Endogenous money and Monetary Policy: a Structuralist Critique of the Federal Reserve's "Quantitative Easing" Programs

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With the collapse of the financial system in 2008 and the consequences on the real economy, the Federal Reserve (Fed) started to implement a series of non-conventional monetary policy instruments to create government-sponsored liquidity, rescuing markets with an extensive program of public and private asset purchases in the so-called Quantitative Easing (QE) programs. However, after the end of these programs in 2015, their impacts on the economy are still dubious. Using an endogenous-money framework, this paper proposes a critical view on the QE programs and their view on money itself. For that, it starts with a literature review on the endogenous/exogenous money debate. The second and third sessions analyze how the Federal Reserve implemented the QE programs and what are their main results. The forth session discusses the underlying theoretical view in these non-conventional instruments regarding money and the role of a central bank in a monetary economy, with a post-keynesian structuralist critique on the QE programs. The fifth session is dedicated to some final comments.

1. Literature review on endogenous/exogenous money debate

Keynes was one of the authors to better understand the importance of banks to the development of capitalism. His views on the subject can be found on his 1930's Treatise on Money, and on writings following The General Theory of Employment, Interest, and Money. On both the aforementioned publications, Keynes makes the point that banks are not just intermediaries between savers and investors, but have in fact the power to expand their balance sheets with the creation of credit, allowing the

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expansion of purchasing power before there is a return on the investment made[2]. Keynes named this process *finance*, which does not require previously accumulated resources in the form of savings; all that is needed is for banks to make the decision to finance illiquid assets by the creation of credit. The investment made will trigger a series of expenditures in cash which in turn will generate new deposits, as in a "revolving fund" that will return to banks (Belluzzo e Almeida, 2002).

After carrying out the investment, firms seek to consolidate their liability through funding. Since their debt with the bank is of a shorter-term than the assets acquired with the investment, banks need to match terms on their balance sheets by lengthening liabilities through financial instruments. Such instruments are acquired by the flow of new savings generated by the investment made in the past and by the wealth inventory accumulated from previous periods. Savings can finance investment *ex-post*, but not *ex-ante*. As stated by Keynes (1936), a lack of money can halt investment, but never a lack of savings.

Besides being able to finance, banks are equally able to perform *funding*, since they are also institutions that intermediate funds and can direct savings generated by investment to long-term bonds issued by corporations[3]. Banks can offer attractive financial instruments to both lenders and borrowers; therefore, they are institutions that create money for financing and generate new wealth, concurrently manage such wealth (Freddo, 2011), and have their liabilities be considered wealth for the private sector. According to Belluzzo and Almeida (2002, p. 55), "banks act as operators of shifts in the equity structure", since they conciliate "producers'" liabilities and "savers'" capital in the form of deposits.

The importance of banks and credit for investment financing is undisputable. Aglietta (2004a) argues that new investments being carried out in the present cannot

[2] In The General Theory of Employment, Interest, and Money (Keynes, 1936), Keynes analyzes the factors that lead to a capitalist investment. In addition to the capitalist's "animal spirit" and the availability of bank credit, the marginal capital efficiency is also taken into consideration- the relation between the price of demand and the price of supply. The former is calculated by the long term interest rate brought to present value by short-term interest rates, which in turn is determined in the money market by the bond speculators' desire for liquidity (bulls and bears). The latter is the investment's present value. Therefore, the capitalist takes a number of factors into consideration before investing, many of which are unpredictable and not dependent on the level of savings, which in turn will only take place ex-post since it is a part of the income that was not consumed.

[3] It is worth noting that for funding to take place, agents must be willing to buy long-term bonds. If the preference for liquidity is high during a period of uncertainty, agents may decide to buy shorter-term bonds or even remain liquid. According to Paula (2014, p. 104): "Therefore, the fundamental issue in a corporate economy is not how to generate savings, but how to make the available savings accessible to allow the consolidation of investors' debts".

depend only on the results of past investments, for that would be a restraint to capital accumulation. Banks participate on the decision as to how to finance new projects, since they have the ability to "bet" on an investment project along with the capitalist. Markets, especially of long-term (capital markets), become involved when the investment has already been made and is already producing results, since they look at past returns. Thus, banks allow investment to take place without the need for previous savings.

However, in the unregulated financial markets era of the post-1980s, only a small portion of the resource flow going through the financial system is meant for the financing of investment[4]. Credit plays a double-role in modern-day capitalism, since at the same time it is used for production (industrial circulation), it is also used to foster speculation in financial markets (financial circulation). Mehrling (2011) says that it is hard to distinguish between these two uses for credit. Freitas (1999) also states that banks can create credit and finance the acquisition of bonds already in the market, which will not promote the issuance of new bonds and end up "favoring financial circulation over industrial circulation, given that bank credit is created to finance both the acquisition of financial assets, as new investment goods or capital assets" (p. 118). Therefore: "[...] *the power of banks stems from their control over money supply – i.e. liquidity. So bank credit allocation is at the heart of cyclical fluctuations*" (Keynes, 1930, pp. 250-262).

It is a fact that banks create money, and do so via demand deposits. But what are the conditions and limiting factors for such money creation? This debate has two main sides: one, which considers money supply exogenous, and another, which considers money supply endogenous. Even though the debate has been around for a long time and is considered outdated by many authors such as Lavoie (2014)[5], it is still relevant if we want to understand how contemporaneous monetary policy – such as Quantitative Easing - affects the real economy.

[4] In the United Kingdom, for example, that portion was approximately 15% in 2013, according to Tett (2013). There is no similar figure available for the United States yet.

[5] The position held by the author is that the debate is over given that current practices by modern Central Banks corroborate the view of endogenous money, since the Central bank controls short-term interest rates and the amount of money issued is shaped by demand. The author seeks other differences between the post-Keynesian school and the mainstream that could be relevant in the current debate, besides endogenous money.

Exogenous money

Mishkin (1998, p. 31), one of the world's most widely-used monetary economics books, defines money in a simplistic way, as "something that is generally accepted as form of payment for goods or services in the final settlement of debts" and considers banking activity as something automatic, meaning that as long as banks have resources in hand, they will be lent out and multiplied. Therefore, banks are considered passive agents - "[banking] has no significant impact upon the behavior of the economy" (Minsky, 1986, p. 252). Such reasoning is described in the exogenous money approach, also known as the verticalist approach. Verticalists argue that reserves (created and destroyed by the Central Bank through monetary policy tools) are the main limiting factors to a bank's ability to lend. Therefore, the monetary authority has great control over money creation, by manipulating the amount of monetary base supplied in the form of reserves. That is the "money multiplier"[6] mechanism: monetary aggregate M1 (means of payment, made up of State money held by the population added to demand deposits in commercial banks) responds to changes in M0 (monetary basis, which is the Central Bank's monetary liability, comprised of State money held by the population added to bank reserves) promptly and according to expectations. Therefore, a stable and constant relation between aggregates and the monetary base is assumed.

According to this approach, when a bank gives out a loan, it creates a deposit obtained from pre-existing reserves and takes into consideration how much resources it needs to leave in the form of reserves (voluntary and compulsory reserves, which are kept in the Central Bank, and technical reserves, kept at the bank to pay off withdrawals). With that, a bank creates money at the rate of 1/reserve requirements. Therefore, if a bank's reserves are 10% of deposits, it will be able to multiply its existing resources by 10. Since there is always bank money creation beyond what the Central Bank put into circulation, to exogenous money theorists the multiplier will always be greater than 1. Therefore, whenever the Central Bank wants to increase liquidity, all it has to do is increase the supply to banks' monetary base and banks will in turn create deposits based on this new money. New deposits (and loans) will only

[6] The deposit multiplier originates from the idea that banks create liquidity by lending money, increasing the total supply of money in the economy by multiplying excess reserves held by them.

be created if they originate in previously-existing resources, which can come from the purchase of public bonds in the open market, for example, that creates reserves.

Endogenous Money

The ***endogenous***[7] money approach, embraced by post-Keynesians authors, maintains that banks create money essentially as the result of their willingness to lend, guided by demand, and are not influenced by external factors such as Central Bank reserves. If there is additional demand for credit by families or businesses, all a bank has to to is to decide to lend *ex nihilo* by adding a loan to its assets and a deposit to its liabilities. The decision to lend precedes the creation of the deposit, and is made as long as the expected return (in the form of interest) is satisfactory, the lender offers a good payment perspective and/or an acceptable collateral, and the bank is willing to become more illiquid. In fact, banks have pre-approved credit lines (overdrafts) which make the lending process virtually automatic. Bank money creation becomes even more powerful when we consider that banks act inside a banking system, where there is hardly any leakage of resources. As stated by Keynes (1971, p. 23): "*Every move forward by an individual bank weakens it, but every such movement by one of its neighbour banks strengthens it; so that if all move forward together, no one is weakened on balance*".

To avoid becoming illiquid, banks keep reserves or seek them out in the market. Such reserves will cover withdrawals (kept at their branches), perform inter-bank transactions, and meet required reserves where such instrument is still used. The

[7] It is important to note there is an internal division inside the endogenous money school and it is not the intention of this article to elaborate on such division. There are two dissenting views on what the determining factors are in bank money creation: the **horizontalist** view and the **structuralist** view. This article is in line with the structuralist view. In the **horizontalist** view, it is believed that the supply of credit is infinitely elastic in relation to the demand. According to horizontalists, "the supply of perfectly elastic money in the short term is a necessary prerequisite to the perpetuation of the system's liquidity" (Moore, 1988, p. xi *apud* Carvalho, 1993, p. 115). In the horizontalist view, bank money creation follows four steps: first, businesses, which will produce or invest in something, will demand funds for financing. On step two, banks accommodate such demand, at a given interest rate (r*) that is determined after a mark-up on the Central Bank's short term interest rate. Thirdly, banks will look for liquidity to finance this new illiquid asset (loan), and thus rely on liquidity supplied by the Central Bank as the lender of last resort. Therefore, on step four the Central Bank also accommodates banks' need for reserves, at interest rates set by the CB itself. Hence, the Central Bank does not have control over the quantity of reserves; instead it controls their price. Forces that push credit creation are the private sector's credit demands and the Central bank's short-term interest rates (Dow, 2006), and both the Central Bank and banks are "price makers and quantity-takers" (Lavoie, 2014, p. 189).

point is that banks will search for necessary reserves only after only they make the decision to lend and create a demand deposit. Contrary to what is believed by verticalists - the ones who believe money is exogenous- **banks do not lend out reserves** (Fullwiler, 2008). Banks also **do not lend out deposits**, which are resources kept as liabilities and are not free assets that can be lent out. The monetary multiplier is, therefore, a simple *ex-post* index of the relation between the monetary base and means of payment, and not an *ex-ante* theory of banks' response to a monetary base increase. In 2014, the Bank of England published an article titled "*Money creation in the modern economy*" (McLeay, Radia & Thomas, 2014), in which it corroborates the endogenous money theory by explaining how commercial banks create money simply with a "stroke of bankers' pens when they approve loans" (p. 16). With the concession of credit, both the bank's and the lender's balance sheets expand on the asset side (new loan for the bank, new deposit for the lender) and on the liability side (new deposit for the bank, new loan for the lender). The Central Bank's balance sheet, however, is not initially impacted by such operation, since there has not been the creation of monetary base nor the purchase or sale of any asset by the Central Bank.

Banks are **central** in the credit concession decision. They are active in managing their portfolios in an economy where there is preference for liquidity. To Dow (2006), the banking structure (which varies from Country to Country), the makeup of banks' assets and liabilities, and their preference for liquidity are the variables that essentially dictate credit creation. Banks' behavior is not, in anyway, accommodating to credit demand nor to the Central Bank's interest rate policy, both of which can influence credit creation at times but are not decisive. In this vision, banks, just like other agents, have a preference for liquidity shaped by their expectations regarding future profits, affecting both the amount lent out and interest rates charged. The more liquidity banks are after, the less they will be willing to accommodate credit demanded by families and businesses. In situations of uncertainty, banks increase interest rates and do not lend as much money, choosing more liquid securities or even keeping reserves at the Central Bank. In Carvalho's (1993, p. 119) words: "banks prefer liquidity as does any other agent which economic activity is speculative and demands some degree of precaution and prudence". When managing liquidity in their balance sheets, banks take into consideration the level of bank reserves, however that is not in any way a quantitative constraint as the exogenous money approach would claim. Awareness of reserve levels is a precaution

regarding the “potential cost” of selling assets in the marketplace since interbank transactions and transactions with the Central Bank need to be done using reserves, and not using a liability created by the bank. That is a fundamental trait of the modern payments system.

Bank money is created not only through loans given out by banks, but also through the purchase of any asset, such as a bond for example, by simply crediting the money generated by that sale to the seller's account. Therefore, bank money creation can affect other assets' prices by increasing liquidity in the economy. Modern banks are extremely active both in stimulating credit demand (which will not be met at times) and in fostering innovations to increase profits. Therefore, banks actively manage their assets and liabilities, circumventing regulations, while at the same time increasing their leverage with an endogenous expansion of their balance sheets. The Central Bank has little control over the interest rate actually charged in the markets and over the amount of money created by the banks. According to Freitas (1999, p. 117): “the Central Bank still controls the primary short-term interest rate, even though it no longer influences the relative level of bank rates in comparison to non-banking financial instruments”.

2. Federal Reserve’s QE Programs

Before the crisis (during the period often called “The Great Moderation”), the School of Economic Thought behind the Federal Reserve’s actions stated that there was no need for any intervention in financial assets’ markets except in the short-term public bonds market. The Fed started in the 1990s to follow the ideas of the “New Monetary Consensus” (NMC), which was formed as a “mix” of the New Keynesian and the New Classical Schools. The prescriptions to the Monetary Authority involved greater independence from the elected government; greater transparency and clearer communication with market participants; less influence from politicians and more from technical experts; and low inflation as the primary and preferably sole objective. The CB must not, in any way, issue money with the purpose to finance public expenditures (which should be partly financed through the emission of bonds directly to market participants), once it is inflationary. Only monetary variables should be controlled by the CB, as the real variables respond to other real processes. If it tries to

influence real variable in the short term, this would only accelerate inflation in the long term, putting in risk its credibility and reputation as a price stability guardian. The short-term interest rate becomes the only variable to be directly controlled by the CB, with repurchase agreements operations with dealers in the open market. Other relevant prices, such as asset prices, exchange rates, and long-term interest rates, are determined by the market.

The economic mainstream represented by the NMC, along with the theory of exogenous money, claimed that the transmission channels through which monetary policy affects the economy are well defined and predictable. It would be enough for the CB to follow a rule for the interest rate, like a automatic mechanism, and other prices and variables would follow the desired and expected path through arbitrage and expectations. The NMC considers four transmission channels: interest rates, exchange rate, asset prices and credit.

Although the NMC prescriptions influenced Federal Reserve's actions in the last 25 years, it has always been more pragmatic than its peers. An explicit inflation target, for example, was never adopted. Nonetheless, nowhere else the efficient markets ideology was as strong as in the US. The "Great Moderation" brought the feeling that the NMC macroeconomic models really worked. Robert Lucas, one of the founders of the New Classical School, said in a speech in 2003: "*My thesis in this lecture is that macroeconomics in this original sense has succeeded: Its central problem of depression prevention has been solved, for all practical purposes, and has in fact been solved for many decades*" (Lucas, 2003, p. 1).

Sided-blinded by the NMC, the Federal Reserve and other Central Banks (CBs) started to implement a series of monetary policy measures when the subprime crisis hit in 2008, trying to counteract the intense effects of the crisis on the financial system. Ben Bernanke, which presided the Fed from 2006 until the end of 2013, was an economist specialized on the Japanese experience with deflation and low interest rate monetary policy and on the 1930's Great Depression. So he was, in the eyes of many experts, the ideal person to be in charge of the CB in this turbulent period.

During the crisis, the Fed resorted to its traditional monetary policy tool kit, and created new facilities in order to deal with financial markets with difficulties setting prices or just disappearing. As argued by Mehrling (2011), the Fed transferred whole markets to its own balance sheet. The assistance involved bail-outs, supply of guarantees in mergers and acquisitions planned by the Fed, loans through a series of

facilities, both to banks and non-banks, quantitative easing, and forward guidance. (Wray e Papadimitriou, 2010). The CB responded to the crisis as it developed. (Guttmann, 2012). In the beginning, conventional tools were used – discount loans and open market operations – as FOMC's members believed the crisis would be limited to the subprime market. With several cuts in the federal funds rate in 2007 and 2008, the Fed hit the so-called "zero lower bound" (ZLB) in December 2008.

However, the conventional NMC monetary policy has not served to improve financial markets' conditions. Starting in March 2008 with the failure of Bear Stearns, and then more aggressively after September 2008 with the failure of Lehman Brothers, the Fed started to intervene in financial markets in order to reestablish liquidity. Using Section 13(3) from its statute, the CB created a series of new instruments to "save" specific markets. When the short-term interest rate reached the ZLB in 2008 and Fed's officials realized that the crisis would be intense and long lasting, they put in action Large Scale Asset Purchased (LSAP) programs, buying an enormous quantity of private and public bonds, like Mortgage Backed Securities (MBS). Unlike the facilities, these operations known as "Quantitative Easing" (QE), aimed to restore both credit and economic activity, especially inflation and employment.

The purchase of bonds has always been inside the monetary policy apparatus of Central banks. They usually do it through open market operations in order to keep the short-term interest rate in a certain target. However, the goals of the LSAP in the context of QE are different. The Fed sought to 1) improve the functioning of certain markets (especially the real estate one) and the balance sheet of financial institutions; 2) lower long term interest rates; 3) make investors migrate to others assets, since bonds purchased by the Fed were more "scarce"; and 4) influence future expectations on short term interest rates, promoting signaling and "forward guidance" (Wolf, 2014). The size of the Fed's LSAP does not have any parallel in recent history. Table 1 presents the actions performed in each round of QE.

Table 1

Rounds of QE

Program	Date announced	Final date	Total purchased
QE1	November 25th 2008	Several dates	Agency debt: US$ 100 billion MBS: US$ 500 billion
	March 18th 2009	Until September 30th 2009 for *Treasuries* Until December 31st 2009 for agency debt and MBS	Agency debt: up to US$ 100 billion MBS: US$ 750 billion Long-term *Treasuries*: US$ 300 billion
QE2	November 3rd 2010	June 30th 2011	Long-term *Treasuries*: US$ 600 billion
Operation twist	September 21st 2011	June 30th 2012	Long-term *Treasuries*: US$ 400 billion
	June 20th 2012	December 31st 2012	Amount limited to the rest of short-term bonds
QE3	September 13th 2012	Non specified	Purchase of US$ 40 billion/month in MBS and long-term *Treasuries*
	December 12th 2012	Non specified	Increase in purchases of MBS and long-term Treasuries to US$ 85 billion/month

Extracted from:

https://www.bostonfed.org/news/speeches/rosengren/2015/020515/020515figuresandcomments.pdf

The first announcement of asset purchase was in November 2008 (QE1). Until December 2009, the Fed bought US$ 300 billion in Treasuries, US$ 175 billion in agency (GSE) debt and US$ 1,25 trillion in MBS, for a total of US$ 1,75 trillion. In November 2010, with rising unemployment and low inflation threatening economic recovery, the Fed launched another QE round (QE2), purchasing an additional US$ 600 billion in long term Treasuries until June 2011. The so-called “Operation Twist”,

which began in December 2012 and finished in December 2012, involved the purchase of US$ 667 billion in long term Treasuries while simultaneously selling short term ones. This operation aimed at directly influencing long term interest rates, flattening the yield curve. J. M. Keynes, in the "General Theory of Employment, Interest and Money", in 1936, had already analyzed the possibility of having a more direct control of c longer rates:

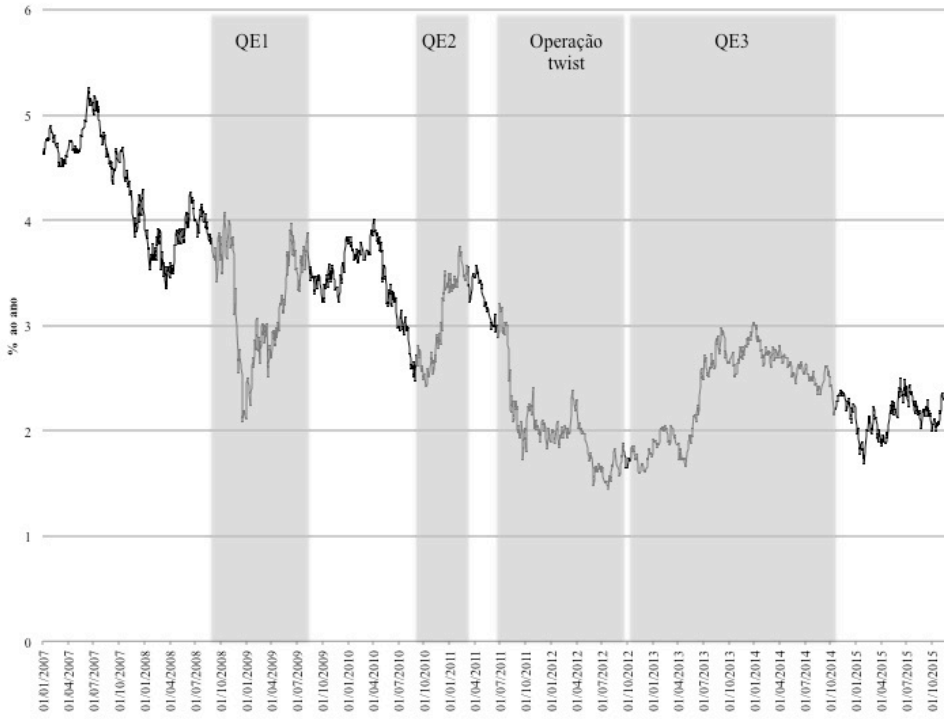
> The short-term rate of interest is easily controlled by the monetary authority [...] But the long-term rate may be more recalcitrant when once it has fallen to a level which, on the basis of past experience and present expectations of **future** monetary policy, is considered "unsafe" by representative opinion. [...] Thus a monetary policy which strikes public opinion as being experimental in character or easily liable to change my fail in its objectives of greatly reducing the long-term rate of interest, because M2 [speculative motive for holding liquid cash] may tend to increase almost without limit in response to a reduction of *r* below a certain figure (Keynes, 1936, p. 202, emphasis on original).
>
> The monetary authority often tends in practice to concentrate upon short-term debts and to leave the price of long-term debts to be influenced by **belated and imperfect** reactions from the price of short-term debts; - **though here again there is no reason why they need to do so** (p. 206, emphases added).

One can notice by figure 1 that the QE programs, especially QE2 and Operation Twist did have an impact on the 10-year Treasury yield. In June 2011, when these programs were put in place, this rate was approximately 3% per year. When they ended, in December 2012, it had already fallen to 1.7% per year.

The last QE round (QE3) began in September 2012. As put by Wolf (2014), its goal was not to restore functioning of financial markets, but rather to increase inflation and promote growth. The Fed first announced that it would buy bonds (MBS and long-term Treasuries) at a US$ 40 billion/month pace until the conditions of the labor market improved "substantially". In December 2012, this amount was increased to US$ 85 billion/month. In May 2013, speculations that QE3 might end made the 10-year Treasury yield soar ("taper tantrum") (Figure 1). In December 2013, the CB finally announced that it would decrease these purchases by US$ 10 billion at each FOMC meeting ("tapering"). The program ended in October 29th 2014.

Figure 1

10-year Treasury Yield, 2007 to 2015

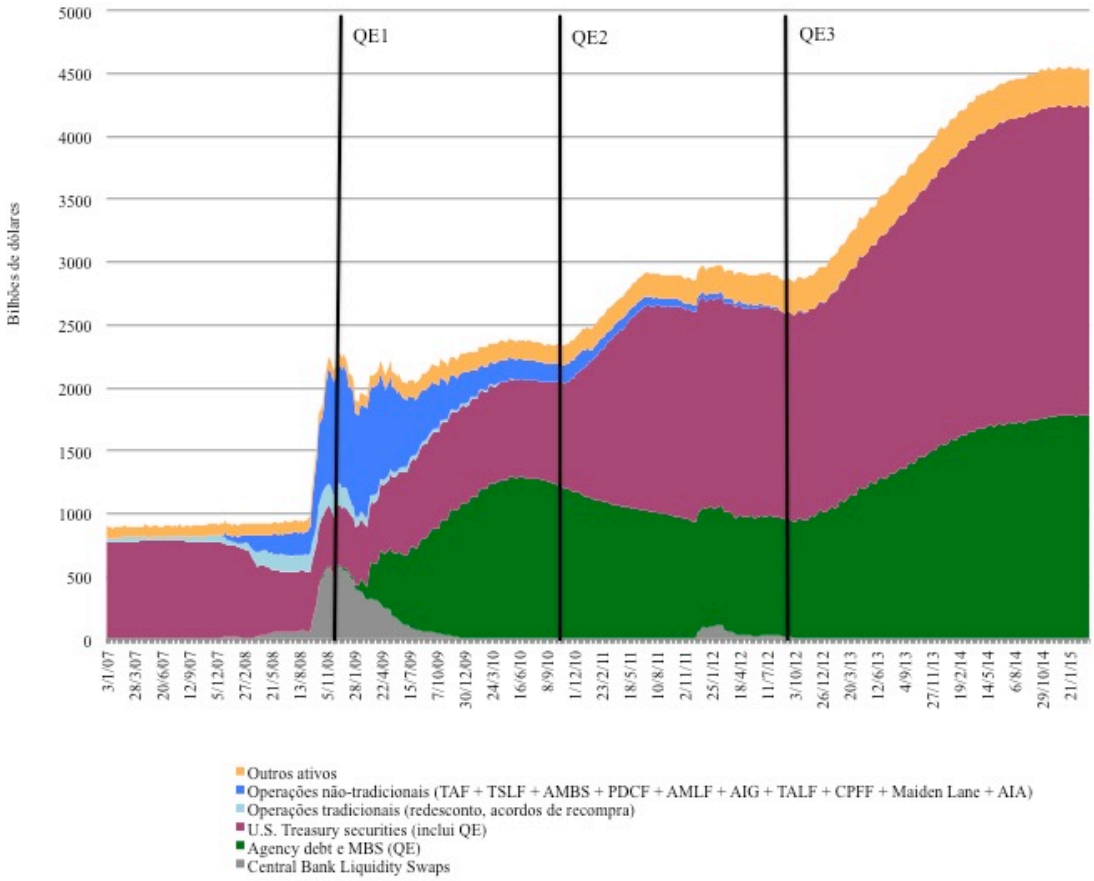


Source: US Department of Treasury

Due to these "non-conventional" measures, there was a huge increase on Federal Reserve's balance sheet (Figures 2 and 3). As the CB bought assets, it issued an enormous amount of money in the form of excess bank reserves. After 2008, once the ZLB was reached, there were no more limits to reserve creation. The monetary base increased more than four times, from approximately US$ 837 billion in August 2007 to more than US$ 4 trillion in 2015. The total bank reserve balance was US$ 10 billion before the crisis. In the beginning of 2015, it was more than US$ 2.7 trillion.

Figure 2

Federal Reserve's Assets, 2007 to 2015

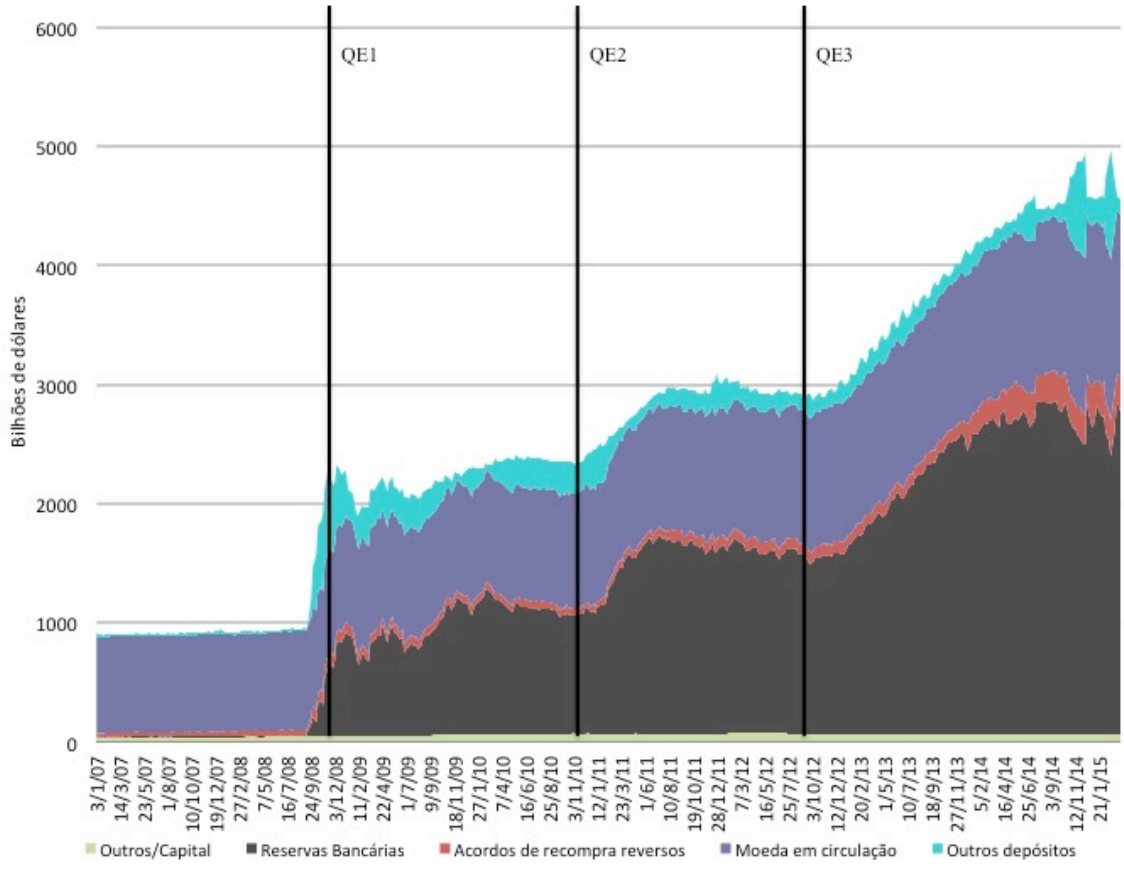


Source: Federal Reserve

Matthews (2015) states that, if one aggregates all programs put in place by the Fed during the crisis, including loans to financial and non-financial institutions, bail-outs and asset purchased, the result is an astonishing US$ 30 trillion. Fed's actions were **endogenous,** totally responding to the needs of the financial system as a whole.

Figure 3

Federal Reserve's Liabilities, 2007 to 2015



Source: Federal Reserve

3. QE's main results

The Fed's actions during the crisis, especially with the various rounds of QE, reveal a belief inside the Central Bank in the money multiplier with exogenous money, since an improvement in economic conditions was expected with the loosening of monetary policy. Low interest-rate policies implemented for an extended period of time without the use of any instruments to keep bubbles from forming caused a huge increase in asset prices, especially bonds and stocks. Figure 4 shows a stunning increase of NYSE's Dow Jones price index. Non-financial corporations also took advantage of low interest rates to issue large number of debt securities in capital

markets. Between 2007 and 2015, the inventory of such securities increased by more than 35%.

Kesarios (2012) transcribes a 2012 interview of Ben Bernanke by then-Reuters' Pedro da Costa. Asked about the QE programs and their inability to produce results in the real economy, Bernanke stated the programs' goals were to increase asset prices[8] and cause the "wealth effect", which would make families consume more and in turn investment would rebound with increased demand projections[9]:

> **One of the main concerns that firms have is there's not enough demand.** There are not enough people coming and demanding their products. And if people feel that their financial situation is better because their 401(k) looks better or for whatever reason -- their house is worth more -- they're more willing to go out and spend, and that's going to provide the demand that firms need in order to be willing to hire and to invest.

However, after almost seven years of expansionary policies in effect, there has not been a vigorous recovery in demand variables (Papadimitriou *et al*, 2015). The recovery of growth, job creation, and consumption has been slower than in any other post-war recession recovery.

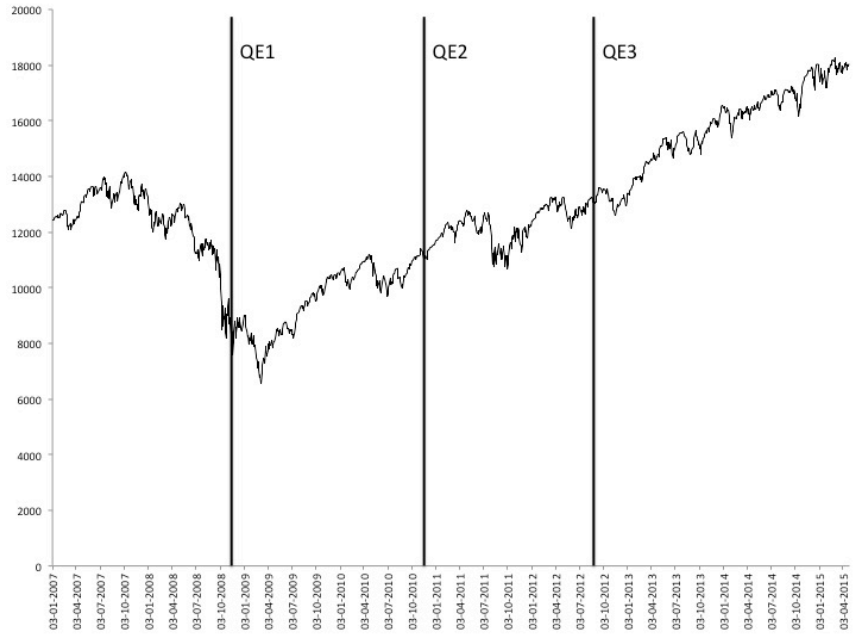
The lack of any significant recovery in the general price index (figure 5) also reveals how the pre-crisis consensus was misguided regarding the way financial relations take place and how the Central Bank influences markets, given the NMC and exogenous money. A crisis exacerbates agents' preference for liquidity- non-financial corporations accumulate liquid assets (figure 6); families increase their demand deposits and stock of cash (figure 7); and banks keep their resources in the form of bank reserves in the Central Bank. Such liquid assets are kept due to the *precaution-motive,* as stated by Keynes (1936, p. 196): "*to provide for contingencies requiring sudden expenditure and for unforeseen opportunities of advantageous purchased*" (for families and non-financial corporations); due to the *speculative-motive,* once agents keep waiting for an increase in the short-term interest rate (for banks and non-financial corporations), and because there is uncertainty of future demand (for non-financial corporations).

[8] It is important to note that the increase in asset prices, resulting from the post-crisis monetary policy, also leads to an increase of both poverty and inequality, since it favors those who already hold such assets: the wealthy.

[9] http://seekingalpha.com/article/867351-are-elevated-asset-prices-enough-to-revive-the-economy

Figure 4

Dow Jones Index, 2007 to 2015

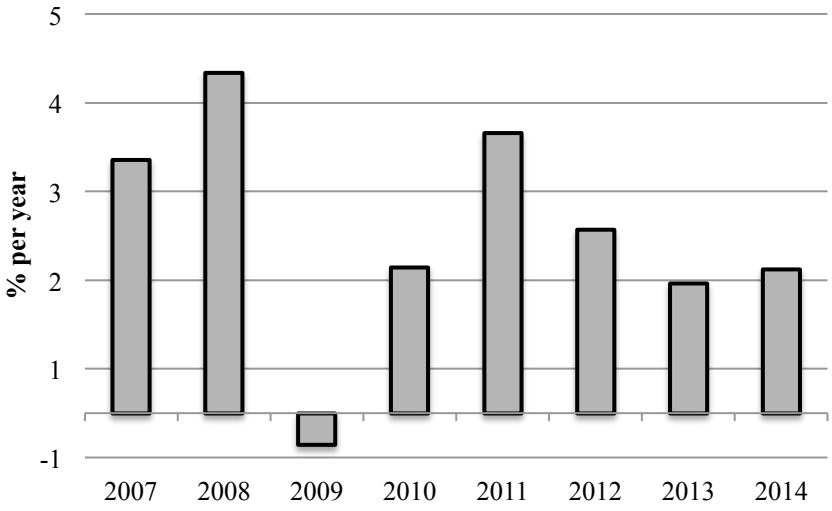


Source: S&P Dow Jones

Figure 5

Inflation – Consumer Index

United States, 2007 to 2014

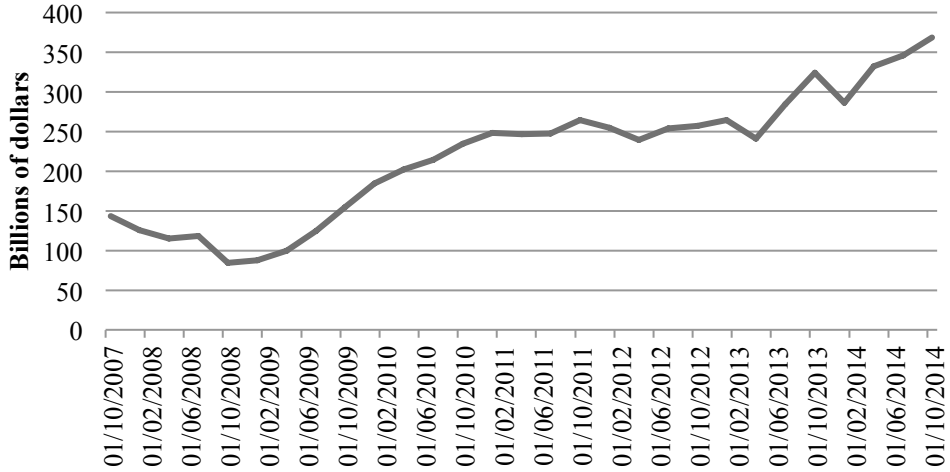


Source: World Bank

Figure 6

Liquid assets (demand deposits and cash) of non-financial corporations

United States, 2007 to 2014

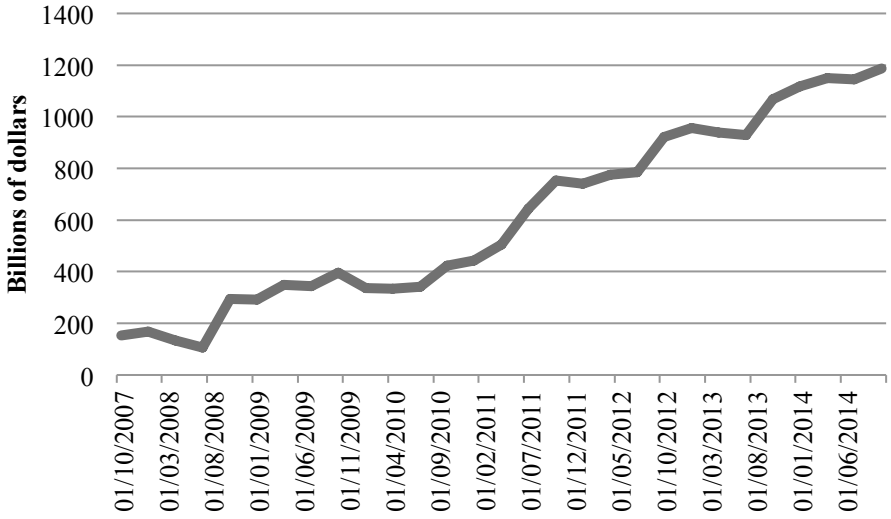


Source: Federal Reserve Bank of St. Louis

Figure 7

Liquid assets (demand deposits and cash) of households

United States, 2007 to 2014



Source: Federal Reserve Bank of St. Louis

Keynes, in 1936, had already highlighted the limitations of monetary policy when the preference for liquidity is high- even with monetary injection, economic

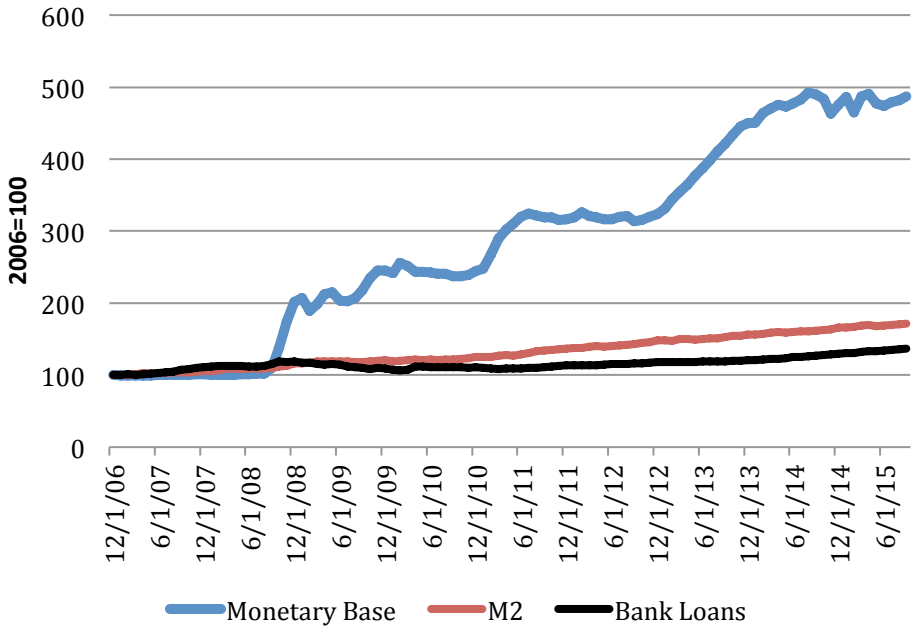
variables do not respond as intended by the monetary authority: "*If, however, we are tempted to assert that money is the drink which stimulates the system to activity, we must remind ourselves that there may be several slips between the cup and the lip*" (Keynes, 1936, p. 173).

Despite the massive liquidity creation by the government in the form of reserves, it is clear on figure 8 that private money creation (bank credit and M2) did not have a vigorous recovery. Credit, which is created by banks *ex nihilo* and does not need previously accumulated resources to be given out, will only rebound when banks perceive that i) on the liability side, markets are optimistic enough to lend at a rate which will enhance their profits and ii) on the asset side there is a decrease in uncertainty about future payment flows, so that collateralized bonds issued by institutions can also be sold at lucrative prices in the marketplace.

Figure 8

Monetary Base, M2 and Bank Loans

United States, 2006 to 2015



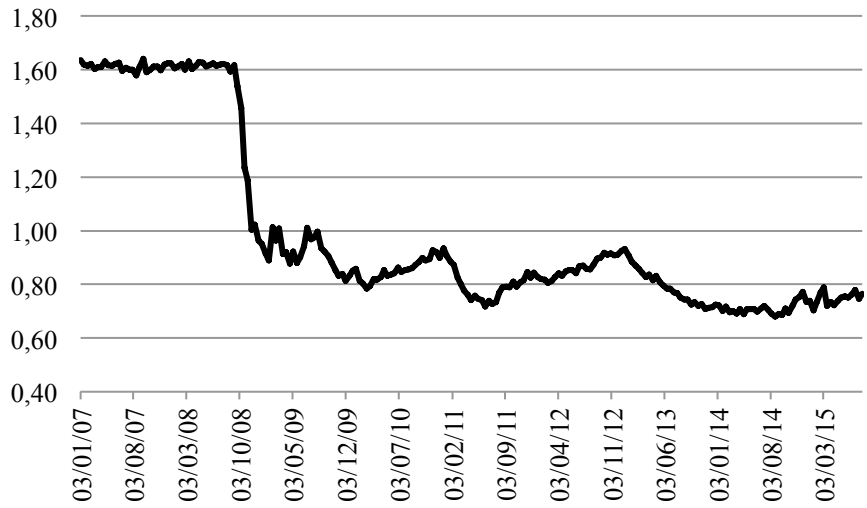
Source: Federal Reserve Bank of St. Louis

The lack of expansion of bank credit combined with the growth of reserves (which, in turn, are kept at the Fed) made the official money multiplier [10] (relation between the monetary base and means of payment) (figure 9) drop to less than one, something not even considered to be possible in traditional text-books such as Mishkin (1998). The post-crisis events prove how flawed the mainstream's theory really was: "QE represents an inapplicable view of banking and credit based upon the money multiplier model" (Fullwiler, 2013, p. 186). If there were any relation between bank money and reserves, the money multiplier should have "exploded", along with inflation- but that is the opposite of what was observed. Farhi (2014) states that a major assumption within the NMC was debunked by the crisis: the idea that monetary expansion without sterilization leads to inflation.

Figure 9

Money Multiplier

United States, 2007 to 2015



Source: Federal Reserve Bank of St. Louis

Huzsar (2013), an ex-Fed employee, makes important revelations about the QE: it was "the greatest backdoor Wall Street bailout of all time" and "[..] has become the largest financial markets intervention by any government in world history". With

[10] The same shift can be observed in M1's and M2's velocity of circulation, which dropped significantly after the crisis.

the rise in bond prices in banks' balance sheets they recovered rather quickly from the crisis, thus decreasing the urgency for significant reforms in monetary policy.

4. Why QE has not worked: wrong theoretical concepts from the start

Although some post-keynesians authors, such as Heintz e Pollin (2013), argue that the Fed's response to the crisis was "non-orthodox", this is a difficult statement to make since one does not know what an "orthodox" response would be like. The Fed's response was the one necessary for the moment in order to avoid a financial system collapse. The monetary policy during the crisis was effective to restore the functioning of financial markets, however the nature of the system was not changed. There is today an additional risk: the markets have become "addicted" to central bank liquidity. As Belluzzo puts it (2012, p. 153, own translation), the CBs:

> [...] are condemned to fulfill the mission that was trusted to them and avoid a financial crash, trying to block the massive disequilibrium from private sector balance sheets caused by the simultaneity between asset disorderly deflation and the nominal fixity of debts.

There is an immediate need to update the monetary thinking, one that proceeds from the reality of the financial system, and the centrality and endogeneity of money. Nonetheless, most of reforms proposed after the crisis, mainly by economists from the NMC (like Alan Blinder, Frederic Mishkin and Olivier Blanchard), tended to focus on financial stability as an additional goal for the CB, without giving clear prescriptions on how this should be pursued (Palley, 2011). The economic **mainstream** is still very attached to traditional theory of banks, seeing them as agents that mechanically respond the actions from the CB (exogenous money). In Minsky's words (1986, p. 252): "*The narrow view that banking affects the economy only through the money supply led economists and policy makers to virtually ignore the composition of bank portfolios*".

A monetary policy reform must stem from the acknowledge that crises are consequences of endogenous processes which led to financial stability, as Minsky's Financial Instability Hypothesis puts it (1986). Economic units, when acquiring real and financial assets and deciding on how to finance them, tend to take on more riskier

"positions" throughout the financial cycle, lowering their margins of safety and increasing financial fragility. If past expectations on future cash flow are not confirmed, the units are not capable of meet short-term financial commitments. In case they cannot access liquidity and renew their lines of credit, they can become insolvent and forced to liquidate assets. The economy enters a process of 'debt deflation' and financial fragility becomes instability (Argitis, 2015).

The CB needs to have tools to control leverage and private units' balance sheets so the financial stability that emanates from banks and other agents' operations is mitigated. In Aglietta's words (2013, p. 31, emphasis added):

> Therefore a new framework of monetary policy aiming at preventing systemic risk at the turning point in the financial cycle, must control credit expansion strongly enough to mitigate the momentum in asset markets. **It cannot be done with the policy rate alone.**

Also, the macroeconomic policy needs to include a better coordination between monetary policy, financial regulation and fiscal policy. The State issues debt bonds that are used both by CBs in open market operations, and by financial institutions as collateral in repo markets. After the crisis, through QE programs, the Fed started to carry in its balance sheet a large amount of Treasuries (public bonds) and MBS (private bonds). The money issued to make these purchases is, however, "puddled" in banks in the form of reserves. There was no "transfer" of this money to bank money since, as analyzed in section 1, banks do not lend reserves. This new money created by the Fed did not enter nor the financial circuit, neither the real circuit. If the reserves had been created to finance public debt directly in the primary market, the impacts of QE would have been much greater and faster (Farhi, 2014). This shows how the CBs perception on how money is created is completely wrong.

5. Final Comments

When the system collapsed, the Federal Reserve, trapped by the exogenous money theory, by the "Great Moderation", and by the New Monetary Consensus, found itself unprepared to deal with the great complex financial system in place. The creation of new monetary policy instruments and the large-scale purchase of public

and private assets by the Fed corroborate the fact that the system does not function without public guarantees.

In 2016, after nine years of monetary stimulus by the Fed, the problems of institutions shutting down and the freezing of several markets have been solved. The policy of ZLB since 2008, however, still has relevant impacts, which deserve to be highlighted. We still have not witnessed a robust growth in real macroeconomic variables in the United States. As the 95th report of the Bank of International Settlements (BIS, 2015) states, one of the great obstacles in the pursue of growth are the “fake ideas” still present in policymakers' decisions. Mainstream models are still blind to the impacts that new monetary policy made with old beliefs have on the global financial system. New bubbles were created, especially in the stock and bond markets. The handling of the crisis, featuring extremely low interest rates for a long time in a system subject to overleverage, creates “stop and go” of bubbles. Since the beginning of the crisis, US$57 Trillion in debt have been added to the global financial system (UNCTAD, 2015). The increase in federal funds' interest rates by the Fed in the end of 2015, after being kept at 0-0.25% per year for almost seven years, has increased the risk of devaluation of a huge asset inventory in a system which is still fragile and extremely leveraged.

Quantitative Easing and low interest rates have also exacerbated financial imbalances between Nations. Emerging economies' currencies have suffered with cycles caused by the stimulus, becoming excessively stronger at times with the influx of capital, and becoming weaker at others when agents decide to return to the safety of the Dollar and US government bonds.

Monetary policy aimed at putting the pre-crisis system back in place Is was largely based on the creation of reserves, the financial structure was not reformed (Deos, 2015). But Quantitative Easing without an adequate reform of the financial system only restores a structure that is dysfunctional in its origins. It is important to ask: do we want a system working that way? Should we have an institution such as the Central Bank responsible for supporting a system that does not feature social and economic benefits that counterbalance the inherent stability brought along by its very operations? The answer to the above questions is no. It is necessary, therefore, to rethink the way the system works, to rethink the role money, and the role of monetary

policy. We should think of monetary policy as an integral part of macroeconomic policy, encompassing fiscal policy, exchange rate policy, and financial regulation, with all being minimally coordinated.

A better system involves new mandates for the Central Bank, new ways of thinking about monetary policy, and new instruments to deal with leverage and balance sheets' endogenous growth. There is a need for better overall coordination not only between national macroeconomic policies, but also across borders. Analyses going forward need to take the nature of finance and credit into consideration. Banks really are essential institutions to the functioning of a monetary economy of production, therefore the Central Bank's mandate needs to include better allocation of credit for productive investment: "*What is needed is a new set of regulatory principles that build from realistic understanding of contemporary financial markets*" (Dymski, Epstein e Pollin, 1993, p. 11).

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