BANKING REGULATION IN THE UNITED STATES AFTER THE WORLD ECONOMIC CRISIS OF 2007/2008: ECONOMIC IMMUNITY OR FALSE HOPES*

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Resumo

Pela perspectiva Pós-Keynesiana, argumenta-se que os bancos comerciais, pelas reformas financeiras de 1980 e 1999 – que flexibilizaram as possibilidades de atuação das instituições financeiras – aumentaram a capacidade de operar no mercado de capitais ao se tornarem *Banking Financial Holding Companies*. Entende-se a crise de 2007/2008 como consequência do processo de desregulamentação financeira e também das inovações financeiras que fragilizaram a capacidade do *Federal Reserve* de conter a atividade bancária. Inicia-se discutindo o novo contexto institucional que emergiu dessas mudanças no marco regulatório financeiro entre 1980 e 1999. Em seguida, foca-se em como a desregulamentação permitiu o avanço do negócio bancário nos mercados financeiros e em como esse processo contribuiu para a crise econômica em 2007, caracterizada primeiro como uma crise de liquidez e então uma crise de solvência, salvaguardada pelos Estados Nacionais. Por fim, analisa-se a Lei Dodd-Frank (2010), interpretada como a reafirmação desse processo endógeno de dominação financeira.

Palavras-chave: Bancos; *Federal Reserve*; Inovações Financeiras; Desregulamentação; Abordagem Pós-Keynesiana.

Código JEL: E44; E58; G01.

Abstract

Based on the Post-Keynesian approach, we argue that commercial banks, through the financial reforms of 1980 and 1999 – which made financial institutions more flexible – increased their capacity to operate in the capital market by becoming Banking Financial Holding Companies. The 2007/2008 crisis is understood as a consequence of financial deregulation and financial innovation process that weakened the Federal Reserve's capacity to restrain banking activity. Initially, we discuss the new institutional context that emerged from these changes in the financial regulatory framework between 1980 and 1999. Then, we focus on how financial deregulation allowed banking business to advance in financial markets and how this process contributed to the economic crisis of 2007, characterized first as a liquidity crisis and then a solvency crisis, safeguarded by the National States. Finally, we analyze the Dodd-Frank Law (2010), which is interpreted as the reaffirmation of this endogenous process of financial domination.

Keywords: Banks; Federal Reserve; Financial Innovations; Deregulation; Post-Keynesian approach.
JEL Code: E44; E58; G01.

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* This work is an update and English translation of a previous paper of Freddo (2013), published in Portuguese in OIKOS – International Political Economy Journal which became a chapter of Freddo's doctoral thesis (2015). One intention is an actualization of the proposed debate – including recent references in relation to the first version published – which favors a more distanced analysis from the breakdown of the world economic-financial crisis of 2007/2008 and its intercurrences. Also, it brings new theoretical contributions from two other researchers on the subject, Nofal and Vargas, who incorporated contents and criticisms to Freddo's original text. In this sense, this article contributes to the specialized literature by showing a renewed and deep perspective (compared to the previous version) of a process that we consider to be unfolding still in progress, that is, the global crisis of 2007/2008. Another intention is to enhance the impact of the study, as it will be available to researchers who are not Portuguese readers.

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1. Introduction

In this article we examine the context of the banking business in the US derived from the Depository Institutions Deregulation and Monetary Control Act (1980) and the Gramm-Leach-Bliley Bank Reform Act (1999). We investigate how the change in the regulatory framework in which banking institutions operated may have contributed to the weakening of the US financial system, providing the necessary conditions for the outbreak of the financial crisis in 2007. We understand this new regulatory framework as a consequence of the process of expansion of deregulated finance, or, more broadly, as derived from money manager capitalism, it did not seek to restrict, and at to some extent ratified the process of financial innovation that allowed banks to advance in the capital market.

According to Minsky (1991), money manager capitalism has its roots in the success of postwar US capitalism, in which the distribution of the ownership of property in the hands of institutional investors such as mutual and pension funds was privileged. This denomination results from the fact that these funds needed to be managed and that the manager acts not only on behalf of the final investor, but mainly in his own interests. In this regime of accumulation, the fundamental act was the transition of banking activity from investment lender to asset broker in the capital market, a process that began in the postwar period and consolidated in the 2000s. Despite this process, it was from the 1980s – in the scenario of the diffusion of the capital market to the global system – that the transformations of the banking business accelerated. Banks, in order to adapt to financial competition, have developed their capacities as intermediaries (or brokers[1]), which suffer less supervision and regulatory constraint, increasing profitability through commissions and fees for their services.

Credit in the 2000s was leveraged thanks to financial innovations that allowed the interrelationship of banking and non-bank financial institutions, where banks use the latter to remove assets from their balance sheets, circumventing the restrictions on equity imposed by the Basel Agreements (1988 and 2004). The latter, however, behaved like banks, creating quasi-currencies, shaping what is now known as shadow banking system – both in the United States and globally.

These distortions in the main *métier* of the different financial institutions must be understood as a consequence of the deepening of the characteristic of fragmented regulation

[1] Denomination used by Guttmann and Plihon (2008).

or of "functional regulation" of the US financial system in the period. This regulatory standard allowed the coexistence of institutions with different degrees of supervision. Also, for the same institution, different types of supervision were possible according to the role played in the financial market, since the logic of supervision during the period was based on the "functionality" of financial products, as exposed in the following section. Commercial banks acting as depositary institution suffered greater supervision over their activities than when acting as financial intermediaries in the capital markets. These gaps in the regulatory framework have opened possibilities for the development of several techniques of financial innovation, gradually radicalizing the instability in the economic system.

Besides this introduction and the concluding remarks, this paper is divided into three sections. In the first, we discuss changes in financial regulation in the US that may have contributed to ratifying and boosting the movement of banks towards the capital market. In the second, we examine the financial innovations that encouraged this process and the financial crisis seen as a result of this movement. In the third, we highlight some points of the Dodd-Frank Act (2010), trying to understand the impacts that it can have on the financial dynamics in the US in the post-crisis period, and whether it change the financial dynamics that culminated in the crisis.

It should be noted that the theoretical framework of this article is Post-Keynesian, contrary to mainstream theory that supported the deregulation measures implemented since the 1980s in the US that brought us to the outbreak of the 2007 crisis. This interpretation is based on research by authors such as Minsky (1991, 1992, 2008a, 2008b) and supporters of the Minskyan theory of crisis.

2. The new institutional context: Depository Institutions Deregulation and Monetary Control Act (1980) and Gramm-Leach-Bliley Bank Reform Act (1999)

In order to contextualize the institutional environment in which the Acts of 1980 and 1999 emerged, we highlight two points of the financial reform carried out in the 1930s that decisively influenced these reforms. The first was the Banking Act of 1933 (The Glass-Steagall Act), through banks were not allowed to pay interest on demand deposits via the so-called Regulation Q. There were also interest rate ceilings on several types of deposits, as savings deposits and time-deposits. Also, there was a limit to the rate of return on bank assets. The second concerns the prohibition on financial institutions from operating as

commercial banks, as investment banks and as insurers simultaneously. Banks were forced to divest their investment banking branches to avoid conflict of interest in the credit and capital markets. The purpose of this prohibition was to avoid price manipulation and abusive market power practices (Guttmann, 1994).

In this vein, the approval of the Depository Institutions Deregulation and Monetary Control Act by the US Congress in 1980 aimed to overcome the distortions of the financial system caused by the Regulation Q, such as the financial disintermediation suffered by banks in the late 1970s, gradually extinguishing interest rate ceilings to strengthen depositary institutions face to competition.

As highlighted by Guttmann (1994), this new legislation also enhanced the competition by the banks, since the "quasi currencies" – such as NOW accounts, ATS accounts[2], *etc.* – had been ratified and any depositary institution was allowed to operate with these accounts. These, which practically represented demand deposits, not only yielded interest, but also enabled the expansion of the credit currency. Through this reform, in addition to overcoming the restrictions set by Regulation Q, the power of money creation has also been extended to savings institutions. These measures have minimized the differences between savings institutions and commercial banks.

Along with theses deregulation measures, the act established reserve requirement standards for all depositary institutions, which increased the central bank control over the private money creation (Guttmaan, 1994).

However, despite the deregulation process was initiated during Paul Volcker management (1979-1987) at the Federal Reserve (Fed), it is accentuated under the command of Alan Greenspan (1987-2006), favoring the expansion of the banking business in capital market. Calomiris (2006, p. 171) points out that, under the management of Greenspan, the logic of "beneficial deregulation" followed by the Fed[3] could advance because: a) did not create major opposition in Congress; b) did not harm the business of large commercial banks; c) did not diminish the Fed's competitiveness *vis-à-vis* other regulators present in the American financial system.

[2] Negotiable Orders of Withdraw (NOW) Accounts and Automatic Transfer of Savings (ATS) Accounts refer to the alternative transaction accounts implemented by banks in the 1970s that paid interest (Guttmann, 1994).
[3] The author conceives the Fed as a political player in Washington (D.C.), subject to congressional oversight, a competitor in promoting financial regulation and an agent who has to decide whether to prioritize in his or her management the battle in the conception of monetary policy or the role of system regulator (Calomiris, 2006).

As a result, during this administration, banks expanded their business by exploiting several loopholes in the regulation to enlarge the set of operations in search of profitability.

In this direction, the 1999 Gramm-Leach-Bliley Act ratified the movement of banks towards the capital market. The major guidelines established by this legislation were to ease the restrictions imposed by the Banking Act of 1933 and the Banking Holding Company Act of 1956[4]. The goal was to ease the constraints that prevented commercial banks from operating with insurance companies and investment banks, for example. In this new regulatory framework, as pointed out by Barth *et al.* (2000), banking subsidiaries were allowed to conduct the majority of financial services. Banking Holding Company was also allowed to become a Banking Financial Holding Company and could add subsidiaries whose financial activities were non-banking.

The Act of 1999 also allowed holdings and depository institutions to trade in the securities, insurance and banking markets. However, the legislation sought to limit the association of financial activities with those considered non-financial (Barth *et al.*, 2000). In defending the formation of Bank Financial Holdings, this legislation favored the regain of financial power by large banks lost in the 1930s, as highlighted by The Levy Economics Institute (2011, p. 9): "financial holdings companies would be much larger than either commercial deposit-taking banks or noninsured investment banks had been in the past, since expansion would not be limited to the provision of any particular service as had been the case under Glass-Steagall".

It can be seen, therefore, that it was in accordance with the interests of large financial groups that sought to regain the space lost in the financial scene since the banking reform carried out in the 1930s. Thus, the abolition of the Glass-Steagall Act in 1999 allowed commercial banks to become more involved in the capital market, via, for example, the formal blending of functions related to the liquidity of commercial banks with the solvency of investment banks embodied in Banking Financial Holding Company. This gave more autonomy to the financial sector, including attracting workers to the domain of private finance to satisfy basic needs, such as housing, consumption, education, health and social security in old age (Lapavitsas, 2009).

For the regulatory structure, as highlighted by Barth *et al.* (2000, p. 194), this Act adhered to the principle of "functional regulation", i.e., similar activities must be regulated

[4] About the Act of 1956, see Klebaner (1958) and Stanford Law Review (1957).

by the same regulatory authority: "under functional regulation, federal and state banking regulators regulate bank activities, federal and state securities regulators regulate securities activities, and state insurance regulators regulate insurance activities". This fragmented regulatory structure, consolidated by the Gramm-Leach-Bliley Bank Reform Act of 1999, allowed the same institution, in this case a Banking Finance Holding, to suffer different degrees of supervision by different regulatory agents, depending on the activity it performed.

The principle of self-regulation in banking practices ended up prevailing, to the point where their decisions were considered the most appropriate to avoid episodes that could trigger systemic risk. The biggest problem with this is that the very dynamics of banking competition tends to promote an underestimation of risks and the search for new products and instruments that allow circumventing the limits imposed by regulation (Farhi *et al.*, 2008).

This reality led to a crisis that put the international financial architecture in check, explaining the limitations of the basic principles of the banking and financial regulation and supervision system then in force. The crisis came and took systemic proportions, spreading to the international financial system. It is concluded that the national deregulation of the United States greatly affected finances transnationally (Farhi *et al.*, 2008).

Stockhammer (2010, p. 10) corroborates this thesis, adding that what he calls this new finance-dominated accumulation regime (similar, but with particularities in relation to what led to the Great Depression of 1929) had pernicious effects on the very stability of the capitalist system[5]. For him, the financial deregulation process started in the 1980s led to a series of major crises directly related to the financial sector even before of the crisis of 2007/08, such as: "the debt crisis in 1982, the Savings & Loans crisis in the USA in the 1980s, the EMS crisis in 1992, the Peso crisis in 1994, the Asian Crisis and the Dot.com bubble".

This whole cyclical and structural process must be understood from an evolutionary path of economic activity, as highlighted by Whalen (2009) based on the Minskyan theory of crisis, which means a dynamic conception of the economy. From this perspective, financial

[5] Stockhammer (2010, p. 10) explains that the mainstream literature has a different view of the subject. It declares this period as stable, "often referred to as the Great Moderation, which has given rise to substantial and technically sophisticated literature". Paula (1998) is theoretically in line with the (Post-Keynesian) view of Stockhammer (2010). In this sense, the first adds that the mainstream literature sees banks as passive and neutral entities in the intermediation of real resources. This differs from the approach developed by Keynes and Minsky, for example, in which banks dynamically manage their balance sheets in such a way that they play a central role in establishing the liquidity and financing conditions of the real economy. Both authors assume that the Great Moderation hypothesis has been called into question by the crisis of 2007/08.

deregulation in relation to the 1930s – which changed the pattern of the economy – contributed decisively to the outbreak of the crisis that erupted in 2007/2008.

The result of this new institutional design favored the emergence of financial innovations to circumvent existing rules, the large financial conglomerates and the growth of bank power. As a consequence, central bank monetary policies lost much of their power to influence business cycles due to the ratification of financial innovations. It is an interactive, tautological relationship between cause and consequence: the shrinking role of the Fed allowed the development of unsustainable practices, and those existed as a consequence of the new Fed stance. It will be exposed in the next section.

3. Deregulation, the advance of the banking business in the capital market and the financial crisis

In this section, we intend to highlight the consequences of the measures adopted by the acts of 1980 and 1999 for the banking business in the 2000s and how the advance of banks in capital markets has decisively influenced the emergence of this crisis. In the next three subsections, we examine: the securitization process, the credit expansion during the 2000s and the 2007/2008 financial crisis.

3.1. Financial instability and securitization

The systemic financial instability of the US economy was mainly caused by bank financial innovations that have allowed the separation between debt to finance investments and the dynamics of financial assets in secondary markets. The securitization process developed from mid-1980s in the US real estate mortgage market took impetus in the 2000s (Minsky, 2008b). The securitization process was an important financial innovation to stimulate the expansion of this systemic risk, taking into account Minsky's (1992) financial instability-hypothesis[6].

Financial instability occurs endogenously to the economic system as the safety margins of both lenders and debtors shrink. Kregel (1997) points out that this process is slow and imperceptible. The author also emphasizes Minsky's (1992) theoretical contribution, noting that this self-generating process of instability is inevitable and endogenous to the economic system, as long periods of stability would lead to erosion of safety margins, increasing the risks of borrowers and lenders, changing the financial

[6] In this 1992 article, Minsky argues that the existence of financial instability, i.e., debt growth, can be confirmed empirically and also by theoretical argument.

structures of agents, which go from a safety position to gradually become which the expected income is neither sufficient to cover interest nor to repay the principal, and debt refinancing is required. In Minsky's hypothesis, financial innovation provides financial instability by enabling the deterioration of safety margins.

In the specific US case of the 2000s, this role was mainly played by credit securitization. The peculiarity of this modality of financial innovation is the "distance" that separates the initial borrower from the final lender, which deepens the degree of intermediation. The purpose of this process is to dilute credit risk (Aglietta, 2008). Moreover, it is believed that the shaping of unrelated and spatially diffused credit pools would provide a less volatile overall yield than if each were alone.

Minsky (1991) has highlighted the tendency of the market to presume to be able to anticipate the future through econometric models, which would only cause greater systemic instability. Such models, according to the author, are most often made at more stable times, when the average financial position is safe, with incentives to increase indebtedness; however, as structures become weaker due to debt accumulation, financing positions progressively deteriorate.

In the process of securitization, between the lender and the borrower there are several agents who benefit throughout this process. According to Minsky (2008b), there are at least six agents – commercial banks, investment banks, econometrician, credit rating agencies, investment managers, insurance agencies – forming the chain that creates the structured asset-backed security (ABS), securities packages or securitized products who seek to increase their own profitability. Finance capital has its maximum expression and plays the central role in shaping this cycle.

When commercial banks act originating the securitized asset and selling it to the investment bank, they exclude the transaction from their balance sheets, circumventing the restrictions imposed on them, both as regards reserve deposits, and as requirements for capital, as a reaction to the rate of return lost in the 1970s and 1980s. They were driven into this process to increase their profitability through fees and services, no longer having a direct relationship with their clients, and to a large extent acting as brokers (Guttmann; Plihon, 2008; Farhi; Cintra, 2009a). The financial competition faced by these institutions exerts essential force in this process. The same is true for brokers, who, induce borrowers to accept

less favorable contract terms, such as subprime[7], which charge a higher interest rate (Wray, 2007).

Since the originator of the financial asset is remunerated by the intermediation rates or fees it charges rather than the asset's rate of return, there is a disincentive to assess borrowers' repayment potential. During the debt cycle, there is a movement toward the worst payers, generating a systemic insolvency problem (Wray, 2007). This movement was assured by the belief that there would be risk dilution and that it would be possible to transform securities into new structured packages, in order to adjust them so that they had the desired return on the investor and lower risks.

To make riskier assets look as good as lower risk ones, credit rating agencies, insurers, and econometrists played a key role. There was a search for techniques that seemingly improved credit in order to develop a market for riskier bonds such as subprime. The aim was to artificially build the credibility of these markets so that it is possible to extract the highest possible profitability from the business. Therefore, some mortgages are now secured by insurance already in issue. And the insurers' ability to pay is also assessed by credit rating agencies (Wray, 2007).

To sustain this chain, mortgages needed to be well evaluated. Otherwise, falling prices and rising insurance costs would impede market development. There is a confluence of interests to underestimate risk, which enabled the creation of a well-developed market for these assets to be traded, ensuring the profits of all involved. The banks that originated the paper themselves guarantee the repurchase of certain assets in case of capital losses.

The objective would be to ensure that the interest rates offered by mortgages more than justify risk taking (Wray, 2007). The subprime was more profitable for all network members, including the final investors of these assets. They generated more fees, tariffs, and interest compared to the safer ones. When the borrowers could not meet their financial commitments, they could refinance of the initial, most often by mortgaging real estate assets that were no longer mortgaged or adding mortgages on real assets whose market prices had increased. Real assets become liquid with this process. It seemed "rational" to benefit from the appreciation of real estate assets, not only when the debts in which the properties were

[7] "The term *subprime*, which has become so well known around the world, precisely identifies individuals who would not have the income, or collateral, or credit history to justify the granting of the loan. In other words, these were the people who [until then] stayed out of the housing finance market, lacking sufficient qualifications to convince financial institutions that it was an acceptable risk. […] being riskier, they would have to pay higher rates than the 'normal' market, or *prime*, to get a loan" (Carvalho, 2008, p. 26).

refinanced could not be paid, but also to keep up financing consumption, ensuring the growth of the economy, but not necessarily investment. It was a game that apparently everyone benefited from.

During this period, the financial instability reached its peak because endogenously the risk is leveraged by the complete reduction of lenders and borrowers' safety margins, provided by financial innovations, bringing the system closer to the financial crisis. And it is not an irrational process with too much asymmetric information or optimism, because it is an endogenous process. And there is no way to prevent the crisis that is configured with the rise of it (Kregel, 1997).

3.2. Credit as the engine of expansion and Fed's limits

Here we highlight other microeconomic and macroeconomic factors which enabled the credit expansion cycle and, consequently, the securitization process that triggered the crisis of 2007/2008. Aglietta (2008) assumes that four major microeconomic innovations are linked to credit expansion. The first refers to the change in accounting rules of the financial sector, which provided the evaluation of assets and capital gains to their holders. This "market-to-market rule" assesses financial assets at their quoted market value. As advances the credit cycle, there is an increase in both debts and the value of assets due to inflation in their prices. This enables the liabilities of financial institutions to grow at a slower pace than the appreciation of their respective assets. Leverage proves to be a good business for banks and other financial institutions.

The second innovation concerns to credit derivatives, or credit default swaps, which provide the transfer of default risk from the security holder to the CDS seller. This was another form of the institutions that suffered financial supervision, the Banking Financial Holdings, transfer the risk by leveraging credit.

The third innovation concerns to a new model of risk assessment of borrowers by commercial banks. In order to streamline the lending process, a dossier of the respective credit applicants is no longer created; customer information is placed by the Value at Risk (VaR) statistical method where, to obtain the expected value of the maximum loss (or worst loss) within a time horizon, the probability of its occurrence within a certain confidence interval is given. In addition to the fact that this system is not as accurate as the assessment of the borrower's history, the information entered into the program are continually deteriorated as the originator's incentive is to increase the amount of loans.

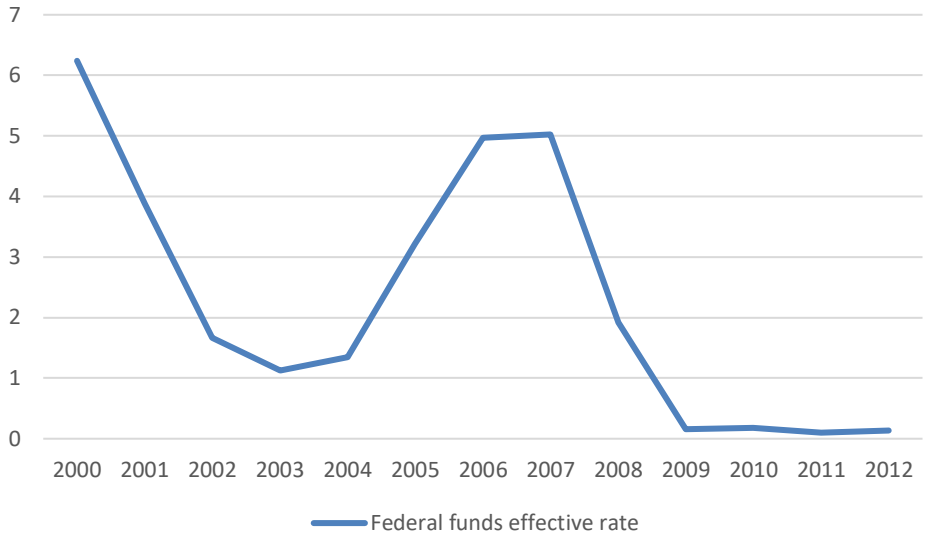
A fourth innovation is the creation of several tranches (segments) within ABS streamlining the system. The tranches ranked the bonds according to the mortgages they supported and also ranked the right of investors to receive the return on investment. The first clients to receive returns were those who invested in senior securities, following mezzanine and finally equity. Subprime mortgages were part of this third segment and, when evidenced their insolvency, they became "toxic waste". In this context, collateralized debt obligations (CDOs) an ABS mode with multiple tranches had their volume significantly increased between 2000 and 2006.

At a macroeconomic level, credit expansion was largely tied to the Fed's monetary policy to overcome the 2001 financial crisis. Due to market uncertainties in the period and the low inflation rate, the US Monetary Authority allowed the interest rate to remain at 1% for a long time. As a result, real interest rates became negative despite low inflation, meaning that short-term borrowing for different financial institutions and households became advantageous. The Fed's expansive monetary policy resulted in boom in the real estate market since costs were low.

These factors promoted the securitization process. Moreover, the Fed's expansive monetary policy from 2001 to 2004, in trying to cope with the disruptive effects of the 2001 crisis, raised liquidity and created excess managed money looking for a return. That fostered speculation and market development for MBS and CDOs (Wray, 2007). The result was the emergence of a housing bubble in the US.

The Fed, to recover companies after the 2001 crisis, provided conditions for them to fall out of debt while allowing households to progressively take on larger debts. Consumption becomes the main force of economic growth. In 2004, a policy of raising interest rates on federal funds rate to 5.25% per year in mid-2006 (Figure 1).

Figure 1- Federal Funds Effective Rate - 2000 to 2012 (%, annually)



Source: own elaboration from the Fed (2022), H.15 series.

However, as Aglietta (2008) points out, this policy has had little effect on the long-term interest rate, due to the great dollar liquidity on a global scale, provided by the expansion of the US economy since 2003. As a result, the Fed's ability to have long-term effects via monetary policy diminished. Endogenous currency expansion channels became more fluid due to financial deregulation, the increasing use of financial innovations and the subsequent increase in world liquidity leveraged by Fed's expansive policy. Only in the second half of 2005, with a heavy demand in favor of US sovereign bonds, the long interest rate started to increase.

Subprime mortgages gained traction in 2006 as all those considered "good payers" were already in debt, with households at the height of their financing capacity. Subprime mortgages were characterized by the use of flexible interest rates, initially very attractive and low, later very high. By mid-2006, US real estate prices ceased to rise, from the effects of the Fed's tightening policy, and in the third quarter of that year began to fall. There was an unrestrained demand for credit to sustain the mortgage appreciation cycle.

Initially, credit rating agencies continued to rank high-rated securities. However, due to the sharp increase in the interest rate on the new contracts, a default and suspicion process began regarding the profitability of other structured products, as they were linked to the real estate market and had subprime mortgages in their pools. In mid-2007, rating agencies changed the rating of several down-structured products, including some MBS that contained subprime mortgages, disqualifying them as components of the mutual or pension portfolio

(Guttmann; Plihon, 2008). The entire network of financial institutions that functioned as a risk buyer for commercial and universal banks were affected and the previously risk-dilution logic was broken.

The risk distribution made by Bank Financial Holdings occurred because other institutions assumed it. By not being configured as depository institutions, they were not subjected to the action of controls of the Monetary Authority. Nor could they be bailed out in times of crisis with liquidity injections (Farhi; Cintra, 2009a).

Following this argument, the shadow banking system, mainly developed from the 1980s in the over-the-counter markets – progressively used for trading financial derivatives of credit and securities arising from the securitization of credits granted by commercial banks – backed by the complex relationships that have been established among financial institutions that did not have their operating environment restricted by the supervision of the Monetary Authority or by the Basel Agreements. The most acute cases of financial fragility recorded in this crisis involved financial institutions with these characteristics. In the US, regional bank, lending banks and government-sponsored quasi-public corporations– such as Fannie Mae and Freddie Mac – were part of the shadow banking system (Farhi; Cintra, 2009b).

These institutions purchased the structured securities of commercial and investment banks through the issuance of short-term securities, such as asset-backed commercial paper. The banks that managed it kept contingent credit lines available for use in times of liquidity tightening. The liquidity crisis was transferred to commercial banks via massive use of the pre-approved credit by shadow banking system that they held. Recurrent liquidity crises began and the central bank began to intervene by playing its traditional role in monopolistic capitalism as a lender of last resort.

3.3. The liquidity crisis and the banking system solvency crisis

Here we analyze the liquidity crisis and then the solvency crisis, which hit the US banking sector in 2007 and 2008 as a result of the securitization process and the expansion of the credit cycle. From June 2007 until the bankruptcy of investment bank Lehman Brothers in September 2008, financial institutions suffered from liquidity pressure, what could lead to a solvency crisis. In 2007, with the money market paralyzed, investment banks and quasi-public corporations were unable to raise funds to refinance themselves in the short term. They sought to sell the assets which still had a market, what triggered the fall in their respective prices. Farhi and Cintra (2009a) points out that the Fed had to provide liquidity

to these institutions by giving them access to rediscount operations. However, such a measure was not sufficient to prevent the dismantling of this market. In March 2008, the fifth largest US investment bank (Bear Stearns) was threatened with default. The Fed intervened and lengthened the terms of the financing lines granted to investment banks. Through a US$ 29 billion loan, J. P. Morgan bought that institution.

In July 2008, the liquidity crisis hit Fannie Mae and Freddie Mac. Due to the falling of asset prices, the market value of the first fell 93.7% and the second 95.3%. In early September, to prevent the mortgage market from collapsing, the US Treasury opened a $ 100 billion credit line for each of these institutions via Fed. In 2009, this line extended to $ 200 billion.

However, in mid-September 2008, the Fed decided not to meet Lehman Brothers' liquidity needs, which led it to bankruptcy. Fed's no action was interpreted as an attempt to mitigate moral hazard. Aglietta (2008) points out that the Monetary Authority underestimated the true extent of the bank's interconnectedness in the derivatives market. The first effect of the Lehman Brothers crash was the paralysis of the credit and interbank markets; the second was the understanding of banking system insolvency problems that would require actions to recapitalize this sector.

In September 2008, there was a joint action by the central banks of different countries, aiming to increase financial liquidity in a coordinated manner. For these reasons, the Fed's role as a lender of last resort was extremely important. On this aspect, Mehrling (2011) go further. Delineating the economic logic of the 2000s system and using the perspective of the "money view", he advocates that the Fed increasingly found itself serving as the dealer of last resort[8] to ensure the liquidity of financial markets – especially in the midst of the crisis.

By instance, the Fed began to: i) accept, as collateral for its liquidity supplies, riskier credit bonds in place of Treasury bonds; ii) lending directly to non-financial companies

[8] Considering the current banking system first as a payments system and second as a market-making system, Mehrling (2011) argues that nowadays the international system has the following hierarchy: 1) it includes those whose credit is sufficient for a swap line; 2) it includes those who can offer acceptable collateral; 3) it includes all the others. It differs from the description of the money market of Bagehot (1873), in which it was discussed in detail for the first time what to do in the event of a banking crisis. As an extension of Bagehot's description, for Mehrling (2011) the challenge in this new context is to move from a central bank market making and administrative pricing to private dealer market making and market pricing, supported by the integrated system of international lender of last resort. On this global dollar structure, Fed has to operate as a global central bank being the international lender as well as dealer of last resort that holds the system.

buying commercial papers. As a result, the composition of Fed assets deteriorated, substantially decreasing the relative share of Treasury securities (Table 1).

Table 1- Monetary Authority – Federal Reserve Assets (1) Billions of dollars; amounts outstanding end of period, not seasonally adjusted

	2006	2007	2008				2009				2010	2011
	Year	Year	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Year	Year
Total financial assets	908	951	932	952	1.541	2.270	2.117	2.038	2.180	2.267	2.453	2.947
In % of assets:												
Official reserves of the United States	3,5	3,6	3,9	3,9	2,2	1,6	1,6	1,7	1,7	1,6	1,5	1,2
Certificates of special drawn rights	0,2	0,2	0,2	0,2	0,1	0,1	0,1	0,1	0,2	0,2	0,2	0,2
Treasure currency	4,2	4,1	4,2	4,1	2,5	1,7	2	2,1	2	1,9	1,8	1,5
Fed float	0	0	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	0
Fed loans to domestic banks	0	0	11,9	18,3	19,5	24,6	25,5	16,1	9,5	4,3	0	0
Discount window (2)	0	5,1	11,9	18,3	13	24	25,3	15,6	9,5	4,3	0	0
AMLF (3)	0	0	0	0	6,5	0,7	0,2	0,5	0	0	0	0
Repurchase agreement securities	4,5	4,9	8,2	12	5,4	3,5	0	0	0	0	0	0
Credit Market Instruments	85,8	77,9	67,7	53,5	50,7	43,4	55,2	72,1	81,5	87,7	92,1	89,4
Open market bonds	0	0	0	0	0	0	0	0	0	0	0	0
Treasury bonds	85,8	77,9	63,4	50,3	30,9	21	23,3	32,2	35,3	34,3	41,6	56,4
Agency bonds (and government sponsored companies)	0	0	0	0	0,9	0,9	13,6	27,4	37,8	47,1	46,5	32
Other bank loans	0	0	4,3	3,2	18,8	21,6	18,4	12,5	8,4	6,3	4	1
Families (TALF)	0	0	0	0	0	0	0,2	1,2	2	2,1	1	0,3
Rest of the World	0	0	0	0	0	0	0	0	0	0	0	0
Brokers and Dealers	0	0	4,3	0,2	13	2	1	0,3	0	0	0	0
Corporate Financing (Maiden Lane LLC)	0	0	0	3	1,9	1,3	1,4	1,4	1,3	1,3	1,1	0,2
Corporate Financing (AIG)	0	0	0	0	4	1,7	2,2	2,1	1,8	1	0,8	0,00
Corporate Financing (Maiden Lane II)	0	0	0	0	0	0,9	0,9	0,9	0,8	0,7	0,6	0,2
Corporate Financing (Maiden Lane III)	0	0	0	0	0	1,1	1,1	1,1	0,9	0,8	0,6	0,3
Corporate Financing (Commercial Paper Funding Facility LLC)	0	0	0	0	0	14,7	11,6	5,4	1,7	0,4	0	0
Investments in companies	0	0	0	0	0	0	0	0	0	1,10	1,1	0
Miscellaneous Assets	1,9	4,3	4	8,1	19,7	25,1	15,7	8	5,2	3,3	3,4	7,7
Unofficial foreign currency (swap lines)	0	2,5	2,3	6,5	18,7	24,4	14,6	5,6	2,6	0,5	0	3,4
Others	1,9	1,7	1,7	1,6	1	0,7	1,1	2,4	2,6	2,9	3,4	4,3

Source: own elaboration from the Fed (2010, 2011 and 2012).

Notes: (1) Fed assets and treasury money accounts that provide or absorb bank reserves. Fed Board (end of period) accounts excluded. (2) Loans granted to domestic banks through credit auction, primary credit, temporary credit and seasonal credit. (3) Loans granted to domestic banks through the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF). (4) Loans granted to domestic banks through Term Asset-Backed Securities Loan Facility (TALF). (5) Loans granted through the Fed's Primary

Dealer Credit Facility (PDCF) and the AMLF. (6) Loans granted from the Fed to Maiden Lane LLC in order to facilitate the business associated with the acquisition of Bear Stearns Companies, Inc by JPMorgan Chase & Co. (7) Loans granted from the Fed to Maiden Lane II LLC to buy residential mortgage-backed securities loan portfolio and reinvesting the subsidiaries of AIG, restricted up to US securities. (8) Loans granted by the Fed to Maiden Lane III LLC to buy the CDOs that AIG has credit default swap contracts. (9) Loans granted by the Fed for Commercial Paper Funding Facility LLC. (10) Preferred interest on AIA Aurora LLC and ALICO Holdings LLC, two limited companies set up to hold all outstanding common shares of American International Assurance Company Ltd (AIA) and American Life Insurance Company (ALICO), both affiliated to AIG (11) Reciprocal currency swap agreements with foreign central banks.

By table 1, we see the gigantic Fed aid to safeguard the US financial system during the crisis[9]. Asset growth in absolute terms from US$ 952 billion in the second quarter of 2008 to US$ 1.5 trillion in the third quarter and US$ 2.2 trillion in the fourth quarter of that year demonstrates the large injection exercised by the Monetary Authority in the domestic financial system. In the last quarter of 2011, Fed's assets reached nearly US$ 3 trillion, tripling between 2007 and 2011[10].

In the fourth quarter of 2008, the share of treasury securities in total assets reached almost 20%. In absolute terms, compared to 2006, it passed from US$ 778 billion to US$ 475 billion in the fourth quarter of 2008, indicating a possible weakening of Fed's ability to intervene in the financial system. The variation corresponding to treasury securities is mainly noted under the "discount window", "other loans", "government-sponsored agency securities" and "unofficial foreign currency (swap lines)" items.

Mazzucchelli (2008, p. 59) points out that without this "continuous injection of public funds", the collapse could have been immeasurable because of the liquidity trap caused by agents who have turned to government bonds, mainly US. These measures sought to rescue the credit-expense-income circuit in a "typically Keynesian" action, even if the cost was the nationalization of the US financial system debt.

4. The implementation and limits of the Dodd-Frank Act

According to the analysis developed in this article, the 2007's financial crisis was a consequence of the US accumulation pattern, due to the growing deregulation policy adopted to protect profits of the banking sector, which allowed the flourishing of the most varied forms of financial innovations. In this section, we highlight the main aspects of it, taking into

[9] Note that this aid was the beginning of the monetary police played by the Fed that is known today as "quantitative easing (QE)".
[10] This liquidity expansion has many impacts on the dynamics of the financial system on global scales, but such an analysis is beyond the scope of this paper.

account the impacts of the law on: banking business, Fed performance and systemic instability.

In the context of the crisis, American society politically demanded the creation of an institutional framework capable of avoiding systemic instability in order to prevent such events from recurring. The materialization of this process was the enactment of the Dodd-Frank Wall Street Reform and Consumer Protection Act in July 2010 (referred to as Dodd-Frank Act).

After a decade of the financial crisis, the crucial question now is whether the Dodd-Frank Act actually strengthened the stability of the financial system. There is no doubt that the answer will not be decisive, not only because of the complexities of the global financial system but due to the fact that post-crisis regulatory reform in the United States is still in a state of flux.

Despite some factors make the assessment be limited, exploring the course of the Act is important by revealing aspects that regulators may have overlooked. In this regard, former Federal Reserve Governor Tarullo (2019) stated that the accomplishments made so far under the Dodd-Frank Act can be addressed through three key points: i) adapting different regulations according to the size and systemic importance of banking organizations; ii) providing failing financial institutions with an orderly resolution mechanism; iii) strengthening the resiliency for bank-related financial institutions.

With respect to the first point, Tarullo (2019) mentioned what he called the "tiering" principle, that is, depending on the size and systemic importance of banking institutions, prudential regulations should set different criteria for enhancing risk-based and leverage capital, liquidity, risk management and stress test requirements. More specifically, section 165(a) of the Dodd-Frank Act stipulates that bank holding companies and foreign banking organizations with total consolidated assets of $50 billion or more must be subject stricter prudential standards because their default or financial failure will certainly destabilize all the financial system.

Proponents of this rule believe that the Act did not restrict the size of Bank Financial Holdings, on the contrary, it sought to strengthen them to expand their activities in foreign markets (Scheiber, 2011, p 33).

However, the years following the passage of the Act revealed opinions that are not in line with this view of regulators. According to Bouwman and Johnson (2018), this

classification of banks on the basis of asset size thresholds resulted in a difference in the costs of regulatory requirements for each category, especially those above two thresholds: $ 10 and $ 50 billion. These differences lead to a situation where banks that are close to crossing the size thresholds seek not to do so by restricting the growth of their assets and loans. Similarly, Thakor (2018) argues that this behavior driven by avoiding the thresholds costs has made it difficult for many small banks to survive and discourage others from participating in lending to small businesses.

Additional evidence provided the empirical study of Bordo and Duca (2018) showing the negative impact of the regulatory burdens on small banks. They found a strong relationship between the adoption of the Act and the decline in commercial and industrial (C&I) loans which are mainly offered by small banks to finance the business of small and start-ups firms. Even large banks have decreased their share of those loans by 9 percentage points. Therefore, their study called for additional modifications to the Act to overcome these problems.

Since the Dodd-Frank Act is considered an initiative by the Democrats (only three Republicans supported it at that time), discussions on this part of the bill were widely present among politicians who welcomed proposals to amend the Act. This debate ended on 24 May 2018, with President Donald Trump signing the Economic Growth, Regulatory Relief and Consumer Protection Act, under which the asset threshold raised to $ 250 billion instead of $ 50 billion. Consequently, the number of banks under enhanced supervision by the Federal Reserve dropped to about 12 banks. Banks with assets under $ 10 billion were also exempted from the proprietary trading ban known as the Volcker Rule, and small and medium-sized banks were freed from the "stress tests" (Dancer, 2019).

The second point highlighted by Tarullo (2019) regarding the Dodd-Frank was the establishment of a mechanism for the orderly resolution of failed financial institutions. whereby the major ones are required to develop and submit plans to the Fed detailing their strategies for these cases – the so-called "living wills". This mechanism is an attempt to contain the risks posed by "too big to fail" (TBTF) financial firms. Such firms tend to be highly risky on the principle that the financial difficulties they may face will not be their sole responsibility as the government will provide bailout funds to avoid wider negative consequences for the financial system as a whole (Kroszner; Shiller, 2011). This lack of incentive to guard against risk known as "moral hazard" is not a peripheral issue and Krugman (2009, p. 65) has previously described it as "a sort of global epidemic" that

prevailed during the 1980s, which applies to reckless practices that led to the recent financial crisis.

According to The Levy Economics Institute report (2011), the Act was not about restricting the size and power of large financial holdings, but about better managing the risk taken by these institutions and ensuring that they could go bankrupt without triggering the risk of contagion and, in this context, receiving public assistance only temporary. In other words, the establishment of this principle is supposed to reduce the likelihood of resorting to the government bailout so that banks and large firms do not continue to consider this option as one of the inevitable options to solve their potential problems, which was indeed the case before the collapse of 2008 (Krugman, 2009).

To avoid the repetition of such a scenario, the Financial Stability Oversight Council (FSOC) established by Title I of the Dodd-Frank Act, declaring the end of the government bailouts, approved in 2015 by the Federal Reserve the final rule to eliminate the TBTF phenomenon. While, the purpose of the creation of the FSOC is to oversee the financial system in order to find the focuses of financial instability and risk. The approach of the Act does not take into account the fact that systemic risk develops endogenously and is not restricted to certain institutions. It has sought to ensure that the conditions of competition among financial market members are upheld, which will certainly have an impact on the innovation process by the agents.

In their study, Allen *et al.* (2018) examined this aspect of the Act. They found out that, despite the declared efforts, the Act has not yet succeeded in eliminating TBTF and many of these big firms and banks are still seen as enjoying special protection by the government. Since the "too big to fail" scenario is still alive, they suggested that regulators need to find more effective ways in this regard before the failure of these companies and banks put the economy once again at risk of collapse.

Although the reform did not solve the problem of the functional segmentation of financial supervision, in which there are many regulatory agencies overlapping their scope, the powers of the Fed to oversee the financial system have been strengthened. All institutions deemed important, including those classified as potentially insolvent by the FSOC, were under Fed supervision. In sum, both the Fed's power in shaping and implementing economic policy and in maintaining systemic financial stability grew during the recent crisis and were ratified by the 2010 financial reform.

The third point highlighted by Tarullo (2019) regarding the Dodd-Frank Act was related to the resiliency for banks and related financial institutions. A series of amendments have been made to the frameworks related to risk management and the stability of funding sources, as well as the criteria for assessing both the quality and quantity of capital required and already maintained by banks. In addition, under the Collins Amendment (contained in Article 17 of Dodd-Frank), the internal risk rating approach that was determined according to banks' own models has been abandoned and all banks, regardless of their financial status, became obliged to achieve minimum capital ratios based on standard risk weighs.

Acharya *et al.* (2014, p. 9) pointed out the evolution of the tools used to assess the resilience of financial systems, in particular, the macroprudential stress tests. The initial release of these tests was in 2009 through its Supervisory Capital Assessment Program (SCAP). Subsequently, Dodd-Frank Act required these supervisory stress tests to be conducted on an annual basis and since 2011 the US Federal Reserve has included these tests to become an essential part of its assessment framework, known as the Comprehensive Capital Analysis and Review (CCAR). Therefore, banks became obliged to exceed "regulatory thresholds on four ratios each quarter of the stress scenario: the Tier 1 Common Capital Ratio (T1CR), the Tier 1 Capital Ratio (T1R), the Total Risk Based Capital Ratio (Total CR) and the Tier 1 Leverage Ratio (T1 LVGR)".

In parallel with the strengthening of the resiliency of banking institutions, the Act did not overlook the importance of improving the performance of credit rating agencies, especially in light of the wave of widespread criticism of their misleading role during the global financial crisis. For this purpose, the Act urged rating agencies to take greater responsibility for their decisions and encouraged them to invest continuously to improve their methodologies. Not only that, but the Act also established a wide range of legal and regulatory penalties that rating agencies could face if they failed to provide accurate assessments.

Epstein and Pollin (2011) reinforce this vision, incorporating to it other elements. To them, Dodd-Frank Act mainly lays out a broad framework for a new financial regulatory system, leaving the details of implementation to different regulatory bodies. This lack of specificity in setting down new financial regulations was widely viewed as a victory for Wall Street, and equally, a defeat for proponents of a strong new regulatory system. Thus, to admit that Wall Street is the one implementing Dodd-Frank (in a phase of regulatory rulemaking)

seems not to be a foregone conclusion, once supporters of financial regulation keep achieving significant victories within the regulatory framework created by the Act.

They explore three central areas of Dodd-Frank where they think believe regulations can be established: i) proprietary trading by banks and other financial institutions; ii) oversight of credit rating agencies; iii) the markets for commodities futures derivative contracts. The conclusion is that under certain conditions Dodd-Frank Act is capable of succeeding in controlling hyper-speculation and promoting financial stability. From their conclusion, they assume that Dodd-Frank Act can be used as a framework for building effective regulations. For example, enforcing the principles set down within Act, such as banks being prohibited from engaging in activities that would pose a threat to the financial stability of the US. It is not an easy task, but can be possible by "insightful economic analysis in the heterodox economic tradition in combination with effective political mobilizations" (Epstein and Pollin, 2011, p. 17).

Dimitrov *et al.* (2015) raised an issue related to the impact of the Act on corporate bonds rating issued by the credit rating agencies. They argued that an increase in legal and regulatory penalties does not necessarily improve the quality of credit ratings and may even have an opposite effect once they are of an asymmetrical nature. In other words, these penalties target agencies that tend to be (overly) optimistic in their credit ratings while they do not include pessimistic biases. Thus, the study mentioned above tested what it called the reputation hypothesis on US domestic corporate bonds rated by Moody's, S&P and Fitch (excluding US bonds and bonds issued through private placement) from 2006 to 2012. The reputation hypothesis reflects the possibility that the Dodd-Frank Act may push rating agencies to downgrade their ratings to a level that protects them from legal penalties and safeguards their reputation regardless of the reality provided by the available information. The study concluded that the impact covered by the reputation hypothesis outweighed the disciplinary effect sought by the Act. Instead of increasing the quality of corporate bond ratings, Dodd-Frank Act provided factors that prompted rating agencies to issue false warnings "type II rating errors" and underperforming ratings to protect reputation.

In this vein, Prasch (2012) argues that the Dodd-Frank Act did not achieve the extension of the Glass-Steagall Act of 1933. The first was based on premises that failed to guarantee explicit rules for effective and lasting financial regulation. Furthermore, a proper end to "too big to fail" financial institutions, excessive leverage and irresponsible risk taking was pending.

Assuming that financial deregulation is a political issue, Prasch (2012) presents three suggestions to strengthen regulatory agencies and improve financial regulation to prevent crises such as the one that erupted in 2007. The first is that underfunded regulatory agencies could have their budgets increased by allowing them to keep a percentage of the fines they impose. The second is to establish a prize competition to "stress test" pending financial regulations or legislation, which would urge young lawyers and image-conscious law firms to compete to identify the biggest gaps in the financial system before the rules are enacted. The third is to really to prosecute fraudulent behavior, enforcing the already existing statutes.

By overviewing the Act, one can see that most of the measures implemented refers to microeconomic risk management to prevent them from expanding at the macro level. It does not consider that the interactions of micro decisions within macroeconomic dynamics can endogenously cause systemic risk. The basis of this legislation is the opposite, namely that it is possible to overcome microeconomic imperfections in the markets and thereby contribute to macroeconomic stability.

As the report by The Levy Economics Institute (2011, p. 10) points out: "the Dodd-Frank Act continues to be based on the mainstream theoretical framework that sees stability in complete markets and synergy in the provision and hedging of financial services". The law does not appear to have favored changes in the structure of the financial system. The foundations of the Gramm-Leach-Bliley Act had been reaffirmed. Even if we ignore that aspect of Dodd-Frank Act, which raised the slogan of enhancing financial stability, still many gaps are contained in its original version. This is not to mention the recent amendments, which can be considered as the beginning of further relaxation of the restrictions imposed on financial institutions, especially those rules relating to capital requirements. Actually, this leads us to ask whether the current state of the financial system has removed the possibility of the return to a situation similar to that which had led to the last financial crisis.

The process of financial reform must be inclusive of all parts of the financial system. In the meantime, there are growing concerns about the role of the shadow banking system in destabilizing financial system. One of the lessons to be learned from the recent crisis is that the attempts of banks and financial institutions to find ways to get rid of the burden of the new rules should not be underestimated. Such practices and attempts, commonly known as regulatory arbitrage should be taken into consideration, especially with regard to the growing concerns about the role of the shadow banking system where in banking activities are not regulated (Kroszner; Strahan, 2011).

In that regard, Kregel (2012) points out that Minsky proposed in the 1990s a narrow banking system – a way for the financial system to meet its basic objectives of financing the capital development of the economy and providing a safe and secure payments system – similar to what became the Dodd-Frank Act of 2010. But he himself abandoned this proposal as he considered it is not enough for an effective financial reform, since this discussion should not be limited to the size of financial institutions, but should aim at restructuring the financial system as a whole.

Precisely because of the characteristics of a narrow banking system, the Dodd-Frank Act of 2010 was born out of date. In the absence of an effective antitrust law, it is considered that the Dodd-Frank Act should be replaced by a simpler alternative, preferably before the next crisis erupts due to the numerous inconsistencies of the financial system (Kregel, 2012).

To put it in a nutshell, the Dodd-Frank Act of 2010 went no further than what Minsky (2008a, p. 323) called fragmented methods and changes made in retail: "policy must range over the entire economic landscape and fit the pieces together in a consistent, workable way: piecemeal approaches and patchwork changes will only make a bad situation worse". In this sense, the financial structure that led to the 2007/2008 crisis had been preserved.

5. Concluding remarks

Based on the Post-Keynesian approach, the objective of this paper was to examine the panorama of the banking business in the United States derived from the Depository Institutions Deregulation and Monetary Control Act (1980) and the Gramm-Leach-Bliley Bank Reform Act (1999). We investigated how the flexibility given to banks to exercise various types of activities and the very emergence of other agents (shadow banking system) outside supervision/regulation had provided financial innovations that endogenously transformed an apparent inexhaustible scenario of economic prosperity at a growing and immeasurable risk of systemic crisis. In this sense, we emphasised how changes in the institutional framework conditioned the process of financial dominance, led by the major banks – Bank Financial Holdings – which culminated in the 2008 financial crisis.

Following the crisis, the coalition of forces that was present and influenced the formulation and implementation of the Dodd-Frank Act in 2010 reassured, in this institutional framework, the interest of large financial institutions. It was argued that this Law did not seek to solve the problem of market forces that led to financial instability. The sense

of (de)regulation did not change, nor did the process of consolidation of large financial holdings as central agents in the process of accumulation of financialized wealth.

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