would be unsustainable. History proved him right as in August 15th, 1971 U.S. President Richard Nixon stopped dollar convertibility, breaking the Bretton Woods system in what it is known as the *Nixon Shock*.

This idea had been in mind at the top decision-making level for some years, as it is told in Silber's biography of Paul Volcker (U.S. Undersecretary of the Treasury

for International Monetary Affairs 1969-74, and Fed Chairman 1979-87): "*National Security Memorandum Number Seven from Henry Kissinger, labeled 'secret' at the top and 'secret' at the bottom, greeted Volcker on January 21, 1969, a day after the* [presidential] *inauguration.* [in Volcker's own words]'*The President has directed the creation of a permanent Working Group to make recommendations on U.S. International Monetary Policy to the National Security Council (NSC) and to implement policy decisions'. Kissinger's memo designated Volcker as the chairman of the working group and asked that a study on international monetary policy be delivered to the NSC by February 15, 1969*" (Silber, 2012. Pp. 55). This movement was executed after long deliberations at the maximum level; the expectations were the U.S. dollar taking over gold as international currency, as described by Volcker's biographer: "*Volker's bombshell, suspending the convertibility of the dollar into gold, had been discussed before[…] He said, 'the major objective and potential advantage of suspension… would be to strengthen* [our]… *negotiating position… by eliminating… a run on our gold stock…* [and forcing] *foreign countries…* [to] *passively hold dollars or permit a gradual appreciation of their currencies'. Volcker felt that foreigners would willingly hold dollars if 'the United States retained reasonable price stability'. The dollar standard could replace the gold standard as long as America lived up to its responsibilities*" (Silber, 2012. Pp. 66).

Many years later, in his own autobiography, *Keeping at it. The Quest for Sound Money and Good Government* (2018), Paul Volcker would remember: "*The country was running a balance-of-payments deficit -spending more money abroad than it was getting back- and foreign governments were increasingly demanding that some of their dollars be converted into gold*" (Volcker, 2018. Pp. 45). And he continues "*This was a fundamental right established in the Bretton Woods agreement. At the end of 1945 our gold stock was $ 20 billion, about 70 percent of the total amount of gold held by central banks and governments worldwide and a multiple of all foreign official dollar holdings. By the end of 1961 our gold had declined to $ 17 billion, while our liabilities to foreigners had surged to $ 23 billion. Our gold no longer covered the amount of foreign dollar holdings entitled to 'convertibility'. Year by year, the discrepancy grew. General Charles de Gaulle, proudly returned to the presidency of France[…] He accelerated French purchases of gold. His finance minister, Valéry Giscard d'Estaing, protested America's 'exorbitant privilege' of easily financing its balance-of-payments deficits, and particularly US direct investments, by means of its trading partners' willingness to hold dollars*" (Volcker, 2018. Pp. 48). Volcker closes these memories recalling "*None of us were ready to simply abandon the Bretton Woods framework of fixed exchange rates and convertibility of the dollar into gold. Our analysis did, however, reinforce the need for change. Our remaining gold reserves in mid-1969 were only 25 percent of foreign-dollar liabilities, down from almost 80 percent at the beginning of the Kennedy administration eight years earlier. The Triffin dilemma*

was apparent for all to see" (Volcker, 2018. Pp. 64). But, as Triffin himself stated, a major transformation of the international monetary system has long been overdue, being this transformation indispensable and urgent (Triffin, 1960).

Yet, the American *exorbitant privilege* is not *sans pleurs* (without tears) as Rueff stated. The flip side of an increasingly massive U.S. external deficit (along the years, and financed by the emission of U.S. dollars) is the fact that this IOUs mass, i.e. U.S. dollars bills outside the U.S., is always increasing.

On the one hand, as the U.S. dollar emission carried out by the U.S. Federal Reserve is backed up by the U.S. Treasury debt, such amount of debt (always increasing as the U.S. runs external deficits year after year), which is naturally denominated in U.S. dollars, also accrues interests, which are also denominated in U.S. dollars. All in all, the U.S. Treasury debt will grow exponentially towards an unsustainable breakpoint[13]. As of today, a huge and growing pool of U.S. debt is reaching above USD 22 trillion and increasing at around USD 1 trillion a year (Haass, 2020. Pp. 238). This is naturally diluting confidence in the dollar, threatening a currency collapse.

On the other hand, every time that the United States pays for its imports with U.S. dollars, a foreign bank is credited, and this amount of U.S. dollars is recorded on the asset side of its balance sheet, defining a sum of Eurodollars outside the United States. This Eurodollar market expands as the U.S. external deficit continues (and eventually increases) overtime. Nevertheless, the American currency which gave origin to those Eurodollars is still registered in the same banking system in which it was created, i.e. the U.S. banking system. Therefore, external settlements of U.S. international transactions (imports) imply a duplication of the American currency. The latter has negative domestic implications, as any variation in the exchange rate due to interventions on the international market is also reflected in the U.S. domestic currency, but the Eurodollar mass is not anymore under the control of American monetary authority.

Effectively, this growing Eurodollar mass becomes a monetary *wild horse* creating speculative waves impossible to be controlled. In this way, the own nature of the

[13] As of early April 2021, American ratio gross government debt/GDP is estimated in 133.6% (Bloomberg, IMF).

Eurodollars is carcinogenic, in the sense that presents an uncontrolled, self-reinforcing growth pattern which is independent of the system in which it was originally created, i.e. the U.S. banking system. This is a pathological capital, devoid money, duplicated and empty currency. This monetary pathology only would be increasingly reduced with sustainable U.S. external surpluses, which would balance out this monetary imbalance by gradually reabsorbing it. Yet, since the early 1970s this is not the case in the U.S. balance of payments, and it seems the U.S. is far from that.

Moreover, as a considerable part of this growing Eurodollar mass is channelized back to the U.S. financial markets (equity and debt markets, structured products, real estate backed-securities, etc.) this massive flow produces unstable financial bubbles within the very heart of the U.S. financial system by an artificial reflation of its financial securities and assets, along with explosive volatilities in global financial markets, weakening the whole world financial system and making it unstable. Eurodollars represent pure speculative capital, empty currency, whose "*erratic movements are always capable of creating disruptive pressures on any national currency*" (Cencini and Schmitt, 1991. Pp. 70).

Effectively, the increasing U.S. external deficits paid by empty money is a losing game not only for the rest of the world, but also for the United States itself as, in the end, such flooding of Eurodollars, as a Mary Shelly's *Frankenstein*, will turn back against its own creator, the United States economy, generating a destructive wave for the U.S. real production, jobs and prosperity. This harmful Eurodollar creation, doomed to go out of control, is "*strictly related to the use of the dollar as key currency and to the American external deficit*" (Cencini and Schmitt, ibidem. Pp. 70) and, when these bubbles eventually explode, this is inevitably transmitted to the real economy, taking a huge toll to the U.S economy, and the rest of the world, as recently happened in 2007-8.

The origin of the problem is not within the U.S. dollar per se. Even in the -unlikely- case of the United States running external surpluses from now on, other currencies will take the place of the Eurodollar, as international commerce is a zero sum game; therefore, we will see the currency of a new external debtor providing international liquidity. It is indistinct whether we analyze Eurodollar, Euro-yuan, or any other as, clearly, the problem is structural and systemic, given the current non-system of international payments by which external surpluses and deficits cannot be compensated under an absolute exchange scheme using a

neutral international, and not national, means of payment. The current non-system of international payments is conceived in a way that it necessarily needs a key currency and, as far as it is established, this key currency will always be a national one, regardless of its color.

All in all, without a compensation mechanism for international payments, these payments can only be settled using a national currency, and this is the very origin of the problem: "*The exchange standard system is so conceived as to require the use of a key currency, and as soon as a national money is made to play this role the mechanism of eurocurrency creation is set at work and can only be dismantled by a radical change in the entire structure of monetary payments*" (Cencini and Schmitt, ibidem. Pp. 71).

I.V. The *Greenback* in a New World Configuration

The world global monetary configuration dates back to end of World War II. Nevertheless, global conditions -both economic and geopolitical- have changed, and it seems they will continue changing. As Eichengreen (2011. Pp. 121) explains: "*The post-World War II recovery of Western Europe and Japan and now the emergence of China, India, and Brazil have reduced the economic dominance of the United States. It is not obvious why the dollar, the currency of an economy that no longer accounts for a majority of the world's industrial production, should be used to invoice and settle a majority of the world's international transactions. Nor is it clear why the dollar should still constitute a majority of the reserves of central banks and governments*".

After the triggering of the last global financial crisis in 2007-8, the Governor of The People's Bank of China, which was holding -at that time- the bulk of 13% of all U.S. sovereign debt (Eichengreen, ibidem), Zhou Xiaochuan, made a speech[14] in which he highlighted the necessity of addressing "*a long-existing but still unanswered question[…] what kind of international reserve currency do we need to secure global financial stability and facilitate world economic growth*" (Zhou, 2009. Pp. 1). In his statement, the Chinese central banker claims for an *international reserve currency* which could be "*disconnected from economic conditions and sovereign interests of any single country*" (ibidem. Pp.1), affirming that "*the Triffin Dilemma, i.e., the issuing countries of reserve currencies*

[14] Governor Zhou Xiaochuan (March 23th, 2009) "*Reform the International Monetary System*". People's Bank of China. We will go back to Zhou's speech in Chapter VII to analyze monetary and geopolitical implications.

cannot maintain the value of the reserve currencies while providing liquidity to the world, still exists" (ibidem. Pp.1).

Zhou's article attracted much attention within the international intellectual and power circles[15]. In November 2009, the influential magazine Foreign Affairs published an article of C. Fred Bergsten[16] stating that the solution asked by the Chinese central banker would be in the *best interests* of both the United States and the rest of the World[17]. In the same article, Bergsten highlights the implications of the current international monetary system in which the U.S dollar "*has made it much easier for the United States to finance, and thus run up, large trade and current account deficits with the rest of the world over the past 30 years. These huge inflows of foreign capital, however, turned out to be an important cause of the current economic crisis, because they contributed to the low interest rates, excessive liquidity, and loose monetary policies that, in combination with lax financial supervision, brought on the overleveraging and underpricing of risk that produced the meltdown*" (Bergsten, 2009. Pp. 20). Bergsten even affirms that Washington D.C. should welcome initiatives like the one advocated by China in order to start serious discussions of reforming the international monetary system.

Even an institution at the core of the status quo such as the IMF, through its *Strategy, Policy, and Review Department*, published in 2010 an in-depth, 35-page analysis[18] advising the adoption of a world reserve currency established and administered by a Global Central Bank: "*A global currency, bancor, issued by a global central bank would be designed as a stable store of value that is not tied exclusively to the conditions of any particular economy*" (IMF, 2010. Pp. 27).

[15] See: Financial Times (March 24th, 2009) "*China Calls for a New Reserve Currency*" by Jamil Anderlini.

[16] C. Fred Bergsten had first-hand dealing with these issues as he was Assistant for International Economic Affairs to Henry Kissinger at the National Security Council (1969-1971), and then, from 1977 to 1981, he served at the U.S. Treasury Department as Assistant Secretary for International Affairs during the Carter administration.

[17] C. Fred Bergsten. "*The Dollar and the Deficits. How Washington can Prevent the Next Crisis*". Foreign Affairs Magazine. November/December 2009.

[18] "*Reserve Accumulation and International Monetary Stability*". International Monetary Fund. Strategy. Policy and Review Department. April 13th, 2010.

From the 1920's until now, a long road has been travelled, yet, the same old problem: the impossibility of printing *foreign valuta*. As for the dollar, for the moment still has the advantage of incumbency; but for how long?

Chapter II
Brief Theoretical Framework

"The object of persuading economists to reexamine critically the whole corpus of modern macroeconomics rests upon my long-established conviction that the soi-disant post-Keynesian or neo-Keynesian school is built around a faulty nucleus"

Bernard Schmitt
French Economist – Founder of Quantum Economics
Macroeconomic Theory. A Fundamental Revision (1972, Preface)

Since this work analyzes, diagnoses, and proposes from a *Quantum* monetary approach, then, it is crucial, at least in a very succinct way, to clarify the basic understandings of this macroeconomic school. Following it is briefly developed a theoretical framework, namely i. The *Quantum* macroeconomic approach to monetary theory, and ii. The *Quantum* macroeconomic approach to international monetary economics.

II.I. A *Quantum* Macro Approach to Monetary Theory

II.I.I. Value and Money

Since time immemorial humankind has asked itself what economic value is, and also, what money is. Economists and thinkers tried to articulate a coherent *theory of value* and, in parallel, a *monetary theory* in order to answer these queries explaining, in this way, the nature and characteristics of economic value, and also the nature and peculiarities of this ancient human creation called money.

Questions around *value* and *money* were -and still are- at the core of the macroeconomic analysis. It is fundamental to understand how a modern macroeconomic system works and how (economic) value, and ultimate

(economic) wealth, is generated within a country. In addition, and since the current Western economic system is a capitalist one based not on barter but on monetary transactions by which money is imbedded and pervasive, it is fundamental to understand the nature of money and how it works. Money and economic value, their nature and laws, are the first and foremost concepts to be understood in macroeconomics.

Classical economists presented the first reflections about this matter. For Scottish economist Adam Smith, father of the Economic Science and author of seminal work *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776), it is human labor the sole and ultimate source of value, and also the definitive standard for measuring and comparing different goods. However, Smith differentiates two kind of value for goods namely i. *value-in-use*, i.e. power for satisfying human needs (e.g. water), and ii. *value-in-exchange*, i.e. quantity of goods and services we may obtain by exchanging it in the market (e.g. gold or diamonds). In his magnum opus, Smith also distinguishes *money* from *money's worth*: "*not only to express the amount of the metal pieces of which it is composed, but to include in its signification some obscure reference to the goods which can be had in exchange for them*" (Smith, 1776. Vol. II. Pp. 22). In this way, the great Scottish moral philosopher illuminates on something that, even nowadays, many economists frequently overlook; that is, money and purchasing power are not the same concepts, as the former refers to a (nominal) vehicle for transporting value whereas the latter refers to the (real) value itself and, therefore, to a money that has the power to make purchases and settle debts.

English economist David Ricardo (1817) proposed that the value of a certain good would be given in terms of another good or commodity, provided that the value of such commodity was invariable as a fixed standard measurement, such as the meter. Gold standard was based on this *Ricardian* conception. The failure of gold standard in the past twentieth century raises the question of whether it is possible to have such a standard-good whose value is invariable through time. As such commodity was never identified (and it will never be) the latter question seems to have a negative answer. David Ricardo's search for an invariable standard of value was destined to fail not because Ricardo failed to find it, but because it cannot exist[19]. As long as the unit of measure is considered to be

[19] As will see, some years later, the Austrian School of Economics proposes its Subjective Theory of Value in which they sustain that economic value is, at the end, subjective. But, all in all, and beyond what the Austrians sustain, what it's true, even in the case of the -allegedly- most stable goods, like gold, is that an invariable economic standard measure, like the meter, cannot exist.

dimensional, Ricardo's search is in vain. As human labor alone is the only source of value, but this human labor, once transformed into goods, cannot hold a fixed value, as this will depend on needs and preferences of other people, there is a logical impossibility to determine this value created by a dimensional standard in economics. As explained by Cencini (2008. Pp. 58) "*Per Ricardo, la ricerca dell'unità di misura coincide con quella di una merce il cui valore non varia[…] Il lavoro è il principio stesso del valore e non può quindi avere un valore. Il lavoro misura i prodotti, il loro valore, ma non misura sé stesso. Il lavoro non ha quindi valore, né come creatore di valore, né come misura di valore*". Cencini (ibidem. Pp. 81) goes beyond stating that "*Ricardo sacrificherà parte della sua attività alla vana ricerca di una misura invariable del valore*".

Later on, German philosopher Karl Marx, in his opus *Das Kapital* (1867), also sustains, as Smith (1776), that labor is the only source of economic value and, therefore, it cannot have a positive value itself. For Marx, labor is the *substance* and *measure* of value, but it has not intrinsic value. Effectively, it would be the *incorporated-labor* into the product (which, for Marx, ultimately is time) what gives value to a given product. This notion presents some difficulties in distinguishing between concrete and abstract labor, and between simple and complex skilled labor. These difficulties show that, contrary to the Marxist idea, labor cannot be the unit of measurement of value since it is not, and it will never be, homogeneous. Additionally, it would be impossible to come out with a conversion formula in order to homogenize different kinds of labors and make them comparable.

A common denominator for these Classical economic thinkers was the fact that value is -in some way or another- explained by human labor, establishing a *Theory of Labor-Value*. Nevertheless, the unsolved problem for the Classical economists was the lack of a dimensional unity of measurement within goods to provide homogeneity to these different goods in order to be exchanged. As explained by Cencini (2008. Pp. 59): "*Siccome l'unità di misura, denominatore comune di tutti i beni prodotti, non può essere una qualità fisica, la determinazione del valore è un'operazione eminentemente economica e richiede l'identificazione dell'operazione che ne permette l'espressione puramente numerica[…] Tutta l'analisi classica dimostra invece che il lavoro è il principio creatore del valore. Come tale, non ne possiede alcuno e deve rigorosamente essere distinto dalla categoria delle merci, alla quale non appartiene*".

Today, as in the past, economists agree that economic value is given, bottom-line, by human labor and talent, but it is not possible to build a homogeneous labor

metric or tool to objectively measure this value based on dimensional units of measure.

It was the French-Swiss economist Leon Walras (1874) who introduced the concept of *numéraire*, defining it as a number and as a commodity that would act as a measurement unit and medium of exchange abandoning, in this way, the idea of a dimensional unity of measurement for a new one of relative value vis-à-vis a *numéraire*. Consequently, Walras introduces a whole new concept, this is, a way of measuring value which is external to the product itself, a pure and a-dimensional numerical form: "*Walras's main contribution to economic analysis is his discovery of the numerical nature of value as opposed to the dimensional conception of the Classics[…] Walras consistently maintained that economic value is not part of the physical dimension of goods and that a standard of economic value is therefore also dimensionless. In its essence, Walras's numéraire is nothing other than a purely numerical standard*" (Cencini, 2005. Pp. 7).

Effectively, for Walras there is no such thing as an absolute value within goods, therefore, goods do not contain any value-dimension. Only the comparison with a *neutral numéraire* -in a relative exchange among goods- would give the notion of value. Economic value, then, is no longer considered as an inherent dimension within goods but as a relationship of these goods with the *numéraire*. Consequently, value measurement would be provided by another good -used as a currency- at the moment of this (relative) exchange. The value of a given product comes out as a relative price (i.e. price of a good in terms of another good) and expressed through the *numéraire*.

The *numéraire*, then, is not a dimensional unit of value within the good, but a numerical a-dimensional quantity of the good chosen as a standard (e.g. gold), that is, certain quantity of this commodity, and not the value of this quantity within the measured good. In this way, if -for example- a kilo of wheat has a market value of ten grams of gold this is not because the kilo of wheat contained within ten grams of gold, but because ten grams of gold is the measure assigned to the kilo of wheat in the a-dimensional numéraire, i.e. gold. Then, ulterior exchanges will be necessarily relative, as they will be carried out through gold, and not as a consequence of barter. Notwithstanding his intuition of a pure numerical form, i.e. the *numéraire*, Walras was incapable to provide a purely numerical conception of prices, as goods taken as *numéraire*, e.g. gold, are not dimensionless when considered physically, and a quantity of goods is a physical concept. In fact, the insoluble problem with this *Walrasian* concept is that a quantity of any given

good -whether gold, silver, wheat, or any other commodity- cannot be a-dimensional by definition. Therefore, Walras's analysis is contradictory, or at least ambiguous. In this sense, the *Walrasian* definition of the *numéraire* as a pure number irremediably clashes with the attempt to identify the *numéraire* with a commodity.

But, undeniably, Walras is the introducer of the concept of a pure numerical form without physical dimension in economics, a precursor of our modern currency, a pure human construction with no intrinsic value, as described by Cencini (2008. Pp. 66) "*La moneta è quindi essenzialmente una forma numerica priva di ogni valore intrinseco. L'equivalente generale di Walras ha dunque la duplice natura di merce e di numerario*".

Additionally, the neo-classical, *Walrasian* approach develops on the concept of equilibrium, taken from physics (classical mechanics and thermodynamics), in which a general equilibrium (or *thermic death*) is reached as a consequence of direct exchanges of goods and services at a point in which no more exchanges are possible (i.e. *maximum entropy*). At this point of equilibrium all agents would reach their maximum satisfaction (Walras, 1874). This analysis presents two difficulties, namely i) the invariability of the *numéraire*, as in the *Ricardian* case, is not guaranteed since it is a good which is subject to price volatility (typically a precious metal such as silver or gold) and, more significantly, ii) a logical inconsistency given by an unsolved circular reference, because if the determination of value-price (expressed in *numéraire*) is given by a relative exchange which takes place following the interaction between demand and supply, then demand and supply are, in turn, a function of the price. In other words, the causal relationship of value determination results in a circular loop without continuity solution.

The problem with the *Walrasian* conception is that value would not exist previous to, and independent of, any relative exchange. As explained by Cencini (2008. Pp. 63) "*Lo scopo della teoria neoclassica non è semplicemente di affermare che se due merci si scambiano tra di loro una è la misura dell'altra, ma di dimostrare che il rapporto di scambio è determinato dall'equilibrio tra domande e offerta. Non si tratta di limitarsi a descrivere lo scambio, ma di determinarlo. Ora, domanda e offerta contribuiscono alla determinazione dello scambio e dei prezzi relativi soltanto se sono in grado di esercitare la loro forza prima che le merci siano scambiate[…] Siccome in questa fase i prezzi relativi non sono ancora conosciuti, non si capisce come sia possibile descrivere l'interazzione tra due forze la cui entità non è ancora stabilita*".

Later on, it was the British economist John M. Keynes (1936) who introduced the *monetary wage-unit* as a measurement unit for the value of goods and services. Keynes accepted the idea from the Classical economists that human labor is the origin of value, and the notion of a pure numerical comparison of physically heterogeneous goods and services. But Keynes resolves this by choosing the amount of employment associated with a given stock of goods as the standard of value, as he is "*perfectly aware of the difficulty related to the heterogeneity of labor itself, he avoids it by introducing the money wage as a unit of account* " (Cencini, 2001. Pp. 17). Keynes identifies the wage-unit as the value-form to turn goods comparable. In effect, wage-units allow a monetary measurement of labor -which is the source of value, but is not homogeneous- thus overcoming the difficulties of the Marxist theory of value. As explained by Cencini (2008. Pp. 68): "*Nell'analisi monetaria della produzione sviluppata dall'autore della Teoria Generale, ritroviamo l'idea, formulata dagli autori classici, che il lavoro è l'unico fattore macroeconomico della produzzione. L'espressione sociale del lavoro non è però più riferita al tempo, ma ai salari monetari*".

Keynesian monetary wage-units also overcome, in this way, the Ricardian problem of invariability of the medium of measurement, and the Walrasian monetary *numéraire* limitations, because monetary-wages allow the monetary measure of labor and give commodities a value-form to make them comparable.

But for Keynes, wages are not the price of labor, since labor is not a commodity, but the *creative-principle* of any economic value, as pointed out by the Classical economists. This creative-principle cannot have a price as a simple commodity. Wages are just a numerical expression of labor, not a price. As explained by Cencini (2001. Pp. 17) "*What really matters is to establish whether or not the expression of labour in wage units allows for its numerical measurement. If we refer back to Marx´s claim that labour has no value itself (which necessarily follows from it being the source of value), we immediately get the idea that labour cannot be expressed in terms of a unit of value. We also realize at once that labour is not a commodity, and cannot therefore have a price. The conclusion is straightforward: wage units can only be the numerical expression of labour*".

Regarding money, Keynes, as Smith, differentiated between *money-of-account* or nominal-money (*money* for Smith) and purchasing power or real-money proper (*money's worth* for Smith). It is in his lengthy work *A Treatise on Money* (Keynes, 1930) that Keynes differentiates between a nominal *money-of-account* and a real *money-proper*. In his *Classification of Money* (Keynes, 1930. Pp. 3) he explains that a pure numerical form as "*money-of-account, namely that in which debts and prices and*

general purchasing power are expressed, is the primary concept of a Theory of Money". Regarding *money-proper*, Keynes (ibidem. Pp. 3-4) explains: "*money-proper in the full sense of the term can only exist in relation to a money-of-account. Perhaps we may elucidate the distinction between money and money-of-account by saying that the money-of-account is the description or title and the money is the thing which answers to the description*".

On the other side, economists under the *Austrian School of Economics* rejected from the beginning the notion that an inherent value exists within a good. Carl Menger, in his seminal work *Principles of Economics* (1871), sustains that value is completely *subjective* and it depends only on *individual needs* and *individual judgements*. Menger builds his *Subjective Theory of Value* upon the notion that the value of a given good in the market does not depend on any intrinsic element of that good, as quantity of labor required, or other costs incurred, instead, it depends on the relative and subjective importance that an individual gives to that good related to his or her personal needs and preferences.

Finally, French economist Bernard Schmitt, father of the *Quantum* Monetary Macroeconomic School, takes from Smith and Keynes the nominal-real differentiation of money, between a (nominal) pure numerical-form, calling it money-flow, and a (real) income-money, calling it money-stock, and develops the *Monetary Theory of Production* intuited by Keynes (1936) in which the payment of monetary-wages to labor is crucial . This nominal-real differentiation of money is essential because "*money as it is issued by the bank has no economic value, or very little, for it has no connection, natural or legal, with any commodity[…] newly issued money offers no purchasing power over real goods and services. Once money is created, it has still to be converted into incomes*" (Schmitt, 1972. Pp. 139-40). Value and purchasing power, then, would be just a relationship, given by the payment to labor in monetary units of salary (wages) between products and nominal money. In the words of Schmitt (ibidem. Pp 140-141): "*In short, nominal money is issued by banks and real money is created by firms[…] Payments of factors of production converts nominal money into real money[…] When wages are paid out, the nature of money changes[…] After wages have been paid, money is no longer nominal, but real*".

In this way, money is originally issued as a simple numerical form (nominal). Its economic value is derived from its integration with current output (monetized production). Therefore, the value of money, i.e. its purchasing power or income, is the consequence of this integration between a pure numerical form (container) and output (content) and cannot exist detached from production. The latter

overthrows the classical dichotomy between real and monetary variables in standard macroeconomic analysis. Under the groundbreaking *Quantum* analysis, income is output, and output is income; therefore total supply (output) and total demand (income) are two sides of the same thing. This relationship does not refer to an equilibrium condition ($S^t = D^t$) but to an identity ($S^t \equiv D^t$) which is verified always and everywhere. Every production as a result of a productive process, generates its own associated, positive income which, giving its banking nature, will be necessarily deposited within that particular domestic banking system, being supplied (liabilities side in the bank's balance sheet) and demanded (assets side in the bank's balance sheet) at the same time, as double-entry bookkeeping testifies (Cencini, 2001). This represents a macroeconomic event as it modifies the economy-as-a-whole, increasing the total economic wealth of the country. As explained by Cencini (Ibidem. Pp. 2) "*production is an example of a macroeconomic event, every new production giving rise to an income that increases the wealth of the whole economic set*".

Under the *Quantum* approach, money is not an asset. Instead, it is a pure numerical form, a numéraire, an "*immaterial entity issued by banks every time they carry out a payment on behalf of their clients[…] money is a flow whose instantaneous circulation has a stock of income as its object. Banks create the flow but not its object, which is closely related to production*" (Cencini, ibidem. Pp. 3).

It is, then, through this *Quantum Monetary Theory of Production* that the nature of money is explained as it is: a container for value, but not economic value itself. Once again, Cencini (2008, Pp. 69) boldly explains that "*È nel momento stesso in cui le merci acquisiscono forma monetaria che esse sono create come oggetti economici e che l'unità di misura può essere definita. È la produzione intesa come creazione che, attribuendo forma numerica ai prodotti, permette di contarli in un'unità comune, puramente numerica e perfettamente a-dimensionale. Il reddito nato dalla produzione è il resultato dell'integrazione dei beni fisici nella forma monetaria; è il prodotto-nella-moneta*".

II.I.II. Production, Money, and Income

Concerning production, under the *Quantum* monetary theory, we must distinguish between physical and economic phenomena. From a physical standpoint, production is a *time-continuous process* of transformation from some initial state of

energy into another utility-form (reflected in the production function). Yet, from a pure economic point of view, production is an *instantaneous* event, an *emission*[20] of a *quantum of time* which contains the product of a particular period of continuous-time. It is then, not a process of transformation, but a pure process of creation, i.e. creation of economic value.

As we saw above, this emission takes place at the very moment of wage payments and, since our economic system is monetary-based, naturally this emission is monetary, then monetary wages. Production is, then, a macroeconomic process of creation which materializes in a specific instant, when the monetary wages are paid. As Cencini (2008. Pp. 100) explains *"in economia, la produzione è un fenomeno istantaneo in cui il prodotto è associato a una forma numerica (la moneta) che lo trasforma da semplice oggetto fisico in merce. Con il pagamento dei salari il prodotto diventa il contenuto reale della moneta e la moneta si trasforma da semplice flusso in reddito. Prodotto e reddito sono così il duplice risultato di un unico processo(…) Il prodotto è reddito e il reddito non è altro se non il prodotto-nella-moneta".*

This consideration takes us back to the notions of (nominal) money and (real) purchasing power already discussed, where it is the monetized production within money what provides purchasing power. Money (nominal), by itself, has no value whatsoever, it is just paper and ink (fiat money).

What *Quantum* monetary theory proposes is, indeed, pathbreaking. Effectively, monetary emissions would capture the production of a *quantum* of time in a given moment, which means capturing production backward in time, erasing in economics what is called in physics the *time asymmetry problem*. As explained by Cencini (2001. Pp. 206-7) "*Physicists and philosophers are still puzzled by the lack of consistency between physical theories -which are largely time symmetric- and physical phenomena involving radiation, thermodynamics and cosmology -which seem to be time asymmetric[…] from an economic point of view, production is not a (continuous or discontinuous) function of time[…] the nature of money is such that payments are instantaneous events. Hence, production is also an instantaneous event since it takes place at the very instant that labour costs are paid*".

The very moment of the monetary emission then, is when this quantum of time is monetized, containing within, in this way, the production of this period. In detailed words, "*during this period of continuous time, matter and energy are transformed into*

[20] *Quantum Monetary Macroeconomic School* is also known as the *School of Monetary Emissions*.

physical goods and services that make up the real object of production. What happens at the instant t_0 *when the costs of production are paid for is that the physical output resulting from this process of transformation is instantaneously given its monetary form. In the space of a mere instant, physical output is thus changed into a set of economic goods and services*" (Cencini, ibidem. Pp. 207).

Quantum monetary theory goes even forward from mainstream monetary theory (as quantum physics does from mainstream physics), stating that production is both *corpuscular* (i.e. a packet of value, a *discrete* variable) and *wave-like* (i.e. a wave of value, a *continuous* variable). The former results from the payment of wages at the precise time of the monetary emission, the latter defines the capturing of the whole period of continuous time corresponding to the process of physical transformation. Cencini (2001. Pp. 207) thoroughly explains that "*The emission of money has the twofold result of defining production in its corpuscular and wave-like aspects. The corpuscular aspect of production results from the fact that at* t_0 *matter and energy are given a new utility-form through a transaction -the payment of wages- that quantizes the period of time corresponding to their physical transformation and leads to the emission of the product as a quantum of time. The wave-like aspect is the instantaneous covering of this same lapse of time, both backwards and forwards*".

As seen, it was Keynes (1936) who first offered a *monetary theory of production* which links nominal bank money with real output expressing output in wage-units. This theory considers human labor the *one and only* macroeconomic factor of production, capturing the essence of the Classical economists in which economic value is only generated by human labor, talent, and creativity. In other words, "*It is workers who pay themselves through the intermediation of banks and firms, and thus convert or change the physical outcome of labour into a sum of money wages*" (Cencini, 2005. Pp. 122).

Effectively, it is at this particular moment of wage payment (and through it) that the economic production is emitted (in economic terms, not physical ones), being this *production-emission* the result of an output numerically associated to money (*into-the-money*). It is, then, at this very moment when physical goods become economic goods, i.e. economic production. In this process, nominal money (flow-money) becomes real money (stock-money or income). This is an *absolute exchange* (Schmitt, 1984) since it is not between two commodities but a pure human, creative process which results in a monetary income which will be, in turn, the object of a bank deposit. This income is a fully new economic product added to

the *economy-as-a-whole*, an therefore, a macroeconomic event, as detailed by Cencini (2005. Pp. 279) "*The production of a single economic agent is in fact of an equal macroeconomic nature as that of any group of agents, since it too engenders a net increase in national output, which entails a change, not just for the singular economic agent, but also for the society as a whole, of which he is a member*".

It is in this way, as intuited by Keynes in his *Monetary Theory of Production* proposed within his *General Theory of Employment, Interest and Money* (1936), that physical output becomes economic production by being monetized into the economic system through money and the monetary intermediation process carried out by the banking system. By observing our current economic organization we can corroborate that the banking system -as a part of the financial system- performs a double action, namely i) monetary intermediation and ii) financial intermediation. The first one at the moment of creating and providing the money-flow to the system (moment of *production-emission*), the second one at any moment in which an income-holder (stock money as a deposit) transfers income to another economic agent: *"Le banche sono così l'intermediario attraverso il quale moneta e prodotto diventano i termini di uno scambio assoluto. Nella sua accezione economica, la produzione è un'operazione istantanea con la quale il prodotto è cambiato (trasformato) in una somma di reddito espresso in unità di salario. Attraverso questo scambio assoluto, il prodotto diventa l'oggetto reale di un deposito bancario che si identifica con il reddito percipito dai lavoratori"* (Cencini 2008. Pp. 101).

II.II. A *Quantum* Macro Approach to International Monetary Economics

The study of monetary macroeconomics at international level addresses not anymore the domestic money flows within a country, but the monetary streams among sovereign entities. This macroeconomic branch is interested in the nature, causes, and consequences of these transnational flows. Monetary flows and exchange rate fluctuations in different countries, discrepancies in their balance of payments and sovereign debt accumulation and crises, are the most important subjects for the study of international monetary macroeconomics.

II.II.I. Transnational Exchange and Sovereign Entities

The macroeconomic analysis at international level presents fundamental differences comparing to the domestic one. Since there is no such thing as international production, because -by definition- every production is a national one corresponding to a given country; therefore, the study of international macroeconomics is the study of world exchanges and payments, leaving aside the study of production for national macroeconomics. That is, the domain of international macroeconomics is economic exchange, and not economic production. National economics is, then, economics of production and exchange, whereas international economics is purely focused on exchange. Yet, these exchanged goods and services produced within national economies are necessarily denominated in national currencies, as there is no such thing -so far- as a pure international currency. Every currency is the domestic currency of -at least- one country: "*At the international level the integration between money and output must first pass through the intermediation of national currencies*" (Cencini, 2005. Pp. 179).

Effectively, within a national economy there is monetary homogeneity, as there is an undifferentiated national currency. All monetary units issued by commercial banks within national borders conform one -and only- banking system which uses the same national currency and enables settlements among its participants through the same clearing system; in this way "*each commercial or private bank is a different institution whose spontaneous acknowledgement of debt would remain heterogeneous with respect to that issued by any other private bank was it not for the system of clearing operated by the central bank[…] the different bank monies are given a common form (central money) and become part of a unique national currency. Things are radically different at the international level. Each national currency is obviously distinct from any other, and their heterogeneity is not dealt with by any system of international clearing*" (Cencini, 2005. Pp. 179-180). This lack of an international clearing system is the origin of monetary pathologies like the -already seen- *German Transfer Problem*. Exchange rate markets do not provide a definitive solution for monetary heterogeneity, as national currencies do not reach a *value equivalence* but an *exchange price* based on a barter relationship, intrinsically unstable and self-reinforcing, as Cencini (2005. Pp. 182) summarizes: "*The problem of international payments is to create a system of international monetary flows connecting national flows*".

Alas, the world economy does not count on an international clearing house operated by a "*central bank of central banks along the same principles already at work within*

the majority of domestic banking systems. In the absence of such a monetary infrastructure, national currencies are bound to remain heterogeneous and the world will go on lacking of a true international monetary system" (Cencini, ibidem. Pp. 181). It is this lack of a true international currency, and an international clearing house within a *central bank of central banks*, what makes certain national currencies act as such (e.g. the American dollar) generating an enormous asymmetry between those countries entitled to use their currency as international means of payments and those which are not (e.g. emerging economies). The former will pay their net international purchases with their own acknowledgements of debt, which means currency emitted by themselves; whereas the latter, instead, will have to purchase this international currency at a cost, which will duplicate their expenditures. Cencini (2005. Pp. 184) boldly describes that there is a great disparity which "*exists between reserve and non-reserve currency countries[…] the asymmetry is such that while reserve currency countries can 'pay' for their net purchases simply by crediting the exporting countries with an amount of national money, non-reserve currency countries are forced to purchase a foreign currency in order to pay for their trade deficit*".

The structural cause underneath this asymmetry is the existence of national, sovereign economic entities. Under an international macroeconomic analysis it would be a mistake to consider countries as a sole aggregation of their residents, ignoring the economic sovereign entity status that countries have by themselves independently of their residents, since a given country has a "*kind of autonomous existence, not only from a political or a sociological point of view, but also from an economic standpoint*" (Cencini and Schmitt, 1991. Pp. 21).

In effect, a given country is an economic, sovereign entity on its own, hence, autonomous and independent from the sum of its residents. The international reserves denominated in the U.S. dollars at, for example, (the central bank of) Argentina are not propriety of some Argentine nationals or residents in Argentina, instead, are sovereign reserves, i.e. external savings of the country as an independent, organic economic unit. Likewise, a country could be sovereignly indebted and this sovereign debt would not represent debts for the individual balance sheets of its residents, but debts of the country itself, a sovereign liability. Under this notion, any sovereign asset or liability is a debit or credit pertaining to a specific country regardless of its nationals or residents. As it will be analyzed, a national economic entity (country A) incurs a (macroeconomic) sovereign debt if it has to acquire, at any time, the domestic currency of a different national entity (country B) in order to pay for its net international purchases, regardless of the

(microeconomic) payments already made by its residents in national currency. This is the reason of the sovereign debt formation and the origin of any sovereign debt crisis.

II.II.II. International Payments, National Currencies

As earlier introduced through the historical debate between economists Keynes and Ohlin-Rueff (1929) on the German war Reparations and the *Transfer Problem* in the 1920's, the analysis of the nature and dynamics of international payments is essential to understanding international monetary economics.

As the *Transfer Problem* showed, the payment of net interest on external debt (which could be paragoned to war Reparations) results in a twofold loss of resources for the debtor country, as this debtor country will have to pay first in domestic currency (collected from the national income of its residents, i.e. the *German Budget Problem*), which is the actual amount of the microeconomic payment, and then, once again, as the debtor country *as-a-whole* will have to afford the cost of purchasing the monetary vehicle (international currency) to settle the debt with foreign residents denominated in foreign currency, a macroeconomic payment (i.e. the *German Transfer Problem*). This macroeconomic payment, i.e. burden on the country *as-a-whole*, has been typically ignored by literature, as mentioned by Beretta (2017. Pp. 106-7): "*Sadly, economists have paid too little attention to this phenomenon; although few researchers have been close to understanding that the reparation payment presupposes a second transfer of resources by the nation as a whole[…] It does seem surprising that, although some of these economists were aware of that anomalous double payment of war reparations, none of them (at least, before quantum economics) were aware in the current non-system of international payments of the primary cause of this double loss to national wealth*".

The sovereign debt formation problem originated by net interests payments or net imports was profoundly studied by Bernard Schmitt since the mid 1980´s. His *Quantum* analysis showed that net interests and/or net imports are effectively paid twice. Let us remember that the total aggregate amount of exports of goods, services or financial securities (EX) is necessarily equivalent to their respective imports of goods, services or financial securities (IM); the first is the counterpart of the second. Therefore, there is an equivalence between total imports and total exports: EX=IM. Since there is no doubt about this equivalence, expenditures in

foreign currency necessarily needs to exceed by the same sum the total amount received after total exports (EX), as explained by Beretta (ibidem. Pp. 111): "*Odd as it may seem, every expenditure in terms of foreign money units is nothing else than an outflow from official reserves, which deprives the country as a whole of a corresponding amount*".

Let us use an example, calling [IM] total commercial and financial imports of (e.g.) Argentina, [EX] her total commercial and financial exports, and [i] the monetary amount of net interest to pay. Let us call [IM + i] the total amount to pay in net imports and debt service. Then, the real payment of [i] -which is denominated in international currency- will reduce the export capacity denominated in foreign currency, that is, the inflow from [EX] resulting in [EX – i]. The final difference (commercial balance) between [EX] and [IM] will be [2i] and not [i], as it should be, which comes from:

$$EX = IM$$

$$INFLOW \Rightarrow [EX - i] = [IM + i] \leq OUTFLOW$$

$$-i - i = IM - EX$$

$$IM - EX = -2i$$

Net Imports (>1) = -2i

The original, and licit, interest payment is only [i]. This difference [2i-i = i] will be entirely covered either by an increase in external loans (sovereign debt formation) or a decrease in international reserves. Here it is the monetary pathology intuited by Keynes in the 1920's, denounced by Rueff in the 1960's, described by Schmitt in the 1980's and developed by his *Quantum School* since then until now. As pointed out by Cencini (2017a. Pp. 19) "*Schmitt applies the principle of 'double double-entry bookkeeping' and shows that when a country, A, borrows abroad a sum of foreign currency in order to re-finance its domestic economy, or to pay for its net total imports, it is subject to an outflow of foreign currency twice as high as the inflow*".

A similar dynamic to debt service payment's is also confirmed with the payment of net imports (when the condition [X-M]<0 verifies). To illustrate, let us suppose the following case, in which importers based in Argentina import goods and

services from exporters based in the United States. In this way, American goods or services will be transferred (or provided) from the United Sates to Argentina. On the other hand, the Argentine importers will have to remunerate with part of their income -which is deposited in the Argentine banking system- to the American exporters in order to pay for these goods or services, i.e. the Argentine importers buy American goods and services and pay (*sell*) with money (securities: titles of Argentine bank deposits), at the same time the American exporters sell American goods and services and collect (*buy*) Argentine money (securities: titles of Argentine bank deposits). As the income of Argentine importers is deposited to Argentine banks in domestic currency, due payments will be originally denominated in Argentine domestic currency, constituting part of Argentine national income.

This microeconomic payment is carried out in domestic currency for the full amount of the goods and services imported. Naturally, the American exporters are not interested in Argentine pesos, therefore, it is needed some local entity (banking institution based in Argentina) acting as the agent in charge of converting these Argentine pesos to American dollars in order to be transferred to the American exporters; the problem, though, is that the Argentine central bank cannot print U.S. dollars, therefore, it may need to either use its accumulated international reserves (built up in previous external surpluses) or purchase -through debt- those U.S. dollars in the currency market (at a cost, naturally).

In this way, the country *as-a-whole* will pay twice for this net import, firstly at the moment that importers collect from their own income the due amount in national currency (microeconomic payment), and then again at the moment in which the banking institution exchanges this amount in national currency to American dollars in order to transfer it to the accounts of American exporters (macroeconomic payment). As these American dollars cannot be emitted by any Argentine agent or institution, it only could be originated after an increase in sovereign debt or a decrease in sovereign international reserves at the Argentine Central Bank. In this way "*preposterous as it may seem, these countries are deprived of the same amount -not only in terms of domestic output (transferred by the residents), but also of external resources (stored in their foreign reserves)- leading to a double economic loss*" (Beretta, 2017. Pp. 105).

This dynamic starts with the national economic agents but eventually it turns into a sovereign economic problem which would not be verified under commercial

surplus. Nevertheless, a commercial deficit will trigger this monetary disorder. As the American exporters are not interested in being paid with titles of the Argentine banking system, then a problem of currency conversion and exchange rate arises (similar to the *German Transfer Problem* in the 1920s), which will unleash a macroeconomic debt formation. Well noticed by Cencini (2005. Pp. 270) "*it is important to note that a country's external debt is first incurred by its residents and not by the country itself*".

Let us analyze what represents national currencies outside their national monetary space. In our example, what do Argentine pesos represent in United States? Obviously Argentine pesos have no settlement power outside Argentina. But, within the Argentine borders, where does this settlement power come from? The power of Argentine pesos to settle debts inside their national monetary space comes from their inherent drawing rights, i.e. their purchasing power, or capacity to extract income (previously formed through national production and then monetized) from their national banking system. Therefore, outside Argentina, Argentine pesos are *per se* just an acknowledgement of debt (promissory note or IOU) from the Argentine banking system to the IOU's holder. Same analysis for any national currency either American dollars, European euros, Swiss francs, British pounds or Japanese yens.

Effectively, any national currency outside its national monetary space is just an acknowledgement of debt of its national banking system to the rest of the world. This is well detailed by Cencini (2008. Pp. 256) "*lo spazio delle transazioni internazionali è invece una pura economia di scambio e la moneta nazionale usata come mezzo di pagamento internazionale è un'unità solo nominale. All'esterno dei confine nazionali ogni moneta è un semplice riconoscimento di debito senza alcun contenuto reale e come tale non ha potere liberatorio*". In this context, the proposal for an international monetary reform elaborated by Keynes during the times of Bretton Woods (1944) presents theoretical and practical significance, as noticed by Piffaretti (2017. Pp. 123) "*the core innovation of Keynes* [Author's note: in his proposal for the Bretton Woods Conference] *was the generalization of the principle of national banking to international transactions, creating an international clearing system operating within the 'necessary equality of credits and debits' very much similar to central bank clearing*".

In brief, the *Quantum* approach explains that national currency is created as a consequence of a monetization process of domestic production at the very moment of remuneration of the only macroeconomic factor of production, i.e.

human labor. This process of monetization is carried out by the national banking system which creates and makes available a pure numerical form or numeraire (nominal money) in order to act as a vehicle for the economic value created in the production process, leaving -as a result- a bank deposit with the income created after the monetization of production, in other words, the economic product gets "into" the money (income). Having understood the latter, e.g. those U.S dollars which are inside the U.S borders have purchasing power on goods and services, a cancellation power on debts, and they represent a drawing right on part of the national income deposited into the domestic banking system of the United States.

However, what happen with the U.S. dollars outside the United States, the so-called *Euro-dollars*? The latter case is fundamental to understand the current monetary economic dynamics in general, and currency volatility and balance of payment crises in particular.

As seen, the object of those drawing rights on (part of) the U.S income deposited into the American banking system will be never *actually* transferred abroad. Effectively, the *Euro-dollars* circulating outside the United States become *empty* money, that is, with no real drawing rights on income (i.e. American monetized production) until when they are, eventually, back inside the United States, which is their country of origin. This is a pathological monetary practice which identifies currency -in this case the U.S dollars- with an asset, and not with a monetary vehicle, as it really is. These empty currencies outside their countries of origin are just promissory notes (IOU's) flooding the global currency markets and, therefore, they are at the mercy of the speculative winds producing huge exchange rates volatility.

This disorder was boldly denounced -as already seen- by Jacques Rueff already in the 1960's, calling it *deficit without tears*. The French economist asked how could be possible for a national currency (e.g. the U.S. dollar) to become an international reserve currency and still remain deposited into the American banking system, so Euro-dollars would be "*entering the credit system of a creditor, but remaining in the debtor country, the claims representing the deficit are thus doubled*" (Rueff, 1963. Pp. 324). Consequently, in this way, "*everything happens as if these currencies had never been exported in the first place*" (ibidem. Pp. 324).

In relation to the latter, Cencini (2005. Pp. 345) reminds us that "*le monete sono flussi e tali rimangono, anche se il sistema dei pagamenti adottato sul piano internazionale non ne*

respetta la natura. La moneta vera e propria rifluisce sempre al suo punto d'origine e le registrazione contabile dovrebbero rispecchiare il suo flusso circolare. Se non lo fanno, la moneta registrata all'attivo delle banche del paese esportatore definisce la formazione di un'eurodivisa, di un duplicato della moneta che, usata veicolarmente, fa ritorno alla sua banca d'emissione". This duplication is such, as the same amount is registered twice, first as an asset for the commercial net exporter country, and then also as liability for the net commercial importer country.

The independent character of nations -beyond their residents- is evident since international payments are not only in relation with residents of different countries but also countries among themselves as sovereign economic agents which are involved in currency conversions and international settlements. The logical deduction of the latter is the following: if any national currency is an acknowledgement of debt of its own banking system, no national currency should be the vehicle for global international payments, instead, it should be available a neutral, free-of-charge global monetary vehicle for every country.

As postulated by Bernard Schmitt throughout his vast scientific work, a sound international system of payments should respect the *Law of Distancing*, meaning that a distance should exist between the issuer and the user of a given currency. No country should pay its debts with a currency issued by itself, as it is the case of the United States and some other OECD countries. As Cencini (2005, Pp. 254-5) explains, the rationale of this *distance* is based on "*L'applicazione della legge logica secondo cui nessuno paga indebitandosi ci porta a osservare che i pagamenti tra paesi non possono essere effettuati in moneta nazionale ma richiedono l'intervento di una vera e propria moneta internazionale. All'interno di ogni paese i pagamenti tra residenti avvengono mediante l'uso di una moneta che non è emessa da alcuno di loro. Sono le banche, in quanto intermediari esterni all'insieme degli acquirenti, che emettono la moneta necessaria a veicolare i pagamenti nazionali […] Tra l'insieme degli agenti economici che agiscono come acquirenti e venditori[…] e le banche in quanto tali esiste una 'distanza' che impedisce a chiunque di pagare col proprio debito*".

In effect, international payments should respect the same *Principle of Distancing* as it is applied inside borders under a national central bank. This would require the use of an international currency which is not the acknowledgement of debt of (i.e. emitted by) any country in particular. Alas, there is no such international currency so far and the amount of global sovereign debt is exponentially growing year over year, suffocating economic prosperity and growth of countries, especially the emerging ones.

This pathological dynamic calls for a swift action; nonetheless, it is required first to understand its nature. As Cencini (2017. Pp. 157) boldly sustains "*Countries' sovereign debt is a pathological 'monster' that should not exist and its presence has dramatic consequences for deficit countries' populations, who are subject to a series of austerity measures that drastically reduce their well-being. The existence of sovereign debts is a fact, but it is also a fact that they are the result of a pathological system of international payments, which means that a reform of this system will suffice to get definitively rid of them*".

Finally, it is Bernard Schmitt himself, in the last academic work of his life (2014. Pp. 1-2), who alerts us that "*the financial crisis, which prevails worldwide and implicates all countries creditors and debtors alike, is strictly correlated with the sovereign debt crisis, whose true nature remains arcane[…] the consequences of the double external indebtedness of deficit countries are so ill fated that it is highly desirable to succeed in eradicating them as soon as possible[…] the tragedy -the word is not too strong- that afflicts countries, particularly 'poor' countries, with regard to payment of their external debts demands a radical change in the way the International Monetary Fund (IMF) deals with the situation*".

Chapter III
Current State of World Monetary Affairs and its Problems

"L'ignoranza che ancora oggi circonda la natura della moneta è sorprendente, così come è sorprendente che la teoria economica più diffusa nel mondo consideri la moneta come un appendice irrilevante[…] Eppure un semplice sguardo alla realtà doverebbe bastare per rendersi conto che tutti i nostri sistemi economici sono monetari, che tutti i concetti economici sono monetari e che tutte le patologie sono di natura monetaria"

Alvaro Cencini
Swiss Economist – Quantum Economics
Elementi di Macroeconomia Monetaria (2008, Pp. 2)

In this work we will go from positive to normative economics, briefly describing how the current mechanism for the settlement of cross-border transactions works, why the lack of an international clearing house with an international currency constitutes the origin of a worldwide monetary pathology, and how the international payments system should be reformed to avoid exchange rate fluctuations and global imbalances.

Even though a detailed description and explanation of all these theoretical and operative aspects of international monetary economics is out of the range of this work, as it would take a whole work on its own and not only a chapter, the intention of this brief description is to concisely present them to understand better the global macro context, how it currently operates, and what is missing.

III.I. The Non-Existent Settlement Mechanism for Cross-Border Transactions

The current international system of payments is a heritage of the Conference of Genoa (1922) and of the Bretton Woods Conference (1944). As previously seen, in that occasion it was the American proposal (Mr. White's) the one which prevailed over the British one (Lord Keynes'). After more than seven decades, and even with the changes after the *Nixon Shock* (1971) -in which the U.S. dollar

abandoned its convertibility peg to gold- the basic structure of the international system of payments for cross-border transactions remains untouched, i.e. mostly based on a national currency: the U.S. dollar.

As Bernard Schmitt describes, a healthy international monetary system should satisfy three requirements:

"*1. The assurance that world commerce and finance will never be hampered or overstimulated through an inadequate pace of overall monetary expansion.*

2. The possibilities for all countries to accumulate net foreign reserves without weighing down official reserves in other countries.

3. The various national currencies must be expressed in terms of a general standard" (Schmitt, 1973. Pp. 5).

Even though the current international monetary scheme is far from satisfying these necessities, its renovation seems to be long overdue. A global, structural change is needed, at least in the mind of an important part of the global economic and financial intelligentsia. As former Fed chairman Paul Volcker sustains "*I think we can agree that the absence of an official, rules-based cooperatively managed, monetary system has not been a great success. In fact, international financial crises seem at least as frequent and more destructive in impeding economic stability and growth[…] That is all a long introduction to a plea, a plea for attention to the need for developing an international monetary and financial system worthy of our time*" (Volcker, 2014. Pp. 3-4). Such a system *worthy of our time* needs to resolve -first and foremost- its crux, namely its international means of exchange. In this way, it seems that all comes down to the U.S. dollar as international medium of settlement for cross-border transactions, as the Governor of the People's Central Bank of China posed: "*The outbreak of the current crisis and its spillover in the world have confronted us with a long-existing but still unanswered question, i.e. what kind of international reserve currency do we need to secure global financial stability and facilitate world economic growth[…]?* " (Zhou, 2009. Pp. 1).

Today, monetary settlements between countries -either payments related to external debt or international commerce- are carried out mostly in *hard* national currency, firstly the U.S. dollar, and secondly -to a lesser extent- in some other currencies of developed countries like the European euro, the British pound, the Swiss franc or the Japanese yen. In any case, for developing countries, e.g.

Argentina, there is no way to do these settlements in their own currency, nor under an international clearing system (which currently does not exist). This reality forces countries not favored as *hard* currency issuers -used for international settlements- to be in the necessity of purchasing *hard* currencies in the international foreign exchange market. In this way, currencies wrongly assume the format of real assets, and then are traded in the global market as any other commodity. As such, their relative values -exchange rates- are results of the interaction between global supply and demand. These different currencies interacting in the foreign exchange market are issued by different national central banks, therefore heterogeneous; these currencies -as previously seen- represent different acknowledgements of debt (IOUs) of the different financial systems in which these currencies were emitted (Cencini, 2017a).

This heterogeneity problem is unsurmountable as it is, because it is not possible to homogenize national currencies without a common international medium of settlement under an international clearing house. None of these currently exist. As Cencini explains: "*Without the presence of a common standard, and without a mechanism ensuring that payments have a real content, no system of international payments can ever exists. If country A pays country C in money A neither of these two requirements is satisfied. What C gets in exchange for its real exports is a mere acknowledgement of debt, a promise that is erroneously taken to define a net asset*" (Cencini, 2009. Pp. 13). In the latter example money A will enter in the asset side of the banking system of country C, which will issue an equivalent amount of money C, generating two monetary pathologies, namely i. The inflow of money A in country C is computed as a real asset, and ii. County C's emission of money C -as a consequence of inflow of money A- is inflationary as it is not originated in the monetization of the own production of country C, as it should be. When country A runs an external deficit and its domestic money is an international reserve currency for the rest of the world -as it is the case of the United States and the U.S. dollar- country A's payments produces a duplication of its own money outside its borders which increases the speculative financial capital, e.g. Eurocurrencies.

The problem with this pure financial capital (e.g. Eurodollars) is that it is just *empty money*, with no real purchasing power as this purchasing power is only defined by national production inside a national financial system. There is no such thing as an international production, e.g. all production is made inside a certain domestic economy. As explained by Cencini: "*Today's financial and economic crises are a clear symptom of the disarray of a system of payments that has its origin in the Conference of Genoa*

(1922), and is based on the use of one or more national currencies as international monies" (Cencini, 2009. Pp. 26).

Lord Keynes called the *Essential Principle of Banking* the fact that every economic transaction is paid by the local banking system acting as a *catalyst*, creating money-units through the double-entry book-keeping principles and incorporating purchasing power -created by domestic production- *into* the money. This cannot be translated to the international level without the existence of an international settlement institution (an international clearing house), and that is why Keynes himself advocated the creation of such an institution in his proposal to the Bretton Woods Conference (1944). A national currency, e.g. the U.S. dollar, cannot at the same time comply with the Keynesian *essential principle of banking* -as it is issued by a national banking system, after the monetization of its national production, which operates only within that national economy - and also define the final object of international payments. This problem was seen not only by Keynes (1942[1980]), but also by Schumacher (1943), Rueff (1963), Triffin (1963), and Schmitt (1973), among others.

As Keynes himself explains in his *Speech to a Meeting of the European Allies* in 1943: "*Modern banking has developed[…] to a very fine degree of perfection within a given country. But we have, broadly speaking, continued with the uncivilized practices of the Middle Ages as between countries*" (Keynes, 1943[1980]. Pp. 210). Keynes based his idea of an *International Clearing Union* on this *essential principle of banking*, as he explains in his *Proposals for an International Clearing Union*: "*The idea underlying such a Union is simple, namely, to generalize the essential principle of banking as it is exhibited within any closed system. The principle is the necessary equality of credits and debits*" (Keynes, 1942[1980]. Pp. 171).

III.II. An International Clearing House

As seen, Lord Keynes (1942[1980]) foresaw the fundamental problem originated by the lack of an organized system of international payments with an *inter-national* clearing house among national central banks in the same way as each of these national central banks represents an *intra-national* clearing house among domestic commercial banks.

In effect, within a domestic economy money is issued by different commercial banks as a spontaneous acknowledgement of debt (IOUs). The way in which the problem of heterogeneity of monies, i.e. each bank's IOUs, is solved is through a system of inter-bank clearing executed by a national central bank. As Cencini explains: "*When a client of bank B1 pays a client of another bank B2, B1 does not pay B2 directly, because if it did B2 would be paid by B1's acknowledgement of debt, while it should be clear that nobody pays by getting indebted. The non-payment is avoided by the central bank, which pays B2 on behalf of B1. The central bank acts as a catalyst through which the monies issued by commercial banks are made homogeneous, i.e. they are given the form of central or national money. Central banks are not the initial issuers of money, yet their presence as clearing houses is crucial, since it is through their intermediation that a homogeneous monetary space can exist at the national level*" (Cencini, 2009. Pp. 11).

In this way, a central bank acts, inside its domestic economic space, as a homogenizer of national heterogeneous monies. In modern economies this procedure of inter-bank clearing is carried out through a real-time gross-settlement (RTGS) system, in which each payment is done by the central bank on behalf of commercial banks, and then balanced at that very moment, in real time. As detailed by Cencini: "*Today, most clearing systems work on the basis of a real-time gross-settlement (RTGS) system whose main principles are: 1. All inter-bank payments are to be carried out through the intermediation of the central bank; 2. Currencies issued by private banks are to be given the common form of central bank money; 3. Each final payment on the inter-bank market is to be carried out by the central bank on condition that the bank asking for it owns a countervailing credit (in the form of a deposit) with the central bank*" (Cencini, 2012. Pp. 6).

What happens at the domestic level, i.e. an inter-bank settlement process in which the national central bank acts as a catalyst facilitating the transformation from heterogeneous bank-monies to a homogeneous national-currency, is coherent with the *Law of the Logical Identity* (Schmitt, 1975) between agent's sales and purchases and the vehicular nature of bank money, according to which, when a given agent acts as a purchaser, she also necessarily acts as a seller, and vice versa. In Cencini's own words, an agent "*cannot be debited without being credited, and vice versa[…] Schmitt's law becomes clear as soon as it is specified that the identity between sales and purchases is verified on the labour, financial and output markets taken as a whole. Hence, wage earners are sellers on the labour market and purchasers (of certificates of deposit) on the financial markets, while firms are purchasers on the labour market and sellers (of bonds) on the*

financial markets. Likewise, consumers sell bonds or certificates of deposit and purchase output, whereas firms sell output and purchase certificates of deposit" (Cencini, 2009. Pp. 12).

It is the national central bank, acting as a domestic clearing house, which applies this principle to domestic commercial banks, compensating, in this way, the payments they carry out on behalf of their clients (for purchases of goods, services, and financial claims) with equivalent receipts coming from their clients' sales (of goods, services, and financial claims). Effectively, we can say that the central bank is not the initial issuer of domestic money, as the commercial banks are at the moment of monetizing domestic production through the payment of wages. Instead, the role of the central bank, as clearing house carrying out the due compensations, is fundamental to homogenize different domestic monies within the monetary space at national level.

Unfortunately, this *Law of the Logical Identity* has not been applied yet to inter-nations settlements, generating the current non-system of international payments. Effectively, inter-nations payments (either coming from external debts or international commerce) are carried out in national currency -typically U.S. dollar- with no intervention of an international clearing house compensating debits and credits of the participant countries of the settlement. Since in these settlements the two currencies are issued by different banking systems from different national economic and financial spaces, they are heterogeneous; they define different acknowledgements of debt of these different banking systems in which they were originally emitted. Without the existence of an international clearing system no compensation between credits and debits is possible. Typically, what a net exporting country is receiving for its real exports of goods and services is, therefore, just paper, *empty money* without purchasing power i.e. a mere acknowledgement of debt, a promise of payment wrongly taken as a real asset, issued by a different banking system.

This lack of a proper international system of payments is hampering a healthy economic growth in both developed and developing countries, and causing serious exchange rate fluctuations and global imbalances which bring recurrent economic bubbles and collapses (Cencini, 2009). As explained by Rossi: "*With the monetary architecture for international payments elicited by this non-system, countries fail to be credited by an international settlement institution -as the latter does not exist yet- whenever they export real goods, services and/or financial assets to a different monetary place. This then creates*

a discrepancy in foreign trade between the income earned in exports and the income spent on imports for each country defined as the set of its residents" (Rossi, 2009. Pp. 4).

In order to carry out proper settlements according to the *Law of the Logical Identity* it is needed an international clearing system working as the domestic ones under a RTGS protocol, i.e. real-time gross-settlement. In this way, foreign-trade transactions will be finally paid in national currency within each of the countries concerned, and in an international money unit (which does not exist yet) between them. As Rossi details: "*the (reformed) monetary system for international payments has to consider that national currencies are indeed means of payment in the relevant monetary space -in conformity with their nature- but not goods or financial assets that can move across these spaces and beyond the country's borders*"(Rossi, 2009. Pp. 8-9).

As we continue without a true system of international payments which properly compensates international debits and credits, we will continue wrongly using national currencies, like the U.S. dollar, to settle international transactions. But money is not a synonym of income and, as we saw, income cannot go beyond the economic space in which it was created after national production. Therefore, we are in presence of a world monetary order in which international payments are done with *empty money* (devoid of purchasing power) which, in turns, is traded as a real commodity, causing high volatilities in the exchange rates. As Cencini bluntly concludes: "*In the absence of a true system of international payments, transactions between nations are settled in money[…] Instead of considering it as a numerical form or vehicle of no intrinsic value, money is seen as a kind of commodity, an asset that can be bought and sold, and which has a price. Very few economists seem to realize that money is required for prices to be numerically expressed, and cannot, itself, have a price. Can we really think that by moving from a national to the international level money is transformed from a simple numerical form into an object of exchange? This drastic change in nature should appear all the more absurd that outside its national boundaries money is no longer related to income. When a sum of money A enters the banking system of country C, not even a fraction of A's income leaves its banks. The total of A's income is deposited within its banking system, which is precisely why the money A entered by C's banks is nothing other than a mere acknowledgement of debt*" (Cencini, 2009. Pp. 14-15).

This was the intuition of Keynes in the early 1940s when he sustained that the international payments system was continuing with the *uncivilized practices of the Middle Ages* and proposed the International Clearing Union based on an (imperfect) international currency like the *Bancor*.

Today, an international currency for international transactions may seems far from reality, but that was not the case at the moment of reshuffling the international financial order in the 1940s. As Nobel Prize in Economics, Robert Mundell, reflects: "*In my view, the post-war system had one major flaw: the absence of a world currency. I believed that the best way to preserve the system was to create the world currency. Even if such a construction was not politically negotiable[…] The proposal for a world currency today sounds radical, but you should know that it was not completely removed from advanced thinking sixty years ago*" (Mundell, 2003. Pp. 3). Professor Mundell goes even further, assessing the root of such an overdue global necessity sustaining that "*It is worth reflecting that the US position at Bretton Woods fits the conjecture I have made before: that there is a tendency for the dominant country to reject the world currency. The basic fear is that the global currency represents a threat to the position of its own currency*" (Mundell, ibidem, Pp. 4). Even though this debate had been asleep for decades, the 2007/8 financial crisis was a wakeup call, as the IMF states: "*In the midst of the world's worst economic and financial crisis in over 70 years, striking at the heart of the system, old worries have resurfaced about the inherent instability and unfairness of a system based on the currency of one country[…] All of these charges are open to debate, but the recurrence of concerns and phases of instability suggest a need to look for durable remedies*" (IMF, 2009. Pp. 6).

Interestingly, it is the IMF, an institution born after the Bretton Woods Conference in which the Keynes proposal failed, which is advocating -in the heart of the international monetary status quo- for a new, international transactional currency: "*A radical redesign of the international monetary system would be to introduce a new currency, an outside money, that could be used in international transactions and would float alongside national currencies. The currency would be issued by an international monetary institution with a governance structure quite different from today's IMF and geared towards ensuring a stable value. Disconnected from the economic problems of any individual country and with a balance sheet backed by the membership of the institution[…] However, a solution of this nature seems so impossibly taxing of national sovereignty that it would be tempting to dismiss it as utopian*" (IMF, ibidem. Pp. 20). Critics and proposals in this line have been presented by Keynes (1942[1980]), Triffin (1960), Rueff (1963), Machlup (1964), Schmitt (1973), Cencini (1995), Rossi (2007), and Alessandrini and Fratianni (2008), among others.

III.III. Balance of Payment Discrepancies

Economic conventional knowledge sustains that, nowadays, there is a world monetary order, a system by which countries orderly set their trade and debts. A close look into this -allegedly- world monetary order may show a different picture, as Gerald O'Driscoll Jr., from the Cato Institute, describes: "*I will begin by disputing that there is a global monetary system. We do not have a system in any meaningful sense. There are 182 independent currencies in the world. Some currencies are fixed in relation to other, larger currencies (e.g. the Hong Kong dollar to the U.S. dollar). Some currencies move within a band against other currencies (e.g. the Singapore dollar and the Chinese yuan). Many currencies float on foreign exchange markets, but few float freely. Four major currencies float against each other: the U.S. dollar, the euro, the pound, and the yen. Countries also change their foreign exchange regime (e.g. Mexico in recent decades). The multiplicity and changeability of arrangements defies the use of system[…] No one designed the global fiat monetary arrangements; the world stumbled into them*" (O'Driscoll, 2012. Pp.1)

This reality, well described by O'Driscoll, portrays rather a monetary *chaos* instead of a monetary *order*. In this state of affairs it is not a surprise such a longstanding problem -barely explained by economists- like the world monetary discrepancies. In effect, the balance of payments of a single country is constructed as a ledger with the rest of the world, as such, it is built in conformity with the double-entry book-keeping principles, keeping record of transactions between residents and non-residents of a given country which, necessarily, must be balanced (debits with credits), i.e. a net entry in the current account of country A necessarily matches an equivalent entry with opposite sign in the consolidated current account of the rest of the world. In this way, the consolidated current account of the world-as-a-whole necessarily needs to be equal to zero. Unfortunately this is not the case as it has been studied by Nobel Prize in Economics Paul Krugman, et al. "*Because each country's exports are other countries' imports, the world's current account balances must add up to zero. But they don't[…] Between 1980 and 2003, the sum of global current accounts was negative, implying either that surpluses were understated or that deficits were overstated. But in 2004, the mystery of the missing surplus became a mystery of the missing deficit. Since that year, the measured global current account has been positive. Given the inevitable errors in collecting detailed international payments data from many national agencies with differing and coverage, some discrepancy is unavoidable. What is puzzling is that the global discrepancy should be persistently positive or negative. That pattern suggests that something systemic is going on*" (Krugman, Obstfeld and Melitz, 2015. Pp. 357).

As seen, the principle of the balance of payments is based on the double-entry book-keeping principle, in this way, any international transaction automatically enters to the balance of payments twice, once as a credit and once as a debit. The latter is coherent with the duality of purchases and sales stated by Schmitt (1975). Nevertheless, as there is no international payments system based on an international clearing house matching debits with credits and, additionally, international settlements are carried out in national currencies, then numbers do not add up . In reality, net importer or external debtor countries have to purchase international currency, in the international currency market, in order to make their international payments. Domestic currency -as the U.S. dollar- is, therefore, wrongly bought and sold as a real asset. As already seen, this action of purchasing international currency generates a duplication effect which leaves no record in national accounts. As Cencini explains: "*The analysis developed so far seems to corroborate the idea that both the missing surplus and the missing capital outflow exist because the payment of interest fails to be recorded in both the current account and in the capital and financial account of creditor countries[…] another possibility cannot be ruled out a priori, namely that the payment of interest elicits a second, pathological payment of net debtor countries' current account[…] the second payment of interest, that is, an over-expenditure carried out by the indebted countries and unrecorded by creditor countries. Instead of looking for the missing surplus in order to transform it into a recorded payment, the problem would then be avoiding the overpayment of interest in the first place*" (Cencini, 2005b. Pp. 13).

Established by Schmitt (2004) and confirmed by Cencini (2005b), a conceptual analysis and statistical evidence confirm that the payment of interest on external debt in domestic currencies used as international standard is indeed the cause of an international disorder leading to balance of payments discrepancies, in Cencini's own words: "*The present system of international payments is so structured as to impose on indebted countries a double payment of interest[…] the payment of net interest gives thus rise to an unreported capital outflow defining a net loss for the indebted countries' official reserves. It is this unaccounted loss that explains the mystery of the missing surplus*" (Cencini, 2005b. Pp. 14).

To be crystal clear on this point, we do not stand against the existence of current account deficits per se, as they are necessary for economic growth, especially in LDCs. As the IMF assesses: "*In a global world, there is no reason for current accounts to be balanced. Indeed, it is desirable for saving to go where it is most productive, and imbalances can therefore emerge naturally from differences in saving behavior, in the rate of return on capital, or in the degree of risk or liquidity of different assets. So, imbalances, even large ones, are surely*

not prima facie bad" (Blanchard and Milesi-Ferretti, 2009. Pp. 4). The *quid*, and the current source of monetary pathologies, is the settlement system, based on national currencies without an international clearing house.

III. IV. Exchange Rate Fluctuations and Global Imbalances

As stated by Blanchard and Milesi-Ferretti (2009. Pp.3) "*Global imbalances are probably the most complex macroeconomic issue facing economists and policy makers*". Effectively, a healthy, modern world monetary order calls for a new mechanism for international payments of cross-border transactions in which national currencies leave the place to a truly international currency for international commerce and financial settlements, and domestic monetary and exchange rate policies are taken based on the internal economic needs of specific countries.

International debate over this necessity took even more weight after the 2007-2008 global financial crisis (Zhou, 2009). Nevertheless, if these changes eventually gain traction, it is expected first a long transition process in which the U.S. dollar -as major international currency- would narrow down its role -probably not voluntarily- in favor of a multi-polar system which, in turn, would cause even more monetary instability (Piffaretti and Rossi, 2010). Current global imbalances, especially the balance of payment deficit of the United States vis-à-vis the gigantic balance of payment surplus and saving rate of China, and also vis-à-vis the European Union and the oil-exporting countries, cannot be adjusted through exchange rates, e.g. relative prices, without affecting the total volume of world trade, in a World's state of affairs in which "*The U.S. dollar status as the world's foremost reserve currency has played a significant role in enabling the financing of the US external deficit beyond what would be sustainable levels for other advanced countries, and allowed the United States to be able to finance during the last decade its mounting current account deficits by borrowing abroad almost limitless and at very low interest rates*" (Piffaretti and Rossi, ibidem. Pp. 8-9).

The monetary (dis)order, as it is today, is mostly based on what Triffin (1960) called a *non-system*, in which the provision of international liquidity depends on the United States running current account deficits *in crescendo*, generating vast imbalances which would be only possible to revert through an adjustment process which would be deflationary. Needless to say that these kind of significant

imbalances would never happen under an international financial order in which i. National currencies are not used for international transactions; instead, a supra-national money is the monetary vehicle for such inter-country transactions, and ii. An international clearing institution is in charge of international compensation between debits and credits compliant with the Keynesian *Essential Principle of Banking*.

Under the current international monetary (dis)order based on fiat money and flexible exchange rates, fluctuations and imbalances are a constant, as it was early detected by Nobel Prize in Economics Fredrich von Hayek, who foresaw in 1937: "*There can be no doubt that variability of exchange rates introduces a new and powerful reason for short-term capital movements*" (Hayek, 1937. Pp. 56).

Conversely, under an orderly international payments system, i.e. with a proper compensation between international credits and debits within an international clearing system using an international currency -instead of a national one-, we would have stable exchange rates (but not fixed) in a context of an open economy with free capital movements. Additionally to the exchange rate stability, such an order would bring degrees of freedom to domestic monetary policymaking, decoupling it from speculative monetary flows of *empty money*, as described by Rossi, an increase of "*their room for maneuver when gearing their economies policies (particularly an autonomous monetary policy) to the needs of their own domestic economies. The conflict between domestic and external goals of a country's monetary policy will therefore be solved definitively, to the benefit of growth, employment, and macroeconomic stabilization*" (Rossi, 2009. Pp. 19).

Unfortunately, this kind of structural world financial reform seems to be far from being executed, as recognized by a World Bank economist: "*Whereas there is widespread agreement that global imbalances have been playing an intrinsic underlying role, and broad support for a call to review the international financial structure, calls for far-reaching overhauls of the international architecture have been rare, with the notable exception of the United Nations[…]*" (Piffaretti, 2009. Pp. 14).

In this regard, Professor Eichengreen sharply summarizes the current global imbalances as follows: "*Today, like 40 years ago, the international system is composed of a core and a periphery. The core has the exorbitant privilege of issuing the currency used as international reserves and a tendency to live beyond its means. The periphery, which still has a way to go in catching up to the core, is committed to export-led growth based on the maintenance*

of an undervalued exchange rate, a corollary of which is its massive accumulation of low-yielding international reserves issued by and denominated in the currency of the center country" (Eichengreen, 2004. Pp. 1).

Concerning exchange rate fluctuations, mainstream economics still could not find an explanation solid enough to anticipate them. Cencini (2000) explained why these fluctuations are not mainly driven by commercial or financial transactions, nor by inflation or interest rates. As Cencini himself reflects : "*Why do exchange rate fluctuate? Economists have answered this question by emphasizing the role played either by interest rate differentials, inflation rate differentials, risk premiums, balance of payment variation, speculations, expectations or by any combination of these and other factors[…] we are offered a variety of highly sophisticated models that seem unable to catch the essence of the problem*" (Cencini, 2000. Pp. 1). Effectively, these kind of fluctuations cannot be anticipated by any model, as they are a result of a systemic misfunctioning.

The problem, as already seen, lays in an international financial order based on national currencies. In this way, settlements based on national currencies are relative exchanges instead of absolute exchanges (as it happens inside a domestic economic space under the clearing of a national central bank).

Essentially, purchasing power cannot be transferred through the international economic space; the international economic space is, therefore, full of *empty* currencies, devoid of purchasing power, which are just acknowledgements of debt of the financial system in which this money was created. This *empty* money is *duplicated* money, as it is still registered into their original financial system (generating loans in the domestic banking system) and, at the same time, generating bank accounts, deposits, and loans outside their original financial system (i.e. Eurocurrencies).

As foresaw by Rueff (1963. Pp. 324) "*Entering the credit system of the creditor country, but remaining in the debtor country, the claims representing the deficit are[…] doubled*". This load of empty money, which is artificially duplicated, is what feeds speculation causing boom-and-bust monetary cycles, and bubbles in other markets, e.g. real estate, equity markets, etc. In this way, *"Speculation is the effect and not the cause of speculative capital, and speculative capital is the direct result of currency duplication. As soon as currencies are transformed from means to objects of exchange their exchanges rates vary according to their sales and purchases, and speculation arises from the possibility of capital gains resulting from these variations*" (Cencini, 2000. Pp. 10).

Under this current (non)system of international payments, plenty of Eurocurrencies, the process of duplication intuited firstly by Rueff, and later explained by Schmitt, feeds, incentivizes, and reinforces speculative capital movements and bubbles, which cause fluctuations in exchange rates. As Cencini (2000. Pp. 16) summarizes: "*Exchange rate fluctuations are not essentially due to fluctuations in economic factors, but to the anomalous working of our monetary systems. Based upon the principles of double-entry book-keeping, the laws of bank money are such that no currency can ever leave the banking system from where it is issued[…] If the present system of international payments were so structured as to comply with this law, monetary order would reign and exchange rate stability would be the rule*". Effectively, as the problem is originated in a fault at systemic level, then, it is at this same systemic level that it must be resolved.

Chapter IV
Flaw Macroeconomic Policy and Debt Formation in Argentina

"Newton accepted the existence of gravity and went on to develop equations that accurately describe its effects, but he never offered any insight into how it actually works"

Brian Greene
American quantum physicists
The Elegant Universe. Superstrings, Hidden Dimensions, and the Quest for the Ultimate Theory
(1999. Pp. 30)

Physical phenomena are visible and, many times, self-evident, like gravity. But, in social sciences in general, and macroeconomics in particular, we do not count on the benefit of having observable experiences described by Professor Greene for Newtonian physics. Effectively, in macroeconomics we cannot describe without knowing how it works. Macroeconomic phenomena rarely are observable (until their consequences materialize, when a crisis is arrived). It is, then, essential to understand the logic and governing laws underneath the very pathological process we try to remedy in order to firstly understand its origin; in our case, what we intent to understand is the nature, logic and laws of the sovereign debt formation, using the *Quantum* macroeconomics analytical framework seen in last chapter.

To make things harder, there is a well-spread misconception about what sovereign debt is, wrongly mixing the concept of sovereign debt with external government debt, when government is just one economic agent, but not the only one which is capable of triggering sovereign debt formation in a given country. As already seen, sovereign debt is a macroeconomic debt which is formed after net imports (or debt service payments) because of the absence of a proper system of international payments. This macroeconomic debt affects a country as a whole, i.e. all its residents, including individuals, firms, and government. This is the sovereign debt of a given country with the rest of the world, hence, an external debt (Cencini, 2017a. Pp. 144).

As discussed, the pathbreaking discovery of the *Quantum* macroeconomic analysis -developed by French economist Bernard Schmitt from 1984 onwards- is the presence of a duplication of payments incurred by countries which have to face persistent net imports across time (Cencini, 2008. Pp 303, 384). Indebted or net importing countries under the current international payment regime have to pay twice their net foreign purchases. As seen, this anomaly was intuited by economist John Maynard Keynes after the Great War (1914-18) analyzing war Reparation payments of Germany and stating the existence of the so-called *Transfer Problem* (Keynes, 1929a). Likewise, other economists, like French Jacques Rueff (1963) and Belgian Robert Triffin (1960; 1963), rose the point criticizing the international payments status quo and the role of the U.S. dollar as international currency before and after the Bretton Woods Conference (1944).

The *Quantum* macroeconomic analysis demonstrated that sovereign debt should not exist at all, being net imports (sustained across time) and net interest payments the origin of this macroeconomic debt -added on top of a legitimate, microeconomic one- as debtor countries are required to purchase the international currency needed to settle their obligations (on top of the original amount -in domestic currency- to be honored). This macroeconomic debt is always illegitimate in nature (Cencini, 2005. Pp. 259) since it represents a pathological outcome of the current *non-system of international payments* -as called by the *Quantum* analysis- which causes international currency volatility and, ultimately, international financial crises which destroy employment and economic well-being, especially in less developed countries (LDCs).

All that being said, the history of Argentina in particular shows us that the government, even though not the only agent capable of triggering this sovereign debt formation, has been its key factor, either executing a wrong macroeconomic policy triggering net imports, or increasingly taking external debt for financing its own fiscal deficits.

IV.I. Public External Debt in Argentina and Latin America

Latin America in general, and Argentina in particular, present a long-standing public external debt problem. As described by Harvard economist Martin Feldstein: "*The origins of the LDC debt problem can usefully be traced to a decade before the*

1982 crisis when the OPEC countries reduced the production of oil and raised the world price of crude oil from approximately $3 a barrel to more than $12 a barrel. The rise in the price of oil created a vast pool of new savings in the hands of the governments of the oil exporting countries[…] The U.S. government encouraged the American banks to recycle petrodollars to borrowers in Latin America" (Feldstein, 1991. Pp. 3). Effectively, leaving aside the irresponsible Latin American governments who took massive amounts of external debt in U.S. dollars for questionable purposes, conditions were brewed by a flood of oil-dollars coming from Middle East countries after the first oil price shock[21] and recycled in the form of cheap loans to LDC's countries, mainly through American banks. This "explosion" of inexpensive money had a painful end. On August 6th, 1979 President Jimmy Carter appointed Paul Volcker as a Chairman of the Federal Reserve (Fed). Chairman Volcker committed the Fed to bring inflation down pushing short-term interest rates up from about 10% to 15%, and eventually above 20% (Frieden, 2006). Volcker kept these interest rate levels until late 1982 ending the provision of "cheap" money to LDC's and making debt services unbearable.

This fact threatened not only the debtor countries but also the American banking system itself, that is, the big names of the U.S. financial system which finally arrived to a settlement through the Brady Plan[22] after the failure of the first attempt, the Baker Plan. These American banks (creditors) were far overexposed to Latin American debtor countries which, when interest rates in the United States started to rise for domestic reasons, got into trouble along with their debtors.

In effect, indebted Latin American countries were not the only ones in danger, since the existence of a high systemic risk because of the overexposure of the U.S. banks, a swift solution was needed (finally, the Brady Plan), not only to protect the creditors but also to prevent a global financial collapse had these banks gone

[21] In October 1973, the OAPEC (Organization of Arab Petroleum Exporting Countries) declared an oil embargo because of the support of the United States to Israel during the Yom Kippur War. By the end of the embargo, in March 1974, the crude oil had gone from 3 USD/barrel to almost 12 USD/barrel.

[22] The Brady Plan (after the U.S. Treasury Secretary Nicholas Brady) was a debt relief + refinancing strategy offered and implemented (mostly) to Latin American countries in the late 1980's. Its precedent was the Baker Plan in 1985 (after the U.S. Treasury Secretary James Baker) which failed at its onset. For a detailed analysis of the Brady Plan see: Sachs, Jeffrey (1989) "*Making the Brady Plan Work*". Foreign Affairs. Council on Foreign Relations. Summer 1989.

bankrupt. Studies[23] show that the LDC loans/capital ratio in the main U.S. banks were well above 100%. By 1981, the LDC's loans of the eight largest banks in U.S.A totaled 264% of their capital: mostly to Argentina, Brazil, Mexico, and Venezuela. Ratio loans/capital in December 1982 were as follows: Bank of America, 137%; Chase Manhattan, 165%; Chemical, 164%; Citicorp, 197%; Manufacturers Hanover, 206%; Morgan Guaranty, 123% (FDIC, 1997).

As Nobel prize economist Paul Krugman describes: "*For generations, Latin American countries were almost uniquely subject to currency crisis, banking failures, bouts of hyperinflation, and all the other monetary ills known to modern man. Weak elected governments alternated with military strongmen, both trying to buy popular support with populist programs they could not afford. In the effort to finance these programs, governments resorted either to borrowing from careless foreign bankers, with the end result being balance-of-payments crisis and default, or to the printing press, with the end result being hyperinflation*" (Krugman, 2000. Pp. 38).

Effectively, history and econometrics show that there is a strong relationship between the public external debt problem in Latin America in general (and in Argentina in particular) on one side, and disequilibria of balance of payments under an import-substitution model with persistent and growing twin deficits, current account and fiscal, on the other side. This toxic combination has been called *debt-led growth model* (Conesa, 2002. Pp. 249). During the 1980's this self-reinforced macroeconomic pathology arrived to a collapsing point of such magnitude that it is known as the *Lost Decade*[24] in which the majority of Latin American countries suffered backward trends in their income per capita figures, and a correlated increase in poverty (Sachs and Larraín, 1993. Pp. 690).

Interestingly, developing countries in East Asia did not suffer the crisis in the same magnitude. International economics studies (e.g. Birdsall and Jaspersen, 1997 or World Bank, 1994) agree that this was because of the differences in their applied growth-model comparing to their Latin American peers. In effect, in the former case, Asia, the dominant model was export-oriented with high real exchange rate (REER) favoring current account surpluses, whereas in the latter

[23] For detailed information see: Federal Deposit Insurance Corporation-FDIC (1997) "*History of the 80's: Lessons for the Future. Volume I: An Examination of the Banking Crises of the 1980s and Early 1990s*". FDIC, 1997. Washington D.C.

[24] Literature points out as starting point for the *Lost Decade* August 1982, when Mexico announced a suspension on all its debt payments.

case, Latin America, it was exactly the opposite, namely closed economies with over-appreciated exchange rates, narrowed exports and substantial and persistent current account deficits. Effectively, even though countries in both regions "*pursued import-substituting industrialization strategies of development from the early post World War II period until the 1960s[…] the East Asian countries shifted to an export-oriented approach[…] the divergent growth paths of the two regions are especially instructive, because most countries in both regions pursued import-substituting industrialization in the postwar period. The anti-export bias of the Latin American trade regimes was reinforced by policies aimed at sustaining growth while protecting domestic industry. This frequently resulted in overvalued real exchange rates. As a consequence, from the early postwar years until the beginning of the 1960s, Latin America's exports stagnated. The combination of expansionary demand management and increasingly restrictive trade policies resulted in periodic outbreaks of inflation and recurring balance-of-payments crises. The result was a stop-go pattern of growth*" (Jaspersen, 1997. Pp.57).

As a result of this *Lost Decade*, the resultant crisis drastically increased poverty in Latin America as never before. Since the early 1980's Unicef (United Nations International Children's Emergency Fund) warned about a growing number of children without their basic needs satisfied in those Latin American and African countries affected by the debt crisis because of a big part of fiscal income going to debt service repayments (Unicef, 1989). Since these debt service payments ought to be in U.S. dollars, then, they are under the logic of the duplication phenomenon previously seen, consequently, the harmful macroeconomic effect in terms of national income and employment reduction is larger and self-reinforcing.

The external-debt crisis in Latin America was the result of both external and internal factors. As seen, the external factors were the same for all the LDC's either in Latin America or Asia, that is, "cheap" money being recycled mostly through "cheap" loans in foreign currency from American banks. Nevertheless, as history shows, the different internal factors, i.e. domestic economic policy and applied growth model, made an enormous difference in terms of macroeconomic performance and reached levels of poverty, between Asian LDC's, oriented toward an export-led growth model with current account surpluses, and those Latin American countries under an import-substitution model with recurrent

fiscal and current account deficits[25]. As described by Jaspersen (ibidem. Pp. 58) "*Latin American countries responded to the crisis by adopting a secondary import substitution strategy, while the East Asian countries responded by adopting an export-oriented strategy[…] Several characteristics of the East Asian countries made it possible for them to successfully pursue an export-led growth strategy in the 1970s and 1980s. They were for the most part successful in controlling fiscal deficits and monetary expansion, holding inflation to low levels, avoiding excessive external and domestic indebtedness, and maintaining an economic environment conducive to high rates of savings and investment. They kept their economies open to foreign technology and put in effect an incentive system that concentrated the export drive on technology-intensive products. Flexible labor and capital markets enabled the real sector to react quickly to government initiatives, setting off new growth cycles that eased the recessionary impact of stabilization measures*". It was, then, a high capacity for generating international reserves, due to an economy with fiscal balance and a high real exchange rate (REER) focused on exporting, what made Asian LDC's to stay away from debt crises during the 1980's, even under the same international conditions as their Latin American peers.

In effect, empirical studies (Sachs and Larraín, 1993. Pp. 703) show that, whereas Asian LDC countries like South Korea, Hong Kong, and Singapore had a *commercial regime rating*[26] of 4, which means *very open* to trade, their Latin American peers like Argentina and Mexico had 1 and 2 respectively, meaning *very closed* and *closed* to trade (World Bank, 1987). In addition, these Asian countries, such as South Korea, Hong Kong, and Singapore had a ratio of exports over GDP of 36%, 106% and 129% whereas Argentina and Mexico had 15% and 16% respectively.[27] The latter indicates that, even under same exogeneous, international conditions, i.e. a flow of "cheap" money -in the form of loans- coming from developed countries to LDC's in Latin America and East Asia, those

[25] For comparative empirical studies between Asian and Latin American LDC's during the 1980's, see: Birdsall, Nancy and Jaspersen, Fred (1997) "*Pathways to Growth. Comparing East Asia and Latin America*". IDB. Washington D.C.

[26] The World Bank publishes these estimations based on the effective protection rate, commercial barriers, export incentives, and exchange rate over-appreciation. Countries are classified in four groups (1 to 4) from "inward oriented" = 1 to "outward oriented" = 4. The World Bank (1987). World Development Report, Washington D.C.

[27] For a more in-depth comparative list between Asian and Latin American LDC countries see: Sachs, Jeffrey; Larraín, Felipe (1993) "*Macroeconomics in the Global Economy*". Chapter 22: "*The Debt Crisis in Developing Countries*". 1st Edition, Prentice Hall (with data from The World Bank, World Development Report 1987).

countries which were export-oriented (East Asia) coped relatively better with these conditions comparing to their LDC peers, and eventually managed to grow.

On the other hand, those countries with balance of payment imbalances due to an import-substitution model, Latin America, suffered for more than a decade of continuous pauperization of macroeconomic conditions. Furthermore, Latin American countries typically presented oversized public sectors generating significant fiscal deficits mostly financed by even more external loans.

As seen in Latin American LDC's, net interest on external debt and sustained net imports constitute a macroeconomic, self-reinforcing pathology which poisoned domestic economies. Then, as efforts imposed to its people turns unbearable, the cycle unfailingly ends up in balance of payment and debt crisis.

Effectively, when export-led growth models, like in the Asian LDC's, are analyzed intertemporally, they tend to neutralize -*ceteris paribus*- a spiral of external debt problem as -by definition- they produce surpluses of balance of payment and abundant international reserves. In this way, the economy produces net exports, instead of net imports, and, through them, the international currency reserves needed to avoid external loans and net interest payments. Clearly explained by Schmitt: "*Today the total external debt of a country is measured adding the debts as incurred by the country's residents. This is fundamentally wrong because the true criterion concerns the country as a whole and not merely its residents of private or public sector. The question therefore belongs to macroeconomics, as does the law of international trade balance between each country's earnings (exports) and expenditures. In macroeconomics, where the measure of external debts is scientifically accurate, only the foreign currencies that are both received and spent by the country as a whole matter. The correct criterion is therefore consistent with the balance of payments: external debt increases by the exact value of the difference between international expenditures of foreign currencies and their gain*" (Schmitt, 2017. Pp 158).

Under the current non-system of international payments the central question, especially for LDC's, is the international currency generation capacity, which only may be originated after exports, i.e. positive balance of payments. Not in vain literature[28] and risk rating agencies agree -at least since 1990s- that *external debt-to-exports* ratio (eD/X) is a considerable more accurate *proxy* for analyzing the

[28] For detailed analysis see: Cantor, Richard and Parker, Frank (1996) "*Determinants and Impact of Sovereign Credit Ratings*". The Federal Reserve Bank of New York. Economic Policy Review (October 1996).

repayment capacity of indebted countries -as it captures international currency generation capacity- than *external debt-to-GDP* (eD/GDP). Harvard professor Ricardo Hausmann, et.al (1999, 2002) named it *The Original Sin* in macroeconomics. This *Original Sin* means that indebted countries in foreign currency, typically developing countries indebted in U.S. dollars, will need to generate the same foreign currencies to repay those loans. Since developing countries cannot print U.S. dollars, the only way to generate this income denominated in international currency is after net exports and current account surpluses. Therefore, those countries which are indebted in foreign currency with low capacity for obtaining foreign currency have the Original Sin, that is, they are bound to go through a balance of payments crisis, sooner or later. The *Original Sin* of professor Hausmann is perfectly coherent with the empirical evidence in Latin America during the *Lost Decade* of the 1980's and the tenets of professor Schmitt in his *Quantum* analysis twofold payments of external debt net interest and net imports.

Additionally, as previously analyzed, in the first part of twentieth century John Maynard Keynes (1929a) alerted about the existence of a similar phenomenon after the World War I regarding war Reparations imposed to Germany by the Allies. Keynes' analysis had the same base-problem as the ulterior *Original Sin* of professor Hausmann and the *Twofold Payment* of professor Schmitt.

Given the impossibility of a macroeconomic lab experiment, the contrast between the cases of South Korea, Singapore, and Hong Kong -on one side- compared to Argentina and Mexico -on the other side- during the 1980's represents a pertinent thought experiment to enlighten how LDC's under the same exogeneous conditions of international liquidity, and suffering same structural breaks of international interest rate hikes, arrived to very different results in terms of macroeconomic performance and social well-being. As mentioned, this divergence would be explained after two different growth models applied, on one side an export oriented model (e.g. South Korea) causing balance of payment surpluses and international reserves generation and, on the other side, an import-substitution/domestic market oriented model (e.g. Argentina) causing chronic balance of payment deficits, international reserve shortage and -finally- a sovereign debt spiral. Emerging countries applying the former strategy are -in some way- armored against the consequences of the non-system of international payments, on the other hand, countries applying the former strategy are exposed to these consequences which turn, sooner or later, explosive.

Economic analysts[29] recognize in the application of these two growth-models the crucial point between the Asian LDC's, which dodged the *Lost Decade* eventually becoming the *Asian Tigers* in the 1990's, and the Latin American LDC's which had the worst economic crisis since the Depression of 1930's. In cumulative terms, Latin America received a net transfer of resources of USD 91 Bn. between 1974 and 1981, whereas it transferred out, in net terms, USD 224 Bn. between 1982 and 1990 (Sachs and Larraín, 1993. Pp. 706). Comparing to the war Reparations problem after the Great War, Germany had to pay an average of 2.5% of GDP per year between 1925 and 1932, whereas Latin America transferred a yearly average of 4.2% of GDP between 1982 and 1985, almost the double of what Germany paid to the Allies after World War I (Sachs and Larraín, ibidem. Pp. 707). The disproportion between capital borrowed and paid is scandalous. The worsening of international financial conditions, i.e., international interest rates, and the deterioration terms of trade (both correlated) combined with closed economies with significant fiscal and current account deficits unleashed a macroeconomic hell for Latin American countries such as Argentina[30].

In turn, this political and economic crisis also triggered a capital flight dynamic[31], accelerated by a currency substitution movement of national residents, a typical monetary *fly-to-quality* or crisis-currency-movement in an over-appreciated domestic-currency economy when economic agents try to preserve their savings and capital[32].

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[29] See: Lindert, Peter and Morton, Peter (1989) "*How Sovereign Debt Has Worked*" in Jeffrey Sachs (ed.) "*Developing Country Debt and Economic Performance*". Vol. 1. University of Chicago Press. Also see: Larraín, Felipe and Selowsky, Marcelo (1991) "*The Public Sector and the Latin American Crisis*". International Center for Economic Growth. ICS Press. San Francisco.

[30] For a broad analysis see: Sachs, Jeffrey (1989) "*The Debt Overhang of Developing Countries*" in R. Findlay, G. Calvo, P. Kouri and J. Braga de Macedo (ed.) "*Debt, Stabilization and Development: Essays in the Honor of Carlos Diaz Alejandro*". Basil Blackwell, Oxford. 1989. Also see: Sachs, Jeffrey (1989) "*New Approaches to the Latin American Debt Crisis*". Essays in International Finance. Number 174. Princeton University. July 1989.

[31] For a detailed analysis on capital flight dynamics during the *Lost Decade* in Latin America see: Edwards, Sebastian and Larraín, Felipe (1989) "*Debt, Adjustment and Recovery in Latin America: An Introduction*" in S. Edwards and F. Larraín (ed.) "*Debt, Adjustment and Recovery: Latin America's Prospects for Growth and Development*". Basil Blackwell. Oxford and Cambridge, 1989.

[32] For empirical studies on the strong relationship between currency over-appreciation and capital flight during the 1980's see: Cuddington, John (1986) "*Capital Flight: Estimates, Issues and Explanations*". Princeton Studies in International Finance. Number 58. Princeton University. December 1986.

The attentive reader will have noticed that in the analysis developed by the majority of the experts of international economics to which this section has been devoted, LDCs' external debt is not distinguished from the external debt incurred by their residents. It is legitimate to claim that the recycling of petrodollars to borrowers of LDCs, as well as the different strategies adopted by Latin American countries (either an export-oriented strategy or a debt-led one), may explain the huge difference in the level of foreign indebtedness reached by their respective residents. Yet, this is not enough to explain how their countries have themselves get indebted to the rest of the world. In other words, mainstream analysis is still lacking the correct definition of *sovereign debt* and fails to recognize that LDCs must face both the excessive indebtedness of their residents and, on top of it, the indebtedness of their country-nations, sets of their residents. It is Argentina as-a-whole that carries the Argentine sovereign debt, and not the State (public sector), whose own debt, partially owed to foreign lenders, corresponds to Argentina's public debt.

The analysis we have considered in this section is well developed by mainstream economists and deserves great attention. However, it is insufficient to get at the bottom of what is known as the sovereign debt crisis. Event though external shocks and economic and monetary strategy matter as far as microeconomic indebtedness is concerned, the macroeconomic debt of countries, their sovereign debt, can only be explained by referring to the pathological working of the present non-system of international payments.

As Argentine economist Eduardo Conesa explains, in general "*external indebtedness in foreign currency must be very selective and restricted[…] It distorts the real exchange rate, over appreciating national currency, and the country slides though the tempting path of the drug of sovereign debt. Resources allocation is distorted. The economy gets organized for production of non-tradable goods in detriment of industry and agriculture where productivity growth is higher*"[33] (Conesa, 2002. Pp. 250). External indebtedness represented for Latin America in general, and for Argentina in particular (and still does), exactly what Professor Conesa characterized as the *drug of external debt*. Because of the phenomenon of duplication, explained by the *Quantum* macroeconomics, Argentina needed more

[33] Original in Spanish (translated by the author): "*El endeudamiento externo en divisas debe ser muy selectivo y restringido[…] Se distorsiona el tipo de cambio real, se sobrevalua la moneda y el país se desliza por el camino tentador de la droga de la deuda. Se distorsiona la asignación de los recursos. La economía se organiza para la producción de no-transables en detrimento de la industria y la agricultura, donde el crecimiento de la productividad es mayor*".

and more external loans in a self-reinforcing indebtedness path along the last decades.

IV.II. Argentine Government and External Public Debt: A Brief History

Argentina started her long story of external debtor right after her independence from Spain. On July 1st, 1824 -in those days, still under the Government of Buenos Aires led by Martin Rodriguez and just eight years after the noble deed of Independence in July 1816- the young Minister and Chancellor Bernardino Rivadavia -later first President of the United Provinces of the *Río de la Plata*, most of which would become the *República Argentina*- took a loan of one million sterling from the Baring Brothers (London) to build infrastructure -something that never happened- payable out of customs proceeds in three years at 6.5% annual interest. Argentina defaulted on this loan in 1827. The actual amount received after commissions and expenses was 552,700£. The loan was finally repaid in full in 1904, 80 years after it was taken. The total amount repaid was about £4.8 MM, almost nine times over the net amount disbursed[34].

During the second half of the nineteenth century and the first half of the twentieth -until the beginning of the Great War in 1914- Argentina (necessarily?) kept depending on foreign capital under the form of foreign investment and external loans -mostly from the United Kingdom- to get established as a country. Wars (e.g. with Brazil 1825-28) and infrastructure (e.g. railway, metro) could not have been financed with domestic resources. As Randall describes: "*Before the First World War, Argentina was part of Britain's unofficial empire. Although this relationship had been weakened by the Argentine financial difficulties of the 1890's, Britain was still Argentina's most important trading partner before World War I*" (Randall, 1978. Pp. 216).

The world -and also the economic relations for Argentina- would change after World War I (1914-18). "*From 1922 to 1929, only 17 percent of new investment came* [to Argentina] *from foreign sources; this fell to 13 percent in the Great Depression, 2 percent under* [president] *Perón, and less than 2 percent thereafter. Similarly, as the size and complexity of the economy grew, Argentine dependence on international trade decreased. Exports comprised*

[34] *Museo de la Deuda Externa. Facultad de Ciencias Económicas de la Universidad de Buenos Aires.* Retrieved on June 2019 from: http://museodeladeuda.econ.uba.ar/01-de-julio-de-1824-primer-endeudamiento-argentino/

more than 25 percent of gross domestic product from 1900 to 1922; 25 percent from 1922 to 1929; 20 percent during the Great Depression; 9 percent under [president] *Perón; and only 6 percent by the 1970's*" (Randall, ibidem. Pp. 210).

By the mid 1940's not only the external conditions changed, i.e. the United Kingdom diminishing her economic power and the United States becoming the undisputable new global leader, but also the Argentine domestic ones. Effectively, Argentina adopted a new economic model which stands -with only two exceptions in the 1970's and 1990's- until now. That is, the adoption of an import substitution, inward economic model. As explained by Argentine economists Cavallo and Cavallo Runde: "*While our country successfully participated in the global economy during the first wave of globalization, it was self-discriminated in the second wave of globalization led by the United States that began just after the Second World War*"[35] (Cavallo and Cavallo Runde, 2017. Pp. 139-40). This stopped massive capital flows (from both, direct investment and debt) to Argentina until the late 1970's. Confirmed by Argentine economist Espert: "*The Argentine economy between 1961 and 1976 was closed to capital movements.* [public] *Debt as a proportion of GDP was low, and most of it was domestic debt*"[36] (Espert, 2017. Pp. 419).

After the last *coup d'état* in March 1976 the economy attempted a new opening to the world, and the process of external indebtedness resumed[37]. Between 1977 and 1982, under the military *de facto* government "*was generated the beginning of the* [external] *debt crisis[...] between 1975 and 1982 the government* [external] *debt grew steadily, with an annual average of 30%. The majority of the debt incurred at this stage was external debt* "[38] (Espert, ibidem. Pp. 420). At the end of the military government, in 1982, "*the public* [external] *debt default was declared and, as a consequence, Argentina*

[35] Original in Spanish (translated by the author): "*Si bien nuestro país participó con éxito de la economía mundial durante la primera ola de globalización, se automarginó de la segunda ola de globalización liderada por los Estados Unidos que comenzó apenas terminada la Segunda Guerra Mundial*".

[36] Original in Spanish (translated by the author): "*La economía argentina entre 1961 y 1976 estuvo cerrada a los movimientos de capital. La deuda como proporción del PBI era baja, y la mayor parte era deuda interna*".

[37] This is not because an open economy necessarily has to get indebted per se. In the case of Argentina this debt spiral was mainly originated due to a growing public spending financed by the issuing of USD denominated external bonds.

[38] Original in Spanish (translated by the author): "*Entre 1977 y 1982 se genera el comienzo de la crisis de la deuda[…] entre 1975 y 1982 la deuda del gobierno creció de forma sostenida, con un promedio anual del 30%. La mayor parte de la deuda contraída en esta etapa fue deuda externa*".

was left out of the international credit markets. The external debt of the government between 1983 and 1991 practically did not grow"[39] (Espert, ibidem. Pp. 421).

Democracy came back to Argentina in December 1983 with the new Administration of President Raúl Alfonsín, but the economy remained closed until the next Administration of President Carlos Menem (1989-1999). It is in 1991, with the reopening of the Argentine economy, that capital flows (in both, foreign investment and external loans) returned to the country. From 1991 onwards "*public* [external] *debt grew by an average of 10%* [a year] *until the crisis of 2001. Then, between 2002 and 2004, it grew again until 2005 when, finally, it had a drastic reduction after its restructuring[...] The dynamics of government* [public external] *debt is explained by the fiscal deficit[...] In 2015, when Argentina arrived to have one of the highest inflations in the world and with* [president] *Mauricio Macri already in office, a new* [public external] *debt process was initiated to finance the fiscal deficit*"[40] (Espert, ibidem. Pp. 422-3).

As seen, in Argentina, the exponential growth of external public debt started in the late 1970's. Buera and Nicolini (2019) provide a succinct summary by identifying sub-periods within the period of study 1960-2017 namely i) 1960-1976 when the economy was closed to capital movements and then the capacity to borrow abroad was heavily limited; ii) 1977-1990 when the liberalization of financial markets and the opening of the capital account took place. This integration with the world allowed the Government to borrow from abroad, fast increasing the external debt stock. In 1982 Argentina defaulted on her external public debt (as long as other countries in Latin America, such as Mexico); iii) 1991-2001 when the second wave of financial liberalization and a successful renegotiation of the old public external debt (Brady Plan) took place.

This process enabled the Argentine government to borrow from abroad again, in a continuous mode until December 2001 when the Argentine currency board collapsed in the midst of a banking crisis and a new default on external

[39] Original in Spanish (translated by the author): "*En 1982 se declara el default de la deuda pública y como consecuencia la Argentina quedó fuera de los mercados internacionales de crédito. La deuda externa del gobierno entre 1983 y 1991 prácticamente no creció*".

[40] Original in Spanish (translated by the author): "*A partir de 1991 la deuda pública creció en promedio un 10%, hasta la crisis del 2001. Luego, entre 2002 y 2004, volvió a crecer hasta que finalmente en 2005 tuvo una drástica reducción luego de su restructuración[…] La dinámica de la deuda del gobierno se explica por el déficit fiscal[…] En 2015, al llegar la Argentina a tener una de las inflaciones más altas del mundo, y ya con Mauricio Macri en el poder, se inició un nuevo proceso de endeudamiento para financiar el déficit fiscal*".

government debt; finally, the last period iv) from 2002 onwards, Argentina was excluded again from the international markets. In 2005 a negotiation with the bond holders took place, because of this negotiation around 75% of the defaulted debt was rescheduled. A second round took place in 2010, and the total renegotiated debt reached 93%. The remaining *hold-outs* went to the international court and got finally paid in 2016 by the new Administration of President Macri. Since 2016 the process of public external indebtedness spirals, mainly to close the fiscal gap, leading to an agreement with the IMF in 2018; this agreement -as of April 2021- is still outstanding, pending of restructuring and refinancing.

As Buera and Nicolini (ibidem. Pp.1) summarize "*The monetary and fiscal history of Argentina for the period 1960-2017,* [is] *a time during which the country suffered several balance of payments crises, three periods of hyperinflation, two defaults on government debt, and three banking crises. All told, between 1969 and 1991, after several monetary reforms, thirteen zeros had been removed from its currency. We argue that all these events are the symptom of a recurrent problem: Argentina's unsuccessful attempts to tame the fiscal deficit*".

Effectively, in the case of Argentina, we can identify two main inter-connected sources for her recurrent public external debt crises, namely i) An anemic exports sector: a relatively closed economy under an inward-model with poor international commerce for the most part of the time since 1930 onwards -with the exceptions already pointed out of 1979-82 and 1991-2001- operating with a low real exchange rate setting (REER) which hinders massive exports (in a country blessed with exportable natural resources) and thus making difficult a genuine and abundant generation of international reserves denominated in U.S. dollars; and ii) A chronic fiscal imbalance: existence of ever-growing public sector with chronic fiscal deficits[41] needed to be financed by growing external public indebtedness[42].

[41] At domestic level, budget deficits reduce the supply of loanable funds (credit contraction), raising domestic interest rate, crowding out private investment and pushing down real exchange rate. See: Gregory Mankiw and Mark Taylor (2017) "*The Market for Loanable Funds*" in "*Macroeconomics*". Pp. 150. Cengage. Fourth Edition.

[42] Giving a rachitic domestic capital market in local currency.

Additionally, as this inflow of public external debt pushes over-appreciation of domestic real exchange rate[43], the vicious cycle (anemic exports sector + fiscal imbalance) is reinforced, as the economy allocates domestic productive resources to the non-tradable sector in detrimental of the exportable tradable sector (Balassa, 1964)[44].

Precisely, this exchange rate volatility is a consequence of the current non-system of international payments in which the majority of countries must operate -at an international level- through the domestic currency of another country (typically the United States). As international commerce and external loans are denominated in U.S dollars, this eventually forces LDC's to purchase international currency at the international currency market which represents -as seen- a double effort for those countries.

Causality is circular (i.e. reflexive), and self-reinforcing[45], being on one side i) a *quasi*-closed economy, typically with an over-appreciated domestic currency and huge fiscal deficits to be financed by public external loans (which accrue debt services in U.S. dollars) and, on the other side, ii) a persistent current account deficits triggering sovereign debt formation; these two are both part of the same boom-bust external-debt-led model (Conesa, 2002). This lethal combination was

[43] Fiscal deficits financed by external debt push down real exchange rate (REER) at least through two channels namely i) Monetary: At the moment that the monetary Authority needs to exchange the U.S. dollar denominated external debt to Argentine pesos to make payments, artificially depressing -in this way- nominal (and real) exchange rate; and ii) Credit: As fiscal deficits produce imbalances in the domestic relationship saving/investment, producing negative public savings and pushing down domestic REER (through an upward domestic interest rate).

For a detailed analysis on the Argentine case of fiscal deficit and its effects on REER (both through monetary and credit channels), see (in Spanish): Conesa, Eduardo (2000) "*Que Pasa en la Economia Argentina*". Pp. 93-108. Ediciones Macchi (Buenos Aires).

[44] For an in-depth comprehension of the exchange rate and the tradable/non-tradable dynamics in developing countries see the seminal work of Nobel Prize winner, Professor Bela Balassa (1964) "*The Purchasing Power Parity Doctrine. A Reappraisal*". Journal of Political Economy. Vol. 72. No 6. Pp. 584-596. December 1964.

[45] Professor Eduardo R. Conesa (Emeritus Professor, University of Buenos Aires) has studied this process in detail. For in-depth analysis of the Argentine case see [in Spanish]: Conesa, R. (1996) "*Desempleo, Precios Relativos y Crecimiento Economico*". Editorial Depalma; Also: Conesa, R. (2000) "*Qué Pasa en la Economía Argentina*". Ediciones Macchi; And also: Conesa, R. (2002) "*Macroeconomía y Política Macroeconómica*". Ediciones Macchi.

common in Latin America during the 1980's. As Easterly and Schmidt-Hebbel explain: "*Fiscal deficits were at the forefront of macroeconomic adjustment in the 1980s, in both developing and industrial countries. They were blamed in large part for the assortment of ills that beset developing countries during the decade: over indebtedness, leading to the debt crisis that began in 1982; high inflation; and poor investment and growth performance[…] How do fiscal imbalances feed into external deficits? One should expect a strong link between fiscal and current account deficits[…] The role that fiscal imbalances played in the overborrowing by developing countries that to the 1982 debt crisis is widely recognized*" (Easterly and Schmidt-Hebbel, 1993. Pp. 15-16).

While this work addresses the problem of sovereign debt formation in Argentina by proposing a different monetary institutional setting inside the Argentine central bank to offset the consequences of the lack of an international payments system (as it will be further developed), it would be incomplete (and naïve) to approach this problem without -at least- recognizing internal drivers namely i) an ever-increasing size of the Argentine government (federal, provincial, and municipal) which causes chronic fiscal deficits typically financed by issuing public external debt (eventually adding monetary emission) which -in turn- artificially pushes downwards real exchange rate (i.e. REER) deterring exports and international reserves formation, and ii) a *quasi*-closed inward-looking economy which (along with its over-appreciated currency) causes balance of payments deficits or -in a best case scenario- a rachitic export level with low generation of international reserves.

The evil is not in the public debt per se, but in the fact that the Argentine government takes public debt denominated in U.S. dollars, whose debt services ought to be paid also in U.S. dollars under the current non-system of international payments in which Argentina needs to purchase the needed foreign currency. The latter, combined with an anemic export sector (typically running external deficits resulting in net imports), triggers, as a result, a sovereign debt formation dynamic.

In this case, Argentina's sovereign debt adds up to that of the government, because of an aberrant dynamic due to the lack of a true system of international payments. Let's be clear on this, the simple fact of borrowing abroad (either by the government or by the private sector) is not enough to cause the formation of sovereign debt, but systematically taking external loans denominated in dollars and running external deficits (net imports) under the current non-system of international payments certainly is.

Ultimately, as assessed by Sachs and Larraín (1993, Pp. 700) domestic policies are fundamental at explaining the indebtedness process and debt crisis of Latin American LDC's since the 1980s. Debt crisis hit with extreme violence in those countries with fiscal dominance and/or distorted commercial policies, mostly those with an anti-exports bias, as empirical evidence shows in Latin American countries vis-à-vis their Asian peers during the 1980s and 1990s. As University of Buenos Aires economist, Eduardo Conesa simplifies: "*The truth is that external debt can only be paid with international currency and the ultimate source of international currency is exports*"[46] (Conesa, 1996. Pp. 578). Professor Conesa once again brings to surface the problem of *foreign valuta* seen at the *German Transfer Problem*.

These two Argentine macroeconomic domestic issues, namely, i. chronic fiscal deficits financed by external debt, and ii. low generation capacity of U.S dollars through exports; both within current global monetary conditions with a lack of an orderly system of international payments, have been underneath the sovereign debt problem in Argentina since the mid-twentieth century.

[46] Original in Spanish (translated by the author): "*La verdad es que la deuda externa hay que pagarla en divisas, y la última fuente de las divisas son las exportaciones*".

Chapter V
A *Quantum* Macro Strategy for Argentina

"Ansiosamente, nos preguntamos entonces sobre la esencia y el porvenir de nuestra patria. Desde nuestras instituciones hasta nuestro arte, todo está siendo ejuiciado, y enjuiciado en una atmósfera de tormentosa nerviosidad. ¿Qué somos? ¿Adónde vamos? ¿Cuál es nuestra verdad nacional? ¿Somos algo nuevo, se gesta aquí algo realmente original, en este caos de sangres y culturas?"

Ernesto Sabato
Argentine physicist, writer, and painter
El Escritor y sus Fantasmas (1963, Pp. 65-6)

The case of Argentina is extraordinary, but not for good reasons. Effectively, as the great Ernesto Sabato asks in the quotation above, what is the *essence and the future of our country*?*[…] Where are we going?* The issue is crucial as Argentina was among the richest countries in the world, receiving millions of people from Europe, a century ago. But now, since several decades ago, the country is getting deteriorated at high speed. Nobel Prize in Literature, Mario Vargas Llosa, said in several conferences and interviews[47] that he knows many poor countries, and also many rich countries which were poor, but only one which was rich and now is poor: Argentina. This is a sad uniqueness.

Nowadays, under the current conditions for international settlement of cross-border transactions, or as we call it, a *non-system* of international payments, when a given middle-size country -such as Argentina- faces net imports, i.e. total imports bigger than total exports[48], it needs to purchase the required amount of international currency to pay for these net imports. In effect, as previously seen[49],

[47] As a graduate student in Cambridge, MA (USA) the author had the honor of listening in person to Mr. Vargas Llosa debating about Latin America. In that occasion, the Peruvian writer -and former Presidential candidate of Perú- expressed the idea quoted in this chapter.

[48] Along this work we refer to imports and exports in a broad sense, i.e. goods, services and capital (including financial titles).

[49] See Chapter II: Brief Theoretical Framework

it is a common mistake in international economics to neglect the pathologic macroeconomic payment of a country, by only having in mind the legitimate microeconomic one.

Effectively, when importers (e.g. in Argentina) purchase abroad (e.g. from USA), importers' resources for the payment of these imports naturally will come from their own income generation capacities. This income generation, as it is produced inside borders (of Argentina), will be denominated in domestic currency (AR$, or currency A). Therefore, these (Argentine) importers must take the needed amount from their own income to settle their debts with foreign exporters (USA) in their domestic currency (AR$). This sacrifice, in terms of domestic income, carried out by the importers (in Argentina) to pay for their purchases (imports) is, indeed, in domestic currency (AR$). But, logically, foreign exporters (USA) require these payments denominated in international currency (USD, or currency R) and, in fact, it is in international currency (USD) that these payments are settled.

For the sake of our analysis, we will break up net imports' payments in two. The first part of the payment is the sacrifice in terms of domestic income that importers (in Argentina) have to make in order to settle their purchases, in domestic currency (AR$), as income denominated in domestic currency is the only possible legal tender inside national borders (of Argentina). The second part of the payment is the necessary conversion that this amount needs to undergo to be denominated in international currency (USD) in order to be accepted by foreign exporters (USA). This conversion is typically carried out by the monetarysystem of the country, which means that the country will have to sacrifice pre-existent national reserves in foreign currency or obtain foreign currency abroad through foreign loans in order to complete the operation.

The first part of the payment is a *microeconomic* payment as it affects only an agent or group of agents (importers), whereas the second part is a *macroeconomic* one, as it affects the country as a whole. When the inflow of international currency (currency R) produced by exports is more than enough, or enough, to compensate the outflow produced by imports, then the net result is either foreign reserves formation or zero (if exports are higher or equal to imports, respectively). But when imports are higher than exports (net imports) then the country necessarily will face a sovereign debt formation.

Net imports:	*M>X* →	*Loss of foreign reserves or foreign currency purchase (sovereign debt formation)*
Net exports:	*M<X* →	*Foreign reserves formation*
Balanced:	*M=X* →	*Zero sum net result*

The distinction between microeconomic and macroeconomic payments is not always enough clear in economic analyses, as explained by Schmitt: "*Today the total external debt of a country is measured adding the debts as incurred by the country's residents. This is fundamentally wrong because the true criterion concerns the country as a whole and not merely its residents of private or public sector. The question therefore belongs to macroeconomics, as does the law of international trade balance between each country's earnings (exports) and expenditures[…] External debts increases by the exact value of the difference between international expenditures of foreign currencies and their gain[…] The difficulty of understanding the crucial distinction between microeconomic and macroeconomic payments is one of the reasons for the error in which the present theory of imports' payment finds itself. Economists believe that imports are paid between residents of the world, in exporting countries as well as in importing countries. This is totally wrong, because only importers and exporters are residents, importing and exporting countries are entirely distinct from their residents*" (Schmitt, 2017. Pp. 158).

Understanding this distinction between microeconomic and macroeconomic payments is fundamental to visualize why resident importers in, e.g., Argentina, do not have the capacity for settling payments in foreign currency by their own, as their income generation capacity is in domestic currency (in this case, in AR$). Their payments are always microeconomic, leaving for the country as a whole, i.e. a macroeconomic entity, the conversion of that amount from domestic currency to foreign currency. Clearly, if the inflow coming after exports is not enough to cover the outflow due to imports (i.e. imports without exports), then the country as a whole (i.e. its central bank) will have to obtain this amount abroad through a net foreign loan.

In effect, the ultimate, global solution for this problem would be a reformulation of the current scheme of international payments through the incorporation of an international clearing house within a system of international payments and the adoption of a pure international medium of exchange, i.e. a truly international currency not emitted by any country.

Without this global reform, the only way for a middle economy such as Argentina's -which is not favored by the possibility of emitting an international currency- to avoid such a problem, is to make an internal reform within its own institutional monetary setting related to foreign payments. Such a *Reform* will introduce a *Quantum* macro-strategy, based on the *Quantum* monetary macroeconomic approach initiated by Bernard Schmitt in 1960s.

The goal of this *Reform* is to prevent the very formation of sovereign debt, and the ulterior crisis of debt and balance of payments. In a (hopefully) future global monetary order functioning with an international clearing house (which does not exist yet) this *Reform* would not be necessary, as the very system of international payments in place would not allow such sovereign debt formation. Yet, for the time being, this reality is far from sight.

As the *Quantum* macroeconomic approach sustains: "*foreign currencies that are not earned must be purchased*" (Schmitt, 2017. Pp. 159) as it was the problem of Germany after the Great War in the 1920s, a problem of lacking *foreign valuta* (Chernow, 1990). As the only way of genuinely generating a positive inflow of foreign currency is through exports. Therefore, when imports are higher than exports (M>X) the country *as-a-whole*, i.e. as a macroeconomic entity, faces the necessity of purchasing foreign currency (by selling financial claims abroad, that is, by obtaining a foreign loan) by the exact amount of this difference (or using preexistent international reserves). This is the very formation of sovereign debt (macroeconomic debt).

Essentially, the macroeconomic payment in foreign currency, carried out by the country *as-a-whole* through its monetary authority, adds to the cost in domestic currency paid by the importers (microeconomic payment) originating, in this way, the problem of duplication, as already seen, a twofold net imports' payment or sovereign debt formation. Without a global reform of the international payments system in place there is no possible solution at hand, except a remedy available and executed on a single-country basis. This remedy consists of implementing certain arrangement inside the country's monetary institutions in order to impede these macroeconomic payments which represent the origin of the sovereign debt formation.

i. Current institutional setting without the *Reform* :

→ microeconomic cost [healthy: residents level] AND macroeconomic cost [pathological: country *as-a-whole* level]

ii. Institutional setting with the *Reform* :

→ Only microeconomic cost [healthy: residents level]

V.I. The Architecture and Logic of a New Institutional Framework

An individual-country solution, under the logic of the *Quantum* macroeconomic approach, in order to avoid the governing dynamics of cumulative sovereign debt formation will need to place certain mechanism to decouple foreign creditors, i.e. foreign exporters to our country, from domestic debtors, i.e. resident importers.

In order to achieve such decoupling, it is needed to introduce a sort of compensation chamber between these two flows namely, flow one: collections from domestic importers in domestic currency (e.g. AR$), and flow two: payments to foreign exporters in foreign currency (e.g. USD).

A *Sovereign Bureau*, named in this way by Professor Schmitt in his writings, will work as a buffer or compensation chamber between national residents-importers and foreign non-residents-exporters acting as a decoupling-correction mechanism. In simply operative terms, the *Sovereign Bureau* (or just the *Bureau*) will be a new department -preferably inside the central bank- which will keep track on external debits (imports) and credits (exports) on daily basis, that is, every payment to/from the rest of the world denominated in foreign currency. This *Bureau*, as it was thought by the intellectual father of the *Quantum* macroeconomic analysis, will not have any responsibility from custom standpoint. It will work, as we will see, just as a monetary compensation chamber, and nothing else.

Schmitt is clear in this respect, observing that the *Bureau* will "*preserve the laissez-faire; in particular the Inland Revenue will not benefit from it*" (Schmitt, 2017. Pp. 159). It is clear, then, that the reason of the proposed *Reform* is neither to exert -in any way- more governmental control to international commerce, nor to increase the burden of taxes to private sector. The only reason to exist for the *Bureau* is to

neutralize the cumulative macroeconomic debt formation generated -with the current (non)system of international payments- when there is a difference between imports and exports being the former higher than the latter (net imports). As Schmitt himself points out "*it is a matter of fighting against the double charge and not against imports as such*" (Schmitt, 2017. Pp. 160).

In order to achieve this goal, the *Bureau* first needs to convert all the national importers' payments to the rest of the world as if they were domestic payments among national residents. The *synthetic* method of carrying out this task is through the *Bureau* which is, itself, a domestic economic agent.

Effectively, by establishing the *Bureau* as a *de facto* and a *de jure* middle-payment agent between national importers and foreign exporters, this *Bureau* will collect all the domestic importers' payments (in national currency). These payments will be done in domestic currency as if they were payments between national residents, because, as a matter of fact, they are. In this way, all the payments coming from domestic importers are going to be done in domestic currency to the *Bureau*. Additionally, the *Bureau* will be the sole and only debtor to the rest of the world, mimicking one big, lone national debtor for every economic agent outside national borders (rest of the world-R).

Domestic Importer 1 =>	The Bureau	=>	Rest of the World's Creditors
Domestic Importer 2 =>	Country A		Country R
Domestic Importer 3 =>	[the one and only debtor]		
.			
.			
.			
Domestic Importer n =>			

Essentially, all domestic importers' payments will be done to the *Bureau* and, as the *Bureau* is also a national resident economic agent, then, all importers' payments will be settled in domestic currency. After these operations are carried out, all the domestic importers having already paid (legitimate microeconomic payment) for their purchases, the only debtor to the rest of the world will be the *Bureau*. This

step is necessary to concentrate all domestic importers' debts with the rest of the world under the umbrella of one single national debtor, that is, the *Bureau*.

This first step is fundamental for the next one, decoupling debts in domestic currency (domestic importers in currency A) from collections in foreign currency (foreign exporters in currency R). In this way, the *Bureau* "*must indeed ensure that the domestic payments, in money A, be disconnected from external payments, defined in money* R" (Schmitt, 2017. Pp. 160).

The result will be as follows:

For exporters in country A: Their only rights are defined in domestic currency and the *Bureau* is their only debtor.

For importers in country A: Their only debts are defined in domestic currency and the *Bureau* is their only creditor.

For exporters in country R: All their credits are defined in foreign currency and the *Bureau* is their only debtor.

The *Bureau*, at the same time, will need to reinstruct the domestic banking system (through legal and operational directives from the central bank) as, from now on, it will be only the *Bureau* which will cancel all foreign credits on behalf of national resident importers. In this way, foreign purchases of residents within the domestic economy (e.g. Argentina) will represent zero credits to the rest of the world. Creditors of the rest of the world will not be able to transform their credits in domestic currency (AR$) into credits in international currency (USD) independently from the *Bureau*. Under the new domestic setting, it is no longer allowed to have a payment in domestic currency as the object of a foreign loan, as "*no purchaser and no lender abroad can include a sum of money A among their credits in country A*" (Schmitt, 2017. Pp. 160).

As the *Bureau* is the only agent of payment and collection regarding exports and imports, in the case of net imports (i.e. M>X) the *Bureau* will generate a net profit in domestic currency out of these payments and collections. E.g. If Argentine exporters sell abroad the equivalent to 10 USD and Argentine importers buy from

abroad 11 USD, then the *Bureau* will pay in domestic currency to domestic exporters the equivalent of 10 USD whereas it will collect the equivalent in domestic currency of 11 USD from domestic importers. The net result for the *Bureau* will be the amount equivalent in domestic currency to 1 USD. This gain is net and definitive, as "*entering the personal belongings of the Bureau is a final gain, which is not and will not be corrected by any future loss. From this it can immediately be deducted that the Bureau finally transfers this gain to its country's government[…] Certainty that the gains of the national budget in domestic money are net and final[…] The reform's principal aim is to assign to countries' governments the total of the sum of incomes in domestic currency spent for the payments of net imports*" (Schmitt, 2017. Pp. 161).

In this way, the national income spent for paying net imports -which were not produced in the domestic economy- remains within the domestic economy. Under the current setting, without the *Reform*, this net result of 1 USD in national currency is lost in the purchase of 1 USD necessary to pay foreign exporters. In other words, in the absence of the *Bureau*, to pay 1 USD of net imports, the country has to purchase international currency for that amount in the international currency market, which leads to the formation of a macroeconomic sovereign debt.

V.II. The *Sovereign Bureau* in Action

Once the *Bureau* collected the sum of national income in domestic currency paid by the net importers with a net gain (in our example, the equivalent to 1 USD[50]), then the next operation is borrowing abroad an amount of 1 USD and, at the same time, lending abroad exactly the same amount (a reverse-loan).

This reverse-loan is the keystone of the *Reform*. The operation could appear at first sight somehow counterintuitive, or even absurd, but it is necessary, as described by Schmitt himself: "*it is obviously strange to contemplate that the deficit country must decide to lend funds abroad. Country A, whose import's value is net to the extent of 1 dollar, must borrow this sum abroad, yet it then has to lend 1 dollar to the rest of the world[…] The loan of 1 dollar to the benefit of R has no other aim than to make sure of the gain in a domestic income*

[50] For the sake of simplicity we use rounded, small numbers in our analyses. We can assume them in billions, e.g. 1USD = USD 1 Bn., etc.

of A of the equivalent of 1 dollar[…] The sum of 1 dollar borrowed abroad is additionally (inversely) lent abroad. This loan makes it entirely impossible for A's government to lose the property of the income A obtained from the domestic payment that finances economy A's surplus imports" (Schmitt, 2017. Pp. 162-3).

In other words, the 1 USD of net imports still has to be financed in foreign currency, that is, regardless of what the country does internally with the *Bureau,* foreign exporters must collect their commercial accretions. In order to do that, County A (e.g. Argentina) takes a loan, i.e. it borrows 1 USD from the rest of the world. So far, this is the current modality of international commerce and, if stopped here, this transaction would form macroeconomic debt as usual.

Effectively, we would be witnessing a duplication process in which the sum borrowed in currency R (USD) would be spent to pay net imports abroad (macroeconomic payment) which already has been paid by resident importers in national currency (microeconomic payment). In this way, we would see, overall, a duplicated payment equal to the sum of the amount already spent in currency R (in our example, 1 USD borrowed from abroad) plus the 1 USD equivalent in domestic income spent by national importers.

The loan granted by the rest of the world (country R) to Country A could be seen as a payment in advance for the future exports of Country A. But Country A also is lending the same amount (reverse-loan) to the financial market of the rest of the world. In this way, the deficit Country A obtains, in financial assets, an external credit of the same amount that the debt incurred by borrowing from R. The external credit compensates exactly the external debt formed by A's borrowing abroad.

. Rest of the World	→ Loan of 1 USD to Country A
. Country A	→ Reverse-Loan of 1 USD to Rest of the World

Effectively, net imports will be paid in full by domestic importers to the *Bureau* in currency A (microeconomic payment). The *Bureau* will make a final profit for the amount of the net imports in domestic currency (e.g. 1 USD in currency A). This

income, in domestic currency, will remain as property of the Country A as it will be re-invested in the domestic economy of the Country A. Then, the rest of the world (Country R) will lend that amount in foreign currency to Country A to enable it to pay for its net imports, (the loan will be only for the amount of net imports [M-X]). Concomitantly, Country A will lend that same amount (reverse-loan) in the international financial market (Country R), balancing the amount of the money borrowed. In this way, by balancing financial credits and debits for the amount of net imports paid, Country A will no longer suffer from a sovereign debt, whereas the net exports of Country R (rest of the world) to Country A are fully paid in the same period that the transaction is performed.

Rest of the World	→ Loan of 1 USD to Country A → X (goods and services) to Country A
Country A	→ Reverse-Loan of 1 USD to Rest of the World → Payment for X (good and services) to Rest of the World

From a strictly operative point of view, the novelty is the reverse-loan extended by the *Bureau* of Country A to the rest of the world (Country R), which will compensate the loan taken by this *Bureau* to pay the net imports of Country A.

In other words, as detailed by Schmitt: "*The coexistence of two equal-size financial transactions, which contradict one another: the loan of 1 dollar granted by R to A is offset by the loan of 1 dollar granted by A's Bureau to non-residents. It is understood that borrowers and lenders in the economy R are distinct residents. The goal is thus achieved, because country R can no longer become the owner of real goods that country A will produce in the future; the loan made by R to A is of a zero sum*" (Schmitt, 2017. Pp. 166). With the *Reform*, net imports will have zero macroeconomic cost, because the deficit country has now borrowed-lent the amount of net imports instead of only borrowing it.

Applying this rationale to our case, net imports of Argentina will be paid to the foreign exporters by the *Bureau* with the loan taken by Argentina from the rest of the world, being these imports settled in the same period of time they were originated. But, if Argentina does not neutralize the debt incurred for the monetary payment (macroeconomic) of her net imports, then the country would

end up paying net imports twice, as we have seen, one in real goods (microeconomic) and one monetary (macroeconomic). The foreign loan is necessary, and it is enough to guarantee the payment of Argentina's deficit. But now the loan taken by Argentina will be compensated by a reverse-loan of the same amount extended in favor of the rest of the world.

Where is the money for the reverse-loan coming from? In this regard Country A has two possible options namely, *Option 1*: The money is coming from preexistent foreign currency reserves of the Country A's central bank, or *Option 2*: We assume no preexistent foreign currency reserves.

In Option 1, in which Country A finances the reverse-loan with its preexistent reserves, the net balance sheet effect to the *Bureau* is zero, as the central bank will be just changing one financial asset for another, in this case, USD cash for USD denominated financial titles.

In Option 2[51], in order to finance the reverse-loan without using preexistent reserves Country A will need an additional loan. Effectively, in the Option 2 the dynamics will develop as following: If we assume that the foreign currency reserves of Argentina are zero, then the Argentine *Bureau* will need from the rest of the world 2 USD instead of 1, the *first* dollar to pay for her net imports and the *second* one to lend it to the rest of the world (reverse-loan). Yet, the 1 USD reverse-loan granted to the rest of the world will reduce to zero the macroeconomic debt of Argentina.

Let's breakup the dynamics of Option 2: At time zero (t_0) the Argentine *Bureau* borrows 1 USD (Loan 1) and pays Argentine net imports; the Argentina's external debt increases by 1 USD. Then, in time one (t_1), the Argentine *Bureau* borrows again 1 USD (Loan 2) to reimburse its debt of t_0. Additionally, the Argentine *Bureau* borrows also another extra 1 USD (Loan 3), which is immediately lent (reverse-loan) to the rest of the world. As explained by Schmitt: "*The second loan is indeed only the reproduction of the first. It is certain therefore that the loan granted by country A compensates both the second and the first loan to country A. The total borrowing of the deficit country, which is equal to 1 dollar in each period, is thus finally and completely cancelled*" (Schmitt, ibidem. Pp. 167). At the end of t_1 Argentina's external debt will be equal

[51] For Argentina, both options could be done, as the country counts on international reserves in foreign currency to extend a reverse-loan for the amount of her net imports.

to 1 USD only, remaining the same in every successive period provided Argentine net imports are repeatedly equal to 1 USD.

The reverse-loan granted in each period by the Argentine *Bureau* to the rest of the world will avoid the formation of Argentina's sovereign debt produced by net imports, and it will also reduce asymptotically to zero the amount of debt renewed in each period. The Bureau borrows only once the value of net imports (1 USD). This loan will be cancelled and renewed, producing no bottom-line change as "*the second loan identifies itself with the first*" (Schmitt, 2017. Pp. 167). The reverse-loan of Argentina to the rest of the world will compensate both, the second and the first loans obtained by Argentina, since the second loan reproduces the first one. Since one loan merely reproduces the other, Argentina borrows only once the amount of her net imports. This amount is then balanced by Argentina's reverse-loan to the rest of the world. What remains at the end of t_1 is the debt of 1 USD acquired due to the first loan which was necessary to repay the loan taken at time zero, t_0.

The purpose of this operation is no other than preventing the sovereign debt formation, still the Argentine *Bureau* will need the 1 USD from abroad (or from its own international reserves). It is therefore "*not a matter of preventing the foreign loan of 1 dollar that country A could not avoid but to add, negatively, the loan of 1 dollar to* R" (Schmitt, 2014. Pp. 57). In successive periods (t_n) the dynamics will be the same, period after period, provided that Argentina's deficit (X-M) is the same. There is only one loan from the rest of the world to Argentina, the third one, which will remain for the Argentine *Bureau*, period after period as a revolving issue.

The double burden of net imports is now effectively cut to a one single cost (the microeconomic one), as the *Reform* will neutralize the monetary cost of the real payment (the macroeconomic one). Once this *Reform* is implemented, external deficit countries like Argentina will remain with the ownership of the totality of their domestic income, as if the imports surplus never happened.

After these operations are carried out, net imports from rest of the world to Argentina are fully paid, and the loan taken by Argentina from abroad to pay for these imports (R → A) is balanced by the reverse-loan granted by Argentina to abroad (A → R). In this way, imports are effectively paid in full and sovereign debt formation in Argentina is zero as, by lending to the rest of the world, Argentina will obtain "[in] *financial assets, an external credit of 1 dollar* [1 MR] *that*

compensates exactly the debt of 1 dollar [1 MR] *formed by the foreign borrowing of this sum. The result is the full success of the reform*" (Schmitt, 2014. Pp. 59).

As Argentina has granted a reverse-loan for the exactly same amount of her net imports, the rest of the world becomes now owner of part of the current output of Argentina, matching its net exports by an equivalent financial imports (the loan from Argentina). Therefore, Argentina acquires part of the rest of the world's current output by taking a loan from abroad (financial imports) and, concomitantly, the rest of the world acquires an equivalent part of Argentina's current output by taking from Argentina an equal amount reverse-loan.

Following this procedure, the *Bureau* has effectively settled the foreign transactions avoiding the formation of macroeconomic cost and, at the same time, obtained a final, net gain equal to the amount of net imports, in domestic currency (M collected minus X paid).

The *Bureau* needs now to invest this amount in domestic public goods in order to offset the decrease in domestic employment and national income. In effect, as net imports are not produced in the domestic economy, and therefore create no income or employ any national labor, the payment in domestic currency of these net imports would decrease national income and, as a direct consequence, the national product it defines. With the reinvestment of this amount by the *Bureau* in national public goods this national labor and income is restored.

Essentially, if net imports are 1 USD (in domestic currency), then that amount is not spent in national production and therefore does not represent national income. In our case, the Argentine economy will experience a loss in national income of 1 USD, which is spent by national purchasers but not collected by national producers. This problem is definitively solved by the *Bureau* as the net gain given by the difference between imports and exports (net imports) will be spent, in full, into the national economy producing public goods and, therefore, giving back to the country the previously lost national income. As explained by Cencini in his study of the Spaniard case: "*Spanish Bureau would have to invest its net gain in a new production. The aim of the reform is to avoid the very formation of Spain's sovereign debt, while making sure that the country pays its foreign creditors their due. The key to the solution is to conform the mechanism of international payments to the balance-of-payments identity between EX and IM. This is achieved by balancing Spain's net imports with the financial transfer of an equivalent part of Spain's current production. Yet, in order for that to*

occur without reducing Spain's employment, it is necessary to increase Spain's production through the investment of its Bureau's net gain. If Spain's Bureau did not invest its net gain of domestic income in a new production, Spain's domestic product would decrease as an effect of the payment of its net imports. Following the investment of the Bureau, Spain's production would remain at its previous level, because the new production would compensate the decrease due to the loan that would still be required for the payment of Spain's net imports, and the rest of the world would become the owner of part of Spain's output equal in value to that exported to Spain" (Cencini, 2017b. Pp. 22-23).

The action of the *Bureau* seen as an intertemporal dynamics will work based on a revolving fund, in this way, renewing every period the loan taken from R and the loan granted to R, the net debt formation in every period will be the same: zero.

In our case, by lending abroad the same amount as the net imports, Argentina will obtain, in financial assets, an external credit of exactly that same amount (in our example 1 USD) compensating the debt (of 1 USD) generated to pay her net imports. The ultimate result, in Schmitt's own words is the "*full success of the reform*" (Schmitt, 2014. Pp. 59). In this way, thanks to this reverse-loan, in the same way as Argentina will acquire ownership over part of R's current production, the rest of the world (R) will also acquire ownership over part of Argentina's current production after the loan granted to R by the Argentine *Bureau*.

The *Bureau* dynamics with the rest of the world can be summarize as follows:

At $\boldsymbol{t_0}$

=> The *Bureau* is the only and sole debtor of 1 USD net imports to R (+NM)
=> The *Bureau* borrows 1 USD Loan 1 from R (+1)
=> The *Bureau* pays 1 USD net imports to R (-NM)

Net debt: +1 USD

At $\boldsymbol{t_1}$

=> The *Bureau* borrows 1 USD Loan 2* from R and cancels Loan 1 (+1 -1=0)
=> The *Bureau* borrows 1 USD Loan 3 from R (+1)
=> The *Bureau* lends 1 USD Reverse-loan to R (-1)
=> The *Bureau* borrows 1 USD Loan 4 from R (+1)
=> The *Bureau* pays 1 USD Net imports to R (-1)

Net debt: +1 USD***

*Given that Loan 3 is the mere repetition of Loan 1, the debt generated for Argentina is equal to 1 USD only, and it is perfectly balanced by the reverse-loan granted by Argentine *Bureau* to the rest of the world.
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At $\boldsymbol{t_n}$

=> The Bureau renews both loan and reverse-loan** (revolving fund)

** Argentina's debt will remain equal to 1 USD over time (n periods) making her debt asymptotically equal to zero.

V.III. The Role of the *Bureau* and the Individual Freedom

Once the operative matters of the *Bureau* have been comprehended, we still have to analyze a philosophical matter, that is, whether the nature of such *Reform* is against the liberal[52] principles of economic freedom as it assumes a major role for the *Bureau* which is, bottom line, the government itself.

In this regard, the traditional classic-liberal thinking[53] recognizes that, even under the preference for a small and limited government, the role of monetary arbitrator is non-delegable, as Nobel Prize in Economics, Milton Friedman, one of the champions of the modern economic liberalism in the twentieth century, sustains in his chapter *The Role of Government in a Free Society* of his book *Capitalism and Freedom*: "*Government responsibility for the monetary system has long been recognized[…] There is probably no other area of economic activity with respect to which government action has been so uniformly accepted[…] In summary, the organization of economics through voluntary exchange presumes that we have provided, through government, for[…] the provision of a monetary framework*" (Friedman, 1962. Pp. 27).

Yet, even recognizing the fundamental role of the government in setting monetary rules of the game in a society, an argument against the *Reform* could be based on questioning the real necessity of having the government in the middle of commercial transactions between private and free economic agents, i.e. domestic importers and foreign exporters. As a rejoinder to the latter we will exercise the following arguments: i. The importance of the monetary procedure carried out by the *Bureau* in order to avoid the cumulative sovereign debt formation after net imports has already been explained; and ii. Such procedure is not feasible to be done by individual economic agents by themselves, i.e. every domestic importer issuing debt in the international debt market to offset its own part of sovereign debt formation.

Additionally, from an operative standpoint, it is needed to possess a view over the economy as a whole to assess how much is the amount of net imports (if it is the case). It is again Friedman who brings a straight thinking on the matter: "*The role*

[52] Disambiguation: *Liberal* term is used in its classical Continental European meaning, not the American one.

[53] Within the Liberal tradition this idea is not unique and monolithic. Being true for classic liberalism, it is not the case for other liberal streams, as the Austrian School, or the Anarcho-Capitalists.

of government just considered is to do something that the market cannot do for itself, namely, to determine, arbitrate, and enforce the rules of the game. We may also want to do through government some things that might conceivably be done through the market but that technical or similar conditions render it difficult to do in that way" (Friedman, ibidem. Pp. 27-8).

As already mentioned, the only objective of the *Bureau* is to prevent the cumulative sovereign debt formation. Such *Reform* is not intended for custom, taxes or international commerce invigilation purposes. Effectively, the *Bureau* will not add any tax to the national importers, or will submit them under additional surveillance. The individual economic agent is *free-to-choose* whether to buy the articles abroad or not, with no related consequences in terms of off-price costs of any type. Taking the words of Ludwig von Mises from his *magna opus*, *Human Action*: "*As a praxeological term, freedom refers to the sphere within which an acting individual is in a position to choose between alternative modes of action. A man is free in so far as he is permitted to choose ends and the means to be used for the attainment of those ends*" (Mises, 1949. Pp. 279).

The proposed monetary *Reform* guarantees the continuation of this *freedom-to-choose* of national individuals between *alternative modes of action* without any explicit nor hidden retaliation, in conformity with what it is understood as an open and free market economy, well described by Mises: "*In the market economy, the laissez-faire type of social organization, there is a sphere within which the individual is free to choose between various modes of acting without being restrained by the threat of being punished*" (Mises, ibidem. Pp. 281).

The one, and only, *raison d'être* of the *Bureau* is to avoid the macroeconomic, sovereign debt formation under a laissez-faire market economy.

Chapter VI
Theoretical and Policy Implications

"If one were to show that economics is of a conceptual and not of a mathematical nature, the usefulness of equilibrium analysis would be seriously challenged[…] It is wrong to identify dynamics with equilibrium and disequilibrium. In economics the word 'dynamics' refers to two different states of equilibrium, or to the transition from equilibrium to disequilibrium (or vice versa), but it may also simply concern two states none of which can be defined in terms of equilibrium or disequilibrium[…] Dynamics would then be akin to a quantum-like transition rather than to a continuous or discontinuous type of change"

Alvaro Cencini
Swiss Economist – Quantum Economics
Macroeconomics Foundations of Macroeconomics (2005, Pp. 61-2)

The analysis and proposal offered in this work, based on the *Quantum* macroeconomic approach, present fundamental implications for both theoretical international monetary economics and monetary policymaking, at domestic and international level. As explained by Professor Cencini quoted above, this analysis is conceptual and not mathematical. Schmitt's *Quantum* analysis clearly differentiates between national spaces, for production and exchange, and the international space for pure exchange as, by definition, every production is carried out in a specific national space. *Quantum* theory clearly states that "*the international economy (not to be confused with the world economy) is the economic space where the agents are the countries themselves[…] This space, which of course does not exist on physical ground, is notably an exchange economy[…] The international economy is affected by monetary disorder, in so far as international transactions are paid using a national -instead of a truly international- currency, considered as if it were a net asset, which, moreover, can trespass the borders of the issuing banking system as if it were similar to a commodity like gold* " (Rossi, 2017. Pp. 176).

The implications of this differentiation have been long ignored by mainstream economics for decades, despite the sophistication reached by its models and the advanced econometrics involved. As Rossi (2011, Pp. 306) analyzes: "*The first*

global crisis of finance-dominated regimes, which burst in 2007 within the US subprime mortgage market and then spread quite rapidly across the world, testifies how dangerous it is to reduce real economic issues to solving complex mathematical models". This view was exposed by Nobel Prize Milton Friedman, *icon* of Monetarism from the University of Chicago, when he claimed that economics was more an *arcane branch of mathematics* than a method for dealing with real economic problems (Friedman, 1999. Pp. 137), but this mathematical sophistication has added poor macroeconomic understanding of the current, complex monetary world phenomena, as explained by Rossi (2011. Pp. 307) "*If macroeconomics analysis is essentially different from microeconomics[…] then mathematical modelling can provide no advances to understand the structural and indeed systemic working of the economy as a whole[…] mathematical modelling cannot do justice to the complexity and interconnectedness of social reality; its institutions as well as institutional changes cannot enter mathematical modelling per se*".

Similarly, diving into Keynes' thought we found that "*Keynes's skepticism about the use of mathematics in economics grew rather than diminished with age, though it was present from the start. It has to do with his growing understanding of the complexity, and reflexive nature, of social life[…] In the deductive-inductive debate, he was on the side of the deductive school*" (Skidelsky, 2003. Pp. 460).

On the other hand, the old *Austrian Economics* tradition historically opposes the mathematization of macroeconomic analysis using, instead, logical analysis. This *Austrian School* tradition applies a logical-deductive method[54], which goes back from Ludwig von Mises (1881-1973) to Aristotle (384-322 BC), passing by through The Scholastic School of Salamanca (c. XVI), Thomas Aquinas (1225-1274), Averroes (1126-1198) and Albertus Magnus (1200-1280).

This logical-deductive method to generate knowledge about reality is not exactly the same to the logical and deductive order underneath mathematical modelling; and it is way afar from the inductive econometric analyses. In words of *Austrian School* economist, Murray Rothbard, "*Econometrics not only attempts to ape the natural sciences by using complex heterogeneous historical facts as if they were repeatable homogeneous*

[54] Even though mathematics is based on deductive method as well, as it starts from premises or hypotheses and, subsequently, it attempts to reach a conclusive result through a series of mathematical deductions, which is why the final result is, to some extent, already implicit in the initial assumptions. Nevertheless, the logical-deductive tradition of the Austrian School is not about math; actually they deny its application to the economic analysis using, instead, praxeology, which is a different logical-deductive approach.

laboratory facts; it also squeezes the qualitative complexity of each event into a quantitative number and then compounds the fallacy by acting as if these quantitative relations remain constant in human history" (Rothbard, 2011. Pp. 74-5).

The line of research of this work agrees with the *Austrian* critique to a pure econometric and mathematical macroeconomic analysis, but it differs -among other aspects- in the application of micro-foundations of individual economic agents to macroeconomic analysis. In the case of the *Austrian* tradition, the methodology is praxeological, that is, an aprioristic reasoning purely conceptual and deductive -mostly based on the individual's nature and behavior-, in which all its implications are logically derived from the premises, and were already contained into them (von Mises, 1949. Vol. I, Pp. 38-9). Von Mises was influenced by several thinkers at shaping his notion of praxeology, like Immanuel Kant's thought, Max Weber's *Methodological Individualism* and Carl Menger's *Subjective Theory of Value*.

All in all, we agree in the fundamental methodological critique to the (extreme) mathematization of mainstream macroeconomics, but our approach to macroeconomics is based on macroeconomic foundations, considering the macroeconomic nature and its governing laws, and developing a logical macroeconomic analysis based on macroeconomic structures and their systemic dynamics. Unlike the *Austrians*, we do not arrive to logically deducted conclusions after behavioral micro-foundations. Furthermore, the logic applied by the *Quantum* approach rejects the *Principle of the Excluded Middle*[55] and, even though it is logically constructed, it may apply induction.

We sustain that the diagnosis and remedy for the current pathological sovereign debt formation is necessarily macroeconomic, not microeconomic and, therefore, based on the institutional frameworks and their laws, which are systemic and structural, instead of being based on individual agents' behaviors (Cencini, 2005a). As referred by Rossi (2011. Pp. 313) "*There are thus a series of essential laws, notably as regards the workings of monetary systems, that depend on the essence of the relevant institutions(s) independently of the number and behaviour of their users[…] It is crucial for any social science, especially economics, whose purview is the study of the economy, to understand how these*

[55] The *Principle of Excluded Middle* is a logical law which states that for every propositions either that proposition, or its negation, is true (either A=True; or Ā=True). Known as the *principium tertii exclusi* it was analyzed and treated at large for logic thinkers of all times such as Aristotle, Leibniz, and Bertrand Russell.

institutions work". The point here is that macroeconomic institutions have their own macroeconomic nature and laws, which do not change because of the behavior of economic individual agents. This is specially right in the case of money and banking at institutional level (e.g. central banking, currency, etc.).

The effects after a *Reform* like this, as it was originally proposed by *Quantum* economics literature and picked up by this work, will impact straightaway in a peripherical, medium-size economy like the Argentine one.

VI.I. *Quantum*-Monetary Strategy and a Review of International Monetary Theory

The fundamental notions underneath this work are taken from the examination of history and current empirical evidence, and then applying structural macroeconomic and logical analysis. Nevertheless, as in any work of economic science, a specific conceptual framework has been applied -after revising it- which is based in the early intuitions of Lord Keynes (1929a, 1929b) written after the Great War of 1914-18, and during the WWII and the Bretton Woods Conference in 1940-44 (Keynes, 1980). The works of Schumacher (1943), Triffin (1960, 1963), Rueff (1963) and Machlup (1963, 1964) continue this initial awareness of Keynes. Then the *Quantum* monetary macroeconomic approach picks up these early works to develop and expand the monetary analysis, explaining current monetary pathologies and proposing specific solutions. The works of Schmitt (1972, 1973, 1975, 2004, 2014 and 2017), Cencini (1995, 2000, 2005a, 2005b, 2009, 2012, 2017a and 2017b), Cencini and Schmitt (1991), Rossi (2007, 2009), and Piffaretti (2009, 2017), along with the *Quantum* Macroeconomics Manifesto (2011), configurate the line of research[56] in which this work aims to be just a modest contribution.

The theoretical implications of our *Quantum* analysis could be condensed in the following ideas:

I. A country as-a-whole has an existence *per se*, being an independent, macroeconomic entity, which is enabled to get indebted beyond its residents. A country is not just a mere sum of its residents, but a macroeconomic independent

[56] This enumeration of *Quantum Economics* authors -and their works- is -naturally- not exhaustive.

agent: "*Monetary analysis shows that a nation is coextensive with the set of its residents and, has thus an existence sui generis. This conceptual, logical point must be recognized and never forgotten, if we are to avoid the deep structural imbalances currently affecting international payments*" (Quantum Macroeconomics Manifesto, 2011). Effectively, popular wisdom saying that a country is a mere aggregation of individual agents, unfortunately supported by the majority of mainstream economists, not only is theoretically dead wrong but also represents an economic vulnerability as it ignores the macroeconomic nature of a country.

The latter presents also methodological implications since macroeconomics analysis is essentially different from the microeconomic one, and therefore, mathematical modelling cannot deliver any progress to comprehend the structural and systemic dynamics of the economy as a whole with its complexity and interconnectedness of social reality (Rossi, 2011), in other words, macroeconomic systems are "*a social reality in motion: neither equilibrium nor optimum situations can and do exist for an economic system in the real world*" (Rossi, 2011. Pp. 307-8).

II. From the latter follows that sovereign debt, i.e. debt taken by the country-as-a-whole, is not a sum of single debts of individual agents living in a given country. This is fundamentally wrong and it represents the conceptual base of a mistaken global sovereign debt formation: "*The problem of external debt is seen as easily attributable to real factors pertaining to the behavior of economic agents. A country's high level of debt is claimed to arise essentially from its people having lived too long beyond their means, having taken out loans that have reached levels too high to be repaid[…] The bottom line is that external debt has nearly always been considered in the same way as the debts contracted between residents of a single country, forgetting that a common monetary space at international level has yet to be instituted and recognized as such*" (Quantum Macroeconomics Manifesto, 2011).

Under the conceptual error of taking sovereign debt as the simple aggregation of residents' external debts we see that the macroeconomic debt has no logical explanation, as sovereign debt is taking just as an addition of individual microeconomic debts. Empirical evidence and logical analysis show that, even after the individual resident made a sacrifice in terms of (his/her/its) national income (naturally in domestic currency) still the country, as a macroeconomic entity, remains indebted with the rest of the world in international currency.

The confusion of taking the international space as if it were a big national space, ignoring the currency conversion problem which, under the current non-system of international payments implies a currency purchase as it was pointed out by Keynes in the 1920s' *Transfer Problem*, makes the country facing a twofold debt. In fact, the country as a whole ends up paying twice, first in real terms (in national income) and then in monetary terms (international currency) increasing, in this way, the stock of sovereign debt or sacrificing international reserves. As recognized by Rossi (2017. Pp. 179), the duplication phenomenon is "*the most difficult to understand in monetary macroeconomics, because of the confusion that pervades the economics profession between a country's debt and public debt, that is to say, the debt of the general government sector*".

III. Money is not an asset per se, as it has not any economic value as such, it is just a *transporter* of value which is only valid within the monetary system in which it was emitted, associated to that specific national production: "*So long as money continues to be considered a net asset, any currency will be exchanged against some other currency in a system of relative exchange rates[…] Shifting from relative to absolute exchange rates means a shift from instability to stability in exchange rates, since it involves removing once and for all currencies from the marketplace*" (Quantum Macroeconomics Manifesto, 2011).

This is valid also for the U.S. dollar, therefore, the U.S. dollars outside the United States (so called *Eurodollars*) are just acknowledgements of debt of the U.S. banking system, that is, just paper if they are outside the U.S.

In simply general terms, no national currency has settlement power beyond the borders of the banking system in which it was emitted and, as any banking system works under double-entry bookkeeping principle, then no single national currency can logically, and practically, abandon its own banking system (Rossi, 2010).

The implication of the latter is that money should not be exchanged in an international space outside its respective domestic space as if it were a simple commodity. This suggests the necessity of, and it claims for, a new world monetary setting which counts on a pure international currency and an international clearing house, as described by Rossi (2010, Pp. 414) "*At the international level, the use of any national currency as means of payments for foreign transactions denatures bank money into an object of trade, which further lacks an international settlement institution through which cross-border transactions can be finally paid as regards countries defined each as the set of its own residents*". Rueff (1963. Pp. 322) is remembered by his

statement about *deficits without tears*, referring to the U.S. balance of payments after Bretton Woods (1944). And also Machlup (1963. Pp. 256) refers to this question when he points out that global imbalances are coming after balance of payment's deficits of countries whose currencies are used as international reserve of value and international currencies, like that of the USA.

All in all, like it is the case with the United States, deficit countries paying international transactions in their own national currency are not paying anything, as Rossi (2010. Pp. 415) closes out: "*The rest of the world is not paid finally when the US just transfers to the rest of the world (the image of) its own acknowledgement of debt, as its object -a bank deposit denominated in US dollars- remains necessarily recorded in the books of the bank through which the US importer settles his/her debt to the exporter*".

IV. As intuited by Keynes (1929a) regarding the German *Transfer Problem*, foreign currency must be purchased and, therefore, every time a country incurs in net imports, or needs to pay debt services, it will have to purchase these international currency to settle its commitments. The latter will generate a duplication of its original monetary commitments adding new, macroeconomic debt to the original debt: "*In fact, under the current circumstances, the problem of external debt is not only financial in nature, but also monetary. Quantum monetary analysis shows, in fact, that a pathological, monetary discrepancy arises each time a country benefits from a foreign loan. Because of the present non-system of international payments, a difference appears between money outflows and inflows, which results in the pathological duplication of the borrowing country's external debt*" (Quantum Macroeconomics Manifesto, 2011).

V. This pathological sovereign debt, which should not exist in first place, can be -and should be- avoided either with a change in the international monetary framework or -if the latter is not possible- a change in the domestic institutional monetary setting. This global reform is not likely to happen in the short run, but nothing prevents a reform within the national institutional setting -provided the country fulfills its due payments with the rest of the world-, then, the remedy is expected to be carried out by, and within, individual countries: "*There is a much more urgent need to undertake a diagnosis that, by identifying root causes, would enable preventive action, thus blocking its very formation. This is what should be expected from any economic analysis and is indeed the goal of quantum macroeconomics, which, besides explaining the underlying mechanisms of the crisis, proposes structural remedies, i.e. reforms of the systems of national and international payments, enabling the crisis to be overcome before it worsens to such*

an extent that social tensions escalate into a spiral of violence with far reaching and potential very oppressive implications" (Quantum Macroeconomics Manifesto, 2011).

VI.II. *Quantum*-Monetary Strategy and Effective Economic Policymaking

Almost for a decade Argentina has been a net importer of the world, incurring in annual current account deficits since 2010. This is not the first period of time of several years in a row with external deficits. Additionally, the Argentine government is a chronic external debt taker from both, multilateral organisms and the international debt market, which implies continuous debt service payments in international currency (mostly in U.S. dollars). With -also chronic- fiscal deficits, high unemployment (along with a significant informal employment), and a low quality infrastructure and public goods, the *Reform* would present the opportunity of a fundamental macroeconomic change, as envisioned by Rossi (2017, Pp. 180) referring to this point on developing countries: "*It is, in particular, the task of heterodox economists to elaborate on a valid alternative to the mainstream approach to these issues, to contribute to the collective task of providing an economic policy framework that is sound on analytical grounds*". In this way, through such a transformation *de jure* and *de facto* in her monetary institutional setting, Argentina would be able to not only stop her sovereign debt formation, but also count on resources for economic policymaking tending to boost economic growth and improve social conditions of the Argentine citizens.

VI.II.I. Statistical Support for our Logical Analysis on Duplication Phenomena

As seen, the fundamental macroeconomic problem that the proposed *Reform* aims to solve is the pathological sovereign debt formation, which is given after the phenomenon of *duplication*. As explained, this *duplication* is unnaturally created when a net importer country (of goods, services, or financial titles) needs to purchase an international currency (e.g. U.S. dollars) in the international currency market to settle its debts. The latter is a monetary pathology produced by the current non-system of international payments, in which middle-size economies, such as Argentina's, pays net imports twice, firstly in real terms (justified payment)

and, additionally, in monetary terms (pathological payment) forming, in this way, a pathological sovereign debt.

Hereafter we will consider the official statistical data (i.e. Argentine Central Bank -BCRA- and the National Agency of Statistics -INDEC-)[57] supporting our case in which is visible how Argentina's external debt has been increased way beyond what it could be expected by the normal commercial and financial flows and their payments. The sovereign debt problem in Argentina goes back to decades ago, producing the last default crises in the 1980's and 2001-2, with debt restructuring processes in the 1990s, 2005, 2010 and, the most recent, in August 2020[58].

In 2019[59] Argentina's stock of external debt was of USD 278,489 MM (or USD 278.5 Bn.)[60]. The gross external debt position grew steadily in the last decade, with the exception of 2013, from USD 144.6 Bn. (2010) to USD 278.5 Bn. (2019), totalizing an increase of USD 133.9 Bn. (+92.6%) almost doubling it in less than ten years (see Table II below, based on BCRA, 2020).

Additionally, Argentina has been running deficits in the current account of her balance of payments during the last ten years (INDEC, 2020), so the sovereign debt formation mechanism continues to aggravate this situation. Effectively, in Table I (see below) it is exhibited the breakdown of the Argentine balance of payments. Argentina has incurred, in the period 2010-19, a cumulative current account deficit of USD 126,3[61] Bn. (USD 123,207 Bn. if taken to 2020) which, as

[57] By their names in Spanish, being BCRA, *Banco Central de la República Argentina*; and INDEC, *Instituto Nacional de Estadísticas y Censos*.

[58] The Argentine Government has just announced the renegotiation with the private creditors (mostly international investment funds). At the moment of writing these lines (August 2020) it is still pending the renegotiation with the International Monetary Fund for more than USD 40 Bn.

[59] 2020/21 data is still subject to modifications by INDEC, therefore analysis is based on data up to 2019.

[60] Source: Argentine Government. *Instituto Nacional de Estadísticas y Censos* (INDEC). As of December 2019. In nominal terms.

[61] In 2020 commercial deficit reverted. Nevertheless, this fact obeyed to an artificial *structural break*, namely i. the new Administration practically banned imports, and b. the reaction to Covid-19 pandemics by the Argentine government was one of the toughest one, locking down population for more than 15 months. Therefore, this balance of payments recovery must be analyzed with reservations. In that sense, an analysis up to 2019 presents itself more reliable.

explained, is directly related to a pathological increase in the stock of external debt as the Argentine Central Bank -clearly- is not able to print U.S dollars and, therefore, those U.S dollars need to be purchased.

On the other hand, Argentine Government has taken, since early 2016 until December 2019, a significant amount of external loans from both, international capital markets and multilateral organisms (mostly the IMF). This capital inflow (mainly denominated in USD, but also in Euros) went to the international reserves stock at the Argentine Central Bank. In this case, the Argentine Treasury acted as international debtor taking the external debt, and then selling the international currency to the Central Bank in exchange for fresh-printed Argentine pesos in order to -mostly- finance public spending. Subsequently, the Central Bank sterilizes the local currency emission through the launching of central bank's remunerated liabilities in AR$ (quasi-fiscal debt) acquired by either the Argentine general public and/or Argentine financial institutions. As of August 2020, the total amount of this quasi-fiscal debt has matched -and surpassed- the Argentine monetary base leaving the Argentine Central bank in an extremely vulnerable financial position[62].

[62] See press articles and Argentine government official data below:

. La Nación; July 5th, 2020 [in Spanish]:
https://www.lanacion.com.ar/economia/leliq-que-significan-y-que-riesgos-tiene-para-economia-nid2390594

. El Cronista; June 21st, 2020 [in Spanish]:
https://www.cronista.com/finanzasmercados/Con-mayor-cuarentena-el-stock-de-pases-y-Leliq-llegara-a--3-billones-20200621-0029.html

. Official data. Argentine Central Bank (BCRA). Daily Monetary Report (in Spanish).
Retrieved on August 27th, 2020:
https://www.bcra.gob.ar/Pdfs/PublicacionesEstadisticas/infomondiae.pdf

Table I. The Balance of Payments of Argentina (2010-2019)

Argentine Balance of Payments (MM USD)

Year	Current Account (1)	Capital Account (2)	Financial Account (3)	Errors and Omissions (4)*
<2020>	<3,121>	<163>	<3,896>	<612>
2019	(3,997)	126	(5,153)	(1,282)
2018	(27,049)	84	(27,985)	(1,019)
2017	(31,151)	173	(31,273)	(295)
2016	(15,105)	366	(13,964)	775
2015	(17,622)	52	(18,498)	(928)
2014	(9,179)	57	(9,321)	(198)
2013	(13,124)	33	(16,165)	(3,074)
2012	(2,138)	48	(2,788)	(698)
2011	(5,340)	63	(5,252)	25
2010	(1,623)	78	(3,802)	(2,258)

** Crosscheck: (1) + (2) - (3) + (4) = 0*

Source: Argentine Government. Instituto Nacional de Estadísticas y Censos (INDEC). Retrieved on July 18th, 2020. The 2020's data was retrieved on August 27th, 2022.

Another relevant statistical information is the international reserves position in the Argentine Central Bank, which -in a counterintuitively way- did not experience any dramatic increase, as one could expect, after such a debt capital inflow. Actually, the international reserves position decreased, going from USD 47.9 Bn. in December 2009 to USD 44.8 Bn. in December 2019 (see Table II below).

All in all, in almost a decade (2010-2019) Argentina accumulated a massive current account deficit (net imports) of USD 126.3 Bn. along with a gigantic increase of 92.6 % in her stock of external debt (USD 129.1 Bn.) going from USD 149.3 Bn. (December 2009) to USD 278.5 Bn. (December 2019) with a simultaneous reduction of USD 3.2 Bn. in the international reserves position in the Argentine Central Bank (almost 7%), from USD 47.9 Bn. to USD 44.8 Bn. (Table II). Consequently, even though the USD dollar inflow via public external debt, it is patent a significant sovereign debt formation with a serious reduction in international reserves[63].

[63] Public opinion in Argentina is confused, and -naturally- asks itself where are those billions of dollars taken as external debt in the last years, as the level of reserves are decreasing. This is an ongoing issue in academia, local mass media, and political debate.

Table II. Sovereign Debt Formation in Argentina (2010-2019)

Argentine Sovereign Debt Formation (MM USD)

Year	Current Account Balance (2)	External Debt Position (nominal) (2)	*Total Reserves (1)	NIIP** (nominal) (2)
<2020>	<3,121>	<271,528>	<39,387>	<70,215>
2019	(3,997)	278,489	44,781	64,603
2018	(27,049)	277,932	65,806	38,250
2017	(31,151)	234,549	55,055	16,450
2016	(15,105)	181,432	39,308	44,144
2015	(17,622)	167,412	25,563	38,261
2014	(9,179)	158,742	31,443	32,791
2013	(13,124)	155,489	30,599	35,862
2012	(2,138)	156,478	43,290	28,464
2011	(5,340)	156,300	46,376	19,206
2010	(1,623)	144,653	52,145	15,210
2009		149,359	47,967	8,308
	Σ (126,328)	Δ 129,130	Δ (3,186)	Δ 56,295

* Including gold

** Net International Investment Position

(1) Source: Argentine Government.Banco Central de la República Argentina. Retrieved on July 28th, 2020. The 2020's data was retrieved on August 27th, 2022.
(2) Source: Argentine Government. Instituto Nacional de Estadísticas y Censos (INDEC). Retrieved on July 18th, 2020. The 2020's data was retrieved on August 27th, 2022.

The last relevant data for our analysis is the Net International Investment Position (NIIP) collected and published by the Argentine Central Bank (BCRA, 2020), which indicates the difference between the external financial assets and liabilities of Argentina. The Argentine NIIP went from USD 15.2 Bn. in 2010, to USD 64.6 Bn. in 2019, an increase of USD 49.4 Bn. (+325%) in less than ten years (Table II).

The increase in the Argentine NIIP during the last years means that Argentina was a *net purchaser* of foreign financial claims, meaning that Argentina's net financial imports (that is, of financial titles) are part of the cause of the external debt formation. The positive value of the Argentine NIIP indicates a net creditor country, which -in the case of Argentina, presenting current account deficits for years and not being a net direct investor in the rest of the world- can only be understood taking into consideration the volume of positive Net Foreign Assets (NFA) of Argentine nationals, mainly caused by a massive currency substitution effect[64] in the last decades as a protection mechanism against inflation, local

currency deposits confiscation, and other economic policy mismanagement suffered by Argentine savers in the recent past[65].

The currency substitution in domestic private savings -from AR$ to USD- poses not only a problem for the formation of national savings to finance domestic investments (domestic loanable funds market), but also a distortive element for domestic monetary policy as money demand (Md) assessment is much more challenging -if not impossible- at the moment of executing monetary policy: "*Argentina has certain economic characteristics namely (i) open, medium-sized economy, soft commodities export-based exposed to terms of trade volatility, and (ii) significant propensity for currency substitution to U.S dollar due to a particular economic history[…] Therefore, the daily work of a central bank management team in Argentina should incorporate these characteristics in their estimations of real money demand*" (Gramont Manzo et. al, 2018).

Essentially, the historical Argentine propensity to currency substitution constitutes a well-known domestic monetary behavioral pattern (Cavallo & Cavallo Runde, 2017; Sturzenegger, 1994). The foreign loans taken by Argentina increased the country's capital inflow in USD, but the variation of foreign reserves is negative for the same period indicating that the increase in the nominal external debt position of Argentina is linked to i. the cumulative current account deficit, but also ii. the huge domestic currency substitution effect.

[64] Origins of currency substitution effect in general, and in Argentina in particular, has been studied in depth. See: Calvo, G.; Vegh, C. (1996) "*From Currency Substitution to Dollarization and Beyond: Analytical and Policy Issues*" in Guillermo A. Calvo. Money, Exchange Rates, and Output. The MIT Press; Also: Sturzenegger, F. (1994) "*Hyperinflation with Currency Substitution: Introducing an Index Currency*". Journal of Money, Credit, and Banking. Vol. 26. No. 3. (August 1994. Part I).

[65] Currency substitution in Argentina is pervasive. As the bulk of USD holdings in Argentine hands is out of the local financial system, it is not easy to estimate. Estimations go from USD 200 Bn. to USD 400 Bn. and even more, depending on the source (see articles below):

. Clarin; July 2nd, 2020 [in Spanish]: https://www.clarin.com/economia/economia/argentinos-guardan-record-222-807-millones-dolares-depositos-billetes_0_997P5Xfd_.html

. La Nación; July 24th, 2012 [in Spanish]: https://www.lanacion.com.ar/economia/los-argentinos-tienen-400000-millones-de-dolares-en-paraisos-fiscales-nid1492960/

The level of Net Foreign Assets (NFA) of Argentina was calculated in USD 964.79 Bn. by the World Bank[66] representing more than 150% of the GDP of the same year (USD 642.7 Bn.)[67].

Summarizing, the sovereign debt formation in Argentina seems to verify three sources which reinforce themselves, namely:

i. *Net imports*: As already seen, given the lack of an international payments mechanism, when there are net imports the country needs to purchase international currency -either from the international currency market or liquidating international reserves- to settle payments to foreign agents (macroeconomic payment).

ii. *External debt service*: Likewise, given the current non-system of international payments, international currency needs to be purchased for the external debt services.

iii. *Currency substitution effect*: As a significant part of the private savings in domestic currency goes to U.S. dollar holdings outside the domestic financial system, this represents purchasing (imports) of foreign financial claims.

Effectively, the Argentine positive NIIP for the period under study must be taken into consideration (see Table II above). Net financial imports of Argentina must be considered when calculating the amount of its external debt due to the payment of her net global imports. If we count the net financial purchases of financial claims by Argentina's residents (2010-19), we will realize that the external debt is much less than expected as indicated by the External Debt Position for the period under study:

Net Purchases of Foreign Financial Claims = USD 56,295 MM

[66] Source: World Bank Database (2017 is the last year calculated at the moment of retrieving information as of July 2021): https://data.worldbank.org/indicator/FM.AST.NFRG.CN?end=2017&locations=AR&start=1960&view=chart

[67] Source: World Bank Database. Available at: https://data.worldbank.org/country/argentina

We consider the difference between the IIP in 2019 and the IIP in 2009 (i.e. beginning 2010) and not the sum for the period. In the case of net imports of goods (current account) it is the sum that matters, but in the case of net imports of financial claims is quite different, as the financial claims purchased in a given year are still present in the IIP of many years to follow.

The net purchase of financial claims indicates an expenditure of dollars. Argentina's residents basically exchange their income, expressed in Argentine pesos, in order to obtain the U.S. dollars (required for the purchase of financial claims denominated in US dollars). The resultant loss of Argentina's domestic income only can be neutralized through an equivalent external loan, that's why it must be added to the computed total amount of Argentina's external debt. As a result, the amount of Argentina's external debt total increase during the period under study (2010-2019) explained by the theory that we have been following is:

Δ (2010-2019) in External Debt Position:
USD 126,328 MM + USD 56,295 MM – USD 3,186 MM = USD 179,437MM

The difference between the officially recorded increase in Argentina's external debt position and that increase correctly calculated is therefore equal to:

USD 179,437 MM – USD 129,130 MM = USD 50,307 MM

VI.II.II. A More Traditional Calculation

The existence of a serious pathological increase in Argentina's external debt position can also be shown in a more traditional way. Leaving aside the net financial purchases of Argentina, the justifiable increase in external debt is given by the sum of Argentina's current account deficit minus the decrease in international reserve between 2010 and 2019, as follows:

. + Cumulative current account deficit	= USD 126,328 MM
. - International reserves loss	= USD 3,186 MM
. Total *justifiable* external debt increase	**= USD 123,142 MM**

Yet, the increase in Argentina's external debt position officially recorded (2009-2019), is equal to USD 129,130 MM.

Hence, the increase in external debt that does not present macroeconomic justification is:

. + Variation in external debt stock =	USD 129,130 MM
. – Total *justifiable* external debt increase =	USD 123,142 MM
. Total *unjustifiable* external debt increase =	**USD 6,988 MM**

Essentially, the differential is indicating a *pathological* external debt formation which should not exist. Even though statistical data from the Argentine balance of payments and central bank balance sheet is subject to distortions of exchange rate fluctuations[68], such a discrepancy is clearly not justifiable. This analysis shows the magnitude of an unjustifiable debt formation which, having either a proper mechanism of international payments or an institutional framework like the *Bureau* proposed, would not exist at all.

The gap between the increase in Argentina's external debt position that cannot be justified by the accumulated deficit of her current account (minus the decrease in international reserves) and the increase forecasted by our analysis of sovereign debt formation is large and might induce the reader to doubt of its soundness. Yet, the plausibility of our result is substantially enhanced as soon as the amount of Argentina's external debt is re-elaborated taking into account the reduction it has undergone because of the important debt restructuring processes of 2005, 2010 and 2020. This restructuration can be estimated to have reduced the effective amount of Argentina's external debt position by USD 65,971 MM in

[68] Exchange rate in Argentina jumped from around 14 AR$/USD in December 2015 to 130 AR$/USD (taking prices of unregulated market) in August 2020 under an exchange rate repression policy (so-called exchange-clamp) and inflation rate over 40%. In 2019 the exchange rate jumped almost 100% in a lapse of three months.

2005, and by USD 12,132 MM between 2010 and 2019. Without this exogeneous reduction, the external debt of Argentina would have increased from USD 149,359 MM in 2009 to USD 290,621 MM in 2019, that is, USD 141,262 MM.

Effectively, in 2005 the external debt was reduced from USD 191,254 MM to USD 125,283 MM, a cutback of USD 65,971 MM[69]. Then, in 2010, the re-structured debt represented USD 18,300 MM. The process conducted to a reduction of USD 12,132 MM (66.3%)[70]. Finally, in May 2020, were under restructuration USD 66,137 MM out of a total debt of USD 324,000 MM (90% of GDP), the largest external debt restructuration in history, after the Greek one in 2012.

This long process of restructuration can be estimated to have reduced the effective and accrued amount of Argentina's external debt position by -at least- USD 78,103 MM, namely USD 65,971 MM in 2005 and USD 12,132 MM in 2010. Even after the 2010 restructuring process with its exogeneous reduction, the external debt of Argentina as of May 2020 was USD 324,000 MM[71], being USD 144,653 MM in 2010, a shockingly increase of USD 179,347 MM (124%) in ten years.

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[69] This restructuring and reduction process had a level of acceptance rate of 76.07%.
See article at La Nación; May 8th, 2020 [in Spanish]:
https://www.lanacion.com.ar/economia/de-2005-2020-como-fueron-ultimos-canjes-nid2354968/#:~:text=El%20canje%20de%202005%20implic%C3%B3,aceptaci%C3%B3n%20del%2076%2C07%25.

[70] This second process had an acceptance rate of 66%. The (so-called) hold-outs continued litigating until 2015. For details see Müller, A. (2013) "*Default y Reestructuración: ¿Cuál fue la Real Quita de la Deuda Pública Argentina?*". University of Buenos Aires. [in Spanish]:
https://www.economicas.uba.ar/wp-content/uploads/2015/11/cespa32.pdf#:~:text=En%20el%20a%C3%B1o%202005%2C%20el%20Gobierno%20Argentino%20%E2%80%93,m%C3%A1s%20del%2093%25%20de%20la%20deuda%20fue%20reestructurada.

See also Nemiña, P.; and Val, M. (2020) "*La Renegociación de la Deuda Argentina durante la Pandemia Covid-19. Implicancias y Perspectivas para los Países en Desarrollo*". Fundación Carolina [in Spanish]:
https://www.fundacioncarolina.es/wp-content/uploads/2020/11/DT_FC_38.pdf

[71] See Deutsche Welle (01.09.2020):
https://www.dw.com/es/argentina-reestructuraci%C3%B3n-de-deuda-inicio-de-m%C3%A1s-desaf%C3%ADos/a-54781875

If we re-calculate the amount of Argentina's effective increase in its external debt position, accounting for debt restructurations and deducing from it the amount of the economically justified increase, i.e. USD 123,142 MM, we obtain, for the period 2010-2019, the following:

USD 141,262 MM – USD 123,142 MM = USD 18,120 MM

Yet, this is stil far from the USD 50,307 MM explained by the theory, which calls for a further investigation. Unfortunately, this would require access to more reliable data concerning details of the debt restructuring processes, currency substitution effect, and dynamic exchange rate distortions (i.e. across time), which is far from being currently the case. Be it as it may, the brief statistical analysis sketched here is enough to show that Argentina is suffering from an unjustifiable loss of billions of USD that could be saved through a *Reform* of the way she carries out its monetary international payments.

VI.II.III. Resources Reallocation for Full Employment and Economic Growth

As already explained, after a successful implementation of the *Reform*, Argentina, through the *Bureau*, will be able to generate a net and final macroeconomic gain equal to the total quantity of net imports, in local currency; considering the totality of Argentina's net imports and not only net commercial imports. By properly adding these numbers from Argentina's net financial imports and net commercial imports of -e.g.- 2019, we reach a massive amount of:

USD 3,997 MM + USD 26,353 MM = USD 30,350 MM

Effectively, as seen, once the *Bureau* is established as a monetary compensation chamber for payments between local residents and the rest of the world, it will capture the negative monetary difference -in local currency- between total imports and exports.

In the case of Argentina, based on official data, this gain, for the period 2010-2019, would have been an equivalent in AR$ of:

	∑ (2010-2019) Current Account Deficit:	USD 126,328 MM
+	Δ (2010-2019) NIIP:	USD 56,295 MM
		USD 182,623 MM

Supposedly, in less than ten years, Argentina would have avoided an increase of USD 182,623 MM of her sovereign debt, and her government would have benefited from a net gain in national currency equivalent to USD 182,623 MM.

Had the Reform been implemented in -e.g.- 2010, Argentina not only would have saved **USD 6,988 MM** of unjustified sovereign debt formation but also would have retained in her economy resources equivalent in AR$ of up to **USD 6,988 MM**.

The correct mechanism in order to retain these monetary proceeds in the local economy is through the *Bureau*, being, this amount, reinvested in the local economy. As seen, the *Bureau* will be a sovereign independent institution working encompassed by the central bank. The *Bureau*, then, would work with the central bank, the ministry of economy and other federal agencies in order to reinvest these proceedings in the domestic economy, typically endowing modern infrastructure and other public goods. In this manner, the part of national income applied to (net) imports which currently is drained away would be retained and invested in the domestic economy generating, in this way, domestic employment and productivity gains after new and better infrastructure, logistic, education, health facilities, and other public goods.

Concomitantly to the increase in domestic employment by the *Bureau*'s proceeds reinvestment, the increase in national savings would increase the supply of loanable funds within the domestic financial system, lowering the domestic interest rate and pushing up the investment level. More savings, more investment, more employment and more productivity (after more and better infrastructure, logistics, education, and other public goods) will boost economic growth, the lack of which has been the structural economic problem of Argentina since more than half a century producing, at the same time, social instability.

A profound comprehension of theoretical and policy implications of the *Quantum* international monetary analysis, in this case applied to Argentina, is essential in order to resolve, once and for all, the sovereign debt formation problem. A large

part of this responsibility, as mentioned by Rossi (2017. Pp. 180), comes down to us, the economists, as our task is to think and implement an effective alternative to the mainstream understanding of these matters, in order to provide a sound macroeconomic policy framework to *"make sure it gives rise to the appropriate policy stance for the solution of these issues in the common interest*".

Chapter VII
Final Considerations: Science, Global Monetary Order, and Geopolitics

"La duda es uno de los nombres de la inteligencia"

Jorge Luis Borges
Argentine writer and poet

All along this work we have considered an economic and monetary analysis, and its subsequent proposal for Argentina, that, even though logically constructed and soundly founded, may appear novel for those regular readers of mainstream economics. Yet empirical evidence and economic history show that this is not the case. As we have seen, first intuitions of this approach may be tracked back to John Maynard Keynes in the early 1920s by referring to the German *Transfer Problem* after the Great War (1914-18) and also to his proposal for a new global monetary order, suggesting the use of the *Bancor* as international currency, which was proposed at the Bretton Woods Conference in 1944.

From those times until now many economists went through the same line of reasoning, developing it and taking it further, calling the attention to problems originated after the lack of a true international monetary order, based on a neutral international currency as well as an international clearing system. As already pointed out, early thinkers in this line were Ernst Friedrich Schumacher in the 1940s, and Jacques Rueff and Robert Triffin in the 1960s. It was in the 1960s, when Bernard Schmitt started his prolific research and writings that *Quantum* macroeconomic and monetary analysis appeared on the scene. This new macroeconomic paradigm was followed by several scholars, mainly in continental Europe, like Alvaro Cencini, Sergio Rossi, Jean-Luc Bailly, Claude Gnos and Nadia Piffaretti, among others.

VII.I. Economic Science and Kuhn's Revolution

The fair question of why *Quantum* macroeconomic analysis does not integrate -so far- the body of mainstream economics may be answered going back to the ideas of Harvard physicist and philosopher of science Thomas Samuel Kuhn (1922-1996) who proposed and elaborated the *Theory of Paradigms* in sciences, in his magnus opus *The Structure of Scientific Revolutions* (1962). Following Kuhn's view we could sustain that economic science in the last decades has been running through a period of *normal science*, in which scientific progress comes from the accumulation of investigation under the same set of accepted basic assumptions, facts, and ideas, forming a given *paradigm*, and leaving aside any analysis or set of ideas which are outside of this set of common, basic knowledge. Yet a *revolutionary* scientific period may come, leading to a new scientific *paradigm*, since too many *anomalies* are arising from the old macroeconomic *paradigm*.

Taking Kuhn's own example -and using it as an analogy- the old *Ptolemaic* system of macroeconomic ideas, both domestic and international, would -at some point- leave the place to a revolution; a kind of a new *Copernican* system of macroeconomic ideas. A *paradigm* shift in macroeconomics may come -especially after the 2008 global financial crisis and collapse- as the malfunction of the current (non)system of international payments is increasingly evident, which causes discrepancies in the balance of payments, unsustainable massive emission of U.S. dollars (with its counterpart in the U.S. external deficit), and formation of gigantic sovereign debt in both emerging countries and developed ones.

Throughout this work we have seen not only the past intuitions of global economic and monetary thinkers as Keynes, Rueff, Triffin or Schmitt, but also how the current *paradigm* has been challenged from the very core of the global economic status quo, like the International Monetary Fund (e.g. IMF, 2009), the World Bank (e.g. Piffaretti, 2009), or a former U.S. Federal Reserve Chairman (Volker, 2014).

As Professor Kuhn explains, "*Scientific development depends in part on a process of non-incremental or revolutionary change. Some revolutions are large, like those associated with the names of Copernicus, Newton, or Darwin, but most are much smaller, like the discovery of oxygen or the planet Uranus. The usual prelude to changes of this sort is, I believed, the awareness of anomaly, of an occurrence or set of occurrences that does not fit existing ways of ordering phenomena. The changes that result therefore require 'putting on a different kind of thinking-*

cap', one that renders the anomalous lawlike but that, in the process, also transforms the order exhibited by some other phenomena, previously unproblematic" (Kuhn, 1977. Pp. xvii). Are structural breaks in the current (non)system of international payments, e.g. 2008 crisis, the *anomalies* -mentioned by Kuhn- forestalling a change? Are the current discrepancies in the world balance of payments, the unsustainable massive emission of U.S. dollars, the gigantic U.S. external deficit, and the increasing formation of sovereign debt around the world the *set of occurrences that does not fit existing ways of ordering monetary and economic phenomena*? It is reasonable to think so.

Kuhn's analysis alerts us not only about a break, or disruption, in the line of thinking between the old *paradigm* and a new one, but also about an overlapping period in which this *revolution* may occur, in which both the incumbent and the challenger paradigms coexist. Effectively, we may start witnessing this overlapping period in a way like described by Kuhn, "*The transition from a paradigm in crisis to a new one from which a new tradition of normal science can emerge is far from a cumulative process, one achieved by an articulation or extension of the old paradigm. Rather it is a reconstruction of the field from new fundamentals, a reconstruction that changes some of the field's most elementary theoretical generalizations as well as many of its paradigm methods and applications. During the transition period there will be a large but never complete overlap between the problems that can be solved by the old and by the new paradigm. But there will also be a decisive difference in the modes of solution. When the transition is complete, the profession will have changed its view of the field, its methods, and its goals*" (Kuhn, 1962. Pp. 84-5). Can we think about the work of professor Schmitt, along with precursors like Keynes, Rueff and Triffin, and contemporary scholars like Cencini and Rossi, among others, as the *reconstruction of the field from new fundamentals* anticipated by Kuhn? Absolutely.

VII.II. American Monetary Leadership and the Chinese Challenger

In addition to the voices of economists, practitioners, and international analysts claiming for an international currency and a sound system of international payments -already reviewed-, current geopolitical conditions may intensify this challenge to the old regime since current international monetary conditions are entirely different from those at the time of its onset at Bretton Woods in 1944.

It was Napoleon who said in 1817 "*Let China sleep; when she wakes, she will shake the world*" (Allison, 2017). Effectively, the emerging contender of the United States in several fronts -including the economic and monetary one- is, undoubtedly, China. The Asian Dragon has undergone in the last decades a true economic revolution, as well documented at length by specialized financial journalism: "*China's ascent is perhaps the most remarkable economic trend of the last generation. The nation produced $330 worth of goods and services per person in 1991, adjusted for inflation. In 2011, that figure had reached $5,430[…] China passed Japan to become the world's second largest economy in 2010, and with a population four times that of the United States', will almost certainly become the world's largest within a generation*" (Irwin, 2013. Pp. 426). Furthermore, as Singaporean diplomat and professor Kishore Mahbubani explains: "*In 1950, in PPP (purchasing power parity) terms, America had 27.3 percent of the world's GDP, while China had only 4.5 percent. At the end of the Cold War, in 1990, a triumphant moment, America had 20.6 percent and China had 3.86 percent. As of 2018, it has 15 percent, less than China's (18.6 percent). In one crucial respect, America has already become number two*" (Mahbubani, 2020. Pp. 10).

The size and velocity of the Chinese phenomenon as a challenger to the incumbent economic and financial Western leadership has no paragon in post-World War history when a previous similar phenomenon caused this world major conflict (in 1914 and 1939). Not surprisingly the incumbency of the United States as world monetary and economic leader is now openly challenged by China, especially after the last financial crisis in 2007-8 and the Chinese own sustained economic growth. Effectively, the monetary challenge was clearly stated by the Governor of the Chinese central bank right after the 2007-8 crisis: "*An international reserve currency should first be anchored to a stable benchmark and issued according to a clear set of rules, therefore to ensure orderly supply; second, its supply should be flexible enough to allow timely adjustment according to the changing demand; third, such adjustments should be disconnected from economic conditions and sovereign interests of any single country. The acceptance of credit-based national currencies as major international reserve currencies, as is the case in the current system, is a rare special case in history. The crisis again calls for creative reform of the existing international monetary system towards an international reserve currency with a stable value, rule-based issuance and manageable supply, so as to achieve the objective of safeguarding global economic and financial stability*" (Zhou, 2009. Pp. 1). Governor Zhou openly, and boldly, claims -as it was proposed by Lord Keynes in 1944- that a national currency like the U.S. dollar should not represent the main international liquidity for international transactions; instead, an international reserve currency should be *disconnected from economic conditions and sovereign interests of any single country*.

Unmistakably, the Chinese Governor was referring to the United States; it is not clear, though, what Governor Zhou, and the rest of the Chinese authorities, think about the future international role of their own currency, the renminbi, after such *creative reform of the existing international monetary system*. As professor Eichengreen recognizes, "*China, our largest foreign creditor, is not a close ally[…] it is not obvious that the best way for foreign countries to ensure their security is by propping up the dollar. All this makes them increasingly critical of America's exorbitant privilege*". (Eichengreen, 2011. Pp. 122).

It is undeniable that the place of North America as the major world currency provider is currently in doubt. As former Greek Minister of Finance during the last crisis, Yanis Varoufakis, conjectures, the United States, using lots of fiat money -and centered on Wall Street- was extracting tributes in real value for decades from the rest of the world after the Nixon shock in August 1971 through their external deficits, yet that dynamic may be arriving to an end. As the Greek economist explains: "*Since the 1970s, the United States began absorbing a large portion of the rest of the world's surplus industrial products. America's net imports were, naturally, the net exports of surplus countries like Germany, Japan and China[…] In turn, the profits earned by the surplus nations' entrepreneurs were returned, daily, to Wall Street, in search of a higher pay-off. Wall Street would then use this influx of foreign capital for three purposes: (a) to provide credit to American consumers, (b) as direct investment into US corporations and, of course, (c) to buy US Treasury Bills (i.e. to fund American government deficits)[…] When, in the fall of 2008, Wall Street's pyramids of private money auto-combusted, and turned into ashes, Wall Street's capacity to continue closing the global recycling loop vanished*" (Varoufakis, 2015. Pp. 222-3). But, regardless of whether this U.S. dollar recycling mechanism is not sustainable anymore or it could continue for a while, empirical evidence and logical and economic analysis -as seen in this work- indicate that it should not continue, as it represents a non-system of international payments generating monetary disorders in both developing and developed economies, including, as seen in 2007-8, the United States.

Effectively, the recycling mechanism explained by Varoufakis is, allegedly, what Lord Keynes wanted to avoid with his alternative proposal presented at Bretton Woods. As seen, monetary vicious cycles like this not only are wealth extractive to the rest of the world -due to the duplication phenomenon and the exchange of real goods and services for void paper currency with no value outside the banking system in which it was emitted-, forming unbearable sovereign debt loads especially in developing economies like the Argentine one, but also represent a

time-bomb of increasing debt for the United States itself, as Nobel Prize in Economics Stiglitz describes: "*The global financial system is not working well, and it is especially not working well for developing countries[…] Some of these dollars from the developing to the developed world go to pay off their enormous debts[…] Others go to buy bonds from the United States and other strong currency countries[…] There is something peculiar about poor countries desperately in need of capital lending hundreds of billions of dollars to the world's richest country*" (Stiglitz, 2007. Pp. 245).

We have seen that the accumulation of debt issued by the United States is a direct consequence of its artificial role of chief liquidity provider to the world, adopted after the World Wars and accelerated from 1971 on. As the President of the Council on Foreign Relations (CFR), Richard Haass, details: "*The large and growing pool of U.S. debt, now above $22 trillion and increasing at around $1 trillion a year, could dilute confidence in the dollar. And there is the increasing U.S. propensity to weaponize international financial transactions to sanction select governments and individuals, a practice that could well hasten a move to dollar alternatives*" (Haass, 2020. Pp. 238). Nevertheless, the main doubt for international analysts may not be how wrongly the financial order works today, which is pretty much under consensus, but for how long this order is viable. There are reasons to expect that this array will reach an end in coming years, as it seems to be unsustainable, at least in the way it is set today. In words of Varoufakis, "*The pertinent question is this: did the United States manage, post-2008, to continue recycling other people's surplus goods and profits at a pace that, judging from the pre-2008 period, is necessary to keep world total demand for produced goods buoyant? The answer that surfaces upon close inspection of official statistics is unambiguously negative*"(Varoufakis, 2015. Pp. 225).

If we give credibility to the assumption that the monetary world order cannot continue too long in this way, which seems fairly plausible, then this will be a historic opportunity for China, which seems to be crouched to jump into a new global role. Is that role similar in kind to the one exercised by the United States since Bretton Woods? Or is it going to be something different, closer to the ideas of Lord Keynes, as Governor Zhou claimed (Zhou, 2009)? Too early to tell. The final outcome of the Sino-American monetary arm-wrestling is not clear yet, even for the most expert international analysts, as CFR's president Haass, who doesn't see a clear outcome, but sustains that, whatever this outcome will be, it will be mostly based on the monetary front: "*Mounting debt will rise questions around the world about the United States[…] U.S. failure to deal with its debt promises to accelerate a worrisome evolution. Mounting debt will leave the United States more vulnerable than it should be to the*

whims of markets and the machinations of governments. Already nearly half of U.S. public debt is held by foreigners, with China one of the two largest lenders. It is of course possible that China will be constrained by its stake in not seeing its own huge pool of dollars lose its value and by its need for the Unites States to continue to buy its exports. The result, according to this line of thinking, is the financial equivalent of nuclear deterrence" (Haass, 2017. Pp. 295). If the outcome of an escalating Sino-American challenge will be mostly defined -in the long run- in the monetary front, then a national *Quantum* monetary strategy to end sovereign debt formation and re-allocate economic resources to inner growth is crucial, especially in a hugely indebted country like the stagnated Argentina.

In effect, out of all the challenges that China poses to the United States, the monetary one is the most explosive because of its sensitiveness and interconnection to global financial markets -mostly via interest rates and the Treasury bond market- with risks of an overshooting and ulterior financial collapse in the U.S. financial assets market. In such scenario the potential poverty-effect in the United States, and the velocity of contagion to the world, is beyond any possible calculation. As quizzed by Eichengreen, "*Official Chinese agencies hold 13 percent of all U.S. government securities. Dumping them would send the bond market into a tizzy. As soon as they realized that the Chinese government was selling, other investors would pile on. Interest rates in the United States would spike. The dollar would crater. This demonstration of its vulnerability could cause exporters, importers, and investors to abandon the dollar permanently. How plausible is this scenario?*" (Eichengreen, 2011. Pp. 153-4).

China not only has clearly stated its disconformity with maintaining the U.S. dollar as the world monetary *lingua franca*, but also has started to take concrete monetary actions, as the deployment of currency swaps with different central banks around the globe, especially in emerging countries like Argentina, where the USD 18.5 Bn. yuan currency swap has been renewed for a third consecutive period in a row and it is part of the Argentine central bank's international reserves[72].

Effectively, as detailed by Eichengreen, even though those swaps do not represent a threat to the current status of the U.S. dollar yet, undoubtedly they are a

[72] . InfoBAE; August 6th, 2020 [in Spanish]: https://www.infobae.com/economia/2020/08/06/el-bcra-firmo-la-renovacion-del-swap-de-monedas-con-el-banco-central-de-china-por-usd-18500-millones/

. Clarín; July 10th, 2020 [in Spanish]: https://www.clarin.com/economia/pedido-alberto-fernandez-china-renovara-swap-monedas-argentina_0_NZ-hzpw9I.html

confirmation of serious intentions from China to force an undermining path for the U.S. dollar, "*China's currency swap agreements with Argentina, Belarus, Hong Kong, Indonesia, South Korea, and Malaysia are not so much practical measures as a way for it to signal its ambitions[…] With time China can strengthen the international role of the renminbi by developing liquid securities markets and liberalizing access to them. With time it can make its currency freely usable for financial as well as merchandise transactions. The question is: how much time?*" (Eichengreen, 2011. Pp. 144-5).

No one ignores that underneath China's monetary claims there is a strong intention of promoting their own currency as the new international means of payment and reserve of value. Furthermore, if such groundbreaking goal is reached, it will necessarily shock the whole global monetary order, impacting national economies and international reserves, investment, and trade. As Greek economist Varoufakis analyzes, "*China is evidently working hard, and with considerable success, in creating a Chinese version of partial globalization; one that puts Beijing at the centre of a vast network of trade and investment deals with India, Africa, Latin America, but also involving European, American and Japanese multinationals. China will try to keep US, European and Japanese officials at bay and, before long, promote its own currency, the renminbi (RMB), as the main means of exchange within those networks*" (Varoufakis, 2015. Pp. 252-3).

Nobody knows what would be the Chinese offered version of globalization. According to the IMF, as of early 2019, the U.S. dollar constituted more than 60% of the official foreign exchange reserves held by the world's central banks, while the euro only 20%, Japanese yen 5%, British pound 5%, and Chinese renminbi 2% (Haass, 2020), so China has a long road to go if their real intention is to replace the U.S. dollar as the chief international currency, which, in the view of some experts, it is unquestionably the Chinese long term strategy, as declared by many high-caliber analysts, like Berkeley professor Eichengreen: "*China has a preferred alternative, namely establishing the renminbi as an international currency*" (Eichengreen, 2011. Pp. 143), and also identified by the specialized journalism, particularly in the United States: "*The PBOC* [Popular Bank of China] *has also been one of the most consistent promoters of renminbi internationalization, the idea that China's currency should one day stand alongside the dollar, the euro, and the yen as an important currency of global trade[…] Unspoken but unmistakable was the conviction that a greater role for the renminbi would be an inevitable part of some new global currency regime. In October 2009, the PBOC created a new department, the Monetary Policy 2nd Division, to study renminbi internationalization[…] In recent years, the PBOC has created swap arrangements with many other central banks[…]*

That should allow banks in those countries access to Chinese currency should they need it, part of a deliberate effort to smooth the process by which more global trade happens in the renminbi rather than the dollar" (Irwin, 2013. Pp. 438-9).

Even though current analyses indicate China's seditious intentions towards the international role of the United States in general, and the U.S. dollar in particular, not long ago the Western establishment, led by the United States, was prone to help China reach a prominent economic role in the international economy. Effectively, Western status quo had a well spread -and incorrect- notion that helping China to become a relevant actor in the international economic and institutional scene would improve international stability under the U.S dollar patronage, boosting economic prosperity. This vision proved to be -at the very least- naïve, as it seems China has its own monetary and economic *desirable goal*: "*reforming the international monetary system[…] to create an international reserve currency that is disconnected from individual nations*" (Zhou, 2009. Pp. 2).

Essentially, in spite of these intentions, the rising of China was seen with good eyes, as declared in those days by Fed Chairman Greenspan: "*China's involvement in the institutions of global finance brought other benefits. Chinese central bankers now play a key role in the Bank for International Settlements (BIS) in Switzerland[…] Zhou Xiaochuan, who was named China's central bank governor in 2002, was particularly welcome at regular BIS meetings of central bankers from major developing countries[…] He and his colleagues, just a few years removed from isolated central planning, have become major players in operating the global financial system*" (Greenspan, 2007. Pp. 298). Not clear when the Western leadership realized that the economic and monetary rising of China may not be compatible with current status quo. But, clearly, the appraisal about the raising Chinese economy was positive, even though some early misgivings were in the horizon, especially the relationship between the Chinese economic consolidation and the U.S. deficit with its concomitant increasing indebtedness: "*The concerns about the U.S. external deficit are not groundless. It is certain that at some point foreign investors will not want to increase further the proportion of U.S. assets in their portfolios. That is the financing counterpart to the payments deficit. At that point, the U.S. imbalance must narrow, with the dollar likely having to decline in order to stimulate U.S. exports and dampen U.S. imports. Moreover, sudden reversals of foreign investor sentiment cannot be entirely ruled out, with the concomitant risk of rapid declines in the dollar's foreign-exchange value*"(Greenspan, 2007. Pp. 346).

But, clearly, the bet on China from the Western world was fallaciously confident, as Ikenberry explains: "*The Clinton administration's decision to invite China to join the WTO was perhaps the capstone of this liberal internationalist strategy. Clinton saw China's rise as part of a rapidly unfolding globalization of the world system. The United States would gain in this globalizing world, China would be transformed, and its integration into the world economic system would be a win-win proposition. China's involvement in the trade would have liberalizing effects on its society, creating domestic constituencies for openness and political reform[…] The economic openness would have a liberalizing effect on China society and that this would lead to bottom-up demands for political change*" (Ikenberry, 2020. Pp. 263)

Going back to those days of confidence and support to the Chinese rising, it seems that this contradictory view was well spread over the Western leadership, on the one hand the positive view of a growing China being collaborative -and instrumental- towards global stability and prosperity, participating in multilateral institutions and respecting the already consolidated status quo post-Bretton Woods but, on the other hand, reservations were increasing, based on a possible currency and debt conflict: "*Some argue that the heavy purchases of U.S. Treasury obligations by other countries' monetary authorities, first Japan and then China, to suppress their exchange rates have elevated the dollar's foreign-exchange value and thereby played a role in the huge increase in U.S. imports[…] There is doubtless some truth in that*"(Greenspan, 2007. Pp. 349).

Nowadays China's economic and monetary challenge is a reality, as the situation has been far developed from the days of those benevolent analyses; savings flooded into the United States from China, having China as the main buyer of U.S. long-term bonds issued by the U.S. government. The big Dragon's average per capita income has risen from USD 193 in 1980 to over USD 8,100; "*Between 1981 and 2004, China succeeded in lifting more than half a billion people out of extreme poverty[…] For the first time in modern history, Asia is now richer than Europe in terms of accumulated private wealth. Asia is expected to surpass North America*" (Allison, 2017. Pp. 15). Numbers supports this expectations on China's surpass, as explained by Mahbubani (2020. Pp. 75): "*China's per capita income is now about USD 18,000. If China were to eventually achieve the per capita income of Singapore (where 75 percent of the population is ethnic Chinese), its GDP would balloon to USD 141 trillion, in purchasing power parity terms. By contrast, America's GDP is now USD 20 trillion. Clearly, the prospects of China having a bigger economy than America are realistic*".

Furthermore, the rise of China has already distorted the center of gravity of the world economy, as explains Ikenberry: "*In 2010, China passed Japan to become the world's second largest economy[…] and it is closing in on the United States. Since it began its market reforms, China's foreign trade has expanded rapidly, from approximately $20 billion in 1978 to $500 billion in 2000 to $3 trillion in 2016. In the past two decades, China has become the hub of fast-growing regional economies linked together by trade and manufacturing networks*" (Ikenberry, 2020. Pp. 271). No one is still expecting that China will nicely accommodate into the world status quo, as now China "*has become too big to be integrated into a US-led liberal international order[…] China was large enough to resist international pressures and, absent a democratic transition, its autocratic state elites have incentives to resist the rules and norms that privilege liberal democracy*" (Ikenberry, 2020. Pp. 280).

It is not possible to know if -and why- the Western leadership didn't see it coming earlier. Yet, a statement from Fed Chairman Greenspan may provide a notion, when on February 16th, 2005 he testifies to U.S. Congress on current economic and financial situation, including the U.S. external deficits, indebtedness levels and U.S. Treasuries. Greenspan's words will be remembered: "*The broadly unanticipated behavior of world bond markets remains a conundrum*" (Mallaby, 2016. Pp. 640).

VII.III. Currency and Geopolitics

Professor Benjamin Cohen, an old-timer researcher on international monetary and financial relations, sustains that the primary motivation for promoting and using national currencies as international means of payment is geopolitical ambitions (Cohen, 2019). In other words, back in history they were geopolitical ambitions which propelled national currencies to an international level, and China's wouldn't be an exception. Indeed, when a national currency becomes internationalized, it typically increases the power of the nation that produces it.

China primarily conducts foreign policy through economics. Effectively, currently China is the largest trading partner of more than 130 countries. Allegedly, here lays its power: "*Nations that have become dependent on China's supply of key imports, and on Chinese markets for their exports, are particularly vulnerable, when disagreements arise, China [can] simply delays the first and blocks the second*" (Allison, 2017. Pp. 21). All in all, the point is that "*China's economic network is spreading across the globe, altering the*

international balance of power in a way that causes even longtime US allies in Asia to tilt from the US toward China" Allison (2017. Pp. 23-4).

That's why analyzing current -and coming- monetary world order without including a geopolitical examination would be far too incomplete. Presently it is well-defined that the main world monetary rivalry is the developing confrontation between the U.S. dollar and the Chinese renminbi. In Cohen's own words, "*Currency statecraft has its own unique characteristics that set it apart from other forms of statecrafts in international affairs. But like all forms of statecraft, currency statecraft is inherently political and potentially contentious. It is impossible to fully comprehend the geopolitics of the world today without an appreciation of the role played by currency statecraft*" (Cohen, 2019. Pp. 4). As these *monetary statecrafts* from China and the United States develop, intensifying a confrontation already in place, one could ask what it is going to be the future of the monetary and geopolitical status quo established after the World War II, and consolidated under the reign of the U.S. dollar, and liberal democracies and political ideas, under a sole and unipolar leadership after the fall of the USSR.

Harvard professor Joseph Nye, Jr. sustains in his last book *Do Morals Matter? Presidents and Foreign Policy from FDR to Trump* (Nye, 2020. Pp. 11) that "*Many analysts believe that the liberal international order is now over with the rise of China*". This is a strong statement, especially coming from one of the top scholars in geopolitics. Is the ancient monetary and economic regime -still in place- coming to an end? or, at least, are we going to witness profound structural changes ahead? In this regard, Wesley Clark, four-star U.S. Army General (ret.) and former NATO Supreme Allied Commander and Chief Strategist, goes farther: "*While the United States was deeply engaged in the Middle East, the Asia-Pacific region became the new center of economic power, diplomatic maneuver, and growing risk[…] Half of mankind's 7 billion people live in the region[…] The region is home to the world's second -and third- largest economies (China and Japan) [and] the United States' largest creditor and trading partner (China)*" (Clark, 2014. Pp. 65).

What a considerable number of international analysts are observing, is that the United States is probably going directly to a situation of being cornered -in geopolitical terms- in which the outcome is not going to be necessarily ordered and monetary implications are guaranteed. As history teaches, a clash between an *incumbent* and a *challenger* of these weights rarely ends without a crisis. Effectively, the so-called *Thucydides' trap*, in which a rising power triggers fears and violence to

the incumbent, typically was resolved in history by a -more or less- disruptive crisis. As Founding dean of the Harvard Kennedy School of Government, professor Graham Allison, explains in his insightful book on the Thucydides' trap between China and the U.S. *Destined for War*: "*Intentions aside, when a rising power threatens to displace a ruling power, the resulting structural stress makes a violent clash the rule, not the exception*"[73] (Allison, 2017. xv). This verifies from the Peloponnesian Wars, in which the rising Athens clashed with the incumbent Sparta, to the rising Germany of early twentieth century clashing with the United Kingdom and France.

Nye alerts about this trap in the horizon: "*Particularly important is the rise of Chinese power and the danger that the world will fall into a Thucydides' trap in which a devastating war is caused by the fear created in a dominant great power by the rise of a new power. Some think the twenty-first century will be devastated by a war of hegemonic transition similar to what happened in the last century, when Britain was challenged by the rise in the power of Germany*" (Nye, 2020. Pp. 196). And Allison adds details to our case, "*The world has never seen anything like the rapid, tectonic shift in the global balance of power created by the rise of China. If the US were a corporation, it would have accounted for 50 percent of the global economic market in the years immediately after World War II. By 1980, that had declined to 22 percent. Three decades of double-digit Chinese growth has reduced that US share to 16 percent today. If current trends continue, the US share of global economic output will decline further over the next three decades to just 11 percent. Over this same period, China's share of the global economy will have soared from 2 percent in 1980 to 18 percent in 2016, well on its way to 30 percent in 2040* " (Allison, 2017. xvi).

Professor John Mearsheimer, an authority in geopolitics from the University of Chicago, goes beyond in the same line of analysis: "*think about the United States looking at a rising China today, or Britain looking at a rising Germany in the decades before World War I. American leaders cannot know China's future intentions with high certainty, just as British policymakers could not be sure of Germany's intentions before 1914. Such situations create fear that trouble lies ahead. To compound matters, China will also fear that the United States might have aggressive intentions toward it, just as Germany distrusted Britain's*

[73] Harvard Professor, Graham Allison, conducted a research project called *Thucydides' Trap Project*, at the Harvard Kennedy School's Belfer Center for Science and International Affairs. In Allison's own words: "*Primal insight describes a perilous pattern. Reviewing the record of the past five hundred years, the Thucydides' Trap Project I direct at Harvard has found sixteen cases in which a major nation's rise has disrupted the position of a dominant state. Our research finds that twelve of these rivalries ended in war and four did not*" (Allison, 2017. Preface).

intentions before the Great War" (Mearsheimer, 2018. Pp. 133). Perhaps not a flagrant clash right now, but many scholars and analysts are definitively seeing it coming: "*Thus far, China has not tried to overthrow but rather to increase its influence within the world order from which it benefits, but this could change as Chinese power grows[…] As China, India, and other economies grow, the U.S share of the world economy will be less than it was at the beginning of this century, and the rise of other countries will make it more difficult to organize collective action to promote global public goods*" (Nye, 2020. Pp. 202-3).

Indeed, monetary affairs and geopolitics are intimately related in a two-direction, reinforcing way, therefore, the analysis of one of them cannot be split off from the other. By applying these two-directions analysis, i.e. from geopolitics to international monetary analysis, and vice versa, we may anticipate the resulting currency conflict to come. As Cohen foresees, "*Currency internalization is not only a consequence of state power; it is also a cause[…] In recent years China has chosen to vigorously promote the international standing of its currency, even at risk of roiling relations with the United States. In effect, Beijing has challenged America's dollar to a duel: the redback versus the greenback*" (Cohen, 2019. Pp.1)

Even though this future clash is still uncertain in timing and its ultimate consequences, yet some evident economic and monetary moves and trends are being observed already. In the last World Economic Forum 2020, global investor Ray Dalio characterized the challenges posed by China in four axes namely i. international trade (access to international markets), ii. geopolitics (deployment of global power), iii. technology (developing and global distribution) and iv. capital (financial assets and currency)[74].

Effectively, financial assets (U.S. Treasury bonds) and capital (U.S. currency) are part of the rising conflict zone in this Thucydides' trap between U.S. and China, but certainly not the only one related to the world economy. The *geopolitical axis*, in words of Dalio, is pulled off by the *New Belt and Road Initiative* from China, a new version of the old *Silk Road*. The name was coined in 2013 by the President of China, Xi Jinping, inspired in the old commercial route -the *Silk Road*- established during the Han Dynasty 2,000 years ago. This ancient commercial network used to connect the old China Empire to the Mediterranean via Eurasia for centuries. This new *Silk Road Economic Belt* will be a trans-continental passage linking China with South East Asia, South Asia, Central Asia, Russia, and Europe

[74] See: https://www.youtube.com/watch?v=ODljXY-sHq0

by land. Adding the 21st century maritime tranche connecting China's coastal regions with south east and south Asia, the South Pacific, the Middle East, Eastern Africa and Latin America[75]. These commercial efforts will be seasoned with direct investment in infrastructure and energy assets, along with direct loans and currency swaps. Probably the most aggressive bet against the reign of the U.S. dollar in all of its history.

Timing and global conditions seem to be favorable for such Chinese initiative, as professor Nye recognizes: "*Today nearly a hundred countries count China as their largest trading partner, compared to fifty-seven that have such a relationship with the United States. China plans to lend more than a trillion dollars for infrastructure projects with its belt and road initiative over the next decade, while the United States has cut back aid. China's economic success story enhances it soft power, and government control of access to its large market provides hard power leverage[…] Of the seven giant global companies in the age of artificial intelligence (Google, Facebook, Amazon, Microsoft, Baidu, Alibaba, and Tencent), nearly half are Chinese. With its large population, the world's largest Internet, and data resources becoming the new oil of world politics, China is poised to become the Saudi Arabia of big data. Overall, Chinese power relative to the United States is likely to increase*" (Nye, 2020. Pp. 199).

Such economic effort would shift the chessboard of global currency, as the Chinese yuan would be introduced -like a *Trojan horse*- inside the bilateral commerce, loans, and investments led by China. It is true that the United States still owns financial power due to its large transnational financial institutions and the current leadership of the dollar. Effectively, out of the total foreign reserves held by the world's governments, only 1.1 percent are denominated in yuan, compared with 64 percent for the dollar (Nye, 2020. Pp. 200) but that reality could change swiftly if the monetary and economic initiatives planned by China are carried out. What would be the new monetary configuration if something like this happened? And what would be a right monetary and external positioning for Argentina under this plausible reality?

[75] See: https://www.ebrd.com/what-we-do/belt-and-road/overview.html#:~:text=The%20name%20was%20coined%20in,Mediterranean%20via%20Eurasia%20for%20centuries.

And also:
https://www.fmprc.gov.cn/mfa_eng/topics_665678/xjpfwzysiesgjtfhshzzfh_665686/t1076334.shtml

Is such a shift in monetary and economic power something conceivable? Or just groundless speculations? Trends show a blatant evidence, as recognizes General (ret.) Clark: "*As the renminbi becomes convertible and appreciates, and if China becomes the world's largest economic power, Shanghai will becoming increasingly powerful in global banking[…] US influence with the United Nations, the International Monetary Fund, and the World Bank may shrink in significance, increasingly reflecting China's priorities and interests, or these institutions may be replaced by emerging institutions which more expressly recognize Chinese self-interests*" (Clark, 2014. Pp. 104). Also Professor Eichengeen supports this notion: "*Foreigners have lost faith in the almighty dollar. They are moving away from it as a unit in which to invoice and settle trade, denominate commodity prices, and conduct international financial transactions. The dollar is at risk of losing its exorbitant privilege to the euro,[or] the renminbi*" (Eichengreen, 2011. Pp. 6). Furthermore, Professor Mearsheimer warnings us about the conflict to come "*There is a good reason to think unipolarity is coming to an end, mainly because of China's impressive rise. If so, American policymakers will have to abandon liberal hegemony. But there is a serious downside: the United States will have to compete with a potential peer*" (Mearsheimer, 2018. Pp. 218).

The risk with China is not something perceived as an eminent conflict, yet it is the ruthlessness in execution and the long term thinking which characterize Chinese culture what rise the alerts, rather than a short timing[76]. As a veteran Henry Kissinger, in his well-rounded book *On China* (2011), explains, Chinese *ethos* follows Sun Tzu's *Art of War* for which "*not simply the triumph of armed forces*" counts, but "*the achievement of the ultimate political objectives[…] Far better than challenging the enemy on the field of battle is… maneuvering him into an unfavorable position from which escape is impossible*" (Kissinger, 2011. Pp. 28). Is China executing that kind of strategy? It seems so.

Clark, as a former military strategist, seems to perceive it clearly: "*It is not simply systemic financial and economic risk that makes China of particular concern. Rather, it is China's long-term national strategy, and in particular, whether as one of two leading global powers, China will rise and ascend peacefully within the international diplomatic, legal, and security structures present today or will instead push, shove, intimidate, fight, and ultimately*

[76] Some warning signals on China are being seeing already beyond the inner circle of analysts and scholars, like mass media and even public opinion. See, e.g., The Washington Post' editorial on February 15th, 2021:
https://www.washingtonpost.com/opinions/can-the-worlds-democracies-really-take-part-in-the-beijing-olympics--while-genocide-is-taking-place/2021/02/12/f05feb02-6d5d-11eb-9f80-3d7646ce1bc0_story.html

wreck and seek to rebuild global systems into the structures, processes, and powers that best suit its own heritage, culture, and self-interests" (Clark, 2014. Pp. 95). These rising conditions from China differ from increasing financial and economic troubles in the U.S. as the same Clark details: "*As of May 2014, the US national debt stood at almost $17.5 trillion[…] Since fiscal year 2007, debt held by the public has more than doubled, rising from about 35 percent of GDP to more than 70 percent. In the fiscal year ending in September 2013, for the first time since World War II, US total national debt exceeded our GDP*" (Clark, 2014. Pp. 116-7). Allison (2017. xvii) goes beyond, stating that "*On the current trajectory, war between the US and China in the decades ahead is not just possible, but much more likely than currently recognized*".

The conflict and war hypothesis between the U.S. and China is not something new in recent times. During the Vietnam conflict (1955-1975) the highest decision-makers and strategists in the U.S. Government assessed and discussed the hypothesis of a full scale strike and the use of nuclear weapons against China. This was more blatant after President Kennedy assassination, under the Johnson administration, in which the old J.F. Kennedy's collaborators, such as Robert McNamara, Theodore Sorensen, Kenneth O'Donnell, and the Bundy Brothers[77] (group known as the *Whiz Kids*, or the *Liberals*) tried to content the eagerness of the top armed forces chiefs (the *Joint Chiefs*) for a full nuclear escalation to China. Today, a nuclear strike from the U.S. to China seems science-fiction, but fifty years ago was a real debate at the top level decision-making in Washington, as it is thoroughly described in Bird's biography of the Bundy brothers: "*Once President Johnson had decided to take a stand in South Vietnam, the job of men like the Bundys was to contain the war. If not managed by liberals, they felt this war could easily have become a Chinese-American war[…] If the Chinese communists intervened with large numbers of ground troops, the Bundys knew that the pressures from the Joint Chiefs to use tactical nuclear weapons would become irresistible*"(Bird, 1998. Pp. 20)

More, in Shapley's biography of Robert S. McNamara, U.S. Defense Secretary (1961-8), is patent the early worriedness about China: "*McNamara talked a lot in 1964 about China's military approach to its goal of world domination[…]* [State Secretary

[77] Refers to McGeorge Bundy and William Bundy. McGeorge was National Security Advisor in Kennedy's and Johnson's Administration (1961-1966). Previously, in 1953, served as Dean of the Faculty of Arts and Sciences at Harvard University. William was CIA analyst, then Foreign Affairs Advisor to both U.S. Presidents, Kennedy and Johnson, and Assistant Secretary of State for East Asian and Pacific Affairs (1964-1969). Later Foreign Affairs professor at MIT and Princeton.

(1961-9) Dean] *Rusk,* [State Secretary (1949-53)] *Dean Acheson, and* [President] *Lyndon Johnson also believed China was a serious threat*". (Shapley, 1993. Pp. 296-7).

Although it is not possible to make accurate predictions, something seems fairly sure, the old reign of the U.S. dollar is either going to suffer a structural change, or even disappear. What it is certain then, is that the international economic and monetary status quo is changing. As an example, the World Bank, foundational part of the world institutional scaffolding established from Washington D.C. is already lagging behind the Chinese AIIB: "*After years of the U.S. refusing to accommodate China's request for a larger share of the votes at the World Bank, in 2013 Beijing stunned Washington by establishing its own competitive institution, the Asian Infrastructure Investment Bank (AIIB). Despite an intense campaign by Washington to pressure nations not to join China's bank, fifty-seven signed up before it launched in 2015 -including some of America's key allies, with the UK in the lead[…] Even before the AIIB was established, the China Development Bank had surpassed the World Bank as the biggest financier of international development projects*" (Allison, 2017. Pp. 22-3).

Whether this change will produce soft or hard trauma will depend on possible accords between the two monetary and economic contenders: "*The direction of the U.S.-China relationship will be critical[…] What will determine its trajectory more than anything else will be whether the two countries can reach a modus vivendi in the economic sphere*" (Haass, 2020. Pp. 95).

Effectively, the Sino-American relationship seems to be the fundamental variable to be analyzed in order to understand the monetary and economic order in the coming years, as "*No relationship has been more important than the one between the United States, the dominant power of the era, and China, the country widely seen as posing the biggest challenge to American primacy*" (Haass, 2017. Pp. 79). For Singaporean Professor Mahbubani there is no doubt about it: "*In the medium to long term, the US dollar will inevitably lose its status as the dominant global reserve currency*" (Mahbubani, 2020. Pp. 64). More, he is not a solitary voice, as he explains: "*Some influential voices are now saying that the world should stop using the US dollar as the global reserve currency. Mark Carney, governor of the Bank of England, in a speech at the annual Jackson Hole gathering of central bankers in the United States in August 2019, cast a critical eye on the predominance of the US dollar in the international monetary system[…] Further, Carney asserted that the world's reliance on the dollar 'won't hold' and that is imperative that an international monetary system is built that is 'worthy of the diverse, multipolar global economy that is emerging'*" (Mahbubani, 2020. Pp. 62-3).

Analyzing possible scenarios, what we can expect is either a peaceful coexistence in a bi-polar world under two economic and monetary giants, or an unavoidable clash. Somewhat optimistic observers, as Eichengreen, expect a certain contemporaneity in good terms: "*A world of several international currencies is similarly what China is after. China has no interest in dethroning the dollar. To the contrary, it has too much invested in the greenback. But preserving its investment in the dollar is entirely compatible with creating a more consequential international role for its own currency. And where the renminbi leads, other emerging market currencies, such as the Indian rupee and Brazilian real, could eventually follow*" (Eichengreen, 2011. Pp. 8). Whereas other analysts are not so optimistic and they are expecting clashes, as anticipated by Clark, who seems to be saying louder and clear: Warning!: "*China is larger than 1980s Japan; potentially more powerful than pre-World War II Germany; and more economically integrated with the United States than the Soviet Union ever was during the Cold War. The United States cannot rely on historical precedents in approaching China[…] Nevertheless, China perceives the United States as the ultimate source of resistance to its expanding claims*" (Clark, 2014. Pp. 194-5).

Whatever the denouement will be, it is unavoidable the fact that the Chinese geopolitical, economic, and monetary outpost is underway, and the current policy of *containment* to China from the United States (in Kennan's style[78]) is not sure to work out. As Princeton Professor of International Affairs, G. John Ikenberry, reflects: "*China and Russia have begun to push back on the American-led order, cracking down on Western influences in their countries and seeking to expand their spheres of influence[…] China has begun to advance its own vision of modernity: capitalism without liberalism or democracy[…] the old Western-led liberal order looks more troubled today than at any time since the 1930s*" (Ikenberry, 2020. Pp. 3); A veteran Kissinger reminds us, "*Yet China is singular. No other country can claim so long a continuous civilization, or such an intimate link to its ancient past and classical principles of strategy and statesmanship*" (Kissinger, 2011. Pp. 2). As William Shakespeare allegedly said, *What's past is prologue*.

[78] George F. Kennan (1904-2005) was an American diplomat and foreign relations strategist. He proposed a policy of *containment* to the global expansion efforts of the USSR during the Cold War instead of a frontal clash.
For details see: https://history.state.gov/departmenthistory/short-history/kennan

VII.IV. A Strategic International Positioning for Argentina

In 1954 a very young Henry Kissinger submitted his doctoral dissertation to the Department of Government at Harvard University, titled "*Peace, Legitimacy, and the Equilibrium. A Study of the Statesmanship of Castlereagh and Metternich*", which was later published in 1957 as "*A World Restored: Metternich, Castlereagh and the Problems of Peace 1812-1822*". In his work, Kissinger, analyzes the strategy deployed by Klemens von Metternich, Foreign Minister (1809-1848) and Chancellor (1821-1848) of the Austrian Empire. Metternich skillfully managed Austrian foreign relationships between two giants in conflict, the Kingdom of Prussia (allied to the Tsar of Russia, Alexander I) and Napoleon Bonaparte. What makes Metternich's actions a study case for geopolitics and statecraft is his mastery at not being absorbed by these expansionist, relentless neighbors in the middle of a complex scenario of a scaling conflict. This study case from history poses a valuable lesson for Argentina -as it also does the German *Transfer Problem* previously seen in this work-, as the country needs to face a process of economic recovery under certain current world conditions within an increasing multi-dimensional Sino-American conflict in the economic, monetary, and geopolitical spheres. Argentina cannot afford to be clumsy nor ideologically, rapturously driven.

As Kissinger explains: "*The kind of game Metternich decided to play was… not one of the bold maneuver, which risked everything on a quick checkmate. Rather it was deliberate and cunning, a game where the advantage lay in a gradual transformation of the position, in which the opponent's moves were utilized[…] while the player marshalled his resources*" (Kissinger, 1957. Pp. 558-63). Even though the evident differences between the XIX century and today, mid-size Argentine economy is - to some extent- also between two expansionist, relentless adversaries namely the United States and China. The former is the historical, incumbent leader of the Western World, and Latin America is considered its backyard, where the U.S. dollar is the wealth reserve par excellence. Additionally, Argentina needs to be in good standing with the United States as this financial, economic, and political relationship is essential for the renegotiation of an endless external debt with the *Club de Paris*, the IMF, and private institutional debtors (mostly American private funds). The latter, on the other hand, has aggressively approached Argentina since the early 2000s, financing infrastructure and providing technology, direct investments, and other

capacities (e.g. currency swaps to integrate to the central bank foreign reserves, a military station for "peaceful use only" in the Argentine Patagonia[79], etc.).

This lesson from history, applying a sort of equilibrist's skills of Metternich, may be something useful for the Argentine strategy on monetary, economic, and foreign relations matters. Going back to Kissinger's intellectual work of his youth, as it is explained by his biographer, Scottish historian Niall Ferguson, "*The first half of the narrative of 'A World Restored' is provided by Metternich's transition from collaboration with France, when the Austrian position was at its weakest[…]*" (Ferguson, 2015. Pp. 306). Nevertheless, as history progresses, Austria worked close to Prussia and Russia to reestablish the monarchical political and economic equilibrium shocked by the republican, liberal movements (led by France). Beyond the differences of context, what is valuable here, is to learn from Metternich that the Argentine's own goals need to be used "*to persuade other actors that these goals were in their interests, too*" (Ferguson, 2015. Pp. 306).

It is clear that Argentina needs first and foremost to cut her own dynamic of sovereign debt formation, by applying a *Quantum* monetary strategy in line with what it is proposed in this work. Yet, Argentina will have to deal with the United States and China, as well as with a clash of their respective geopolitical, economic, and monetary strategies. Certainly, Argentina cannot have a say or any direct influence on the multidimensional Sino-American conflict; however, Argentina definitively cannot afford to bet *all in*[80] to China, or against China.

In such scenario between competing forces, Argentina still counts on valuable assets to be taken into consideration, provided a sound economy and the sovereign debt formation problem remedied. These resources are namely the

[79] . La Nación [in Spanish]. March 9th, 2020:
https://www.lanacion.com.ar/politica/ciencia-espionaje-el-misterio-base-espacial-china-nid2339857

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https://www.perfil.com/noticias/equipo-de-investigacion/base-espacial-china-neuquen-patagonia-acuerdo-firmado-por-cristina-kirchner-cuales-son-posibles-fines-militares.phtml

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https://www.infobae.com/america/mundo/2020/08/26/la-prensa-europea-se-pregunta-por-la-misteriosa-base-china-en-el-sur-de-argentina-tiene-fines-militares/

[80] *All in* is a term used in certain games (e.g. poker) which means the player bets everything in a given option of the game. The term is also used in Game's Theory and geopolitics.

capacity of producing diversified quality food at competitive prices for more than 400 MM people (from soft commodities and meat to sea food), precious and desired natural reserves such as clean water and metals (e.g. lithium), as well as fossil and renewable energy. Additionally, Argentina possesses a strategic geographical asset due to both long extension and bi-oceanic localization in the Southern Cone. As Kissinger praises in Metternich, Argentina should not play it bold but measured and crafty in order to carry out a *gradual transformation* of her international *position*, in which the Argentine economy can take advantage of international commerce and reach a technology and infrastructure catch up.

Hence, how is it possible for Argentina to get some leverage in economic and geopolitical terms in order to reach this *gradual transformation*? As stated by the *Realist School* of International Relations, countries make their moves based solely on power and the unavoidable struggle for absolute and relative shares of this power (Mearsheimer, 2018). Sino-American relationship will eventually (inevitably?) deteriorate and, it is in this -very likely- reality that Argentina needs to resolve her sovereign debt problem and then head to an economic prosperity state propelled by international commerce. Yet, under this scenario, balance of international commerce could show itself problematic, as approximately 40 % of Chinese GNP is exports, a quarter of which goes to the USA. A fall in the value of the U.S. dollar would hit Chinese exporters. After the 2007-8 crisis Chinese exports fell 17% in 2009 as a result of the crisis in the USA (Eichengreen, 2011).

In this context, the implementation of a *Quantum* monetary strategy, as proposed, will not only cut the vicious cycle of sovereign debt formation, but also decouple Argentina from an uncertain future value of the U.S. dollar, which will be immersed in a new reality where the main inner threat for the U.S. dollar is not only China, but also America's own budget deficit out of control. Effectively, as of early 2021, after huge fiscal packages were deployed and over-extended, and also ultra-expansive monetary policy was executed by the Fed due to the Covid-19 pandemic[81], the stability and value of the American currency is uncertain.

[81] Ultra-expansionist monetary policy in the United States has been executed since the 2008-9 crisis, firstly under the TARP (Trouble Assets Relief Program) approved by the U.S Congress in 2008, and then through four rounds of Quantitative Easing (QE) and subsequent interest rate cuts. As of early 2021, and as a consequence of the impact of Covid-19 pandemic, more fiscal stimulus and a monetary accommodative policy have been confirmed.

Hence, back to our original question, that is, how is it possible for Argentina to get some leverage in economic and geopolitical terms in order to reach this *gradual transformation*? Going back to Metternich, Argentine's own goals (i.e. retaking the path of economic growth and development, and being internationally and geopolitically respected) need to be used "*to persuade other actors that these goals were in their interests, too*" (Ferguson, 2015. Pp. 306). The question is how, and the cornerstone might be the Mercosur Commercial Block.

Effectively, implementing a *Quantum* monetary strategy to cut the vicious cycle of sovereign debt formation and decouple Argentina from the uncertain U.S. dollar is a *sine qua non* condition, may be not sufficient if the Sino-American conflict, in any of its dimensions, such as monetary, commercial, military, etc., escalates. The strategic leverage for Argentina would lay on her regional integration. This regional block, the Mercosur, would present advantages in several cases, but will be fundamental under a post-Western liberal order arranged in blocks, as serious international affairs analysts are already assessing, such as Princeton's professor Ikenberry: [if Western order falls then] *"the liberal international characteristics of the old order will disappear and the long Western liberal ascendency will give way to a postliberal order organized around some other set of principles and institutions[…] China will become the organizational center of a post-Western liberal system. Or there might be a decentralized system composed of regions, blocs, and spheres of influence[…]*" (Ikenberry, 2020. Pp. 5)

Nowadays, the Mercosur, common market founded in 1991 by Argentina, Brazil, Uruguay, and Paraguay, is struggling to continue alive. The main issue is an irreconcilable ideological vision of its state-members. For one hand, there is the willingness of Brazil and Uruguay (under classic liberal Administrations) to opening to the world trade, whereas Argentina (currently under a populist Administration) pushes to be even more closed to world commerce. In any case, if Argentina manages to get rid of her current toxic populism and goes back to a path of political sanity and economic soundness, then Mercosur would offer an unparalleled geopolitical leverage. The economic strength of the Mercosur Block, with the agricultural power of Argentina and Uruguay, and the industrial muscle of Brazil, would position Mercosur in the international concert.

Once Argentina has cut the sovereign debt formation vicious circle and got decoupled from the U.S. dollar through the implementation of a *Quantum* monetary strategy, then the Argentine economic diplomacy and political intelligence should address to, and advocate for, the Mercosur Monetary Union.

Effectively, going back to the implementation of the *Bureau*, at the beginning Argentina would count on three *Bureau* offices, namely one for U.S. dollar transactions, one for Chinese yuan transactions, and one for Brazilian real transactions (eventually also a fourth one for European euro transactions), until a Mercosur Monetary Union can be implemented. It is fundamental for this monetary union, in order to be successful, to respect the nature, laws, and governing dynamic of money and currency already seen[82]. If Argentina, within -and with- the Mercosur, is able to implement a regional common currency to be used only for transactions among Mercosur members and foreign agents extra-Mercosur, keeping her Argentine peso for domestic transactions (likewise the other Mercosur members), then the Mercosur would become a mid-power economic and geopolitical block, capable of leveraging its negotiations either with China or the U.S., keeping its independence at Mercosur level, using its Mercosur common currency, and also keeping, at member nation level, its sovereign independence by using their domestic currencies and applying their own domestic monetary policy.

In this way, once this common currency is a reality, all international transactions must be done through the Argentine *Bureau*; Brazil, Uruguay and Paraguay will implement their own *Bureau*. Mercosur internal commerce will be carried out in the common currency, respecting the international macroeconomic laws already seen in this work. But each country will operate inside borders with its own domestic currency. The Mercosur Block will act as a sole economic agent at the moment of economic or geopolitical negotiations. Eventually this could lead to a Mercosur common internal tax structure, Mercosur treasury bonds emission, etc. In this regard, the example of the unfinished, lame, and difunctional European Union, where the common currency is wrongly used as local currency inside borders, with not few problems and unbalances between its state-members, must be taken as an example of what to do, and what not to do[83].

Even though such improved and powered Mercosur clearly will not compete in forces with China, or the U.S., yet it would not be easy for either of these two

[82] See in this work *Chapter II. Brief Theoretical Framework. A Quantum Macro Approach to International Monetary Economics*; also see *Chapter VI. Theoretical and Policy Implications. Quantum-Monetary Strategy and a Review of International Monetary Theory.*

[83] In this regard see Cencini, A. (2012) *What Solution for the Euro-Crisis?* Research Gate. Available at: https://www.researchgate.net/publication/328428705_What_Solution_for_the_Euro-Crisis

powers to run over it, or over any of its member states such as Argentina. Not only because this powerful Mercosur will have much economic value to offer, specially to China (food, raw materials, and metals) but also geopolitical value for both, the U.S. and China as well. Certain balance will be established, not between equals, but between strategic partners (as Metternich did long time ago, Austria was not an equal neither of the French Empire, nor Prussia, but the leverage lies not in having equal power, but being enough strategic and essential to the global power in order to be respected and minded). Leverage, in words of Archimedes[84], does not need too much power, but just a *pivotal point*.

Effectively, in the last years Brazil led the ranking of suppliers to China, surpassing the U.S. This fact places the Mercosur Block as the number one agroindustry supplier to China (average 2016-18). On the other hand, Argentina, Brazil and Perú are the top three Sud American countries receiving Chinese direct investments in the last decade, being Brazil the number one (Piñeiro and Valles Galmés, 2020).

Once this improved Mercosur is fully operative with its common currency working, the Block will use this very currency to trade either with China, the U.S. or Europe. In one sentence, a successful geopolitical monetary strategy for Argentina is neither dollarization, nor *yuan-ization*, but a monetary integration within -and with- Mercosur, in order to be leveraged by the regional block in a future multipolar world which may present an uncertain outcome. In any case, and whatever the economic or geopolitical challenge may be, it would be far more astute to tackle down the challenges of an upcoming, new chess-board in a position macroeconomically sound and geopolitically leveraged; as Kissinger would say, referring to Metternich, in a *deliberate and cunning* way, setting *a game where the advantage lay in a gradual transformation of the position* (Kissinger, 1957. Pp. 558-63).

The alternatives are not promising. If Argentina does not use her economic and human resources, reaching a bold solution for her dynamic of sovereign debt formation, along with a sound integration with her neighbors, specially Brazil, as a leverage to gain certain relevance in the world order to come, unfortunately she will be condemned to insignificance and impoverishment, in a world tending to change, and changing fast.

[84] Archimedes (287 BC – 212 BC), Greek physicist, astronomer and mathematician.

With the advantage of the hindsight, it looks like the unipolar, liberal world assumed after the fall of the USSR is over. This reality makes the remedy for sovereign debt vicious circle and the decoupling from the U.S. dollar even more relevant, and it provides a sense of urgency. Professor Mearsheimer explains the basis of this failed *Liberal* world as a failed *Pygmalion*[85], in his own words: "*The United States was so powerful in the aftermath of the Cold War that it could adopt a profoundly liberal foreign policy, commonly referred to as liberal hegemony. The aim of this ambitious strategy is to turn as many countries as possible into liberal democracies while also fostering an open international economy and building formidable international institutions. In essence, the United States has sought to remake the world in its own image[…] From the beginning, however, liberal hegemony was destined to fail, and it did*" (Mearsheimer, 2018. viii). Sino-American current reality may be better read under the *Realism* School of Foreign Relationships, rather than the *Liberal* one, that is, understanding power as the foundation and guiding-force for countries' decisions, "*Realists maintain that international politics is a dangerous business and that states compete for power because the more power a state has, the more likely it is to survive[…] The driving force behind this aggression is the structure of the international system, which gives states little choice but to pursue power at each other's expense*" (Mearsheimer, 2018. Pp. 131). Under this logic, Metternich's approach acquires relevance and substance, making out of Argentine economic weaknesses, potential strengths. As CFR's Haass recognizes, "*Each era of history is defined by its principal forces, powers, and challenges and how people and governments fare in the face of these issues. Usually this puts great powers, be it their rivalry or rule, at the center of the narrative. This has been true for the preceding eras of history, and may yet be true of the current or next one, especially if either was to become defined by the growing competition between the United States and China*" (Haass, 2020. Pp. 157).

The *raison d'être* of the latter analysis lies in the fact that it not possible to arrive to a well-rounded international monetary analysis of Argentina without inserting Argentina in the current international monetary conditions. An these conditions need to be studied in dynamics, considering the ongoing forces and plausible coming changes, i.e. China economic and monetary drives. Understanding these current transformations and dynamic is crucial to anticipating the coming chess-board which, in turn, is indispensable to plan and execute a new monetary framework tending to solve a sovereign debt problem in a stand-alone fashion,

[85] Pygmalion was, in the Greek mythology, a king and sculptor who felt in love with his own image reflected from his just craved sculpture.

and also to come back to a path of economic growth taking advantage of exogeneous conditions -which, by definition, are out of the Argentine reach-.

All things considered, the mere possibility of a global international currency is -unfortunately- not at sight (yet), even though some movement in the global monetary status quo is expected, as CFR's Haass analyzes, "*At least in principle, the dollar could be replaced by another currency, a number of them (a basket), a new international currency, a cryptocurrency, or some combination. It is remarkable that even during the global financial crisis of 2008-2009, which started in the United States, the dollar rallied and remained the favored currency for investors[…] As other economies grow and become more open, they may be both willing and able to take on the role of a reserve currency. China obviously comes to mind here*"(Haass, 2020. Pp. 237-8).

For Argentina, as Professor Cohen explained -when interviewed by an Argentine journal regarding an intelligent positioning for Argentina towards the Sino-American monetary challenge- it is crucial to play some sort of balanced strategy, namely "*The answer is about statecraft, about not becoming too dependent from one of these two. This means to avoid a situation in which one of the big powers, the United States or China, could see itself threatened by an inclination to the other. And that is a matter of statecraft*"[86].

All in all, mid-sized economies such as Argentina's would experience a much healthy macroeconomic and monetary conditions, and an enhanced geopolitical situation, creating monetary zones by adopting a unified, reformed system of external payments. Then, the world would be subdivided in monetary zones, each with its vehicular international currency. This solution would prevent a change from the present non-system of international payments based on the U.S. dollar to another -equally flawed- (non) system based on -e.g.- the Chinese renminbi.

Greek economist Varoufakis finishes his book with a straight paragraph in its postscript: "*Even brighter scenario would be for the West to have an epiphany and, at long last, embrace John Maynard Keynes's suggestion of an International Currency Union, the very suggestion America rejected in the Bretton Woods conference in 1944. Is this far-fetched? Very*

[86] Original [in Spanish]: "*La respuesta es un asunto de gobierno, de no volverse demasiado dependiente de ninguno de los dos. Eso significa evitar una situación donde uno de los grandes poderes, Estados Unidos o China, pueda sentirse amenazado ante una inclinación por el otro. Y eso es un asunto del arte de gobernar*" [translated by this author]. Perfil. February 21st, 2021: https://www.perfil.com/noticias/internacional/benjamin-cohen-el-dolar-no-sera-desafiado-por-el-yuan-por-una-decada.phtml

much so" (Varoufakis, 2015. Pp. 254). Until this sort of international monetary arrangement, long claimed since Keynes, can be a reality, Argentina needs to move -as soon as possible- to a stand-alone *Quantum* monetary strategy in order to cut her debt cycle formation. Additionally, Argentina needs to reinvest the national income -recuperated under the new *Quantum* strategy- in her own domestic economy, monetizing it.

As veteran Harvard Professor Graham Allison sustains: "*China and the United States are currently on a collision course for war, unless both parties take difficult and painful actions to avert it[…] Denying Thucydides' Trap does not make it less real. Recognizing it does not mean just accepting whatever happens. We owe it to future generations to face one of history's most brutal tendencies head on and then do everything we can to defy the odds*" (Allison, 2017. Preface).

By combining these actions with fiscal and monetary discipline, Argentina will head back to a road of economic prosperity and financial and monetary stability, based on her own internal monetary institutional setting; unfolding, concomitantly, smart commercial and foreign relations strategies. This work attempts to be a modest contribution in this regard, a sort of wake up call, in order to reach that ideal.

Epilogue

"Economists cannot avoid being students of human nature"

Alan Greenspan
American economist. Fed Chairman (1987-2006)
The Age of Turbulence (2007. Pp. 17)

If we would have to summarize what this doctoral thesis is about we could make it come down to two main parts, namely i. a first part in which we *acknowledge and explain the problem* of the lack of an international monetary order, with an international payments system under an international clearing mechanism. On this point we reviewed the historical empirical evidence, and we condensed the main aspects of the *Quantum* monetary theory, in both ways, domestic and international. Then ii. a second part in which we propose a structural and operational solution for Argentina in the monetary context explained, i.e. a context characterized by a lack of such proper international monetary order.

As it says the quotation from Chairman Greenspan (2007) at the beginning of this Epilogue, bottom line, we, as economists, face the study of human nature; but this human nature is not only reduced to the microeconomic foundations of individuals. The whole domestic and international scaffolding of human institutions, e.g. financial system, banking system, central banking, international payments, etc., are -indeed- part of this human nature we need to understand. Therefore, *a systemic, macroeconomic* approach is needed to understand, assess, and formulate solutions for problems generated at this same *systemic, macroeconomic* level, which cannot be solved at a lower individual, micro-foundational one. This was precisely what we aimed to offer in this work.

At the moment of starting this research work the author was confronted with a methodological dilemma (what researcher doesn't?). In my case the decision was to be taken between either working within the boundaries of mainstream economics using the usual methodological toolbox, which would have led me to

repeat the set of usual common places, that is, adding nothing; or addressing a very different intellectual journey, using the *Quantum Macro Analysis*, which applies logical analysis grounded on macro-foundations instead of econometrics. The latter was the chosen path, integrating it with historical parallels, statistical corroboration, and geopolitical analysis. The author is confident that this approach, even with many open questions and no definitive answers, is much more integral and near to reality, which is always complex, multi-dimensional, and non-linear (impossible to subsume it into a linear regression).

The purpose of this doctoral work is not, and it could never be, to arrive to absolute explanations, or proposing final solutions; rather to raising new questions, proposing new approaches, questioning current reality and its problems and related crises; by using economic history, economic theory, data, and the author's own and other scholars' logical and economic analysis.

The intended academic take-out of this work is a well-rounded understanding of current global monetary status quo, and an effective strategy for a country like Argentina in order to neutralize its harmful effects, reaching a healthy monetary relationship with the rest of the world and a sound domestic macroeconomy to secure economic prosperity and social progress for its people.

The author sincerely hopes having added, even modestly, some content on this regard. As an economist interested in global macroeconomic monetary aspects, nothing could be more important.

Nam et ipsa scientia potestas est

Francis Bacon

Veritas vos liberabit

St. John; 8:32

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