Supply Side Keynesianism

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by

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INTRODUCTION

The world economy is in disarray today, with the highest inflation in decades and the possibility of a recession. A situation which is particularly remarkable because it happens during one of the most significant technological revolutions in human history – the ICT (Information, Communications, Technology) Revolution. At the end of the day, inflation is the consequence of an imbalance between supply and demand. The questions to be answered are: How is it possible the inflationary imbalance happened during the huge ICT's potential to increase supply production? and why is there the possibility of a recession, when economic growth is supposed to be guaranteed by the ICT? The answer to these questions is that today's economic disarray is the result of two causes: 1) inadequate economic policies which significantly increased the demand side, while doing very little to stimulate the supply; and 2) a recalcitrant nationalism that has been opposed to the ICT. In this book we will concentrate mainly on the first cause and will only comment briefly on the second one, which we have discussed at length elsewhere[1].

The 2008 GFC (Global Financial Crisis) and the 2020 GP (Global Pandemic) have convinced most economists and policy makers that the supposed neoclassical homeostasis of the private markets does not work. Once a large disequilibrium is produced by a significant external shock, the private economy does not return to a Pareto optimum equilibrium; instead, all sort of non-optimum Paretian equilibriums and non-Paretian equilibriums can occur[2]. Therefore, policy makers have implemented Keynesian policies that stimulate the demand side to return economies to an acceptable equilibrium. In doing so, however, they have created an imbalance between demand and supply, which is one of the main causes of today's inflation. Additionally, supply recovery was delayed by exogenous shocks such as: the commercial confrontation between the US and China, China's Covid restrictive national policies, and the cost-push infla-

[1] Obregon, C. 2022., *Technology Versus Nationalism*. Amazon.com. Also available at Research Gate.com.

[2] See Obregon, C. 2020. *New Economics*. Amazon.com. Also available at Research Gate.com.

tion consequence of the energy and food price increases associated with the Russia-Ukraine war. The stubborn high-level inflation has created the possibility of inflationary expectations, which have forced central banks to increase interest rates aggressively, that are the immediate cause of the possibility of a recession. In this book the exogenous shocks will only be mentioned briefly, and we will concentrate on discussing why supply-side Keynesianism could have been more adequate than demand-side, traditional Keynesianism in promoting the economic recovery. We will argue that the former could have maintained a more adequate balance between demand and supply; therefore, avoiding to a large extent the inflationary imbalances produced by the latter.

In terms of macroeconomic policy, there are only two traditional tools: fiscal and monetary policies. The schools of rational expectations and monetarism have suggested that the microeconomic equilibrium of the private markets is stable, and that disequilibrium is always caused by government intervention; therefore, they have concluded that macroeconomic policies are not required. In practical policy, however, governments have used both macroeconomic tools; with a Keynesian perspective, which however up to 2008 was directed only to manage short-term mild business cycles. The 2008 GFC changed drastically the perspective, Keynes was revived, and macroeconomic policies were used to bring the economy back to equilibrium. In Keynes' theory, monetary policy does not work to bring the economy back into equilibrium because of the liquidity trap; therefore, the only policy left is the fiscal policy. Both in the 2008 GFC and in the 2020 GP the focus has been on increasing government expenditures, and the main role left for monetary policy has been to finance the government.

The innovation that was introduced to confront the 2008 GFC was *Quantitive Easing* (QE) – the buying of mortgage bonds by the central banks. Thus, a new role for monetary policy was found which did not exist in Keynes' thought. Through QE the central banks entered the realm of credit, but only as related to mortgage bonds. In the 2020 GP, QE was used again, even though the crisis was mostly related to supply-demand imbalances and not to a real- estate crisis; and a large part of the burden of the recovery was left to the traditional Keynesian policy of increasing government expenditures, mostly financed by the central banks.

In the 2020 GP, an important shift was introduced as to how to spend. The government expenditures Keynes had in mind were directed at infrastructure building, which, while increasing aggregate demand for the

private sector, create short-term jobs that generate income and an occupation (even if short-term lived) for the potential workers. In the 2020 GP, mainly in the US, government expenditures were largely used to subsidize the population directly. Keynes' proposal had its own problems; mainly, whether the government expenditures in infrastructure could revive the long-term growth expectations of the private sector - which are required to bring the economy back into equilibrium. Subsidizing the population directly has the same problems mentioned for Keynes' proposal; and in addition, it generates the problem of decreasing, at least temporarily, the supply of labor which puts upward pressure on the wages and therefore on inflation. And although the shortage that is generated in the supply of labor is short-lived, it produces a temporary inflation which may create the risk of the formation of inflationary expectations and may force the central banks to increase rates, creating the possibility of a recession.

The 2020 GP had produced a breakdown of the global chains of production and a major shift in the demand vector of the economy – for example: instead of restaurants, home food delivery; and instead of gym subscriptions, home stationary bicycles. Both phenomena partially reflect the short-term conditions of the pandemic, but there is also a long-term shift of demand due to definitive changes in lifestyle patterns, the dimensions of which are still unknown. In the short term, there has been a huge increase in demand with shortages in the supply production, due either to the breakdown of the chains of production (car production is an example) and/or to the fact that the installed supply production capacity is insufficient to satisfy the new demand in certain sectors (in the example used - stationary bicycles). These imbalances have generated inflation.

The argument made in this manuscript is that the two traditional macroeconomic tools, fiscal policy and monetary policy, are insufficient to bring back efficiently into equilibrium an economy that has had a major crisis. Both traditional macro-tools only work through the demand side, and there is no macro-tool at hand to influence the supply side. QE could be understood, in principle, as a new tool that works through the supply side – by providing credit; but it was only used substantially for mortgages both in the 2008 GFC and in the 2020 GP. In this document, it is proposed that QE should be extended to provide credit to the whole productive economy – which will provide policy makers with a new macro-tool capable to stimulate the supply side of the economy in the short term. The new macro-tool proposed does not pretend to substitute the demand side adjustments required using fiscal and monetary policies;

but to complement them with a new macro-tool that fosters the rapid recovery of the supply side. Using this new macro-tool will reduce to the minimum possible the demand-supply imbalance that generate unacceptable levels of inflation.

In writing this manuscript we understand that it offers a futurist proposal, and that for some readers it may seem just *too much imagination*. But our argument is that both the initial proposal to create the central banks, and Keynes' recommendation to increase the government expenditures, were in their historical times, initially perceived as *too much imagination*.

The first chapter briefly reviews what has been written on supply-side economics. It argues that there has not been any theoretically acceptable proposal as to how to influence the supply side of the economy in the short run. And therefore, to build a supply-side Keynesianism one would need to look elsewhere. There is no tradition in the Western world for efficient government intervention in the supply side, one needs to go to the Asian model of economic growth. Key selected Asian countries have been able to intervene successfully in the supply side. However, such interventions were guided towards the long run, and therefore it is argued that supply-side Keynesianism would need to go well beyond the Asian model of economic growth, because it needs to find a way to intervene efficiently in the supply side in the short run. It is argued that the experience and efficiency of the financial sector in the Western world, both in giving credit to companies and in pricing them in the stock market, could be used to intervene in the supply side of the economy in the short run.

To understand why economic policy has focused only on the demand side of the economy, one needs to understand how economic theory has been developed. Traditional neoclassical theory denied the need of government intervention in economic cycles. Then the 1930 GD (Global Depression) happened, and governments had to do something, so they started to spend heavily in infrastructure to provide employment and to foster economic recovery. In the front of economic theory, Keynes writes the *General Theory* and argues that monetary policy is inefficient to take the economy out of a major crisis, because lower central bank interest rates will not be translated into more credit by the private banks to the public (mainly because all the economic agents are bankrupt and, therefore, are not candidates to receive a credit). Thus, Keynes argues government expenditures are the right tool; and so - at the theoretical level - he justifies what governments were doing in practice. Keynes' theory, however, was highly incomplete and had incongruencies that needed to be solved.

Keynes' thought was soon transformed into the IS-LM model, which was the basis of the Keynesian-monetarist controversy that ended up in the eighties with the triumph of rational expectations and the renewal of the neoclassical belief that government intervention was not required in economic cycles. The stable, rational-expectations world did adjust very well to the world's economic reality during 1950 to 2008, which was reasonably steady period. Then the 2008 GFC came along and there was no theory to explain the crisis, nor as to what should be done. Thus, Keynes' unfinished theory was revived, and contemporary explanations based on behavioral economics were used to justify again a fast increase in government expenditures. This time however the recovery was unusually slow, and the Federal Reserve was forced to intervene directly into the mortgage credit market, buying MBS (Mortgage-Backed Securities) - innovating what today is known as QE (Quantitative Easing). In the 2020 GP government expenditures were increased substantially again, more than in the 2008 GFC, and the recovery was faster – but the cost has been inflation.

The purpose of chapters two, three and four is to explain these theoretical developments, which will provide the basis for our proposal of Supply-Side Keynesianism in chapter five. It is argued that the reason why the Federal Reserve was successful in the 2008 GFC is because it entered directly into the distressed mortgage credit market, and by doing so: 1) invalidated Keynes' critique of the inefficacy of the monetary policy, because the central bank bypassed the private banks; 2) it created the first tool ever used of supply-side Keynesianism, which is based on the direct intervention in the supply side of the economy through the credit markets. Unfortunately, QE was restricted mostly to the mortgage market both in the 2008 GFC and in the 2020 GP.

The second chapter explains how the Keynesian interpretation of Keynes happened and why it was doomed to failure. It traces back the success of the school of rational expectations; and argues that while it clearly triumphed theoretically against the Keynesians, it did not solve the practical policy concerns of Keynes. Although Keynes was not able to create a solid theory to back up his practical policy concerns, these have remained alive and became particularly relevant due to the 2008 GFC and the 2020 GP. This chapter explain Keynes' LPT (Liquidity Preference Theory) which serves the purpose of understanding how a credit economy works. The success of QE in the 2008 GFC is explained because the Federal Reserve directly entered the credit mortgage market.

The credit market is the actual key for a new macro-tool aiming at stimulating in the short term the supply side of the economy. The chapter also explains Keynes MEC (Marginal Efficiency of Capital). And it discusses why both LPT and MEC disappeared in the IS-LM model; and the relevance of both in major crisis.

The third chapter reviews other interpretations of Keynes such as the ones of post-Keynesians, disequilibrium macroeconomics and behavioral economics. It shows that none of them is capable to explain why major crises occur. The chapter explains why the official explanation of the 2008 GFC, based on behavioral economics, is wrong and discusses the institutional mistakes that were the real causes of the crisis. The correct view of what actually happened in the 2008 GFC is an important antecedent in our construction of a new monetary policy in chapter five, that may allow policy makers to stimulate the supply side of the economy in the short term.

Chapter four compares the adjustment programs of the 2008 GFC and the 2020 GP, both in the fiscal and the monetary side. As for the fiscal policy, it shows that 2020 GP's fiscal policy has been more aggressive: with positive results in the economic growth front, but the undesirable consequences of generating inflation. It explains why Keynes' policies were needed, and states that despite inflation they have been a success. But it argues that the fiscal approach in the 2020 GP has had a welfare bias that created excess savings, that generated lower supply of labor and strong consumer demand - the two main causes behind inflation. On the monetary side, it argues that to continue the aggressive buying of MBS in the 2020 GP was a mistake – because the crisis was not characterized by a mortgage market crisis, like the 2008 GFC, but by an imbalance between supply and demand due to the Covid 19 pandemic. A wider intervention in the credit markets to broadly support the supply side of the economy would have been a more advantageous strategy.

Chapter five describes how supply-side Keynesianism could work; it emphasizes that, by stimulating the supply side of the economy in the short term, it reduces to the minimum the imbalance between supply and demand that generates inflationary pressures. It argues that money supply increases do not necessarily have to be channeled to finance the government. And it proposes the creation of a new institute, which could depend on the central bank but with autonomous functions, to channel the resources directly to the productive economy. The focus is theoretical, but the most important practical policy implications are discussed.

CHAPTER ONE: SUPPLY-SIDE ECONOMICS

For decades, the dominant schools of Western economists (monetarism and rational expectations) have relied on the homeostasis of the private markets. However, the 2008 GFC and the 2020 GP have proven them wrong. As a consequence, there has been a comeback to Keynes' thought. Keynes' policies, however, were adopted with inadequate theoretical background. Keynes wrote in the 1930's, and despite the brilliancy of his policy views, he was never able to fully develop a congruent theoretical position. And Keynesians have been theoretically defeated by monetarism and the school of rational expectations, according to which the two crises should never have happened. Therefore, there was insufficient theoretical analysis as to why major economic crises happen and what to do to bring the economies back into equilibrium. Moreover, Keynes' theory, insufficient as it was, only studied the demand side of the economy, under the assumption that increasing the demand was going to be enough to stimulate the supply. Because of all the above, there is no theory in Western economics as to what to do to specifically stimulate the supply side of the economy in the short run. None of the macroeconomic tools that the governments have at hand are intended to foster a rapid recovery of the supply side of the economy.

The central banks, under the influence of the neoclassical school of economics, were conceived as a tool to regulate the natural cycles of the economy, through fixing the bank rate at the level of the natural rate of the economy - the one that equalizes savings and investments. In Keynes's theory, central banks were conceived as unable to take the economy out of major economic crisis due to the liquidity trap. In the neoclassical synthesis the ability of the central banks to influence the economic cycle – through monetary policy – was acknowledged. And with the triumph of rational expectations, active monetary policy remained very much in use, but guided only to influence short-term, minor economic cycles.

Keynes argued that government expenditures could be critical to take an economy out of a major crisis. In the neoclassical synthesis the power of the fiscal policy to influence the economic cycle - both through government expenditures and through taxes - was acknowledged. And with the

triumph of rational expectations fiscal policy remained it use in practical policy, but also guided only to influence short-term, minor economic cycles.

In any case, both fiscal policy and monetary policy were always tools directed at the demand side of the economy, except for a brief – unsuccessful - theoretical proposition coined in the literature as supply-side economics. Under president Reagan, some economists - without theoretical support - introduced the idea of the Laffer curve. The idea was that lower taxes would stimulate the supply side of the economy in the short term, and therefore were more adequate to manage the economic cycle than the government expenditures. There was some literature that associated lower taxes with higher profits for the private sector and therefore more productivity and higher economic growth in the long run, but there was nothing to indicate the short-term positive relation assumed by the Laffer curve between short term economic growth and tax reductions. The Laffer curve never had any theoretical or empirical support, and in policy terms it ended up as a total failure. The tax reductions, under the Reagan administration, generated a huge government deficit. The expected tax revenues that were supposed to be associated with the short-term growth of the economy (generated by the initial tax reductions) never came in. The same happened under the administrations of President Bush and President Trump[3].

Except for this brief and failed attempt of what was known as supply-side economics, nothing in the Western economic literature ever analyzes the supply side of the economy. Economic growth was assumed by the classical economists to be a natural consequence of the capitalist's hunger for profits. Neoclassical economists saw the private markets as self-adjusting. And even Keynes was convinced that the supply would follow the demand. Recent literature in information economics, game theory and institutional economics have shown that there is the theoretical possibility of multi-equilibriums, many of which may be non-Pareto (like the Nash-equilibriums) or non-optimal Pareto, which opens the possibility of economies with equilibrium underemployment or with equilibrium with underdevelopment. Therefore, the questions about how to: 1) bring the economies back from an economic crisis into a Pareto optimal equilibrium with full employment and 2) bring the economies to an adequate path of economic growth - have been reopened. There is an extensive

[3] For a quick summary in this issue see https://www.economist.com/graphic-detail/2019/06/19/can-countries-lower-taxes-and-raise-revenues.

literature on economic growth - that we will discuss furthermore below - and there also exists considerable literature on how to bring an economy back into equilibrium after a major crisis. However, the economic growth literature, although it discusses the supply side of the economy, only focuses on the long run. And on the other side, the literature that focuses on bringing the economy back into equilibrium, after a major crisis, centers on the demand side of the economy and never discusses the supply side. Therefore, there is a lack of theoretical analysis as to how to stimulate the supply side of the economy in the short run. This book is an attempt to provide preliminary ideas in this direction, which are badly needed given the characteristics of the 2020 GP.

The economic growth literature described which factors on the supply side were critical for long-term economic growth. Solow's model, first published in 1956, argued convincingly that there was no economic growth without a proper level of savings. In Solow's model technology is exogenous; later models discussed the endogenous factors that produce technological development, and four were identified: science, research & development, learning by doing, and the quality of labor capital[4]. In addition, institutional economics described the institutions that stimulared Western's economic growth[5]. Despite its many contributions the literature of economic growth has two key limitations: 1) it does not describe the role of the middle class in the economic growth of the West – a topic that I have addressed at length in other works[6]; 2) it does not explain what happened in the Asian growth model – which I have discussed in other works as well [7]. But from the point of view that is central in this manuscript, the key constraint of the economic growth literature is that, although it discusses the supply side of the economy, it only does so for the long run. Thus, it is not very useful in our quest to find a macro-tool that could be used to stimulate the supply side of the economy in the short-term.

[4] Science (Phelps and others), Research & Development (Acemoglu and others), Learning by doing (Arrow and others), and the Quality of labor capital (Lucas and others). For a discussion of this issue see Obregon, 2008. *Teorias Del Desarrollo Economico*. Amazon.com. Also available at Research Gate.com. See also Obregon, C., 2021.*Todays problems In the Minds of the Great Economists*. Amazon.com. Also available at Research Gate.com.

[5] North and others. See Obregon, C ., 2008. *Teorias Del Desarrollo Economico,* op.cit. See also Obregon, C., 2021.*Todays Problems In the Minds of the Great Economists*. Amazon.com. Also available at Research Gate.com.

[6] Obregon, 2008. T*eorias Del Desarrollo Economico,* op.cit. See Also Obregon, C., *Globalization Misguided Views,* 2018. Amazon.com. Also available at Research Gate.com.

[7] See Obregon, C., 2018. *Globalization Misguided Views,* op.cit.

The discussion of the Asian growth model, however, is of particular interest to us; the success of key Asian economies that followed this model, versus the failure of the underdeveloped countries that followed the neoclassical model, clearly shows that intentional governmental interventions in the supply side of the economy can be fruitful. However again, the interventions in the Asian growth model were aiming at the long-term economic growth; and therefore, they are of limited value for our present quest for a supply-side economics aimed at stimulating the economy in the short run. Despite its limitations, the Asian growth model provides one important lesson: for a government to be able to stimulate the supply side of the economy, it must be particularly close to what is happening in the markets. The main difference between the success of the Asian growth model and the failure of the communist model, is that the Asian model was guided by its exports to the Western middle class; thus, it developed based on world-class technology, developed in the Western markets; while the communist model was guided by bureaucratic decisions, not guided by markets, and it ended up producing with obsolete technology. Governments' interventions in the supply side must be done without attempting to substitute the private- sector markets; the idea is to stimulate them, not to replace them as the communist model did.

KEY ASPECTS TO OBSERVE WHEN BUILDING A THEORETICAL FRAMEWORK FOR A SUPPLY-SIDE ECONOMICS AIMING AT STIMULATING THE SUPPLY SIDE OF THE ECONOMY IN THE SHORT RUN

There are critical preconditions that need to be observed when pretending to influence the supply side of the economy in the short run. The first precondition is that markets cannot be substituted. The main function of markets is to discriminate future successful projects from unsuccessful ones. How do they do it? Through supply and demand. There are two key private markets that price the future: the credit market and the stock market. They have existed for a long time in the Western economies, and they have substantial experience in discriminating (through trial and error) the potential of future projects. Both markets influence the supply side of the economy in the short run. They both provide financing in the short run to companies, that allows or limits their ability to operate successfully in the future.

Governments in general are not good at discriminating markets. In fact, even the Asian growth model has been operating under flexible planning, in which the government guides companies though very sophisticated and well-funded research institutes, but they allow private companies to operate by themselves. It is well known, for example, that the Japanese success in semiconductors was promoted by the MITI (Japan's industrial research institute); but the success of its automotive industry was due to decisions of private sector companies, that were not backed up by the MITI. Planning in the Asian growth model is a guidance element for companies, but they are free to operate according to their own market needs. In particular, the Western governments have been quite disconnected with the supply side of their economies. Although, in emergencies, they have come to the rescue of key companies in the economy, they hardly have the experience to properly discriminate the viability or growth potential of companies in the supply side of the economy.

Therefore, our first proposal is that governments must guide themselves in their short-term interventions in the supply side with the expertise of the private institutions that already discriminate well future successful versus unsuccessful companies: the private credit suppliers and the stock market.

In a crisis like the 2020 GP, what was critical was to maintain the economy operating - *but the future economy*. A Keynesian package was undoubtedly needed, but it was a mistake to aim it only at the demand side, and it was a further mistake to channel it directly to the people, regardless of whether they were working or not. Keynes' initial proposal had the problem that it was focused on the demand side, and it did not target explicitly the supply side of the economy; however indirectly, to some extent, it did. Creating infrastructure is creating supply, and moreover infrastructure fosters future supply growth. In the 2020 GP, particularly in the US, an increasing demand policy was put together with a welfare program aimed at helping the most needed and those who lost their jobs. It was a mistake for several reasons: 1) targeting people's actual short-term needs was well beyond the capacity of the government; 2) part of the subsidies went into savings and did not stimulate the economy; 3) additional savings in the hands of the people reduced the supply of labor, putting extra pressure on the wage level; 4) persistent supply bottlenecks and pressure on the wage level in front of growing demand meant high inflation. The welfare route adopted in the 2020 GP was even inferior to Keynes' initial proposal in that it did not have any effect whatsoever on the supply side of the economy.

Without a short-term stimulation of the supply side, adjustments needed for the fast demand shifts due to the pandemic were too slow. New companies were created, and old ones shifted their operations to satisfy the new vector of demand, which was very different from the demand vector that prevailed before the pandemic; but the structural shifts without government support were slow for at least two reasons. First, due to the pandemic companies significantly reduced their operations and laid off workers, which later were difficult to hire back because the supply of labor was smaller than usual, due to the individual benefits received from the government. And secondly, the pandemic produced sectorial shifts in the demand that made it difficult to find skilled labor in the new growing areas of production; here, well-directed training programs, government supported, could have been of assistance.

THE WESTERN GROWTH MODEL VERSUS THE ASIAN GROWTH MODEL

There is no doubt that the Western growth model has been very successful, but this success has been mistakenly explained as the demonstration that free markets by themselves provide both stability and progress. The Western success has been linked to a liberal ideology that maintains that individual creativity and freedom is the cornerstone of political and economic stability, and of economic and social progress. This liberal ideology has also mistakenly been used to justify the refusal of the Western countries to explicitly develop an industrial policy. At the other end, the successful Asian growth model is based on an explicit industrial policy and looks at the whole society (not the individual) as the basis of economic progress.

There has been a long discussion in the literature about the costs and benefits of an explicit industrial policy; and it is not our purpose to review it here. However, some key points should be raised. As I have explained in other works[8], the key for economic progress is to produce with world-class technology, which is something that both the Western growth model and the Asian growth model have in common. There are three failed economic growth models: the import substitution model, the

[8] See Obregon, C., 2020. *Three Lessons from Economists That Policy Makers Should Never Forget*. Amazon.com. Also available at Research Gate.com.

communist model, and the neoclassical model in developing countries. All of them produce with obsolete technology. The first two because they shut themselves off from the rest of the world, and the third one because it was unable to bring home the large amounts of foreign capital required to modernize the economy. Now, what defines world-class technology are the changing preferences of the world's middle class, mainly based in Western countries. The key to the success of the Western growth model is that its technology is guided by the changing preferences of its middle class. The neoclassical model is nothing else than the Western model applied to developing economies, and it failed because open markets, liberalized prices, democracy, and small governments were not sufficient to attract the needed amounts of foreign capital required to modernize these economies, so that they could produce with world-class technology. Instead, capital went to key Asian countries that followed the Asian growth model; and, in a later stage, particularly to those countries that adapted themselves properly to the ICT revolution. Given two facts: 1) that the Western world has already modernized itself and therefore world-class technology is defined in the West; and 2) that the ICT revolution has globalized many production processes; it becomes impossible to develop an economy without an explicit industrial policy, guided to export to the Western middle class.

The West does not need an industrial policy because it is already producing with first- world-class technology; that is being created in the large Western companies, which guide their technological development by the changing preferences of the Western middle class. But the developing countries cannot develop imitating the West, because the West is already there, and it imposes the technological frontier conditions required to compete globally.

The proponents of the import-substitution model tried to imitate the West by promoting higher savings in the developing economies (under the influence of Solow's model); but their failure originated in producing with obsolete technology for the local market.

The designers of the communist model also tried to imitate the West; and the USSR reproduced many of the conditions of the Western model: it had high savings, science and technology, learning by doing, research and development, and high levels of education: but it failed because it did not export to the West, and therefore its technology was not in the frontier. Therefore, when the USSR opened to the West in the 90's, its economy collapsed.

The advocates of the neoclassical model were trying to repair the mistakes of the two previous models. Therefore, they imposed open markets as a first condition - so that the developing economies could integrate themselves with the West. But they assumed that capital would flow to the developing economies because of their low wages, which did not happen because of the following two reasons: 1) opening an economy does not change its historical, political, and social institutions, nor its infrastructure and administrative capacity; these factors constitute entrance barriers that obstruct the transfer of capital assumed by the neoclassical economists; 2) the ICT revolution came along, and provided a new way to increase global productivity. Instead of bringing capital to the developing economies, it allowed to transfer only a fragment of production, while the whole production process continues to be managed in the developed economies. Under this new paradigm for production, what became relevant were the conditions offered by the countries to host the new fragments of production defined by the ICT revolution. To give an example, China (following the Asian growth model) did a much better job than Mexico (following the neoclassical model) in accommodating to the ICT. Moreover, since capital did not arrive in Mexico in the amounts expected by the neoclassical model, savings became insufficient to promote modernization, while China following the Asian growth model promoted very high local savings, that allowed it to create its own champion companies that could learn foreign frontier technology and export to the West. Between 1990 and 2020, the GDP per capita growth of China in PPP constant international 2017 dollars was 1136% while Mexico only grew 24 %. Which means that China grew at an annual rate of 8.4% while Mexico only at 0.7%. Clearly the Asian growth model, well adapted to the ICT revolution, was a success while the neoclassical model was a failure[9].

The conclusion that can be drawn from the above is that, while the West does not need an industrial policy, developing economies cannot successfully grow unless they do have an industrial policy, together with a whole development model, alike the Asian growth model.

This discussion is relevant to our topic because it explains why the West has been so reluctant to develop an industrial policy; simply be-

[9] It is true that China started with a very low GDP per capita, but the conclusion is still valid. South Korea, which also followed the Asian growth model, started with a GDP per capita only 15% lower than Mexico's and it grew in the same period 248%, that is at an annual rate of 4.1%. The failure of the neoclassical model versus the success of the Asian model is undeniable.
Data from database: World Development Indicators. Last Updated: 07/20/2022

cause it does not need to have one. However, the consequence is that the West has not crafted any institutions that understand and connect well with the supply side of the economy.

CONCLUSION

The 2008 GFC and the 2020 GP have shown that the economic stability of the West is not granted, and that the government must intervene to bring the economy back into equilibrium (which is in line with the contemporary theoretical developments in information theory, game theory and institutional economics). But if the government must intervene, we question why to do it only in the demand side of the economy, intervention should also happen in the supply side. And if intervention is going to occur in the supply side, a new macro-tool is needed. Moreover, since the government in Western countries has little or no experience with the supply side of the economy, it should use the experience accumulated in the private sector. But before discussing further how to develop a new macro-tool to stimulate the supply side of the economy in the short term, which we will do in chapter five, we will use the next three chapters to describe how we got a demand- stimulating policy as the one applied in the 2020 GP, which has so little theoretical support.

CHAPTER TWO: KEYNES, KEYNESIANS, AND THE SUCCESS OF RATIONAL EXPECTATIONS

For the classical and neoclassical economists, cycles were seen as a natural feature of the economies. Therefore, they did not have a macroeconomic theory. Smith was concern with economic growth; Ricardo and Marx with the source of economic value; the neoclassical school with the allocation of resources. None of these schools ever thought that the government could do anything to substantially modify the economic cycle or to prevent major economic crisis to occur. For the classical and neoclassical schools, the role of fiscal policy was to provide resources for the government to be able to execute its responsibilities related to guarantee the rule of law, education, infrastructure, national defense, social aid. and regulation of the political life. But it was never conceived to seriously influence the economic cycle, or to get the economy out more rapidly of a major crisis. Monetary policy was understood as providing the neutral conditions for the economy to work properly, thus the purpose was to maintain the central bank interest rate at the level of the natural rate of the economy – not to interfere with the productive side of the economy, which by itself defined the natural interest rate.

It is not until Keynes that macroeconomic started – basically with the proposal that the governments had also the task to get the economies out of mayor economic crisis. He argued that monetary policy was not suited to the task, and that fiscal policy had to be used. Since the second World war, the 20th century did not suffer any major global economic crisis, and macroeconomics – the IS-LM model, was used to manage the short-term economic cycles – reducing their length and deepness. In the beginning with more emphasis in the fiscal policy, but soon was recognized that monetary policy was useful as well to manage the economic cycle. And in fact, that the fiscal policy has the disadvantage that must pass by congress, and therefore is too slow to be efficient as a countercyclical policy – and more emphasis was given to the more flexible monetary policy.

The IS-LM model was subject to strong controversies between Keynesians and Monetarists that finally were won by the second group.

At the end of the seventies the world economy suffered stagflation that could not be explained through the IS-LM model. The school of Rational Expectations (SRE), outgrown from monetarism, was able to explain stagflation by conceiving full informed economic agents which use the information in an optimal way. This school used recursive dynamic mathematical models which maintain the economy near full employment. Business cycles were conceived as short term lived, or as having real causes which could not be influenced by macroeconomic policy. Therefore, there is a return to the classical-neoclassical view that the role of the government is to remain neutral versus the economic cycles. The 1930 GD was argued as a curiosum, consequence of mistaken government economic policies, which never supposed to happen again due to the contemporary knowledge in economics. Lucas argued that Keynes was dead. The SRE was however not fully convincing for all the economists, and some other rational expectations models were built that included short term Keynesian rigidities. These other models did emphasize the need for the government to manage the business cycle. But their share the view that business cycles are short lived minor fluctuations, and that the 1930 GD was a curiosum never to happen again.

Then came 2008 GFC, and could not be explained with the theoretical economics that had been developed since the 1950's. It was unexpected and unexplainable with Rational Expectations models. Therefore, Keynes was resuscitated. But so many years had passed by, that most contemporary economists did not know much about Keynes' theories; in fact, they had never read any of his books. The consequence was that Keynes was often misrepresented. Finally, the 2020 GP occur; governments incur in huge fiscal deficits, and central banks printed huge amounts of money; and all this happened without a proper theoretical explanation of why those policies were taken, and the world has been surprised by their unwanted consequences in the inflationary front.

It is true that Keynes advocated large fiscal deficits to get out of major economic crisis; but Keynes himself was concerned with the consequences of big government spending. Moreover, Keynes never realized the possibility of an efficient monetary policy such as QE. We need a new theoretical perspective, and we must design new institutions to confront major economic crises; in particular, the world must be very careful not to create again future inflationary expectations.

At the global level Keynes was always concerned with institutional design. Since he wrote *The Economic Consequences of the Peace,* Keynes saw in

an inadequate global economic design a major cause of world economic crises. His concerns culminated in Bretton Woods design, in which his ideas were influential. However, Bretton Woods ended in 1971. And todays Free Floating Exchange Regime and the ICT revolution have created new global financial problems, that require new global institutions that have not been built.

The 2008 GFC was mainly consequence of inadequate institutions, both nationally and globally. Under the influence of the School of Rational Expectations markets were seen as stable by themselves, and the US financial authorities argued for three years that the market was going to solve the problem of the crash in the adjustable-rate subprime mortgages - it did not. And European financial authorities insisted that the subprime crash problem was a US problem, that did not concern them - they were also wrong. We just did not have the proper institutions, both nationally and globally, to understand what was really happening.

The 2020 GP has been consequence of an inadequate global health system. We knew it could happen. In fact, years before Bill Gates had warn the world of the possibility of a global pandemic. President Obama created a special US health office dedicated to observing pandemics worldwide, which was dismantled by President Trump. However, even Obama's US health office was insufficient; what was needed was a strong WHO (World Health Organization) – which we did not have. And Trump's decision to dismantle the US' office was just unbelievably incorrect. Nor only we had managed the pandemic wrongly, in addition the macroeconomic responses had been based on badly understood Keynesian policies and using old inadequate institutions. We need to think new ideas, create new theories, and built new institutions.

NEOCLASSICAL MACROECONOMICS

In traditional neoclassical economics, fiscal policy was conceived as a tool to provide resources for the government to be able to execute its responsibilities related to guarantee the rule of law, education, building infrastructure, national defense, social aid, regulation of the political life and so on. But it was never thought as a macroeconomic tool to influence the economic cycle, or to get the economy out more rapidly of major crisis. Therefore, Neoclassical Macroeconomics was centered in monetary policy.

Neoclassical monetary theory was simple, more gold implied higher nominal GDP, and less gold implied lower nominal GDP. Nominal GDP always followed real GDP. Therefore, although there were economic cycles, these were always around the equilibrium defined by the real economy. The Neoclassical Monetary Theory (NMT) is closely related to the Theory of Capital. Real savings and real investment opportunities equal each other and define the natural real interest rate, that maintains the economy at its long-term growth potential. Note that there can be more than one long term growth potential, but only one that relates to full employment equilibrium. But that was not a concern for neoclassical economists, for whom real savings and real investment opportunities are exogenously given.

A good summary of NMT is given by Wicksell[10]. For him the "natural rate" is the one that equals real savings and real investments in an inter-temporal sense, which is compatible with Bohm Bawerk's Capital Theory. It is an inter-temporal equilibrium, between the inter-temporal preferences of the savers and the inter-temporal opportunities of investment as foreseen by investors. Thus, the role of the monetary policy is to maintain the "nominal rate" equal to the "natural rate".

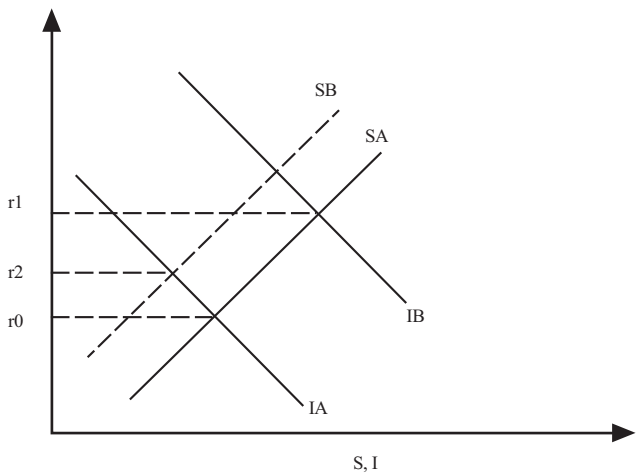
The disequilibrium may have both monetary and real causes. Monetary causes relate to banks intermediating between the supply of savings and the demand for investment. If banking credit is higher than real savings –which means the bank rate is lower than the natural rate, investment is higher than savings and there will be excess aggregate demand and inflation. If it is less, investment is less than savings and there will be insufficient aggregate demand and deflation. The role of monetary policy is to remain neutral, so that real savings equal real investment and monetary disturbances are avoided. The real causes of disequilibrium relate to parametric changes in the inter-temporal preferences of the saver, or in the investors' planned investment (which among other causes, may be due to an external shock). These real and monetary parametric changes may result in the previous banking rate to be higher or lower that the new natural rate.

Wicksell's adjustment process can be easily appreciated in figure 2.1. To start with let us assume that is the natural rate of interest, therefore the central bank rate should also be $r0$. Now let suppose a real shock (a new technology, a new mine discovery, and so on) that implies that investors wish to invest more. Investment moves moves from *1A* to *1B*, therefore the new natural rate is $r1$, if the central bank maintains the inter-

[10] Mainly in Interest & Prices.

est rate at *r*0 there will be an excess credit demand (aggregate demand) and there will be inflation. Now, as a second example, let us assume that we start with a natural rate equal *r*2, and that there is another real shock, this time in savers preferences, so that they decide to save more. Saving move from *SB* to *SA*, and the new real natural rate will be equal to *r*0, if the Central bank maintain the interest rate at *r*2 there will not be enough credit demand (aggregate demand) and there will be deflation.

FIGURE 2.1 THE INTEREST RATE AND THE SAVINGS-INVESTMENT BALANCE.



There is already in Wicksell a preliminary justification for what latter would become the preferred monetary policy of Monetarists and proponents of Rational Expectations, a stable rate of growth of money supply. This is because in Wicksell's view, the role of monetary policy is to remain neutral. In other words, the Central bank should not produce monetary disequilibria.

However, it is remarkable that the rule of a stable rate of growth of the money supply has never convinced central banks in the real world. And the explanation can also be found in Wicksell - his vision of the frequent parametrical changes, both in real savings and in real investment. In this sense, there is in Wicksell a recognition that monetary policy must be active, because it should react to parametrical changes in either real savings or real investment, to avoid the banking rate to remain above or below the new natural rate.

Therefore, Wicksell, summarizes what would constitute accepted monetary theory for many years to come: (1) Central banks most avoid a monetary policy that introduces unnecessary fluctuations in nominal GDP. And (2) given real shocks, whether internal or external, to the economy; a conservative, but active central bank policy is required.

The most important lesson to learn form NMT is that money is not and end of itself, the key problem of any economy at any time is the real economy. But since the neoclassical school defended that the real economy was most of the time in equilibrium – it follows that the government does not have anything to do to stimulate it. Paradoxically, latter on, Keynes will refuse that the government has nothing to do in major crisis – but he accepted the neoclassical idea that the supply side of the economy is self-adjusting; thus, he proposed that the solution was to stimulate the demand side.

KEYNES

Keynes' *Treatise of Money* was written in the neoclassical tradition11. Following Wicksell, Keynes argued in this work that the role of the central bank is to maintain the bank rate equal to the natural rate, which means real savings equal real investment. Thus, Keynes in the Treatise is still compatible with Bohn Bawerk's Capital Theory. Keynes' Treatise of Money is still in the neoclassical tradition, but it differs from Fisher's Quantitative Theory of Money. The latter focuses on monetary disequilibria, while Keynes focuses on the disequilibrium produced due to parametrical changes in savings and investment.

In the *Treatise of Money,* economic equilibrium is defined by real savings and real investment. Disequilibria mainly expresses itself in the level of prices, although Keynes argues that disequilibrium can have short term consequences in the level of employment. *The Treatise,* however, is not a significant departure from the NMT. In fact, Keynes' second fundamental equation in the Treatise may be written in such a way that it is compatible with Fisher's. The difference between the two being that: Fisher's covers all the transactions and Keynes' does not. However, Keynes places special emphasizes in the instability of the real economy, particularly due to parametrical shifts in investment – a concept he will use latter on in the *General Theory*.

[11] Obregon, C., 2021. *Keynes Today*. Amazon.com. Also available at Research Gate.com.

Keynes in the *General Theory,* and his writings afterwards, had three key contributions, and two unwarranted propositions. The first critical contribution was, as Patinkin has convincingly argued, his theory of the consumption function. Keynes' consumption function for the first time allowed the conceptualization of theoretically diverse economic equilibria, of which only one corresponds to full employment. As far as this contribution goes, the IS-LM model does recover it very well. His other two contributions were his Liquidity Preference Theory (LPT), and his concept of the Marginal Efficiency of Capital (MEC). The first was substituted by Tobin's Liquidity Theory (LT), based in a probability view of risk, while the second was substituted by Hick's investment theory (IT). To understand why LPT and MEC were left behind one needs to understand the two unwarranted proposals made by Keynes.

The first one is that the dynamics of the real economy were mainly defined by the volatility in the investors' expectations, derived from uncertainty about the future. In other words, he implied that his concept of the MEC was relevant at any point in time in any given economy. However, if he had been right, we should have seen many more major crises in history. The uncertainty of the future is always there, yet major crises only occur infrequently. The MEC is relevant in a major crisis; therefore, we listed it as significant contribution. It, however, does not explain the normal functioning of the economy which is better accomplished by IT. Economies are usually close to full employment equilibrium; because markets are efficient and flexible prices make the economy quite homeostatic.

Markets usually operate within a given institutional arrangement, which normally works well. But, when there is a serious institutional mistake, the economy may move from near full employment equilibrium to a faraway suboptimal one, in the form of a major crisis. When this happens, the confidence of economic agents in financial institutions worsens drastically, and MEC becomes relevant.

A similar argument applies to LPT. In normal times the balance sheets of most economic agents are sound and therefore, central bank policy rate movements define movements in the banks' lending rate – in line with Tobin's LP, which explains rather well the economic mechanisms at play. But once a major crisis occurs, the balance sheets of most economic agents seriously deteriorate, and Keynes' LPT becomes relevant. Because both LPT and MEC are only relevant in major crises and not during the regular operation of the economy, these concepts were removed from the

IS-LM analysis, and substituted by LT and IT, both of which explain better the functioning of the economy in normal business cycles.

The second unwarranted proposal in Keynes is found in the chapter in the General Theory titled *Sundry Observation on the Nature of Capital,* where he argues that the interest rate is a pure nominal phenomenon. This chapter reflects Sraffa's influence – the latter had mounted a critique of Neoclassical Capital Theory, which he would develop in his book *Production of Commodities by Means of Commodities,* many years later.

As I have argued elsewhere, Sraffa's was wrong[12], but under his influence, Keynes mistakenly abandons the Neoclassical Capital Theory, and makes the economy hang on pure nominal categories. This approach is behind Mrs. Robinson's defense of volatile "animal spirits". With this proposition Keynes, dissociates his theory from the real economy, and from the problems of economic growth. A view of nominal quantities dominated by the uncertainty of the future was clearly a poor substitute to the Neoclassical Capital Theory, where the real interest rate was a function of savings and investment. LT and IT had the virtue that they were compatible with a vision of a real interest rate, as defined by the Neoclassical Capital Theory. Years later, Solow's Theory of Economic Growth would be compatible with the IS-LM frame, and therefore with LT and IT.

It should be quite clear why the main economics tradition refuses to incorporate LPT and MEC: they were not useful to explain the regular or normal operation of an economy. **Despite this however, once a major crisis happens, LPT and MEC become relevant concepts. The first one, to explain the inefficacy of the traditional monetary policy after a major crisis occurs. And the second one, to explain the deterioration in the economic agent's expectations as to the capacity of the institutions to manage the crisis.**

It is important to understand that Keynes did not have a monetary theory of his own. However, both LPT and MEC are key elements in his thought that allow us today to explain why QE did work in in the 2008 GFC. This understanding will be helpful in the construction of a new monetary theory that may allow policy makers to stimulate the supply side of the economy in the short term. The *Treatise* is fully compatible with the NMT, and Keynes did not develop a new Monetary Theory of his own in his *General Theory*.

What changed between the *Treatise,* published in 1930, and the *General Theory,* published in 1936, was the Great Depression. Keynes had

[12] See Obregon C; 2018. *Globalization: Misguided Views*. MPRA_paper_85813.pdf

two theoretical insights in the General Theory. First, the consumption function which allowed him to understand full employment equilibrium, as distinct from other equilibriums. Second, an explanation of why monetary policy may be sometimes ineffective in maintaining the economy at full employment equilibrium. This second insight is lost in the IS-LM model. The consequences are serious. As we already mentioned, Hicks left out Keynes' MEC, and Tobin dismantled Keynes' LPT; and with these two changes the IS-LM model became incapable to explain the inefficacy of the monetary policy. And in fact, unable to understand an economy far away from the full employment equilibrium. The Keynesians versus Monetarists debate of the post war era ended up with the triumph of the monetarists, latter reinforced by the triumph of Rational Expectations explaining stagflation.

Keynesians were doomed from the start because, without Keynes' MEC and LPT, they had to mount their defense on rigidity assumptions and monetary illusions that were both theoretically and empirically indefensible (prices are almost always quite flexible, and markets disseminate information efficiently): 1)Wage rigidity, to explain unemployment; 2) Monetary illusion, to explain movements in the full employment level; 3) An inelastic investment function and the Liquidity Trap, to explain the inefficacy of monetary policy.

The results of the debate were: First, that the Keynesian policies directed towards managing aggregate demand were shown less useful than what Keynesians initially suggested. In turn, this was due to (a) external shocks, uncertain expectations, and unknown response lags, make it difficult to forecast and understand the results of a specific aggregate demand policy; (b) the fact that if the economy is near full employment, aggregate demand policies will only produce inflation; c) inflationary expectations, which seriously restrict the possibilities of aggregate demand policies. These results did not fully eliminate active aggregate demand policies, but seriously restricted their scope. Second, the instability of the money demand function makes it impossible to fully abandon monetary policy and to substitute it by fixed rules. And third, the microeconomic foundations of the IS-LM model were very poor and needed to be addressed, which was done by the Rational Expectations School.

Under the assumption that all the economic agents have all the available information, and that they process it accordingly to the best available economic model, the Rational Expectations School was able to explain the stagflation phenomenon of the late seventies. Despite its enormous

success, however, this school was unable to convince the profession that a policy of aggregate demand was not needed at all. Short term, Keynesian-like, rigidities were introduced in models of Rational Expectations, that became the accepted justification of minor interventions on aggregate demand. This vision of the economic world was mostly back to the NMT. The central bank was argued must avoid creating unnecessary monetary disturbances, and active monetary policy is needed to attend the minor disequilibria produced in the real economy by small and short-lived rigidities.

This was the state of mind in the economics profession when the GFC arrived in 2008. As I have argued elsewhere, the 2008 GFC was not inevitable – it was rather caused by untimely and misguided intervention of economic institutions such as the Fed and US Treasury - which were based on the incorrect theoretical framework, i.e., NMT. This framework works very well when economies are in the vicinity of full employment equilibrium. But it is ill-suited to explain economies far away from it, as was the case during the 1930 GD, the 2008 GFC and in the 2020 GP.

For these extreme cases, something else is needed to understand the role of monetary policy. This was understood by Keynes who provided some highly useful insights in this area, though was unable to provide a full answer of what is needed to be done. Keynes argued that monetary policy was inefficient in these cases because of his LPT, and he was right. He, however, did not develop an alternative proposal for a new monetary theory, nor concrete policy ideas. **We will argue in this book that an extended and modified QE could provide such new monetary theory** that may allow policy makers to stimulate the supply side of the economy in the short term.

Keynes had doubts as to the possible efficacy of the fiscal policy in large crises, but since he was left without monetary policy, he did not see other option but to use fiscal policy fully. In the response to the 2020 GP, governments relied mainly on fiscal policy and again in QE related mostly to MBS (Mortgage-Backed Securities). We argue that this was a mistake. An extended and modified QE should have been used as a key element that should have collaborated with and reduce the size and scope of fiscal policy. In what follows, we will review Keynes's theory from the point of view of what is relevant for economies far away from equilibrium. Both, to explain why QE worked in the 2008 GFC, and to provide the building blocks of a new monetary theory appropriate for large crises that may allow policy makers to stimulate the supply side of the economy in the short term.

Keynes' LPT

The understanding of Keynes' LPT is fundamental for various reasons: 1) It explains Keynes dismissal of monetary policy as a macro-tool in major crises; 2) it describes the workings of a credit economy, which helps to explain why QE was successful in the 2008 GFC – because it intervene directly into the mortgage credit market; and 3) the workings of a credit economy are the basis to understand why the best way for the policy makers to stimulate the supply side of the economy is through intervening directly in the credit market.

The best way to understand what is missing in the IS-LM, is to start with Minsky's interpretation, which provides a good version of Keynes' LPT13. Minsky modifies the money demand of the IS-LM model to make explicit the precautionary demand of money. In the IS-LM model, the demand for money is given by (1), and in Minsky by (2):

(1) $Ld = Ld\ (y,p)$

(2) $Ld = Ld\ (y, Pk, F, NM)$

where, y is national income, p is the deposit interest rate, Pk is the price of capital goods – and Minsky introduces the uncertainty associated with its possession, F is the precautionary motive for possession of Money, and NM is quasi-money, which can also be used to satisfy the precautionary demand for money. For Minsky, the key is that the price of real capital assets in relation to financial debts depends on U, the state of uncertainty. In the recession, when the money supply goes up and p goes down, the debt capitalization rises and Pk should also rise; but if U deteriorates, then Pk does not go up enough. The balance sheets of the companies deteriorate. Given; the higher perceived risk banks raise their margin, and the bank lending rate rises, or banks ration the credit, or a combination of both. Note that in this recessive process there is an increase in real balances because of the fall in prices and monetary wages, and that this stimulates consumption (the neoclassical effect). But Minsky's point is that the effect of the increase in corporate the debt (and we would add consumer debt), consequence also of the fall in prices and wages, can more than offset the effect of the increase of the real balances.

In Minsky's and Keynes's model the deterioration in U could be read as volatile expectations. In our view as we will show, it would be due to large and consequential mistakes made by the institutions and policy makers

[13] Minsky, H.P. (1975). *John Maynard Keynes*. Columbia University Press. New York.

which drastically reduce trust in their capabilities to manage the situation.

To summarize the above model, the distinctive feature of a credit economy is that it depends on the state of confidence *U*, i.e., on uncertainty as incorporated in the view of economic agents about the future. If the state of confidence deteriorates, assets whose value depends on the resulting (more uncertain) view of the future (in the case of Minsky, capital goods) lose their value, the balance sheet of economic agents deteriorates, and banks restrict credit. As a result, the differential with the central bank's policy rate rises, and negative feedback loops are unleashed.

Minsky's model does not include consumers, nor parallel banking[14]. But it is relatively easy to see how it would operate in this case. Parallel banking is more willing and able (because it is less regulated) to take more risk; so that it should ration less the credit, and it will take more the route of significantly higher lending rates. But the macroeconomic consequence is similar as the one in the case or regular banks.

Long-term assets owned by the consumer, such as their home and their investments in the stock market, also incorporate a view of the future. During recessions consumer net worth goes down. Normally when the policy rate goes down the stock market should rise. However, given diminished confidence in the future (in our view, in the capabilities of institutions to manage the situation), deteriorates, and therefore the stock market nor only does not rise, but may go down significantly. A similar phenomenon occurs with real estate. Home prices decline, but consumer debt does not, implying a deterioration in consumers' balance sheet. In turn, this led to a reduction in the supply of consumer loans, unleashing a negative loop. Bank credit and rises, and a negative feedback loop is unleashed. That is what happened in 2008. The slow and incorrect actions of policy makers (such as not addressing sub-prime adjustable-rate mortgage holders when rates started to rise and allowing Lehman Bros to fall) were a blow to confidence in policy makers that explains, at least partially, why the US recovery was so slow after the 2008 GFC. In a credit economy[15], monetary policy is not as effective as it is in a traditional macroeconomic model. That is why QE must be used at the end in large amounts to combat the already very large financial crisis.

[14] Parallel banking refers in here to institutions that intermediate credit but are not regulated as banks.

[15] A credit economy is one which largely operates through credit intermediation, a feature not specifically considered in the traditional economic model.

The models developed by Minsky, Stiglitz, and Greenwald[16], emphasize the decline in the supply of credit as a result of the deterioration in the balance sheets of credit claimants. The model of Stiglitz and Greenwald has the advantage that it is a more elegant and precise mathematical formulation, but it operates in a similar way to Minsky's[17]. These authors point out that the objective of monetary policy is not p but r. If r rises above the desired equilibrium - if in a recession r is contractionary rather than stimulating - the Central bank must lower p even more and reduce reserve requirements. This task is even more difficult if parallel banking is widespread, as the central bank has little control over it.

Minsky's model makes an explicit description of the demand for money that is not in Keynes's work but is compatible with the view of this author. In Keynes, as in Minsky, Stiglitz and Greenwald, financial relations are expressed in nominal terms. Keynes criticizes Fischer[18] because he distinguishes between the nominal interest rate and the real rate but does not distinguish whether future changes in the value of money were anticipated or not[19]. Thus, for Keynes, Fischer's theory is written based on a real interest rate that would have to prevail "as a result of a change in expectations about the future value of money, so that this change has no effect on the current product"[20]. The distinction of Minsky, and Stiglitz and Greenwald, between p and r is very compatible with Keynes's original thinking in his LPT.

The reason QE was successful in the 2008 GCF is that the Federal Reserve bypass the private banks and it entered directly the credit market by buying mortgage bonds; this allowed the cleaning of the balance sheets of the economic agents and help with the good functioning of the credit economy. Any policy aimed at stimulating the supply side of the economy in the short term must work through the credit market, because it is the one that provides the key difference between future successful and unsuccessful private economic projects. Therefore, the proper functioning of the credit economy is fundamental for the rapid recovery of the supply side of the economy.

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[16] Greenwald, B., Stiglitz, J.E., (2003): *Towards a New Paradigm in Monetary Economics*. Cambridge University Press. Cambridge.

[17] For a summary of this model see Obregon, C; 2008. *Teorías del Desarrollo Económico*. PUI, México. Available in Research Gate.

[18] A point Patinkin did not understand

[19] Keynes, quoted in Obregon, 1989, p. 173. *Controversias macroeconómicas contemporáneas* (un tratado sobre la macroeconomía de Keynes en la controversia contemporánea). Trillas, México.

[20] Keynes, quoted in Obregon, 1989, p. 173. Idem.

Keynes' MEC

Keynes goes further. Aside from LPT, he introduces the MEC, *rd*, the discount rate used by investors for future cash flow. If *rd* is very high, it means that investors are very concerned about the future (again, for us this includes a degree of trust in the capability of institutions to manage any situation). Thus, in Keynes there are two mechanisms that slow economic recovery and hinder the effectiveness of monetary policy. The first is the LPT, i.e., the contraction of bank credit, and the rise in the lending rate of banks. And the second is the rise in the MEC. According to Keynes, uncertainty is reflected both in the LPT and in the MEC. The first maintains too high and/or reduces credit amounts, and the second increases *rd*.

In Keynes, the demand for credit and the supply of credit can determine *r* and the amount of credit, but not *rd*. The lack of credit may be a problem for investment, but the presence of credit does not necessarily solve the investment problem, since *rd* is defined by the uncertainty associated with expected future cash flows.

With this background we can see with theoretical clarity why it was so difficult for central banks to stimulate the economy after the 2008 crisis: (1) Central banks have control over , but less so over (and with the growth of the parallel banks have been losing control over monetary aggregates); (2) and even if central banks manage to influence , they have no control over the demand for credit and over . What Bernanke brilliantly understood with QE was the need to sustain asset prices by buying them directly, which was equivalent to lower , which significantly quickens the recovery. The recovery, however, was still slow because remained too high for a significant period.

In Keynes there is also no theory that describes what happens to the consumer, but it is easy to extend the model. The consumer has his own discount rate of the future, let's call it *rdc*. Even if the central bank manages to influence *r*, it is possible that the economy recovers slowly because *rdc* and *rd* remain too high. Therefore, if we compare *r* what happened earlier in Japan, with what happened in the US after 2008; the difference is that due to Bernanke's heterodox policies the US was able to influence *r*, which Japan never manage to do; therefore, recovery happened faster in the US than in Japan. But still Bernanke's large purchases of assets did not influence *rdc* nor , that is why US recovery, despite being faster than Japan's, was slow.

The 2008 GFC began with a bank's credit crisis, consequence of the authorities' mismanagement of the adjustable-rate subprime mortgage loans crash. In Minsky's model the confidence in the future *U* deteriorated. Then at first the supply of credit is reduced (the supply curve shifts to the left). Later, as credit quality of bank and mortgage lenders worsened, the supply of credit became inelastic (insensitive to changes in *p*). Finally, the demand for credit itself is reduced because of the increase in rd and rdc rise (the demand curve also shifts to the left and becomes inelastic). At first with the reduction in the supply of credit r rises, then with the fall in the demand for credit r tends to decline. The value of *r* is indeterminate. However, what we do know is that the total amount of credit is reduced, and that the new LM is inelastic to both changes in p and r.

With the rise of *rd* and *rdc* both investment and consumption fall and become insensitive to changes in both *p* and *r* (the IS also shifts to the left and become inelastic). With the shift of both LM and IS to the left, aggregate demand is reduced, and because of both curves aggregate demand also become inelastic, hindering the Central bank's ability to help the economy recover.

The consequence of the above is that total credit falls, credit to GDP is low and GDP growth is low, along the lines of what happened in the 2008 GFC. In the US, total credit fell 42% in 2008, and was negative in 2009. Credit granted by financial institutions in 2018 fell 23.2% and was still negative in 2009. The crisis caused a sharp reduction in credit /GDP. GDP declined -0.3% in 2008, and 3.5% in 2009.

At first sight, fiscal policy seems to have the advantage of increasing aggregate demand directly and does not have the problem related to the uncertainty of *U*, *rd* and *rdc*. But unless the increase in aggregate demand caused by fiscal policy is seen as sustainable, fiscal policy will have similar problems to traditional monetary policy. If fiscal policy is seen as unsustainable, it will not modify the uncertainty of the future. i.e., expectations of institutional capacity to manage the crisis –, and recovery will be spurious.

For fiscal policy to be efficient, it must be seen as sustainable. And its sustainability is related to the economic recovery, which depends in the private sector trust in the institutional capability to engineer and support a recovery. Keynes himself warned us, that while monetary policy in an environment such as the 1930 GD, or the 2008 GFC, had difficulties in recovering the economy; he was not sure that fiscal policy could solve the problem either. Fiscal policy has problems of its own: 1) it is influenced

by political considerations[21]; (2) it is directed indistinctly to the social and the productive economy, without considering that only the second can produce economic recovery; (3) even the resources directed to the productive economy are never well focused; because the government lacks the needed understanding of the productive economy, to be able to expediently discern what corporations are viable and which are not[22]. (4) government demand lacks the main virtue of the capitalist system, the transmission of consumer preferences in an efficient way through the price system. Because of all these problems fiscal policy did not produce a fast recovery after 2008.

The basic problem of the economy in 2008 was the lack of confidence in the proper functioning of the economic system because of the deterioration in the balance sheets of systemic agents in the financial system. Thus, the main goal of policy should of have been to regain confidence, i.e., raise *U* in Minsky's model. The first job of the government or the central bank in 2008 should have been cleaning up those balance sheets. It was therefore of paramount importance to withdraw the so-called toxic assets from the system at an early stage. Without reestablishing health in the balance sheets, it was impossible to achieve economic recovery quickly. If they had acted this way, *U* would of recover.. In Minsky's model, *U* would have risen, and the credit economy could of have been put to work[23]. If early done, the 2008 GFC could have been avoided. Furthermore, it could have been done cheaply. Waiting only worsen the balance sheets and increases the cost of the rescue. QE was efficient to reduce *U*, but was introduced too late and, as a result, large amounts were needed.

Fiscal policy typically does not influence *U*, and without healthy balance sheets recovery is necessarily slow, as it happened in 2008. Neither QE, nor fiscal policy, influenced directly *rd* and *rdc*. They could only have been reduced if the policies as announced appear sustainable and capable to solve the crisis.

The new monetary policy, that may allow policy makers to stimulate the supply side of the economy in the short term, proposed in this

[21] Now in the US, for example, it is under the influence of next November presidential election.

[22] Which right now is a particular key point, given the structural changes that the 2020 GP crisis will produce.

[23] That is why events like the mismanagement of Greece's case by the European financial authorities, in the Great Contraction, was so disturbing for the world economy. Because they raised - the mistrust in the ability of the credit economy to function properly.

manuscript is directed specifically to the productive (viable) parts of the economy, which are the ones that will bring about the recovery; and it should be publicly announced from the start of the crisis to positively shock expectations. This helps both reduce the amounts needed and further deterioration of rd and *rdc*. A large monetary package directed to the productive economy (an extended QE), and a proper fiscal policy, both announced early in the crisis, could have had prevented the deterioration in the balance sheets of the economic agents and could of have prevented the deterioration of *rd* and *rdc*.

The key to a new monetary theory is to understand how the central bank can extend its responsibilities to better complement the fiscal policy efforts. The proper communication to regain consumer confidence is a task that the government can do efficiently, but to be credible there must be real policies of recovery, for which the new extended monetary policy proposed in here might be very useful. The new extended monetary theory consists in short in arguing that QE can go much further than it had in the past. The goal of the central bank should be the management of the whole relationship between money and the real economy, which includes inflation, productivity, economic growth, and employment. The productive economy must be the goal of the central bank, because as the classical economists well understood the only purpose of money is to facilitate the better functioning of the real economy. The social economy should not be a concern of the central bank; it should be the government's. The independence of the central bank should be increased. And all the above, as we will argue in the next chapters will require the creation of new institutions.

In Summary: LPT and MEC do not explain economies in regular times, that is why they were excluded from the IS-LM version, and were substituted by Hick's IT and Tobin's LT. The IS-LM is an equilibrium theory, which after a long controversy between Keynesians and Monetarists, ended up in a revival of the NMT. However, in some rare events, the economy moves from a full employment equilibrium to another faraway equilibrium. And in these cases, both the LPT and the MEC can be helpful. There are however many questions that have been left unanswered. First, we have argued that MEC is not a candidate to explain why and how the economy moves to these infrequent far away, inefficient equilibrium because MEC is always there, and these events happen rarely. But then, we need to explain why and how these rare events happen. In the next chapters we will address this issue using Institutional Economics and General Equilibrium Theory.

Second, it is unclear in Minsky and in Keynes why and how U deteriorates, and in Keynes why (and our added) also deteriorates. The topic of What is the role of uncertainty about the future? deserves further attention and explanation, because again uncertainty about the future is always there, and big crises happen rarely. The answer to these questions can only be found in the advances in economic theory achieved in the last years and which have not yet been fully incorporated in Monetary Theory. These advances include the fields of Institutional Economics, General Equilibrium Theory, and Behavioral Economics. This discussion is the subject of the next chapters.

There have been several failed attempts to build a monetary theory based on Keynesian concepts. They involved many economists, which can be divided in four groups: 1) Those involved in the IS-LM controversy; 2) the post-Keynesians; 3) the proponents of Disequilibrium Macroeconomics; and 4) Behavioral Economists.

What of all of them have in common is the use of unwarranted rigidities and/or of irrationality in decision making. Rigidities with flexible markets, however, are short lived, and thus cannot be used to frame an alternative monetary theory-much less explain why economies occasionally may move so far away from full employment equilibrium. The assumption of irrational behavior has the problem that if economic agents are truly irrational, since they must be so all the time, then the frequency of major crises should be much higher than history shows.

POSTWAR ECONOMICS

To explain economies near full employment equilibrium – as they were in real life in the second half of the twentieth century, and to make the explanation compatible with the neoclassical capital theory, Hicks substituted Keynes' Marginal Efficiency of Capital (MEC), for his Investment Theory (IT); and Tobin changed Keynes' Liquidity Preference Theory (LPT), for his Liquidity Theory (LT). IT and LT are a function of the interest rate, and therefore define an endogenous model. This defines a clear equilibrium position which, through the interest rate, connects with the neoclassical capital theory. Once the IS-LM model was defined, there was a macroeconomic controversy between Keynesians and Monetarists, which as we said, was won by the Monetarists. Understandably so,

because in the real-world prices are mostly flexible, information generally flows well, and markets are quite efficient. Therefore, any assumption of money illusion or of price rigidity (as the ones used by the Keynesians) was not validated by the data.

The Monetarist success came with the conviction that more solid microeconomic foundations were needed. And the more these were developed, the clearer it became that markets display homoeostasis on their own. Thus, normally they maintain themselves close to full employment equilibrium.

The final blow to the Keynesians was the success of rational expectations to explain stagflation. However, the monetarists and rational expectations' proposal of a fix rule of money growth was never accepted. Because, although the economies in the real world were near equilibrium since the second world war until 2008; economic cycles were evident. The initial Rational Expectations School's explanation of such cycles, based in the lack of transmission of information between the Phelp's islands, was very unconvincing – for the same reasons that monetary illusion was previously rejected. Therefore, it was soon replaced by the theory of Real Business Cycles (RBC) of Kydland and Prescott, which also used rational expectations models, but explains the cycles because of a myriad of unpredictable internal and external real events that hit the economy. They argue that the most important of such events was technological changes. The problem with RBC models was that they left unexplained why monetary and fiscal policy had been successful from the 50's to the 80's in managing the business cycle. The cycles then were explained by Taylor, Fisher, and Dornbusch, introducing in the Rational Expectation model short term Keynesian rigidities, do justify the need of a moderate active monetary policy. The conclusion of all of this is the contemporary NMT, characterized by a view that prescribes very moderate and conservative monetary policy.

The development of the endogenous microeconomic foundations strengthened the view of an economy always near equilibrium, in which risk is viewed in terms of historical probabilities. Tobin's LT became the cornerstone of future key developments in finances and in portfolio theory. An economy in equilibrium, and a concept of probabilistic risk, are the theoretical basis for: (1) Black and Scholes options theory which had a huge impact on the growth of the derivatives markets. (2) Modern portfolio theory developed by Tobin, Markowitz, Sharpe, and others, which

is the theoretical basis of today's professional asset management practice and has been decisive in convincing large pension funds of the benefits of index investing. (3) The Modigliani-Miller theorem which is the foundation of contemporary financial thinking about the capital structure of a company. The actual functioning of the world global finances just would not have happened without the vision of an endogenous economy, in which risk is perceived in terms of probabilities.

CONCLUSION

Keynes' two unwarranted proposals: 1) that the dynamics of the real economy is mainly defined by the volatility in the investors' expectations, derived from uncertainty about the future; and 2) that the interest rate is a purely nominal phenomenon; were theoretically unacceptable. They disconnect the real economy from the monetary one and create a volatile system that cannot explain the workings of a real economy in normal times. Therefore, the IS-LM reinterprets Keynes in a way that is compatible with the main tradition and that can explain the normal workings of a real economy. The problem is that this reinterpretation only maintains one of the main contributions of Keynes, the consumption function, and throws away the other two, the LPT and the MEC. LPT and MEC are however relevant once the economy is in major crisis. Keynes used LPT to explain why the monetary policy would not work in a major crisis, since the credit economy is disrupted because of the bankrupt balance sheet of the economic agents. LPT however can also be used to understand why QE worked well in the 2008 GFC; and provide the basis to understand why interventions in the credit markets may be the right way for policy makers to stimulate the supply side of the economy in the short term, a topic to be discussed in chapter five.

NMT explains not only the behavior of central banks before QE, but also the functioning of the financial markets in the global economy, and how individual consumers and investors make their economic choices in normal times. Its success is undeniable.

There are however key problems that remained unresolved with the NMT. The main ones are: why in the 1930 GD, the 2008 GFC, and the 2020 GP, the economies moved drastically away from equilibrium? Why in all these cases governments used a highly expansionary fiscal policy sup-

ported by a rapid growth in the balance sheet of the central banks? Why was QE introduced in 2008? Why was it used again in 2020? What theory justifies these actions? Were they correct or wrong? What else could have been done? These topics will be addressed in the following chapters.

CHAPTER THREE: KEYNES AGAIN; THE 2008 GFC

The 2008 GCF could not be explained with NMT, nor could it be resolved; therefore, it was needed to revive Keynes. Keynesians' version of Keynes has already been discarded in the IS-LM controversy with the triumph of the School of Rational Expectations. There were other alternative explanations distinct from the Keynesians that have been offered in the literature: the Post-Keynesians, Disequilibrium Macroeconomics and Behavioral Macroeconomics. Of the three, the official explanation of the 2008 GFC used Behavioral Macroeconomics. In this chapter we will briefly explain the first two schools, and show that they, as Keynes did before, failed to explain why the economy is almost always in equilibrium - but eventually major crises do happen. We will then concentrate in explaining the Behavioral Macroeconomics explanation of Keynes, and in discussing its limitations in explaining the 2008 GFC. The correct view of what really happen in the 2008 GFC is an important antecedent in our building of a new monetary policy that may allow policy makers to stimulate the supply side of the economy in the short term.

THE POST-KEYNESIANS

The so-called post-Keynesian economists, distinguished between a monetary economy and a non-monetary one. The argument being that money is the reason why economies may be far away from equilibrium. They avoid the rigidities and the monetary illusion of the IS-LM Keynesians. There are two distinct groups within the post-Keynesians. In the first group, the distinguished participants are Clower and Leijonhufvud. In the second, Shackle, Davidson, and Minsky. Clower, developed the microeconomic foundations of a monetary economy in a general equilibrium framework, and showed that unemployment is a possibility. Leijonhufvud, rescued basic ideas from Keynes' Treatise of Money. However, none of the two is successful in explaining why most of the time econ-

omies are near full employment, and then occasionally they move far away from it. Clower's discovered failures at the microeconomic level are always there; therefore, they cannot explain either the actual dichotomy in the real world. Clower's microeconomic foundations, however, were influential in the General Equilibrium literature later.

Leijonhufvud used *The Treatise* and went back to Wicksell's NMT. In his formulation there are real and monetary shocks, but the economy always maintains itself in a corridor near full employment. He uses NMT to explain normal conditions of the economy (with the advantage that it connects with the Neoclassical Capital Theory), but he uses Keynes' MEC to explain why the economy moves far away from a corridor near full employment equilibrium. There are however, two problems with Leijonhufvud (1) he ignores the LPT of the General Theory, and (2) he does not explain, (also missing in Keynes' work) what is the source of drastic changes in the MEC during large crises.

Shackle, Minsky, and Davidson, in opposition to Leijonhufvud, insisted that the uncertainty as to the future has its main impact in the economy through Keynes LPT, and therefore, it is a theoretical mistake to remove it out. Davidson, criticizes the use of General Equilibrium by Clower and Leijonhufvud, because in this framework there is no money. The problem with this second group, however, is that they are never able to explain the dichotomy observed in the real world which Leijonhufvud attempted to explain. This is because, since the uncertainty is always there, then it is inexplicable why economies are most of the time near full employment equilibrium.

Whether uncertainty as to the future only enters through MEC like in Leijonjufvud, or through both MEC and LPT as in Shackle, Minsky, and Davidson (closer to Keynes's original thought), the question remains unanswered: why suddenly, in very rare occasions, these factors impact the expectations of economic agents so negatively.

DISEQUILIBRIUM MACROECONOMICS

The argument of these group of economists is that unemployment is consequence of rigidities, either in salaries or prices. It is a long tradition that we find in mathematical models of several economists such as Malinvaud, Bennasy, Grandmont, Hahn and others. The main problem of these mod-

els is that they can never explain where the rigidities come from. Therefore, Grandmont substitutes the price and wage rigidities by rigidities in the interest rate, and Hahn by conjectures. None of these models can explain economies far away from full employment equilibrium. Rigidities of any sort are normally short lived in flexible markets; and Hahn's conjectures were never convincing, and they are also short lived. Short term rigidities were finally incorporated in Rational Expectation Models, like the ones initially developed by Dornbusch and Fisher, which became the justification of the Contemporary CNMT. But still, they only explain movements inside the corridor near full employment equilibrium.

Behavioral Macroeconomics

The triumph of Monetarism and Rational Expectations meant that the old Monetarist-Keynesian controversy was substituted by a debate between the Rational Expectations Model of real cycles, and Rational Expectation models with the Keynesian rigidities. Both of which were used to explain short term cyclical fluctuations near full employment equilibrium. This explains Lucas' dictum that Keynes was death, and that the 1930 GD would never happen again with the tools at hand that contemporary economics offered. But 2008 happened, and the NMT had no explanation, because it was not supposed to have happened.

When human beings cannot explain something, they often turn to *irrational explanations*. The official explanation of the crisis by the economics profession, which we have argued is wrong[24], resorted to irrationality of economic agents in the US real estate market. The crash, of this market was argued as the cause of the crisis. It is interesting to note here the revival of Keynes irrational expectations using Behavioral Economics.

However, if the reason for a major crisis like 2008 is that the economic agents are irrational, then Why we do not have a major crisis more often? The volatility in "animal spirits" that only happens in rare occasions must be explained by causes different from the irrationality of the economic agents, because economic agents are not on and off irrational/rational. Intrinsic irrationality of economic agents cannot explain rare cases of crisis that move the economy so far away from equilibrium.

[24] Akerlof, G.A., Shiller, R.J. (2009). *Animal Spirits: How Human Psychology Drives the Economy and Why It Matters for Global Capitalism*. Princeton University Press. Princeton, New jersey.

In *Animal Spirits,* first published in 2009, Akerlof and Shiller argue that *"declining animal spirits are the principal reason for the recent economic crisis"*[25]. *For them, the understanding of the main drivers of the economy "lie somewhat outside the traditional boundaries of economic research, in the realm of psychology…"*[26]. They identify five psychological factors: *confidence, fairness, corruption and bad faith, money illusion, and stories. They defend that the invisible hand story "although right in a fundamental way, is wrong at the level of detail and approximation that is necessary to explain what we need to know about macroeconomics"*[27]. The 2008 banking and housing crisis in their view *"was caused precisely by our changing confidence, temptations, envy, resentment, and illusions – and especially by changing stories about the nature of the economy"*[28].

But we ask again, what produces all the changes that they allude to?

For them confidence is more than just prediction, it means trust and *"the very meaning of trust is that we go beyond the rational. Indeed, the trusting person often discards or discounts certain information. She may nor even process the information that is available to her rationally, even if she has processed it rationally, she still may not act on it rationally. She acts according to what she trusts to be true."*[29]. *"Confidence – implying behavior that goes beyond a rational approach to decision making – indicates why it plays a major role in macroeconomics"*[30]. For these authors *"confidence comes and goes. Sometimes it is justified. Sometimes it is not. It is not just a rational prediction. It is the first and most crucial of our animal spirits"*[31].

And again, it is never explained why confidence comes and goes. Especially how is it that it only goes in certain rare occasions such as 1930, 2008, and 2020, and not at other times?

They quote the experiments of fairness of Kahneman and others. And unemployment according to these authors, is the consequence that employees ask for a fair wage, and employers give it to them because employees then respond with more productivity. However, since the fair wage is above the clearance level, there is unemployment.

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[25] Idem. *p. vii*

[26] Idem. *p. viii.*

[27] Idem. *p. xi*

[28] Idem. *p. 4*

[29] Idem. *p. 12*

[30] Idem. *p. 13*

[31] Idem. *p. 14*

Their proposal will explain permanent unemployment, but not cyclical unemployment; and much less huge levels of unemployment in faraway equilibria.

They discuss the corruption in corporate America before the 2008 crisis and argue that it was one of the elements that caused the crisis. Recessions they argued, always involve corruption scandals. They describe Milken's junk bonds, Enron, and the irregularities with subprime loans. They argue that the business cycle is connected to fluctuations in the level of corruption, which are related to *"cultural changes over time to facilitate or to hinder aggressively competitive or predatory activities"*[32].

There are several problems with introducing corruption as an element producing economic crisis. First: Japan, Korea and China have grown quite efficiently with corruption. Of these countries, only Japan entered a major crisis. If corruption produces major economic crisis, Korea and China should of have had one already. Second: the major corruption events happened after the banking crisis in 2008 had already started, not before it. As we have argued elsewhere, the 2008 crisis was not a real estate crisis, but a banking and credit crisis[33]. Therefore, the corruption that could have happened in real estate before was irrelevant. Third, most non-performing mortgages happened after the beginning of the banking crisis, and because of the rise in interest rates and were related to ALT A loans and not to subprime loans[34]. Fourth, there was no corruption in rating agencies. Fifth: Banks held 75% of the MBS (Mortgage Back Securities) that were in private hands; clearly, they were not corrupt when they were structuring the securities that they finally held. Banks did not, no body willingly, shoot themselves in the foot. Akerlof's and Shiller's argument that corruption causes major economic crisis is just not theoretically, or factually, defensible.

They argue that at low levels of inflation there should be some degree of money illusion.

The argument of money illusion was already discarded in the Keynesian-Monetarist controversy many years ago. Moreover, to explain stagflation in the real world requires Rational Expectations, which imply that there is no money illusion. Even if we were to accept the arguments of be-

[32] Idem. *p. 39*

[33] See Obregon 2011 and 2018. 2011, *La crisis financiera mundial: Perspectivas para México y América Latina*. Siglo XXI, México. Also see *Globalization: Misguided Views*. MPRA_paper_85813.pdf

[34] ALT A loans have higher credit quality than subprime loans, but less than the prime loans.

havioral economists, they would only explain minor fluctuations around full employment equilibrium. Moreover, when counter cyclical monetary policy is used and it works, it is not because there is money illusion, but because economic agents anticipate that there is margin in the economy for a real recovery. This means that they trust that the central bank and the Treasury are doing their job correctly. Finally, in deep depressions, Keynes argument that the monetary policy would not work has nothing to do with money illusion; but with the real fact, that the balance sheets of the economic agents have deteriorated, and banks do not find healthy customers to lend to.

For these authors *"confidence is not just the emotional state of an individual. It is a view of other peoples confidence, and other peoples perceptions of other peoples confidence"*[35]. So, they argue that there are new era stories that spread like an epidemic. Confidence is as contagious as any disease.

It is true that any Institutional Arrangement does have a corresponding story, a conceptual system that binds the institutions together. Therefore, any economic situation does have a story attached, which is reflected in the actual institutions that exist. But these stories are not just imagination, nor are they the outcome of irrationality. They are built as part of the true real history of the economy in question, and they are part of the survival characteristics of such society. Stories found in conceptual systems are not irrational and do not exhibit whimsical abrupt changes. They have a rational survival relatedness with reality which is required for evolutionary and economic subsistence. Stories may end up being wrong ex-post. But, ex-ante, at the time they are formed they are always rational, and compatible with all available real facts. Such facts may be read in an optimistic or negativist mood. But the mood is not just irrational either. It depends on real events that are changing the economic agents' confidence in the institutional arrangement in question. A gold-mining boom at first sight may appear irrational; but it happens only because someone in fact did find gold. It is true however, that there can be Manias, Panic and Crashes; but they can only explain regular financial crisis, which produce short term fluctuations around the full employment equilibrium. Something else is needed to justify a truly major global economic crisis. Finally, the key thing to focus on is that stories are there all the time, and therefore major economic crisis that occur sporadically cannot be explained just by stories.

[35] Animal Spirits, op. cit. p. 55

The 2008 GFC

The best way to understand the consequences of using Behavioral Economics for macro problems is to review Akerlof's and Shiller's explanation of the 2008 crisis. Basically, for them "animal spirits" produced a real estate boom which eventually had to crash, and it did. And *"in its wake it has left the biggest real estate crisis since the 1930s, the so-called subprime crisis, as well as a global financial crisis whose full dimensions have yet to be grasped"*[36]. Due to animal spirits *"it appears that people had acquired a strong intuitive feeling that home prices everywhere can only go up"*[37]. The story did spread mouth to mouth and created cycles of feedback. *"Money illusion appears to explain some of the impressions that homes are spectacular investments"*[38]. This housing boom was greater than ever before because of the political intention to provide housing to the most disadvantageous population. *"The feedback that produced the epidemic of home-price increases had institutional, as well as cultural and psychological correlates"*[39]. And *"In this atmosphere it was easy for mortgage lenders to justify losing their own lending standards"*[40].

The problem with these authors argument is that major economic crises appear almost from nowhere, from "animal spirits" whose dynamics are mysterious and unpredictable. There is no doubt that markets do have herding behavior, in the sense that people are trying to guess what others will do. Booms do not start out of nowhere. Neither do crashes. They start with stories, and in this behavioral economics has a point. However, two arguments must be stressed: (1) these stories always have a rational component. And (2) They must be institutionally supported by financial authorities. The critical point is not whether there are or not psychological influences when investing at the individual level, because there are. The important discussion is whether these psychological influences at the individual level define market prices.

Keynes' and Knight's uncertainty concept means that the future is not known, and investors must build stories about what is going to happen and doing so they can be optimistic or pessimistic, but there is always

[36] *Animal Spirits,* p. 149. Op.cit.

[37] Idem. p. 150

[38] Idem. p. 152

[39] Idem. p. 155

[40] Idem. p. 155

real basis for their views. In *Irrational Exuberance,* Shiller argued that stock market boom in the mid-1990s was fueled by *"the story"* of the advent and explosion of the internet. We can argue ex-post how optimistic or pessimistic the story ultimately proved to be, but the phenomenon of the commercial expansion of the internet was a real story. People that believed in this story chose to invest in companies that benefited from the so-called ICT revolution (Information, Communications and Technology), and many made a fortune. Today the largest companies in the US stock market are those who best exploited to the ICT revolution.

Given real world uncertainty people must create stories, but they do it based on the best available information available to them. This information is always incomplete and requires intuition and risk taking. Manias do extend market prices away from what pure fundamentals can justify, but not irrationally - people do their best guess, using both their emotions and their reason. Manias are not due to irrationality, but to uncertainty.

In the 2000s prices in real estate in US increased partially due to a long economic boom, which had increased substantially the consumer's wealth, and partially to the fact that stock prices have become expensive while real estate was still reasonably priced[41]. Thus, relative to other assets, fundamentals correctly indicated buying real estate. However, the 2008 crisis was not the consequence of the crash in real estate. Two facts back up this view: (1) real estate prices in Europe in that decade increased much more than in the US, but the crisis did not happen initially in Europe[42]. And (2) a careful analysis of real estate indices reveals that real estate prices in the US only started to fall after the banking crisis had dramatically increased interest rates. The causality is the inverse of the conventional narrative: the real estate crash did not produce the banking crisis; the banking crisis produced the real estate crash. The only crash that took place before the banking crisis was in the adjustable-rate subprime real estate market, due mostly to the rapid increase in the policy rate by the Fed in 2005-2007.

There is a clear reason that explains why the early boom happened in the adjustable-rate subprime real estate market in US, and why the crash occurred: the rapid downward and upward swings in the Federal Funds Rate. But the collapse of subprime did not imply a major crisis. Contagion to the broader system occurred because sub-prime loans were packaged into derivative securities that included mortgage loans of higher

[41] Obregón 2011 and 2018, op.cit.

[42] Obregón 2011 and 2018, op.cit.

quality, the so-called Mortgage-Backed Securities, or MBS. These derivative products were engineered to get an optimal mix of risk and return. MBS became exceedingly popular because they provided a higher yield at a time interest rates were very low. MBS were so attractive, that banks kept 75% of them in their books. With the collapse of the subprime real estate market, it became very difficult to value the MBS containing these loans; and because banks held the MBS in such large amounts, they began to distrust each other's financial health. The result was a pullback in interbank credit lines and an increase in the LIBOR rate (the rate at which banks lend to each other). The consequence was an across the board increase in interest rates, that eventually caused both the generalized real estate and the stock market crashes. Thus, *there are clear fundamental causes of the 2008 crisis*. It is not necessary to resort to irrationality to explain it. These reasons also explain why it did happen initially in the US, and not in Europe[43].

The crisis was not contained in time, because *inadequate institutional policies were implemented*. These were mostly predicated based on a free market ideology of limited intervention. Financial authorities believed that risk was probabilistic, and that markets could manage it well. They thought markets could take care of the subprime segment and would be able to discriminate amongst viable financial institutions. Authorities were wrong-the amounts involved were too high, relative to the banks' capital.

The lack of proper policy intervention added a level of uncertainty with regards to the financial system that could not be managed with probabilistic risk. Confidence in a credit economy is essential for economic transactions. The only way for confidence to be restored was for the Fed and/or the government to extract subprime loans and the "toxic asset" (MBS) from the banking system. If done early in the crisis the cost would have been much lower, the implementation easier and the policy more effective. Because authorities waited too long confidence in the banks suffered, breaking the spinal cord of a normal credit economy. Importantly, trust in the ability of the Fed and the US government to manage such crises took a major blow. The economy entered a credit crisis.

For our purposes it is crucial to understand that the deterioration of confidence was not the result of whimsical irrational shifts but was based in two real facts: the balance sheets of the banks had deteriorated, and regulatory and oversight institutions were not showing themselves capa-

[43] For a more detailed explanation of the 2008 crisis, see Obregón 2018, *Globalization: Misguided Views,* op. cit chapter three.

ble of solving the problem. Given these two facts, it is rational to forecast future problems. What allows economic agents to invest in an uncertain future is the assumption that institutions would be able to cope with future internal or external shocks of the economy of a systemic nature, and therefore that the future will resemble the past. This is the assumption under which all the assets are priced in an economy. Only under this assumption Tobin's probabilistic risk works. When institutions make a major mistake in coping with an internal or external shock of large magnitude, people will rationally extrapolate that there will be future trouble – a concern that can become widespread.

In the above environment, economic agents turn more conservative as it happened in 2008. These rational adjustments of expectations drove the severity of the crisis and the muted recovery that followed. By looking carefully at what happened in 2008 we get a first clue about the importance of the credibility of institutions in the determination of U in Minsky's model, and MEC in Keynes's model.

The 2008 crisis was not a psychological crisis of generalized mistrust because the boom in real estate had been overextended. Booms do relate to stories about the uncertain future, and when they are wrong, they correct themselves. And yes, there are manias and contagious effects in these processes. Market volatility is in fact explained by uncertainty about the future. However, this happens all the time in economies hovering within the corridor near full employment equilibrium. But a major collapse like the 2008 GFC is typically accompanied by serious and fundamental institutional mistakes The recovery was slow because the economic agents' confidence was shaken. This causes an increase in , with a corresponding higher spread between the policy rate and the interbank rate. The loss of confidence also increases MEC, which shows up as higher values for and To belabor the point, the shift in confidence is not due to a whimsical or irrational deterioration of confidence. Rather, it stems from the realization of institutional failure. Under these conditions, it would be irrational for confidence not to be shaken.

During the duration of the 2008 crisis there is no evidence of money illusion. Buyers read the newspapers and consulted specialists, and they knew houses had become expensive, This, however, did not help them predict when the boom was going to end, which is why they continued buying. While some corruption did happen, it was not the cause of the crisis as it happened later – in the middle of the banking crisis. Some observers have argued that the credit agencies were either irresponsible or

corrupt, and that the banks were greedy and abusive; but that story cannot be sustained, since banks kept in their books 75% of the MBS. And as we have said, *nobody deliberately shoots himself in the foot*[44].

It is also argued that mortgages were sold with irresponsible schemes to consumers of questionable economic means. This happened to some extent, but it happened mostly with higher quality ALT-A loans, and only after the subprime adjustable-rate real estate loans crisis had already started. In fact, the rise in interest rates explains the growth in flexible rate mortgage schemes.

In summary, it is impossible to explain the 2008 GFC as the result of irrational mistrust, money illusion, corruption, or stories, or consumer fairness. It was not produced by irrational "animal spirits", but by institutional mistakes that improperly managed the shock. **These fundamental institutional mistakes and errors explain the dimensions of the crisis.** They made future uncertainty unmanageable with probability models. The only rational thing left was to be very conservative.

The view of strong proponents of free markets was shown to be wrong in the 2008 crisis. For risk to be able to be managed with probabilities the institutional arrangement must be working properly, so that internal and external shocks do not change much the actual normal course of the economy. If there is a huge institutional mistake, future uncertainty cannot longer be managed, economic agents become conservative (an increase in: *U,rd,* and *rdc*); economic agents reduce drastically their transactions related to the future, and the economy enters a major crisis. Markets manage well risk probability; but they cannot alone by themselves manage uncertainty when the institutional arrangement makes a huge mistake.

What explains frequent fluctuations in asset prices, is not that the economic agents are irrational, but the presence of uncertainty about the future which they are continuously assessing because whoever gets it right reaps huge profits. Economic agents may not be as rational as rational expectations assumes; but nor are they as irrational as Akerlof and Shiller have argued.

In the postscript of The Nudge, Thaler argues that the 2008 crisis was partially due to: *(1) extreme complexity in products offered to investors, and in the extreme diversity and complexity of mortgages offered; (2) lack of self-control by refinancing the mortgage instead of paying it; (3) the social contagion in the real estate bubble – he cites Shiller*. Nudges he argues, *if implemented would make a crisis like this less likely to occur*. Is he right? As we had seen, he is not correct;

[44] Obregon 2011 and 2018, op.cit.

none of the elements mentioned by him caused the crisis. Nudges would not have helped.

As we have seen, Keynes LPT neutralizes conventional monetary policy in acute credit crisis. That is the reason why the Federal Reserve in the 2008 GFC had, for the first time in history, to enter the credit markets directly; implementing QE – buying huge amounts of mortgage bonds. This wise move from the Federal Reserve single handedly prevented the global economy from entering a depression like the one in 1929.

For markets to operate they require a proper institutional arrangement normally evolving and learning, and prone to minor mistakes, which create volatility around full employment equilibrium. However, when institutional mistakes are of a systemic nature, they lead to a serious deterioration of the balance sheets of key economic agents in large numbers and shake the confidence of economic agents. Markets alone cannot solve this situation and major economic crises occur.

CONCLUSION

The last seventy years of monetary policy were mainly defined by the huge success of monetarism and rational expectations, which consolidated a contemporary version of the NMT. Keynesians, post-Keynesians, and macro-disequilibrium theorists failed to resuscitate Keynes' original thought in a useful manner. The main reasons are that the rigidities of any sort are short-lived in flexible markets, and that information flows are significant enough to discard any form of money illusion. However, contemporary NMT cannot explain major economic crises. According to this theory the 2008 GFC and the 2020 GP should not have happened. Behavioral macroeconomics also tried to rescue Keynes' original thought, but it encountered the problem that irrational "animal spirits" cannot explain major economic crises, because they are always there. Economic agents are assumed to be always irrational, yet major crisis only happen on rare occasions.

A better understanding of what really happened in the 2008 GFC helps us appreciate why major crises occur: they are the consequence of huge institutional mistakes in coping with an internal or external shock. Markets operate within an institutional arrangement, which usually functions well and guarantees the continuity needed for the economic agents to be able

to estimate future uncertainty through probability risk. Large institutional mistakes, however, make it rational to expect more problems in the future, due to the loss of credibility in the institutional arrangement. When this happens, the economic agents' confidence deteriorates (and and the economic agents drastically reduce their transactions related to future consumption and investment plans, and a major economic crisis occurs.

CHAPTER FOUR: THE 2020 GP AND THE TWIN PARADOX OF DEMAND SIDE ECONOMICS

Keynes argued that private markets by themselves are not suited to efficiently move an economy out of a great depression. He was right. Despite the beautiful technical arguments of the recursive mathematical rational expectations models, which always bring the economy quickly back to the optimal full employment equilibrium, the 2008 GFC and 2020 GP did happen. And in both crises the governments have needed to recur to Keynes' policies – basically huge government deficits, financed by the central banks' emission of large amounts of new money. The governments and central banks' response to the 2020 GP has been significantly larger than in the 2008 GFC. Table 4.1 shows the government balance defined as revenues minus expenditures for the world economy. As it can be seen, the initial response in the 2008 GFC was -8.6% in 2009 in the advanced economies, while in the 2020 GP it was -10.5%. The exception being Japan, all the other advanced economies' response in the 2020 GP was larger than the one in the 2008 GFC. In the US the numbers are -13.5% for 2009 and -14.5% for 2020. Since the 2008 GFC happened mainly in the developed financial centers, the response in emerging markets and developing economies was significantly larger in the 2020 GP, -3.8% in 2009 versus -9.0% in 2020. The exception is Mexico, where the response was similar.

TABLE 4.1. GOVERNMENT BALANCE REVENUES MINUS EXPENDITURES AS GDP PERCENTAGE

	2004-2007	2008	2009	2010	2011	2012-2015	2016-2019	2020	2021	2022	2023	2008-2011	2020-2023
Advanced economies	-2.0	-3.5	-8.6	-7.6	-6.2	-3.7	-2.6	-10.5	-7.3	-4.3	-2.9	-6.5	-6.3
Japan	-3.9	-4.1	-9.7	-9.1	-9.0	-6.3	-3.1	-9.0	-7.6	-7.8	-3.5	-8.0	-7.0
United Kingdom	-2.9	-5.1	-10.0	-9.2	-7.4	-5.8	-2.5	-12.8	-8.0	-4.3	-2.3	-7.9	-6.8
United States	-3.1	-6.6	-13.2	-11.0	-9.7	-5.1	-5.0	-14.5	-10.2	-4.8	-4.0	-10.1	-8.4
European Union	-1.7	-2.0	-6.0	-6.0	-4.1	-2.6	-0.8	-6.9	-5.1	-4.1	-2.5	-4.5	-4.7
Emerging market and developing economies	0.2	0.7	-3.8	-2.4	-1.0	-2.3	-4.1	-9.0	-5.3	-5.7	-5.4	-1.6	-6.3
China	-1.0	0.0	-1.8	-0.4	-0.1	-1.1	-4.3	-10.7	-6.0	-7.7	-7.1	-0.6	-7.9
Latin America and the Caribbean	-1.1	-0.8	-3.6	-3.3	-2.6	-4.4	-5.1	-8.7	-4.5	-4.6	-4.2	-2.6	-5.5
Brazil	-3.2	-1.5	-3.2	-3.8	-2.5	-5.4	-7.4	-13.3	-4.4	-7.6	-7.4	-2.8	-8.2
Mexico	-1.4	-0.7	-4.1	-4.0	-3.3	-4.0	-2.1	-4.4	-3.8	-3.2	-3.2	-3.0	-3.7

Source: International Monetary Fund, World Economic Outlook Database, April 2022

In terms of economic growth, despite the downward revision of the IMF in July 2022, still it seems that the 2020 GP recovery is performing very well. Table 4.2 shows that, while the world slowed down 1.9% in 2008-2011 versus 2004-2007, it is expected to slow down only 0.8% in 2020-2023 versus 2016-2019. This is particularly the case in the advanced economies, whose corresponding numbers are 2.6% and 1%. Latin America and the Caribbean even improves its growth rate. It was 0.5% in 2016-2019 and it is expected to be 1.1% in 2020-2023. The exception is Mexico which is paying a huge cost for not implementing a Keynesian adjustment program. While Brazil is expecting to increase its growth rate 2016-2019 versus 2020-2023, from 0.2% to 0.8%, Mexico is decreasing it from 1.7% to -0.1%.

TABLE 4.2 2008 GFC VERSUS 2020 GP

	Gross domestic product, constant prices			Percent change	
Countries, Regions:	2004-2007	2008-2011	2012-2015	2016-2019	2020-2023
World	5.3	3.1	3.5	3.4	2.2
Advanced economies	3.0	0.4	1.7	2.1	1.1
Japan	1.7	-0.8	1.3	0.7	0.1
United Kingdom	2.5	-0.3	2.2	1.9	0.3
United States	3.0	0.4	2.3	2.3	1.3
European Union	3.0	0.1	0.9	2.3	0.9
Emerging market and developing economies	7.8	5.5	4.9	4.4	3.0
China	12.1	9.8	7.5	6.6	4.5
Latin America and the Caribbean	5.4	3.1	1.9	0.5	1.1
Brazil	4.7	4.1	0.4	0.2	0.8
Mexico	3.2	1.1	2.8	1.7	-0.1

Source: IMF, WEO April 2022. 2022 and 2023 come from July's update.

A key difference between the 2008 GFC and the 2020 GP has been the higher inflation in the second crisis. Table 4.3 shows that the world's inflation in 2021 was 4.7% and it is expected to be 7.4% in 2022. It is worth observing that inflation is a worldwide phenomenon, even Mexico which did not implement a Keynesian adjustment program is experiencing high inflation. In the US average inflation is expected to be 7.7% in 2022.

TABLE 4.3. INFLATION, AVERAGE CONSUMER PRICES PERCENT CHANGE

Region, Country	2004-2007	2008	2009	2010	2011	2012-2015	2016-2019	2020	2021	2022	2023
World	4.0	6.3	2.8	3.7	5.1	3.4	3.3	3.2	4.7	7.4	4.8
Advanced economies	2.2	3.4	0.2	1.5	2.7	1.3	1.5	0.7	3.1	5.7	2.5
Japan	0.0	1.4	-1.3	-0.7	-0.3	1.0	0.5	0.0	-0.3	1.0	0.8
United Kingdom	2.0	3.6	2.2	3.3	4.5	1.7	1.9	0.9	2.6	7.4	5.3
United States	3.0	3.8	-0.3	1.6	3.1	1.3	1.9	1.2	4.7	7.7	2.9
European Union	2.4	3.7	0.8	1.8	2.9	1.1	1.3	0.7	2.9	5.8	2.9
Emerging market and developing economies	6.1	9.2	5.2	5.7	7.1	5.2	4.7	5.2	5.9	8.7	6.5
China	3.0	5.9	-0.7	3.3	5.4	2.2	2.1	2.4	0.9	2.1	1.8
Latin America and the Caribbean	5.0	6.4	4.6	4.2	5.2	4.9	6.5	6.4	9.8	11.2	8.0
Brazil	5.3	5.7	4.9	5.0	6.6	6.7	4.9	3.2	8.3	8.2	5.1
Mexico	4.1	5.1	5.3	4.2	3.4	3.7	4.3	3.4	5.7	6.8	3.9

Source: International Monetary Fund, World Economic Outlook Database, April 2022

MONETARY POLICY

In the 2008 GFC QE was introduced and, particularly in the US, it implied buying large amounts of mortgage bonds. Table 4-4 shows how MBS (Mortgage-Backed Securities) grew rapidly in the US between 2008 and 2011, they went from zero in November 2008 to 827 billion in 2011. Additionally, US treasuries held by the Federal Reserve grew rapidly from 476 billion in 2008 to 1672 billion in 2011. Both continued growing as the balance sheet of the Federal Reserve expanded. By 2016, total Federal Reserve Assets were 4454 billion of which 94.3% was explained together by MBS and US treasuries, which were respectively 1736 billion and 2654 billion. However, between 2016 and 2019 both quantities were reduced both in absolute terms and as a percentage of total Federal Reserve assets.

In the 2020 GP both quantities increased rapidly again. The total assets of the Federal Reserve expanded from 3969 billion in October 2019 to 8921 billion in June 2022. In June 2022 MBS represented 2710 billion - an increase from October 2019 of 86% - and the US treasuries represented 5772 billion - an increase of 167%.

TABLE 4.4. US FEDERAL RESERVE ASSETS

					Billions				
	nov-08	nov-09	nov-11	oct-16	oct-19	aug-20	sep-21	mar-22	jun-22
Total Assets	2108	2210	2817	4454	3969	6957	8448	8937	8921
US Treasuries	476	777	1672	2464	2149	4320	5431	5760	5772
MBS	0	852	827	1736	1458	1934	2495	2715	2710
					% Total Assets				
US Treasuries	22.6	35.2	59.4	55.3	54.1	62.1	64.3	64.5	64.7
MBS	0	38.6	29.4	39	36.7	27.8	29.5	30.4	30.4
TOTAL	22.6	73.7	88.7	94.3	90.9	89.9	93.8	94.8	95.1

MBS= Mortgage Backed Securities
Source. Federal Reserve Home Page

Table 4.5 presents an approximate calculation of what the increase in the treasuries held by the Federal Reserve represented as a percentage of the net lending/borrowing of the US government[45]. It shows that the Federal Reserve was significantly more relevant financing the government in the 2020 GP than in the 2008 GFC. This is what allowed for the larger fiscal policy applied in the 2020 GP. The Federal Reserve financed on average around 55% of the new debt issued (an estimated to be issue) in 2020, 2021 and 2022.

The financing of the central banks of the increased government expenditures was a reality in the 2020 GP all around the world – and particularly in advanced economies. The IMF fiscal monitor of October 2020 estimated that, of the total government debt issued since February in advanced economies, between 50% to 75% was financed by the governments - see figure 4.1.

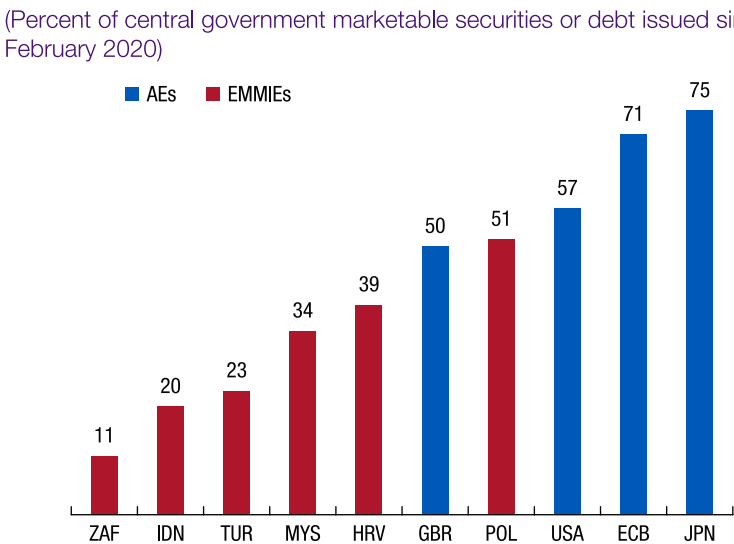
[45] Although it is just an approximation, it is likely not far away from the actual number, the IMF October 2020 fiscal monitor estimated that around 57% of the government marketable debt issued since February 2020 was bought by the Federal Reserve. See Obregon C, *New Economics,* 2020. p. 194. Similar amounts apply to other advanced economies.

TABLE 4.5. CHANGE IN US TREASURIES HELD BY THE FEDERAL RESERVE AS A % OF GOVERNMENT'S NET LENDING/BORROWING

2008-2111	2019-2022
23.6	55.1

Source: Table 4.4 and WEO April 2022
Note: This is an approximation based on table 4.4 and the annual net lending/borrowing reported in the IMF WEO.

FIGURE 4.1. CENTRAL BANK PURCHASES OF GOVERNMENT DEBT



Sources: Country authorities; US Federal Reserve Economic Data; Haver Analytics; and IMF staff calculations.
Note: Data labels use International Organization for Standardization country codes.
AEs = advanced economies; EMMIEs = emerging market and middle-income economies.
In what follows we will concentrate in the behavior of four Central Banks to describe what has been their role in the 2020 GP.

The increase in the assets of the Federal Reserve was significant as a GDP percentage, they represented 14.3% in 2008 and are estimated to go up to 35.2% in 2022.

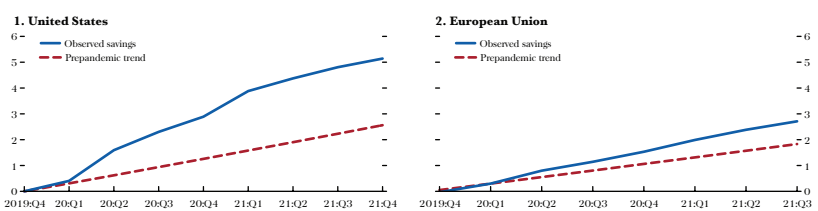
WHY INFLATION?

In its semiannual monetary policy report to the Congress of June 22, 2022, the Federal Reserve states that the high inflation observed is mainly due to two factors: 1) increasing energy and food prices, and 2) a tight labor market. The first factor, it is argued, is mostly a consequence of the war in Ukraine. The second factor is the result of a strong labor demand and modest increases in the labor supply. Aggregate demand is estimated to continue to be strong; because although private fixed investment is moderating, consumer demand remains strong. The Federal Reserve also mentions the supply chain bottlenecks aggravated by China's Covid 19 lockdown policy. The Federal Reserve announces its policy to increase interest rates and reduce the size of its balance sheet.

Given the topics that are of central interest in this manuscript, it is worth pointing out that what really concerns the Federal Reserve is the tight labor market; because while energy and food price increases are transitory, wage increases may fuel inflation in a sustainable way. And why is the labor market so tight? Due to the modest increases in the labor supply and a strong consumer demand, both of which are consequence of the fiscal-welfare policy of giving money to everybody, whether they were employed or not. Figure 4.2 shows the fast increase in household savings, mostly due to the fiscal-welfare policy adopted. This excess savings is behind the modest increases in the labor supply and the strong consumer demand – with so much savings people do not have to work, and yet they can still maintain an strong consumer demand.

FIGURE 4.2 EXCESS GROSS HOUSEHOLD SAVINGS ROSE SIGNIFICANTLY IN ADVANCED ECONOMIES

(Trillions national currency, cumulative sum since the fourth quarter of 2019)



Sources: Bureau of Economic Analysis; Eurostat; and IMF staff calculations.

Supply-side Keynesianism would have been helpful because: 1) it promotes a better balance between aggregate demand and supply – by

stimulating the supply side; and 2) it links better the government aid to the productive sector, fostering a stronger labor supply; since a significant part of the benefits go to companies that maintain people employed.

THE TWIN PARADOX OF DEMAND-SIDE ECONOMICS

Rational expectations and monetarism cannot explain how it is that global crises like the 2008 GFC and the 2020 GP happened; and the IS-LM model was designed to manage business cycles. Therefore, since none of the other known macroeconomic theories are adequate to understand what to do in a global crisis, after almost one hundred years of deviating from Keynes' thought, macroeconomics has gone back to Keynes' policies. Not do so would have been very expensive. The case that, sadly enough, exemplifies what would have happened without Keynes' policies is Mexico in the 2020 GP, that followed the traditional approach of a balanced budget – the consequence is an expected negative economic growth 2020-2023, see table 4.2. Thus, there is no doubt that following Keynes' policies in both the 2020 GFC and in the 2020 GP was the correct decision. It also stands out that it is better to implement a rapid fiscal response than a slower one. The first-year fiscal response in the 2020 GP was more aggressive than in the 2020 GFC, a government balance of -10.5% versus -8.6% in the advanced economies, see table 4.1; the consequence was not only a faster recovery – see table 4.2; but also, a lower negative following-three-years average government balance, -6.3% in the 2020 GP versus -6.5% in the GFC.

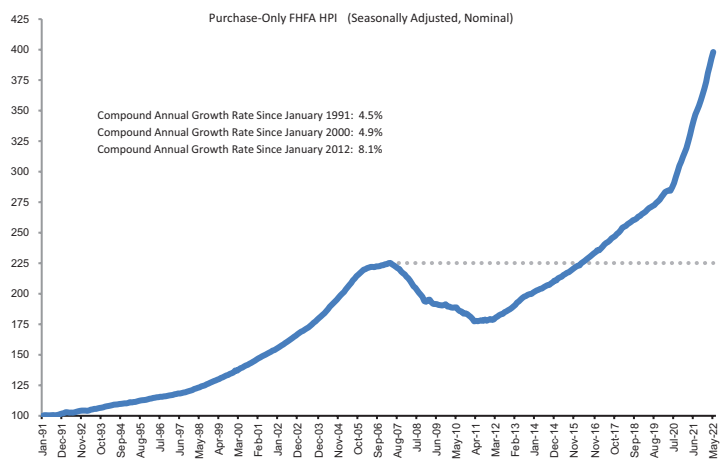
Despite inflation, the judgment about the use of Keynes' policies is that they worked reasonably well, not to use them would have been awfully expensive in terms of economic growth.

However, demand-side Keynesianism presents a twin paradox. The first paradox is that: since the cost of not doing anything is too high, once a major crisis occurs demand must be stimulated; but if demand is stimulated there is always the risk of generating inflation. The second paradox is that: once inflation starts, it must be brought down to avoid inflationary expectations; but fighting inflation through interest increases impacts simultaneously both the demand side and the supply of the economy (as the interest rate is raised, private fixed investment goes down and consumer demand also goes down, and the first component impacts future supply), and therefore always generates the risk of a recession.

The way out of the first paradox is that, together with the demand side, the supply side of the economy must be stimulated. There is no way out of the second paradox, once inflation is high enough to potentially be able to stimulate inflationary expectations the only way for the central bank to regain credibility is to aggressively raise interest rates and reduce its balance sheet, with the undesired consequences that this may have in terms of economic growth. That is why it is extremely important to avoid as much as possible inflation in the first place, which is the main task of supply-side Keynesianism.

What the Federal Reserve does when it buys MBS is that it increases their demand, therefore the price of these bonds goes up and their corresponding interest rate goes down. Thus, it is subsidizing the interest rate that relates to real estate. A policy which - by the way - was very justifiable in the 2008 GFC, in which real estate entered a major crisis, see figure 4.1. But one should have expected MBS to go down to zero again. and they never did. Moreover, they grew rapidly in the 2020 GP. But why intervene only in the mortgage market in the 2020 GP? The 2020 GP has had distinct characteristics from the ones of the 2008 GFC. The real estate market was not the center of the 2020 crisis, but the dislocations between supply and demand due to Covid 19. A generalized supply-support policy would have been appropriate instead of the MBS policy used - that was long overdue. The main consequence of continuing in the 2020 GP the MBS policy has been an unwarranted rapid increase in real estate prices - see figure 4.3.

FIGURE 4.3 MONTHLY HOUSE PRICE INDEX FOR U.S. FROM JANUARY 1991 - PRESENT



Source: FHFA

CONCLUSION

The 2020 GP macro-policies were needed, not to have done anything would have been extremely expensive in terms of lost economic growth. In this sense the 2020 GP macro-polices were even better than the ones used in the 2008 GC, because the fiscal deficits were larger, and therefore the lost in terms of economic growth was smaller. Despite its undeniable virtues however, the 2020 GP macro-policies made two critical errors that could have been avoided. The first mistake was directing QE mostly to MBS (there were other assets, but in insubstantial quantities); the consequence has been that the real estate market prices have stayed unnecessarily high. The second mistake was the government fiscal-welfare policy that had the consequence of creating excess personal savings which reduced the supply of labor and increased consumer demand; the two factors that better explain the sustainable inflationary pressures in the US economy. There was a better way out: supply-side Keynesianism, which will be explained in the next chapter.

CHAPTER FIVE: BEYOND FISCAL AND MONETARY POLICIES: SUPPLY-SIDE KEYNESIANISM

After 2008, some economists revived Keynes' thought; but again, based on the same irrationality that had motivated the construction of the IS-LM model from the beginning [46]. Therefore, their proposals, as did Keynes' original thought, were unable to explain why economies stay most of the time near the full employment equilibrium. If economic agents are irrational, then we can explain economies far away from equilibrium; but we cannot explain why most of the time they are in equilibrium, and only in rare occasions move far away from it. Just the opposite happened before with rational expectations; if economic agents are rational, we can explain why economics are usually in equilibrium, but not why in rare occasions they move so far away from it.

The only possible answer, to explain both states of the economy, can be found in changes in the institutional arrangement. It is the influence of serious institutional failures what takes an economy away from its regular equilibrium[47]. And once it happens, mistrust in the institutions' ability to run the economy properly develops. The solution to bring the economy

[46] Akerlof and Shiler, 2009. *Animal Spirits,* op.cit

[47] As we have argued, Keynes' economics explain why traditional monetary policy does not work in major economic crises and why fiscal policy might work. But it is important to realize that Keynes' economics does not explain the genesis of the major crises. None of the three major crises that the world has had, 1930 GD, 2008 GFC, and 2020 GP, started because of the irrational volatility of investors' expectations. The 1930 GD was the result of a combination of overly restrictive monetary policies and the enactment of highly protectionist trade policies. Thus, it was the consequence of wrong policies, and this institutional failure created negative consumer and investment expectations. The latter were quite rationally based on the poor performance of the institutions to tackle the economic problem at hand. The 2008 GFC was again, the consequence of inadequate policies by the Federal Reserve of bringing down interest rates sharply (and keeping them there for too long) in the early 2000's, and then quickly raising them in 2005-7. Add to this the government's refusal to intervene in the subprime mortgage market early in the crisis. Finally, in Europe there was a deplorable lack of understanding by regulators of the composition of the assets that the European banks held. Here again, the critical element was the deterioration of the economic agents' confidence in the ability of the institutions to deal with the crisis. The 2020 GP is also a consequence of real external causes—in this case a virus that was largely out of investors' expectations.

back to full employment equilibrium then, must be a macroeconomic program that restores trust in the institutions.

The only theory at our disposal today to explain what to do in major crises is Keynes' theory, which recommends an expansionary fiscal policy. And that is what the world did in the 2008 GFC, and again - and even more aggressively - in the 2020 GP. But is this theory correct? Have we not learned anything along almost a century since Keynes wrote? In the 2008 GFC Bernanke introduced a new policy, QE, he just bought the MBS and put them in the Federal Reserve's balance sheet. This policy alone contribute decisively to accelerate the recovery. QE has been used again in the 2020 GP. In addition, in both economic crises, the balance sheets of central banks have been used to finance the governments – in fact, most of the burden of the macro-adjustment has fallen in the realm of fiscal policy. We argue that an extended and modified QE could be the beginning of a new monetary theory, able to allow policy makers to stimulate the supply side of the economy in the short term.

In what follows we will: 1) explain both why the economy usually only has business cycles near full employment equilibrium, and why on rare occasions it is far away from equilibrium; 2) discuss briefly national and global policies to avoid serious institutional mistakes that may move the economy to far away equilibriums; 3) explain what macroeconomic policy should do in regular times; 4) introduce supply-side Keynesianism as an alternative to complement fiscal policy and traditional QE (directed mostly at MBS); 5) analyse which are the risks in the present situation, and what could be done; 6) mention very briefly the connections between macroeconomic theory and growth theory.

WHY AND HOW DO MAJOR ECONOMIC CRISIS OCCUR? AND WHY DO THEY ONLY HAPPEN RARELY?

In normal times, there are all sort of frictions that explain economic business cycles around the full employment equilibrium. Among others, these include short-term, Keynesian-type rigidities, technological shocks, temporary problems in the transmission of information, manias, panics and even market crashes that may explain a particular crisis in real estate, a financial sector, the price of gold, the stock market, and others. They also arise from temporary individual behavioral irrationalities, minor in-

stitutional changes and adjustments, minor monetary shocks taking place in the process of adjusting monetary policy to new conditions of the real economy, and all sorts of internal and external shocks which usually are absorbed both by new institutional policies and/or by price flexibility in the markets. All these processes are complex and imprecise, and they induce all sorts of relatively minor fluctuations whether in real output, in prices, or in the level of employment. But normally, the economy stays in a corridor near full employment[48].

On rare occasions, however, economies move to far away equilibriums. But since there are only two shock absorbers: flexible market prices, and institutional policies; and market prices, except for very short-term rigidities, remain flexible; it follows that the explanation of the economy's shift to a far away equilibrium must be found in huge mistakes in institutional policies. Our previous analysis of the 2008 GFC has shown that this was the case. The 1930 GD was also caused by huge institutional mistakes. In the 1930 GD the serious institutional mistakes were the all-around contractionary monetary policy, and an increase in trade protectionism. Understandably, during the Great Depression economic agents lost their confidence in the institutions' capacity to manage the situation. Keynes's LQT and Keynes' MEC then became relevant. The 2020 GP was due to an exogenous shock – the Covid 19 pandemic, which however was institutionally mismanaged, due to a lack of global coordination that was the result of misguided nationalisms and the very weak presence of a small and not well-respected WHO (World Health Organization).

In the current 2020 GP, the US and other countries authorities have adopted more timely economic policies. However, they largely rely on fiscal policies, financed by central banks. Therefore, large amounts of free money have been misdirected and have generated inflationary pressures, forcing the central banks to drastically raise interest rates, reducing, therefore, the future economic growth of the economy, and even creating the risk of a recession.

Contemporary economics has been trapped in a vision of social dynamics defined exclusively by the individual agent. The discussion is whether humans are rational and selfish, as contemplated in neoclassical economics, or whether they are irrational and volatile, like behavioral economics (and Keynes before) argues. By focusing only on the individual agent, economic theory has been incapable of explaining major economic crises. This is because, if the individual agent is rational and

[48] We remind the reader that the idea of the corridor was introduced first by Leijonhufvud.

selfish, then markets work and are flexible, and the economy should be in the full employment equilibrium corridor all the time; but if the individual agent is irrational, then she/he is so all the time, and major economic crises should be much more frequent. Since the economic agent's characteristics (whichever they are) are always the same, something else must change, something must be different, in order to explain the two distinct realities of the economy. What is different, as we have been emphasizing, are the institutions which in normal times operate well, but occasionally make huge mistakes.

The behavior of the individual agent is heavily context dependent. Individuals can display altruistic and cooperative social behavior in some cases, like in the dictator's game in behavioral economics, or as the high social expenditures in developed economies reveal; and act differently in other circumstances, like the extremely low amounts of international aid exemplify, which are nothing else than a global dictator's game, in real international economic life[49].

To explain reality, we need to realize that markets work within an institutional arrangement. Usually, this arrangement works reasonably

[49] In the dictator game in which the player A is a dictator that can give whatever he pleases and keep the rest; surprisingly enough 74% divide the money 50-50, and in the punishment stage 81% choose to punish an unfair allocator. In public good games, the standard traditional economic prediction that no one will cooperate turns out to be wrong; on average people will cooperate half their stake to the public good. These results have been used by behavioral economics as an empirical demonstration of the argument that humans are not rational selfish calculators, maximizing their personal well-being. However, what they really show is that in developed countries there is a strong integrative system. And we must recall that both the integrative system and the power system are reflected in monetary and economic transactions. Therefore, it is not surprising to find that the integrative system plays a role even in monetary transactions in the laboratory, in the dictator game and other experiments in developed countries. The integrative system and the power system are part of the economy. At the beginning of the 20th century, in developed economies governments represented on average only around 10% of GDP, today they are around 40%; of which the power system represents around 4%, social expenditures around 25% and other integrative functions 11%. Thus, *the Integrative System represents 36% of the economy, the Power System 4% and the Economic and Exchange System 60%*. Individuals living in developed economies live in a world in which social cooperation is a reality, that is why they display cooperative and altruistic behavior. However, it does not follow that they will behave altruistically in a large, competitive market, *in these markets they behave selfishly*. And it does not mean either that humans are, by nature, altruistic. While altruism and social cooperation is very high inside the developed economies, it is almost nonexistent in the international arena. At the global level, the world economy presents us a "Global Dictator Game", which results in minimal altruism, due to the extreme weakness of the global integrative system; international aid is only 0.2% of GDP, and even some of it is conditioned by the interests of the donor. For a definition and a discussion of the integrative, the power and the economic systems (which originally are a contribution of Kenneth Boulding) see Obregon, C., *The Philosophy of Belonging*, 2d Edition, 2021. Amazon.com. Also available at Research gate.com

well, because its task is to guarantee the survival and reproduction of society. It mostly maintains the economy in the full-employment corridor. However, due to its complexity, institutions occasionally make huge mistakes, and the economy moves to a far away equilibrium. The microeconomic theory as to how and why these major institutional mistakes do happen is explained in my book *New Economics*[50]; and it is based on the most recent developments in information theory, game theory and institutional economics

In summary: *major crises happen due to large unwarranted institutional mistakes which occur occasionally*. Institutions are overly complex systems, which due to evolutionary and survival reasons usually work well. However, occasionally something goes awfully wrong, and a major crisis is produced.

NATIONAL AND GLOBAL INSTITUTIONAL POLICIES TO AVOID MAJOR CRISIS

The world has become globalized due to the ICT revolution. The recent effort to dismantle the global institutions, like the WTO (World Trade Organization), while reinforcing regional or selected participants organizations like the European Union and the NATO (North Atlantic Treaty Organization), has been a huge mistake. It should be the other way around; it is needed to strengthen them. In my book titled *A New Global Order,* I argue that unless the world makes a serious effort to have proper global institutions, we will suffer again global crises with enormous costs[51]. The 2008 GFC could have been avoided with adequate national and international institutions, which should have been closer to the markets to understand what was happening and thus be able to regulate them. Markets are not stable by themselves; they need institutional surveillance and regulation. And since markets are now global, that means that global institutions are required. The dimensions of the 2020 GP could also have been avoided if the world had had the required global health institutions. And there are other areas in which global economic crises are in the making such as global climate – with humans warming the planet; transnational crime – which is already the eighth largest "economy" in the world; and

[50] *New Economics,* 2020, op.cit.

[51] Obregon, C., 2020. *A New Global Order*. Amazon.com. Also available at Research gate.com.

international trade – with the weakness of the WTO (World Trade Organization) and the bilateral trade war between US and China. It is urgent that we realize the crucial need of institutional design. Institutions cannot replace markets, but markets by themselves may become quite unstable and may end up in very suboptimal equilibriums.

WHAT SHOULD MACROECONOMIC POLICY DO IN REGULAR TIMES?

If the economy is near equilibrium, traditional neoclassical rational expectations theory works well, and the main role of macroeconomics is managing the short-term business cycles.

However, because - as we have been arguing - the main cause of a major crisis is a large institutional mistake: *the first thing for policy makers to keep in mind is to try to avoid such mistakes*. Preventing is always much cheaper than remediating. Thus, the authorities must be permanently vigilant of the markets, regulate them and intervene early when a critical disequilibrium is in the making, such as the adjustable subprime mortgage crisis in 2008 or the beginning of the pandemic in 2020.

As we have seen, in the 2008 GFC there existed a cheap preventive measure: applying QE much earlier and taking the subprime adjustable-rate real estate toxic assets out from the private banks. If deployed early, a program involving only about 2% to 5% of what was finally done would have been enough[52]. It could be argued that this recommendation is done with hindsight and that, at the time, not enough information was available. But this defense is unwarranted, the Federal Reserve knowingly and aggressively hiked interest rates, and should have anticipated that this would produce disequilibrium in the adjustable-rates mortgage markets – the problem which the policy makers needed to address and resolve. Instead, they initially left the solution to the markets because of an erroneous concept of the homeostasis working in the private economy. With the interest rate increases in 2022 and onwards a new disequilibrium may be created, and the central banks must be alert watching the markets and coordinating with one another globally.

Therefore, in addition to manage the regular business cycle as rational expectations suggests, policy makers must continuously review the

[52] See Obregon 2011, *La crisis financiera mundial,* op.cit.

impact of changes in the institutional arrangement on the economy. And moreover and very fundamentally, regulators need to be much more involved with the markets.

WHY DID QE WORK SO WELL IN THE 2008 GFC? AND WHY WAS IT NOT USED PROPERLY IN THE 2020 GP?

A critical characteristic of large markets is that economic agents behave selfishly, therefore they are eager to obtain information that serves their interests, and any available help for analyzing it. Markets are far from perfect, but they are reasonably efficient, and prices are mostly flexible over the medium term. Therefore, although the rational expectations assumption is very extreme, it alerts us to something quite important, namely, that *institutions and policy makers cannot fool economic agents*. QE worked in the 2008 GFC, because it was the reasonable thing to do, and therefore economic agents regained confidence in the central bank. The reason QE was successful to get out of the 2008 GFC is because it corrected the balance sheets of the economic agents and therefore allowed the credit economy to work properly.

The reason QE was misused in the 2020 GP is that, while in 2008 buying the MBS was an obvious need, in 2020 the real estate sector was not the source of the problem – which rather originated in supply-demand imbalances due to the Covid 19 pandemic.

WHICH ARE THE APPROPRIATE FISCAL AND MONETARY POLICIES TO FOLLOW IN MAJOR ECONOMIC CRISES?

The key is to disentangle which policy has a better chance to produce the recovery of the productive economy. And therefore, it is important to define first what constitutes the productive economy.

One can conceptualize an economy as divided in two: *the social economy and the productive economy*. In general, the economic agents in the productive economy can be distinguished, because they own productive projects that will generate future returns. The social economy, instead, is constituted by economic agents who are consumers but do not have viable economic

projects capable to produce future returns; but who nonetheless are subject to receive social benefits from the government. The main task of the private banks and of the analysts in the financial markets is to distinguish future viable projects from those which are not viable. It is key that the money printed for the recovery of the economy, in a major economic crisis, is not used either to finance the social economy nor those segments of the productive economy which hold economic projects which are not viable in the future.

Governments' only future returns come from taxing the productive economy. Therefore, to be credible they should only borrow as much as they can repay with future taxes. And an expansionary fiscal policy (whether by reducing taxes or by increasing expenditures) is only credible if it can be believed that the recovery of the productive economy will be such that the increase in future taxes will allow the government to repay. The government's budget is under enormous political constrains and pressure to privilege political bases; it is affected by electoral cycles. Government transfers benefit a selected few, which must be funded by all taxpayers; thus, questions about fairness are always raised. Government bureaucrats change all the time, and therefore they do not develop the required expertise to know the dynamics within the productive economy. Governments lack the expertise to distinguish which companies are viable – and therefore have repayment capacities. Because of its built-in inefficiencies, government expenditures are simply not fit to properly attend the pressing needs of the productive economy, both during a crisis and during the recovery. Economic agents know that all these challenges to the fiscal policy exist; and therefore, they rationally distrust large increases in government expenditures.

What is the alternative? *The alternative is that most of the increases in the money supply are not used to finance the government, but to finance directly the productive private sector*.

Traditional monetary policy does not work because of Keynes' LPT – that is why Keynes recommended fiscal policy, although he was not sure that it would work. But the innovation of QE introduced by Bernanke changed the panorama. Because QE can be used to clean the balance sheets of the economic agents, it will reduce and eliminate the problem of the LPT. Once the balance sheets are corrected, credit flows again, which means that once more traditional monetary policy becomes effective. But what to do if interest rates are already near to zero? The European Central Bank (ECB) has found an interesting solution, it gives an economic

incentive to private banks for lending, which in fact constitutes a negative interest rate – although interest rates for the savers are still positive. *Anyway, it must be noticed that whatever is done, traditional monetary policy only will work if QE has already cleaned the balances of the economic agents*. And that even then, there still remains the question of the MEC. Therefore, the adjustment program that will be announced has to be of such a magnitude that it convinces the economic agents that it will work

The social economy is also important, because it creates demand for the productive economy. Therefore, government expenditures that contribute to recover the balance sheets of members of the social economy, so that they can continue participating in the economy, are welcome. Tax reductions to the productive economy, or government expenditures that create additional demand to the productive economy – like infrastructure projects – are also welcome, because they increase the chances of recovery of the productive economy. But whatever the government does must be limited to its future repayment capacity.

A large QE program channeled directly to the productive economy can hardly be managed by the central banks today. To be able to distinguish viable projects from non-viable ones requires a lot of expertise on the productive economy, that central banks do not have. There must be a new institution in charge of the extended and modified QE program – which could be under the central bank's authority, but which should have well-defined, independent tasks. This new institute must develop the expertise required to channel resources directly to the productive economy. Its purpose will be to clean the credit channels, making sure that proper credit flows to future viable projects – for which it should associate with private agents to use their accumulated experience in this regard.

Once we have discovered QE, there is no need to fully follow Keynes' recipe, conceived almost one hundred years ago, of relying mainly on an expansionary fiscal policy. We must be innovative. Me must create new theoretical perspectives. There is no reason for which the increase in the balance sheet of the central bank must go mostly to the government. In fact, in 2008, Bernanke showed that the central bank did it better than the government. By buying the MBS the Federal Reserve cleaned the credit channels of the economy – which in the 2008 GFC were not working appropriately in the real estate market. If this money had been given to the government, it would not have solved the situation. Fiscal expenditures had already been very high previously, and the recovery would have continued to be very slow.

There must be a specialized institute whose only purpose is to channel the money to the productive economy. How will the extended QE work? And what should the institute do? What will be the areas of competence of this institute, versus the ones of the central bank? And what will be the role of the government and of the fiscal policy?

The New Monetary Institute for Economic Recovery

The role of this new institute that we envision will be to identify those economic agents that may recover from the crisis – those able to produce economic returns in the recovery. Most of the increase in the balance sheet of the central bank will be channeled through this institute. Which will then, through association with experienced private agents, lend long term and at low interest rates to the productive economic agents, with ample grace periods to allow for their recovery. The institute will also buy financial instruments from the private sector that are in the market such as the MBS and many others; the sector to be privileged will depend upon the specific characteristics of each financial crisis.

In many countries there is already considerable accumulated expertise as to the functioning of the productive economy. Such is the case mainly in those Asian countries that followed what we have called the Asian growth model, and to a lesser extent in several European economies. The institute will clearly have an advantage both over the government and the central bank as to how to channel these resources efficiently – because this will be its main duty, it will develop expertise, and it will not have conflicting goals.

The Central Bank

In the proposed new institutional framework, the central bank will remain in charge of traditional monetary policy. It will be responsible, as it is today, both for the control of inflation and for the proper growth of the economy. It will handle the interest rate policy. And when needed, it will consider the possibility of stimuli to the banks that imply negative interest rates, as the ECB is already doing. It will be vigilant of the good health of the banking system. And it will recommend to the institute for economic recovery the

buying of certain financial assets held in the private banks, whenever those assets may present a potential threat to the health of the credit economy.

The Government

Within this new arrangement, the government continues in charge of the fiscal policy, but it would only be able to borrow from the central bank according to its repayment capacities. It oversees the well-functioning of the social economy. And it may create stimuli for the productive economy through taxes or government expenditures that make the private sector more profitable – like infrastructure projects. But the government's borrowing must be restricted to its future repayment capacity.

Our purpose in this manuscript is not to develop with precision the roles of the new proposed institute, the central bank, and the government – they will adopt different and specific roles in distinct countries and in financial crises of distinct characteristics. The purpose is to transmit a strong theoretical message, which is: 1) that governments should not be the owners of increases in the balance sheets of the central banks; 2) that new money in large amounts should be channeled to the new proposed institute, which will borrow it and will regain most of it in the future. Because although it will lend long, borrowers will be chosen carefully as to their repayment capacity– mostly using the accumulated experience of the private sector in this regard. Thus, most of the loans will be repaid. 3) That contrary to what Keynes believed, monetary policy has many possibilities to contribute to the recovery of a major crisis; but that a new theoretical framework, and the creation of new institutions, is required.

WHAT ARE THE RISKS OF THE PRESENT SITUATION AND WHAT HAS TO BE DONE?

The main risk of the present situation is that the high levels of inflation may create inflationary expectations, and maybe even the menace of stagflation. Therefore, central banks are raising interest rates drastically. Once inflation is created, economies fall into the second trap mentioned for demand-side Keynesianism. To avoid inflationary expectations interest rates

must be raised and aggregate demand is disincentivized. And reducing the investment demand also brings down the future growth of the economy; therefore, a high price in lost future economic growth must be paid. Therefore, it is important that recovery policies aim at stimulating the supply side of the economy in the first place, to reduce as much as possible the imbalances in demand and supply that create inflationary pressures.

Now, once we are in the present situation of high inflation and the risk of inflationary expectations; there is no way out but to increase the central bank's interest rates and reduce its balance sheet, because the potential damage of inflationary expectations and stagflation is significantly higher than the cost paid in future foregone economic growth, consequence of tightening the monetary conditions.

The Risks of Stagflation

In the IS-LM framework, a macro-adjustment policy will only become inflationary once the economy is near or at full employment equilibrium. According to monetarism (Nobel prize Milton Friedman and Ana Schwartz), the long-run inflation is a monetary phenomenon. But one must be careful interpreting these results. In normal conditions, with the economy near full employment, which is the norm in their sample period, their results hold (even in simple IS-LM terms). But this does not mean that their conclusions are valid when the economy is far away from equilibrium. In fact, there are clear cases which empirically show that it is not the case. The most recent example is the massive increase in money supply, and the huge fiscal deficits witnessed in developed economies after the 2008 GFC, which did not translate into inflation, and which produced a slow recovery. The second example is the very low growth with low inflation that Japan experienced for almost twenty years.

To understand why money supply increases do not always translate into inflation when the economy is way out of equilibrium, we can use the simple quantitative equation, , where is money, is the velocity of money, is the price level, and is real output. Assuming a constant velocity of money; either money moves with prices, or real output, or with both. If the economy is way out of full employment equilibrium, there is a large space for money to go to output and not to prices, the same result can be obtained with a simple IS-LM model. Moreover, the velocity of money is

not constant. And when the economy is far away from equilibrium goes down significantly, due to Keynes' LPT, according to which banks cannot find economic agents with healthy balance sheets, and therefore do not lend. Thus, money either goes to , or to and it does not go to . This is not just a theoretical result; rather, this is what has occurred in Japan for almost twenty years and in the US after the 2008 GFC. In summary, not all money supply increases have the same impact on prices. It is critical to understand the degree of connection between Q and M. The more relates to , the less it will have an impact on .

However, the period of stagflation in the 70s showed us that economies can have inflation, even if they are not at full employment. When central banks have an irresponsible monetary policy, rational economic agents who have access to all available information and process it efficiently, will mistrust institutions and increase their prices. An important lesson from that period is that central banks must operate in a credible and responsible manner. Otherwise, any increase in money will quickly translate into inflation. It is all a matter of expectations. Either: 1) economic agents believe that the policy used is the right one, expect an economic recovery, invest, and do not increase prices (in which case Q goes up); or, 2) they believe that the policy is irresponsible and inadequate, will not lead to a recovery, and they do not invest and raise prices (P goes up). The use of expansionary macroeconomic policies, in an economy far away from equilibrium, should not produce inflation provided that it is properly communicated within an environment of institutional credibility. Institutional leadership is required to help build the bridge between the present and the future.

A company trying to convince potential and actual shareholders of the benefits of an aggressive expansion plan requires credibility and leadership. The same is true for a society. Investing in the future requires institutional leadership. This is even better understood with Keynes' MEC. LPT, as we have already said, reduces , therefore increases in go to ; but in addition, MEC implies that unless there is confidence, people will not invest (neither will they consume durable goods), and therefore a fast recovery will fail to materialize. This is what happened both in Japan for almost twenty years, and in most large, developed countries after the 2008 GFC. Institutions need to be credible. Any central bank's increase in can be thrown out of the window by changes in (Keynes' LPT), or by autonomous economic agents' increases in prices (raises, as explained by rational expectations.

Today, with the already experienced high levels of inflation, to avoid risks of stagflation central banks must maintain their credibility; and therefore, right now they must raise interest rates and reduce their balance sheets. However, it must be emphasized again that supply-side Keynesianism, if applied in the first phase of recovery, would have generated significantly less inflationary pressures, reducing the likelihood that central banks would have needed to tighten their monetary policy

Supply-side Keynesianism entails much less risk of bringing stagflation back than demand-side Keynesianism mostly for obvious, already mentioned, reasons: 1) the proposed institute would channel the resources to the productive economy better than the government; thus, the expected impact on Q would be greater. 2) The institute would be more reliable than the government, from the productive economy's perspective, not to spend money unwisely.

A NOTE ON SUPPLY-SIDE KEYNESIANISM AND ECONOMIC GROWTH

Supply-side Keynesianism might be a very useful macro-tool to get an economy out of a major economic crisis. But it should not be used as a substitute for an economic growth policy. Economic growth must be based on real savings and can never be based on nominal expansions of the money supply.

CONCLUSION

In the 2020 GP most of the policy response has been through fiscal policies. We have argued: 1) that fiscal policy is a highly inefficient mechanism to promote the recovery of the productive sector; 2) that an extended and modified version of QE should have been used; but that this requires new institutions, capable to lend directly to the productive economy; and, 3) that once the credit economy is working well again, due to the extended and modified version of QE, traditional monetary theory could be used in the form of stimuli to the private banks and other credit agents for lending.

We have reviewed the main goals of the fiscal and monetary policies in major crises. We have argued that the main problem in a major eco-

nomic crisis is that the traditional policies - reduce interest rates, increase the money supply, reduce taxes, and increase government expenditures - do not work well. Due to Keynes' LPT, lower interest rates do not increase the private banks' credit to the economy, because the balance sheets of the diverse economic agents are in such a bad shape that they are not subject of credit. Therefore, the increases in the money supply are compensated by a decrease in the velocity of money, and the output in the economy does not increase. Tax reductions and increases in government expenditures are usually not well directed to the recovery of the productive economy, and therefore are unnecessarily inefficient. With the MEC depressed, economic agents are using rational expectations to ascertain whether the government's program will work. If the government and the central bank act irresponsibly, big expansionary macroeconomic programs run the risk of culminating in stagflation. The only way out of a major crisis is to convince the economic agents that the program will work. So, they forecast the recovery, and then the long-term returns of their investment projects will raise again to normal levels and the MEC will go down drastically. Therefore, the key is to be able to influence But, to be able to do that, two conditions must be met: 1) the balance sheets of the economic agents must be cleaned. And 2), economic agents must be convinced that the program will work.

This reasoning has given us a theoretical framework as to what to do to get out of a major crisis. An extended and modified QE, if well used, can correct the economic balances of the economic agents and will reduce . And announcing a well-conceived and concerted package, that gives good conditions for the recovery of the productive economy, will change expectations, and will reduce both Once an extended and modified QE has gotten rid of toxic assets, traditional monetary policies to reduce interest rates and provide more credit to economic agents will work. The package for economic recovery may also include reducing taxes and increasing government expenditures, but the fiscal policies must be designed in such a way that the repayment capacities of the government are credible, according to a rational expectations model.

We have discussed that there are many problems associated with the use of fiscal policy as the main instrument of the recovery. Governments typically make several mistakes: 1) they often finance economic agents with non-viable future projects; 2) they may finance economic agents that do not increase aggregate demand; 3) they channel resources in ways that benefit them politically.

Most governments do not have the necessary expertise to properly target those agents that are crucial for the recovery of the productive economy. And central banks do not have this expertise either. What happened in the 2020 GP, as we said, is that central banks incorrectly just continued to use QE to buy more MBS and most of the expansion in their balance sheets was used to finance the governments. But all this arrangement, we have argued, is theoretically incorrect. Economies need to develop a new institute capable to ascertain the opportunities of recovery of specific economic agents that belong to the productive economy.

The only purpose of money is to allow the productive economy to function adequately, and there is nothing to defend that the increase in the balance sheet of the central bank should be used mostly to finance the government; we have argued that it could be used to finance a new, credible, independent institution, which could be part of the central bank, but with autonomous functions, and that has the only purpose to operate the recovery of the productive economy.

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