Beyond Quantitative Easing Towards a New Monetary Theory

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In his article Interest and Prices, originally published in 1898, Wicksell summarized the two goals of monetary policy that today constitute the corner-stones of monetary theory. The first goal is to prevent monetary shocks due to excessive/or insufficient credit in the system, resulting in a conserva-tive view of monetary policy. The second goal is to adequate the level of credit to changes in the real sector of the economy as reflected in changes in the real level of savings or investment. The first goal has been the main emphasis of the Quantitative Theory of Money which supports both Monetarism and Rational Expectations. The second goal was the route taken by Keynes who emphasized the volatility of investment as a main cause of economic instability. This article provides a third route that benefits from the two routes previously mentioned and proposes a new monetary theory.

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INTRODUCTION

Keynes' Resurrects, Partially

The Quantitative Theory of Money was right: economies are usually near equilibrium. It is true that the long run Phillips Curve is vertical, and that money increases only traduce themselves into prices in the long run. However, it went too far in arguing for a pre-established fix rule that defines money growth. This has never convinced policy makers. Although, in normal times real economy shocks are relatively small, they do exist, and an active monetary policy is a welcomed countercyclical tool. This was the main conclusion of Rational Expectations models that introduced short term Keynesians-like rigidities, and became the base of the accepted monetary theory from the eighties until the 2008 GC.

However, the Global Financial Crisis of 2008 changed the world of policy. As Lucas had argued, the GD could no longer be seen as the isolated event, never to be caused again by the absence of modern theoretical and practical economics. The causes of the 2008 GFC had to be explained. In addition, economists and policy makers needed to understand why the huge increases in the quantities of money, injected as a policy response, did not have the expected impact in the speed of the recovery, and why they did not produce inflation.

Keynes was back, not because his teachings could explain the origin of the crisis (which as we said they could not), but because of his Liquidity Preference Theory (LPT) which explains the conditions under which monetary policy loses efficacy. Furthermore, the worsening of investor expectations can be analyzed through Keynes' Marginal Efficiency of Capital; (MEC) becomes relevant once the crisis starts.

QE and Beyond

The most effective tools and the best solution found for the 2008 crisis was Quantitative Easing (QE), introduced by the Federal Reserve under Ben Bernanke. By buying directly toxic assets from the market, the Federal Reserve became a direct player in the credit market, circumventing Keynes' Liquidity Preference Trap. The Liquidity Trap occurs when banks cannot lend at any interest rate because economic agents' balance sheets have deteriorated to the point that they become unviable. In these conditions, the difference between the Central Bank discount rate, and the rate at which the Banks are willing to

lend, is unsurmountable; no matter how low the discount rate goes. QE is again being used in the 2020 Pandemic. Notwithstanding the relatively successful experience of 2008-09, several theoretical questions (with implications for policy) need to be answered. What is the theory that explains why QE works? How does QE relate to traditional monetary theory? How does QE relate to Monetarism and to Rational Expectations? Should QE be used in "garden variety" downturns, or only in major crisis? How does QE relate to LPT? How does QE relate to MEC? Could QE have been better designed and applied in the 2008 cri sis? Is QE properly applied in the current? What would a new monetary theory that includes QE look like? What is the role of Central Banks in the post QE world? To answer these questions, we need a historical perspective on both of monetary theory policy.

What Is Money Today?

Money is not an end in itself; it is just the means for economic agents to transact more efficiently in the real economy markets. The goal of any economy is real growth. Money facilitates savings and is therefore intimal connected with an expectation about the future. Therefore, money and expectations are always related. But expectations are not irrational animal spirits incapable to know the truth and subject to manipulation. Expectations are based on all available current information. In this sense, they are rational. However, in addition to having full information of the economic model, they also incorporate a rational evaluation of the capabilities of the institutions in society that regulate the economy and respond with policies to unknown future events. *Thus, any proposal made in relation to the role of money and monetary policy in the economy has to consider that (1) economic agents incorporate an expectation that markets aim to achieve the economy's main goal which is economic growth; And (2), that expectations about the future incorporate their confidence on the capacity of the institutions to cope properly with future and unforeseeable shocks to the economy.*

The relationship between money and the real economy's adequate functioning is crucial. Money is not mechanistically related to nominal GDP. Money facilitates savings and thus creates the bridge between the present and the future of the real economy. Money represents the true social pact, that allows the real economy to operate properly. Money usually functions well as economies are near full employment equilibrium most of the time, and institutions are trusted to confront normal volatility. In these conditions traditional monetary theory works fine. Avoiding unwarranted monetary shocks, and having a conservative, moderately active monetary policy is enough. But occasionally major event happens that disrupt the economies well-functioning; and institutions do need to respond properly. In these infrequent, but very important cases, like 1930's GD, 2008 GC, and Covid 19 GP; the performance of the institutions is closely watched. If they do a poor job, confidence on them deteriorates; and expectations of the economic agents about the future worsen – This means that the MEC declines. And if the institutions allow a credit crisis to unfold, Keynes´ LPT would become relevant, as the balance sheets of most economic agents in the economy deteriorate.

A New Understanding of The Role of Central Banks

Before the 20th century, money had been the responsibility of the elected governments. Central banks existed since 1668 in Sweden, and 1694 in England, but these early Central Banks' main task was to finance the governments. Governments used their power to finance themselves by diluting the gold content in the coins, which implied an unannounced inflationary tax. This generated unstable expectations, mistrust in the government's finances, and uncertainty about the future of the economy.

In the last one hundred years governments have been moving to delegate part of their responsibility to Central Banks. Today they enjoy a high degree of autonomy, although their top officials (usually the governors) are still elected by the government. However, important questions need answering: have been Central Banks been able to separate themselves from the traditional mistrust in the governments' mismanagement of their finances? And, what should modern Central Banks' main role in the economy? Should it be only to impede the inflationary consequences of mismanage public finances? Or, should Central Banks be responsible of the whole relationship between money and the real economy? In practice, some Central Banks (like the Euro pean Central Bank) have the single goal of maintaining inflation under control; others have incorporated a dual objective that, in addition to inflation, includes stable real growth of the economy. But even when they do incorporate this second goal, it is always unclear how it is shared with the government. In this manuscript our main argument is that Central Banks must be responsible of the whole relationship between money and the real economy. This includes responsibility for forming expectations about both future inflation and economic growth. Since the GFC, Central Banks in the developed world have been moving in this as shown by their use of QE. However, this role and the accompanying policies, are limited, not well defined, and often not well directed.

The Monetary Credit Bazooka

The future Central Banks must interact more directly with the society and not operate mostly through the government. *Money is not a monopoly of the government; it is socially own.* The Covid-19 pandemic represents a test for the role of Central Banks – one they are not passing with high grades. Namely, Central Banks are still mostly financing governments (as their balance sheet holds large amounts of government, or quasi-government bonds), their financing has been insufficient to prevent a deep decline in growth or a rapid economic recovery, and has been unable to fully reset economic expectations about the future. In this manuscript we argue that Central Banks have at their disposal a *Monetary Credit Bazooka (MCB)*[1], that they had been unwilling to use, which could have been critical in responding to the Covid-19 pandemics. The MCB is not and everyday tool. It should be used only in infrequent major economic crises. The Central Bank cannot just print money or buy toxic assets at will. Because it would be just going back to the behavior of the governments of the previous centuries when distrust in governments and Central Banks prevailed. Therefore, in normal times, Central Banks must behave according to traditional monetary theory. However, in severe crisis, they must use the MCB in order to remain credible. The reason is that key institutions like Central Banks help connect the present with the future. They are one of the chief channels economic agents have to assess the risks in unknown future. If Central Banks' response is not proportional to the size of the crisis, they risk losing society's trust, which feeds into more uncertain and volatile expectations. In the end, the credibility of institutions' capability to adequately manage unknown future events provides some confidence for consumer decision and investors to risk capital into the future. MCB consists of long-term lending, with preferential conditions, to all economic agents capable of repaying the loans which here, we will call the *productive economy*. Loans can include the government in so far as its debt repayment capacity is present.

The new monetary theory presented in here, proposes that Central Banks are responsible for the whole relation between money and the real productive economy, with the purpose of maintaining a proper functioning of the real economy. Most of the time, traditional conservative active monetary policy is enough, and it must be followed to maintain the credibility of the Central Bank. But in major crisis, that only happens occasionally, Central Banks must use the MCB to guarantee a fast return of the economy to a position near full employment. One of the concerns of the use of MCB is that it may deteriorate the Balance Sheet of the Central Banks. But while this is true in regular times because bad assets will not be repaid, it is not true in major crisis. In the latter, an economic recovery induced by the use of the MCB can turn non-performing assets into viable ones. *What does credibility in the Central Bank really means? To believe that it can properly bridge between today and tomorrow and maintain an adequate relationship between money and the real economy, so that this can operate properly near full employment equilibrium.* Using MCB in a major crisis is the rational course of action as it will actually increase confidence in the Central Bank, just like QE did in 2008. The positive shock on the economy achieved through the use of MCB more than offsets

concerns with the quality of the Central Bank's balance sheet. Not doing enough from a monetary policy perspective would actually result in a loss of credibility.

The Separation Between Monetary and Fiscal Policy

Central Banks must be responsible for what we have defined as the productive economy. Fiscal policy (the government) should be focused on the *social economy*. Which is defined in here as the segment of society negatively affected by the crisis to the point. where they are not credit worthy.

The Government may borrow from the Central Bank for expenditures needed to help the social economy in major crisis in so far as it shows repayment capacity (like any other economic agent), based in future tax revenues in the recovery, or other austerity measures to be implemented when economic normality returns.

Economic agents are not irrational actors. Especially in major economic events are related. Some microeconomic behavior can be well explained with *Behavioral Economics*, but not macroeconomic events. In this document we will discuss how Behavioral Economics relates to Monetary Theory. *When institutions perform poorly they create mistrust, and loose the economic agent's credibility on the capacity of the institutions to bridge between the present and the future.*

Before 2008 most in the economic profession were convinced that money shortages produce a contraction, and that excess money only produces inflation. Thus, the recommendation was a mildly active monetary policy. In a world of rational expectations with short term Keynesian frictions this implies that the economy is almost always near full employment. It was argued that free market and sound institutions always produce a full employment equilibrium. In this context, the role left to Central Banks was to control inflation and counterbalance some minor and temporary real shocks, consequence of Keynesians rigidities in the system. The period of stagflation of the seventies was thought to have been caused by irresponsible Central Bank responses. This made them loose credibility.

Then, the 2008 global financial crisis became a reality, forcing Central Banks to act well beyond their traditional duties. QE was introduced because fiscal stimulus, despite its large size (over 110% of GDP in the US), was not enough. At the same time, Keynes' LP trapped traditional monetary policy. Banks were not lending despite ultra-low interest rates.

It is not yet not yet fully appreciated how big of a change in macroeconomic policies QE really is. It meant that Central Banks entered the realm of long-term lending, giving Central Banks a powerful tool like the MCB. This tool of policy has not been fully used in the Covid 19 crisis due to ideological conservatism regarding the role of Central Banks which ascribes inflation as their main objective. The argument in this book is that Central Banks have the main and exclusive responsibility for the whole relationship between money and the real economy, and to be less reluctant to use tools like the MCB when circumstances merit it. In the current juncture, Central Banks could do much more to mitigate the economic impact of Covid-19 and to prepare the economy for a stronger and fatter recovery. However, to fully embrace this, require major rewriting of monetary theory.

Keynes was right in that traditional monetary policy was unable to fight very deep recessions due to the Liquidity Preference Trap; but the MCB is not traditional monetary policy, and it does not have the limitations foreseen by Keynes. Furthermore, fiscal policy has proven of limited value to fight deep recessions (something that Keynes suspected). However, Central Bank can and should use their balance sheets more aggressively and resort to the MCB when needed. Central Banks and economists should not be afraid. New ideas are always needed to confront unprecedented new situations like the Covid-19 crisis. We should not be afraid that using MCB will worsen the Central Banks' balance sheets. The resulting economic recovery will ensure that non-performing assets will transform into viable. MCB will not be inflationary because its mainly target is the productive economy, and because it will increase the economic agents' confidence in the Central Bank.

In other words, whether or not MCB will bring a recovery depends upon the policy's size, timing and messaging. This will determine how economic agents form expectations. In the 2008 GFC economic agents lost confidence in the institutions as a result of the mismanagement of the sub-prime crisis. That is in part why recovery was mild and slow. QE brought back confidence and accelerated the recovery, despite the

fact that it was introduced late. The slow recovery also explains why deflationary pressures have persisted. The regained confidence in the Fed explains why stagflation has been avoided. In the current crisis, QE has been introduced earlier and scaled quicker than in 2008. Fiscal policy was also activated faster. This is also why the stock market has performed well. However, QE has not been adequate in three areas: 1) It has not been specifically directed to the productive economy, 2) the amounts are still insufficient, and 3) although it tried to use communication to positively shock expectations, it could have been done better.

New ideas are powerful to transform reality, they are a key input that promote rapid and flexible social change. But the new ideas have to con front the old ones, and they do not always win the battle. Even when they no longer correspond to the new social reality, old ideas are represented by institutions built in the previous reality. As a result, what was once functional to promote change may become one of the key impediments to understand what must be done under new circumstances. Macroeconomics is not the exception.

Understandably in a historical context, Central Banks thinking, is dominated by the fear of inflation caused by excessive money supply growth. But one must distinguish between normal times and exceptional ones. Most of the recent monetary theory was built with economic data near full employment equilibrium. We must think out of the box and look more carefully at situations where the economy is far away from equilibrium, like now. QE has shown us that unconventional monetary policy not only works but also increases the confidence in the Central Bank and has not produced inflation. It is now the time to go beyond QE, and for all Central Banks to use MCB. We must not be afraid. The depth of the crisis and the speed and length of the recovery are at stake.

QE and Keynesian Monetary Theory

Keynes had three key contributions, and two unwarranted propositions. As Patinkin has convincingly argued, the first critical contribution was 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. As such, MEC does not explain them; the latter only becomes relevant after a major crisis happens. This is why we listed it as significant contribution. It however, does not explain the normal functioning of the economy which it better accomplishes. Economies are usually close to full employment equilibrium; because markets are efficient and flexible prices make the economy quite homeostatic.

The Importance of Institutions

Markets, however, always operate within a given institutional arrangement, which usually works well. 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. Therefore, Central Bank policy rate movements define movements in the Banks' lending rate – in line with Tobin´s LP which explains the economic mechanisms at play rather well. 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 times or mild recessions.

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 and 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[2], but under his influence, Keynes mistakenly abandons the Neoclassical Capital Theory, and makes the economy hang on pure nominal categories. This approach will have defined Mrs. Robinson volatile *animal spirits*. With this proposition, Keynes dissociates his theory from the real economy and the problems of economic growth (this is further discussed in chapter five). 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 an economy's regular or normal operation. *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 to explain why QE (Quantitative Easing) did works in major crises. This understanding will be helpful in the construction of a new monetary theory. The *Treatise of Money*, as we said before, is compatible with the CNMT, 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 made two major contributions 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 some times ineffective in maintaining the economy at full employment equilibrium. This second contribution 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, it is 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. Rational Expectations was able to explain the Stagflation

phenomenon of the late seventies under the assumption that all the economic agents have all the available information, and that they process it according to the best available economic model. 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. The vision of the economic world was mostly back to the CNMT. The Central Bank argued has to avoid creating unnecessary monetary disturbances, and active monetary policy is needed to address the minor disequilibria produced in the real economy by small and short-lived rigidities.

This was the state of mind in economics when the GFC arrived in 2008. As I have argued elsewhere, the GFC was not inevitable – it was rather caused by untimely and misguided intervention of economic institutions such as the Fed and US Treasury. When it finally came, intervention was based on the incorrect theoretical framework[3], i.e., CNMT. 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 was the case during the Great Depression of the 30´s (1930 GD), the Global Financial Crisis of 2008 and is the case now as a result of the Covid-19 global pandemic.

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. However, he did not develop an alternative proposal for a new monetary theory or concrete policy ideas. *We will argue in this book that QE, extended into the concept of a Monetary Credit Bazooka (MCB), could provide such new monetary theory.*

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 Covid 19 GP, governments are still relying mainly on fiscal policy. We argue that this is a mistake. Once the MCB is at our disposal, it should be a key element that should collaborate with, and reduce the size and scope of fiscal policy. In what follows, we will review Keynes's views from the point of view of what is relevant for economies far away from equilibrium. Both, to explain why QE works, and to provide the building blocks of a new monetary theory appropriate for large crises.

Keynes' LPT and MEC

The best way to understand Keynes' relevance for today's Covid 2019 crisis and address what is missing in the IS-LM, is to start with Minsky's interpretation, which provides a good version of Keynes' LPT[4]. 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 as sets concerning 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 as a consequence 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 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, 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[5]. 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, it should ration less the credit and take more the route of significantly higher lending rates. However, 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), *U* deteriorates, and as a consequence 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 lead to a reduction in the supply of consumer loans, unleashing a negative loop. Bank credit and *r* rises, and a negative feedback loop is unleashed. That is what happened in 2008. Despite the fact that QE put an end to the crisis, 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 has been so slow. In a credit economy[6], monetary policy is not as effective as it is in a traditional macroeconomic model. The models developed by Minsky, Stiglitz, and Greenwald[7], emphasize the decline in the supply of credit due to 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 similarly to Minsky's[8]. 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 difficult if parallel banking is wide spread, 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 this author's view. In Keynes, as in Minsky, Stiglitz and Greenwald, financial relations are ex pressed in nominal terms. Keynes criticizes Fischer[9] 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[10]. Thus, for Keynes, Fischer's theory is written on the basis of 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"[11]. The distinction of Minsky, and Stiglitz and Greenwald, between p and *r* is very compatible with Keynes's original thinking in his LPT.

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 LP and in the MEC. The first maintains *r* too high and/or reduces credit amounts; the second increases *rd*. In Keynes, the demand for credit and the supply of credit can deter mine *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 as sociated 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 p, but less so over *r* (and with the growth of the parallel banks have been losing control over monetary aggregates); (2) and even if Central Banks manage to influence r, they have no control over the demand for credit and over rd. What

Bernanke brilliantly understood with QE was the need to sustain asset prices by buying them directly, which was equivalent to lower r, which significantly quickens the recovery. The recovery, however, was still slow because *rd* remained too high for a significant period.

In Keynes, no theory 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, the economy may recover slowly because *rdc* and *rd* remain too high. Therefore, if we compare what happened in Japan before, with what happened in the USA after 2008; the difference is that due to Bernanke´s heterodox policies the USA was able to influence r, which Japan never manage to do; this is why recovery happened faster in the USA than in Japan. But still Bernanke´s large purchases of assets did not influence *rdc* nor rd, that is why USA recovery, despite being faster than Japan's, was slow.

The crisis of 2008 began with a bank´s credit crisis, consequence of the authorities' mismanagement of the adjustable-rate subprime mortgage loans crisis. 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 as a consequence of the increase in *rd* and *rdc* rise (the demand curve also shifts to the left and also becomes in elastic). At first with the reduction in the supply of credit *r* rises, then with the fall, 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 as a consequence 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 GFC of 2008. 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 GDG, 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[12]; (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[13]. (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. Therefore, It was paramount 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[14]. 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 MCB proposed in this manuscript is directed specifically to the productive (viable) parts of the economy, which are the ones that will bring about the recovery; 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 package of MCB, and a proper fiscal policy, both announced early in the crisis, could have prevented the deterioration in the economic agents' balance sheets and could 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 has to be real policies of recovery, for which the Central Bank new monetary policy proposed in here might be very useful. The new 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.

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, discussed further in the next chapter, ended up in a revival of the CNMT. However, in some rare events, the economy moves from a full employment equilibrium to another far away 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 chapter 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 *rd* (and our added rdc) also deteriorates. The topic of what is the role of uncertainty about the future? deserves further attention and explanation because uncertainty about the future is always there, and big crises rarely happen. The answer to these questions can only be found in the advances in economic theory achieved in the last years, which have not been fully incorporated in Monetary Theory. These include the fields of Institutional Economics, General Equilibrium Theory, and Behavioral Economics.

A NEW MONETARY THEORY

A new monetary theory (NMT) has to accomplish three tasks: (1) It has to explain why QE worked in the 2008 GC; (2) It has to explain why and how major economic crisis occur? and Why they only happen rarely? and (3) It has to define what is the appropriate monetary policy in major crisis. In addition, the NMT must be compatible with contemporary CNMT, which operates fairly well in normal times. Task (1) was already accomplished in Chapter I where we have shown that Keynes' LPT ex plains why QE worked in the 2008 GFC. Tasks 2) and 3) will be the topic of this article.

Why and How Major Economic Crisis Occur? and Why They Only Happen Rarely?

In normal times there are all sort of frictions that explain economic cycles around the full employment equilibrium. These include: short term Keynesian type rigidities, temporary problems in 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 come from particular temporary individual behavioral irrationalities, minor institutional 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 are absorbed usually both by institutional new policies and/or by price flexibility in the markets. All these processes are complex and imprecise, and there are all sorts of fluctuations whether in real output, prices, or employment level. But normally, the economy stays in a corridor near full employment[15].

In rare occasions however, economies move to far away equilibriums, 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 faraway equilibrium must be found in huge mistakes in institutional policies. Our previous analysis of the GFC indicates that such is the case. Huge institutional mistakes also caused the great Depression. In this case, by: a severely contractionary monetary policy, and an unwarranted increase in trade tariffs that produced a draconian reduction in international trade. In the current Covid-19 pandemic, US authorities have been applying both fiscal and monetary policy responses more properly. These are, however, still insufficient and largely misdirected. Consequently, the recession is likely to be deeper and longer than what the underlying shocks justify.

So far we have seen that major crises occur due to large unwarranted institutional mistakes which occur occasionally. But we need to dig deeper into the concept of an *institution*. Why can institutions make these huge, though infrequent, mistakes? and Why the economies remain in a faraway equilibria for long periods? To answer these questions, we will take advantage of knowledge that has been accumulating in the fields of Institutional Economics, General Equilibrium Theory, and other social sciences.

Institutions Versus Individual Agents

Traditional economics has been caught in a vision of social dynamics defined exclusively by the individual agent. The discussion is whether humans are rational and selfish as contemplated in the contemporary CNMT, or irrational and volatile like in behavioral economics and Keynes. By focusing only in the individual agent traditional economic theory has become incapable of explaining major eco nomic crises. This is because if the individual agent is rational and selfish, markets work and are flexible, and the economy should always be in the full employment equilibrium corridor. And if she/he is irrational, then she/he is so all the time, and major economic crisis should be much more frequent.

Conventional economics cannot explain two distinct realities of the economy (within the corridor equilibrium and occasionally in a far-away equilibrium) only with the permanent economic agent's characteristics (whether they are conceived as rational or irrational). Since the economic agent's characteristics (whichever they are) are always the same, something has to change, something has to be different, to explain the two dis tinct realities of the economy. What is different is the institutions which in normal times operate well, but occasionally make huge mistakes. The conception of isolated individuals defining social economic dynamics is inconsistent with our evolutionarily history. We evolved from apes who already had a social life. From an evolutionary perspective, the social group always has had primacy over individual agents. Experiments in social psychology have clearly shown how crucial the influence of the group on the individual is. The same individual behaves differently in diverse institutional settings[16].

An institution is composed of a *conceptual system* which defines the main set of beliefs and values of a given society, and its corresponding *institutional arrangement*, which consist of the pragmatic institutions that operate the beliefs and values contained in the conceptual system[17]. As an example, the British constitution is part of the conceptual system, while the parliament is part of the institutional arrangement. Institutions are changing all the time. Social dynamics occurs both at the level of the institutional

arrangement, like Veblen and Marx taught us, and at the level of the conceptual system, like North's historical analysis has shown.

Humans belong to the existential universe, and their evolutionary survival requires for them to develop three ways of belonging: (1) To the closest human beings, what we have called *Love* else[18], and which has been extensively documented by the *Psychology of Attachment* of Bowlby and others. (2) To the social group, which we have called *social belonging.*

And, (3) to the material and biological universe at large, which we have called existential belonging. Institutions define the three ways of belonging. In particular, social belonging expresses itself through three social systems: The Integrative System, the Power System, and the Economic and Exchange System[19].

The Integrative System contains the set of values, emotions, beliefs, and institutions holding the social group together. The Power System relates to the use of force, usually a monopoly of the state, whether to maintain internal order, or to protect the social group from external threat. The integrative system traditionally defined the Eco nomic and Exchange System, but in capitalism it has acquired a force of its own. In capitalism, individuals are allowed to express their selfishness through the markets. But markets have never existed isolated; even in capitalism they develop as part of the social belonging system which includes the Integrative System and the Power System. The growth of the welfare state, for example, could not be understood without the Integrative System. The GD cannot be explained without understanding the consequences of the use of power in the First World War. The latter resulted in an inadequate peace settlement which implied excessive transfers from losers to winners which could not be fulfilled[20]. The losers printed large amounts of money (as an inflationary tax) in an effort to extract resources from their economies and fund the transfers. In the end, losers weren't able to fulfill these obligations and the winners did not receive the expected payments. To offset for the missing payments, the winners also printed large amounts of money. The excess money supply caused the hyperinflation of the 1920s which was the main precedent to the drastically contractionary policy - one of the main causes of the Great Depression. Furthermore, both war and hyperinflation exacerbated the nationalism, which led to the increase in tariffs which was the other main cause of the crisis.

Institutions are overly complex systems, which usually work well due to evolutionary and survival reasons. However, occasionally something goes awfully wrong, and a major crisis is produced. In the 1929 GD the grave institutional mistakes were contractionary monetary policy, and an increased trade protectionism. Understandably, during the Great Depression economic agents lost their confidence in the institutions capability to manage the situation. Keynes's LQT and Keynes' MEC became relevant. The behavior of any individual agent is heavily context-dependent. individuals can display altruistic and cooperative social behavior in some cases, like the Dictator´s Game in behavioral economics (or the high social expenditures in developed economies), and act differently in other circumstances (like the extremely low international aid which is nothing else than a global Dictator´s Game in real international economic life)[21].

Since the 50's Neoclassical Economics endeavored to show that markets – defined by individual economic choices – can stand by themselves. It has followed three main routes: Welfare Economics (WE), General Equilibrium theory (GE), and Rational Expectations (RE).

Neoclassical Economics tried to show that markets optimize social welfare, but it failed as the Arrow´s theorem showed; the only solution is introducing external social values as Sen suggested[22].

GE fail in demonstrating that there is a unique equilibrium. In fact, as Nash showed, there are many, of which an important subset are suboptimal non Paretian equilibriums. And RE failed to show that economies always remain close to full employment, which has become evident with the 2008 GC and the 2019 GP. The models developed are extremely useful but precisely showed the opposite of the initial neoclassical intention. Economic markets do not stand by themselves and cannot be understood if the Institutional Arrangement in which they exist is not analyzed and understood. Institutional Economics as developed recently by North and others, and long before by Veblen and others, has clearly documented the market dependence upon the Institutional Arrangements. In GE terms, an Institutional Arrangement could be conceptualized like a game in game theory; depending upon the game, one gets diverse several distinct stable equilibriums, some of which could be Nash and others Pareto. And many of them, whether they are

Nash or Pareto, may be far away from the full employment corridor. Eventually societies may learn, and Institutional Arrangements may be modified, and the economy may return back to the full employment equilibrium corridor may take a long time depending upon the institutional decisions taken.

Behavioral Economics is a critique of traditional Neoclassical Economics, which also starts from the individual economic agent and has been useful to understand several microeconomic disturbances[23]. However, from a macroeconomic perspective viewing economic agents as irrational, altruistic, and socially cooperative, makes it impossible to explain many empirical phenomena, such as: (1) Why individuals behave selfish in large markets, while they display altruistic and cooperative behavior in laboratory settings or small groups - even in monetary transactions. (2) Why individuals can display altruistic and cooperative social behavior in some cases, like the Dictator´s Game in laboratory setting, or in the high social expenditures seen in developed economies but not in other cases, like in the extremely low international aid (which is nothing else than a global Dictator´s Game in real life). (3) Why in some cases individuals can display very aggressive behavior, particularly to *other* individuals (the out-group). And very cooperative in other cases, mainly to those individuals included in the group to which the individual belongs (us, the *in-group*). 4) Why the companies with more global success are the ones which introduce new options to the customer and new ways to process information in a more rational way. 5) Why, despite the presumed individual, non-rationality markets work so well to allocate resources and promote economic growth. To explain these realities, we need to go beyond Behavioral Economics and introduce Institutional Economics.

What explains seemingly contradictory behavior in (1), (2) and (3) is that there is a change in the institutional settings. In (1) in large markets the individual is operating within the Economic and Exchange System, thus he behaves selfishly; in the laboratory settings, he operates within the Integrative System, which is why even in monetary transactions he behaves altruistically and cooperatively. In (2) again in the laboratory setting he operates within the Integrative System, and the same happens with decision about social expenditures within a developed country, it is *us*. International aid is related to *the others* as distinct from *us*. The integrative international social system is very weak and almost inexistent, therefore, individuals do not behave altruistic. (3) is explained by *us* within the Integrative System versus *others* outside the Integrative System with whom we relate on the basis of the Power System. In fact, in a given society, the same individual may be a soldier killing the enemy within the Power System, a wonderful and loving father and neighbor within the Integrative System, and a fierce business man within the Exchange and Economic System.

To explain 4) and 5) Classical economics is required. Adam Smith's contribution was precisely understanding the power of markets to produce wealth in the nations. Markets do not need rational expectations to operate, but a rational economic agent is clearly required. While human beings behaving selfishly and rationally in large markets is a necessary condition for these to have so much productive power it would have not been sufficient to generate wealth as rapidly as capitalism has. Key institutional changes were also needed. One of the most important institutional changes in capitalism was the rapid growth of middle-class consumption which enlarged the markets, and therefore fostered fast technological change. To explain why economies are usually in the full employment equilibrium corridor, and occasionally far away, a social dynamics based only upon the individual choices is inadequate. If she/he is assumed rational, we will always be in the corridor and never a major crisis should occur. If he is assumed non rational, frequent major crisis should happened more frequently. To explain reality, we need to realize markets work within an Institutional Arrangement. This arrangement usually works reasonably well because its task is to guarantee survival and reproduction of society and the system. It mostly maintains the economy in the full-employment corridor. However, due to its complexity, institutions occasionally makes huge mistakes, and the economy moves to a far-away equilibrium.

What Is the Proper Monetary Policy to Follow in Major Crisis?

A critical characteristic of large markets is that economic agents behave selfishly, therefore they are eager to obtain information and any help they can obtain in analyzing it. Markets are far from perfect but 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: institutions and policy makers cannot fool economic agents. QE worked in the 2008 GC because it was the reasonable thing to do, and it was implemented in a context in which economic agents regained confidence in the Central Bank. If the main cause, as we had been arguing, 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 remedying. In the 1930 GD: the drastic monetary contraction and the sharp increase in protectionism were clearly the wrong policies to implement. The current ideologues supporting nationalism have a lot to learn from this experience.

Nationalism is a recipe for international economic disasters. In the 2008 GFC there was a cheap preventing measure: to have had applied QE much early, and to have taken out the subprime adjustable-rate real estate toxic assets from the private Banks. If deployed early, a program of only 2% to 5% of what was finally done would have been enough[24]. It could be argued that this recommendation is done with hind sight and that enough information was not available then. But this defense is unwarranted, the Federal Reserve knowingly aggressively hiked interest rates, and should have anticipated that it was going to produce disequilibrium in the mortgage markets that policymakers had to resolved. Instead, they initially left it to the markets because of an erroneous concept of the workings of the economy. For policymakers, it is critical to regularly review the impact of changes in the Institutional Arrangement on the economy. Regulators need to be much more involved with the markets that they were back then, something that it is now universally recognized. Institutions have so far underestimated the economic fallout from the Covid-19 pandemic. And although they reacted much better than in the 2008 GC, it is generally too late and too little[25]. Given that preventive and early responses (in both the health and economic areas) were not applied and we are already in the middle of a major crisis, decisive and aggressive measures need to be deployed. Keynes' LPT remains a good guide of why we cannot rely on traditional monetary policy. Instead, QE shows us what to do on monetary policy, and Keynes' MEC tells us how. MEC tell us that whatever we do should be large, publicly announced, and convincing, so that it can influence and Keynes´ LPT analysis did not propose QE, it was former Fed Chairman Ben Bernanke's creative policy response to the GFC. And for this he deserves all the merits. However, Keynes' LPT allow us to understand why QE works -- because it gets around the problem of the weakened balance sheets of key economic agents.

QE worked very well in the 2008 GC, but it was applied late in the crisis. The early and the most decisive it is used, the better. The name of the game is to prevent the deterioration of the balance sheets. The idea is to keep, as possible, the crisis from becoming a widespread credit crisis, which will produce a banking crisis. In a widespread credit crisis, borrowing costs rise, and the stock and real estate markets drop. The current crisis has not yet morphed into a credit crisis. This may be avoided given that governments and Central Banks have been more proactive this time. However, countries are unnecessarily relying on fiscal policy, while monetary policy had been insufficient and misdirected.

On July 30, 2007, the Fed´s Balance sheet had $0.87 trillion in assets; by December 29, 2014 the Fed had accumulated $4.50 trillion assets. On March 16, 2020 not much had changed, the Fed held $4.67 trillion assets; of which $2.64 were TB treasury bills and bonds (TB) and $1.37 MBS. As a result of the monetary response to the Pandemic the Fed's balance sheet swelled by $ 2.5 trillion, in the span of 2 months to a June 3, record of $7.1 trillion. Of this total, $4.13 trillion are TB, and $1.83 trillion which indicates that that most of the Fed's financing is still going to the Government. The markets and the private Banks are much better suited than the government to distinguish between viable and not viable enterprises, that is their daily work. This creates a division of labor between fiscal and monetary policy. We proposed a new role for the Central Bank. In this role, its autonomy and scope of responsibilities increase, solely becoming responsible for the whole relation between money and the real economy. After all, the main purpose of money is the well-functioning of the markets and the real economy. In this role, the Central bank must prevent the deterioration of the balance sheets of private economic agents that belong to the productive economy.

The Monetary Credit Bazooka Again

In the above context, and in a crisis of large magnitude, the Central Bank should buy long-term viable credits held by the private banks, and should grant new loans as required and do it through private banks,

and/or development banks (more common in emerging economies). The idea is for these loans to be long term, 10 to 30 years, with a grace period of 3 to 5 years. Their goal is to foster a quick recovery of the productive economy.

- Which economic agents belong to the productive economy? Those with repayment capacity of the mentioned loans.
- How will the mechanism work? Through private banks, which are best suited to discern economic agents with repayment capacity.
- What will be the interest of the private banks in participating? They should receive an operating fee and a commission in return for keeping in their books between 15% to 20% of the loans granted. Furthermore, this mechanism slows down the surge in non-performing loans in their balance sheet.
- What should be the exact commission? To de defined by the market.
- What happens with the economic agents that do not have re payment capacity? Entrepreneurs will receive no help, because their companies are no longer viable, but as private citizens they belong to the social economy.
- What is the social economy? All those citizens that need help due to the crisis.
- Who is responsible for the social economy? The government through fiscal policy.
- Can the government receive loans from (sell his securities to) from the Central Bank, to be able to help the private citizens that belong to the social economy? Yes.
- Under Which conditions? The government will need to demonstrate its repayment capacity to the Central Bank based upon future taxes or spending savings. It should be noted that the recovery will increase the government's tax revenue. If, as expected, the economic recovery restores the agent's balance sheets, the loans will be eventually repaid and there will not be a transfer from the general tax payer to those who receive the loans. What is the logic of the new monetary theory? The idea is simple, major crises must be avoided as much as possible, and when happen they must be attended very early and decisively. The Government´s budget is under enormous political constrains and pressure to privilege their political support basis. It can also be affected by electoral cycles. Government transfers benefit few, but have to be funded by all taxpayers, thus raising questions of fairness. There is also a risk that these emergency spending becomes permanent. Government bureaucrats change too often, and they do not often develop the required expertise to understand when a decisive action is required to prevent, or stop from advancing, a major systemic crisis. Governments lack the expertise to distinguish which companies have repayment capacities. Because of its built-in inefficiencies, government expenditures are just not fit to properly attend the pressing needs of the productive economy during the crisis and during the recovery. Economic agents know all of these fiscal policy challenges and rationally distrust large increases in government expenditure.

Keynes recommended to rely in the fiscal policy, because he was convinced that traditional monetary policy would not work; and he was right. However, thanks to Bernanke, QE has opened a new powerful channel for monetary policy to operate. We should use this as an entry way to enter a new era of monetary policy. This new era is characterized by a more vigilant Central Bank responsible for adequately functioning the entire productive economy. We shall call this extended use of QE, the Monetary Credit Bazooka (MCB).

CONCLUSION

Keynes had the correct insight that traditional monetary policy does not work properly when the economy is in a far-away equilibrium in certain critical circumstances. However, he did not provide an alternative monetary theory – distinct from the CNMT. Nor did he have a good explanation of why the economy gets far from its normal full-employment equilibrium corridor. In the General Theory Keynes tries to develop some of his insights from the *Treatise of Money*. As we recall, Wicksell's version of the CNMT includes two causes of disturbances: monetary and real ones. In the *Treatise*, Keynes argued that the

disturbances in the real economy came from investment, and he reinforces this view with the introduction of a stable consumption function in the General Theory. The disturbances in the MEC latter on were interpreted as the "Animal Spirits" by Mrs. Robinson. Therefore, curiously enough, real disturbances in the economy were seen as coming from the irrationality of investor's economic expectations. Today this view is represented in the version of Nobel prizes Schiller and Akerlof. This view is, as we had shown, unsustainable for several reasons: 1) If the economic agents expectations were so unstable as these irrational views claimed, then why major crises are so rare? Lucas was wrong when he claimed that Keynes was death. But it is also true that in the twentieth century we had only had three events with the economy been fully away from equilibrium, the Great Depression, the 2008 GFC, and the Covid-19 pandemic.

None of these crises was produced by irrational 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 rationally based in the poor performance of the institutions of the time to tackle the economic problem at hand.

The 2008 GFC was the consequence of inadequate polices by the Federal Reserve of bringing down interest rates sharply (and keeping them there for too long) in the early 2000s, 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 complete misunderstanding by regulators of what was in the assets of European banks.[26]. Here again, the critical element is the deterioration of economic agents' confidence in the capability of the institutions to deal with the crisis.

The Covid-19 pandemic is also a consequence of external causes—in this case a virus that was largely out of investors' expectations. What is now critical is to have adequate institutional responses (both in the health and economic arenas) to: (1) avoid a future deterioration in the economic agent´s confidence in the institutional capacity to deal with the crisis; and (2) to prevent a further deterioration in the balance sheets of the economic agents. So far, few countries have tackled health and economic policy adequately. On the economic front, countries like the US and Germany are doing much better than in the 2008 GFC. However, they are still relying excessively on the fiscal policy, with all the inefficiencies that this entails. In other cases, such as the European Union, responses are less adequate. Emerging economies are a special case discussed in the next chapter.

We have shown that major crises are the consequence of large institutional mistakes that deteriorate the confidence of economic agents in the ability of institutions to cope with the economic shock (whether it is in ternal or external). Major crises can be seen in the GE tradition as Nash equilibriums or Pareto equilibriums, far away from the full employment corridor. To understand why huge institutional events may occur in rare occasions, we have reviewed the enormous complexity of social change, of which markets are only one element.

Finally, we have discussed what to do when a major crisis hits. We pointed out that too much emphasis has been given to fiscal policy, despite its many limitations, and that Monetary policy has not been used to its full potential when needed. This is due to historical legacies: (1) Keynes was convinced that traditional monetary policy would not work. And, (2) Monetarists were convinced that an expansive monetary policy would be inflationary.

We have shown that an expansive monetary policy must not be inflationary if used in a major crisis. And we have argued that QE open a new door for monetary policy, that we should expand and use in major crises. We have called this tool the Monetary Credit Bazooka, or MCB. This powerful tool should only be used in major crises, or to prevent them. The MCB should only be used whenever there is a credible Central Bank and a believable potential economic recovery. The misunderstanding and abuse of the MCB is dangerous. It may lead to a revival of the pedestrian Keynesianism which predicates the expansion of government expenditures and the enlargement of the state. Historically, this has only resulted in hyperinflation and economic chaos. Not to be inflationary MCB has to be used only to finance the recovery of the productive economy in major crisis, and to finance the government only when the latter can show its repayment capacity. Maintaining the Central Bank credibility in a large operation like this is of the foremost importance.

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This book has benefited from conversations that I have had with my colleague Jorge Mariscal; with whom I have written a paper in monetary policy in emerging markets, see bibliography. I wish to acknowledge the importance of his contributions. I also want to thank him for his suggestions to the first draft of this book.

ENDNOTES

[1] This name is due the paper in monetary policy in emerging markets written by my col league Jorge Mariscal and myself. us in our discussion of monetary theory because it must be understood that there is nomic growth foster rapid technological cha

[2] See Obregon 2018b

[3] See Obregon 2011 and 2018c.

[4] Minsky's interpretation is used by Kindleberger in his book, Manias, Panics and Crashes: A History of Financial Crisis.

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

[6] A credit economy is one which largely operates through credit intermediation, a feature not specifically taken into account in the traditional economic model.

[7] 2003.

[8] For a summary of this model see Obregon 2008a.

[9] A point Patinkin did not understand

[10] Keynes, quote in Obregon, 1989, p. 173

[11] Keynes, quote in Obregon, 1989, p. 173

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

[13] Which right now is a particular key point, given the structural changes that the Covid 19 crisis will produce.

[14] 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.

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

[16] Two crucial classic experiments in psychology are the Robbers Cave Study (Sherif, M. et al., 1961) and the Stanford Prison experiment (Zimbardo, P., 1971).

[17] See Obregon 2019.

[18] See Obregon 2016.

[19] This classification is original due to Kenneth E Boulding.

[20] This was Keynes topic in the Economic Consequences of the Peace.

[21] 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 equally and in the punishment stage 81% choose to share $10 with a fair allocator in instead of $12 with an unfair one. 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. Which is argued by Behavioral Economics as an empirical demonstration that *humans* are not rational selfish calculators maximizing their personal wellbeing. However, what it really shows 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 others. The Integrative System and the Power System are part of the economy. *Governments at the beginning of the 20th century were in average in developed economies 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. That however does not mean that they will behave al truistic in a large competitive market, *in these markets they behave selfishly*. And it does not mean that man is, by nature,

altruistic. While altruism and social cooperation is very high inside the developed economies, it is almost non-existent in the international arena. At the global level, the world economy presents us a *Real 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 to the interests of the donor.

[22] See Obregon 2008.

[23] See Obregon 2018a

[24] See Obregon 2011.

[25] For a further discussion in this topic see Obregon and Mariscal 2020.

[26] See Obregon 2011 and 2018c.

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