1. Introduction

The key role for the dynamics of capital accumulation in capitalist economies of credit-money created by the banking system was highlighted by both Schumpeter (1911) and Keynes (1930). For these authors and their followers, such as Minsky (1986), unlike the conventional approach, the existence of banks issuing money (cash deposits)\(^3\) frees the investors of any prior need for savings, or, in other words, from wealth accumulated in the past and its distribution.

Thus, banks are the only financial institutions that provide finance by being able to create money, and also act as financial intermediaries by participating in the creation of funding, differentiating themselves from other financial institutions which are called, consequently, non-bank. Non-banking institutions only exercise the function of intermediation of funds between surplus and deficit agents. Just by playing these two distinct yet linked functions, banks occupy a key position in payment and credit systems of modern capitalist economies, and for this reason, are under the control and regulation of the State (Freitas, 1997). This regulation, in turn, limits the space and forms of banking competition because, although they create money, which is a public good, as pointed out by Polanyi (1944), these institutions are private agents subject to the logic of profit-seeking.

The decision to leverage the buying power of entrepreneurs by creating money \textit{ex nihilo} depends on their expectations in relation to an uncertain and irreversible future. This, therefore, gives a pro-cyclical nature to the evolution of credit and a potential destabilizing role to banking activity. Driven by competitive dynamics, these institutions define their management strategies by the funding sources and applications, aiming to reconcile expected return and liquidity preference in order to increase their

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\(^2\) Ph.D. in Economics from the University of Campinas and a professor at the same University, CNPq researcher.

\(^3\) In countries where the institutional segmentation in the financial system prevails, this capability is unique to commercial banks (which thus become synonymous with the bank), while other financial institutions (investment banks, savings institutions, etc.) are called non-bank. In countries where the institutional form of multiple or universal banks prevail, such bank, besides acting in the money market by raising deposits and credit-money creation, is also present in other segments of the financial market.
profits. Over the periods of optimistic expectations, they grant credit without requiring safe collateral and underestimate the risks involved, since the adoption of a more prudent behavior may result in loss of market share. Additionally, they introduce financial innovations to circumvent the restrictions imposed by the prudential regulations in force, and/or create additional sources of income. In contrast, when expectations deteriorate, banks tend to reduce credit provision, reducing lines and deadlines, raising interest rates and collateral requirements (Minsky, 1986).

However, as Keynes (1930) and Minsky (1986) pointed out, the special position of banks is a consequence of the historical evolution of the banking system, which culminated in the emergence of an articulated institutional arrangement, being integrated and structured around a central bank. In each country this evolution culminated in a set of rules, fundamental in guaranteeing the credibility of the monetary system and defining which institutions have the prerogative to hold deposits and create money. Following in Keynes’s footsteps, Chick (1986 and 1993) identified six stages of the development of banks based on the British institutional model.

In the first stage, banks were numerous and small, their liabilities were not used as means of payment and, consequently, their lending capacity depended on the prior holding of deposits. In other words, banks were only financial intermediaries. In the second stage, bank deposits were used as a means of payment which allowed the expansion of credit. It is in this stage that, in macroeconomic terms, investment is freed from the need for saving in advance. In the third stage, with the development of the interbank market, which enables the exchange of reserves between banks, the ability of credit creation by banks grew significantly. Only in the fourth stage, when the central bank assumed the role of lender of last resort and guardian of the financial system’s stability, banks became able to grant credit at higher volumes in global reserves system, that is, if they want to be able to meet any and all demands for credit. Moreover, it is at this stage that a relevant part of the deposits is guaranteed by the state. When considering the typology of Victoria Chick, in the last two evolutionary stages, banking underwent substantial changes. In the fifth stage, which emerged in the 1950s and 1960s, respectively, in the United States and England, the practice of liability management arose, freeing the banks from the need of non-compulsory reserves as protection against a lack of liquidity, but, in contrast, significantly increased the risk of banking activity. The sixth stage, presented only in Chick (1993), is characterized by two processes: the securitization of credit, which
allows banks to reduce the risk of illiquidity intrinsic to banking, and the emergence of off-balance sheet operations (off-balance-sheet).

The 1988 Basel Accord (Basel I) further encouraged banks to increasingly use securitization and transactions unregistered in the balance sheets in order to escape regulatory guidelines and to obtain new sources of income. This process, known as regulatory arbitrage, exacerbated the competitive dynamics between the banks associated with the change in the macroeconomic environment and the processes of financial deregulation. This resulted in the introduction of a set of financial innovations which deeply transformed the nature of banking and culminated in the emergence of a new stage of evolution in the banking system.

This article aims to describe this new stage, whose dynamics led to the recent global financial crisis. The hypothesis that the seventh stage of bank development emerged on the threshold of the 21st century and that the main characteristic of the stage is the inextricable interpenetration between the balance sheets of the banking system and the so-called Shadow Banking System (SBS) is argued here. This was made possible by credit derivatives and structured products traded on the over-the-counter (OTC) markets, which allowed non-bank financial institutions to gain access to credit operations considered highly profitable. Such configuration multiplied and globally redistributed the risks present in the system, as well as the losses resulting from these risks, to a variety of financial institutions. Therefore, this stage was responsible for the transformation of a classic credit crunch, wherein there is acknowledgement of the sum of potential losses corresponding to loans with low collateral, into a systemic financial crisis in the international arena. Four years after its onset in mid-2007, it is still impossible to measure its impact on the bank balance sheets of financial and non-financial institutions, as evidenced by the recurrent episodes of distrust by investors in its stability. The arguments are organized as follows; the second section describes this new stage and explains how its dynamics culminated in the crisis. The third section, by way of concluding remarks, discusses the evolution of the SBS after the crisis and its implications for banking regulation and the financial structure of the banking system.

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4 In their latest paper on the subject (Chick, 2009), the author has not updated their typology. They just look at the relationship between securitization (a hallmark of the sixth stage) and the crisis.
2. The new stage of development of the banking system

The logic of the maximization of profits that underlies the behavior of banks and thus the creation of money is a source of inherent instability, and can put into question the stability of the monetary regime, a public good. Precisely because they occupy a central and special position in the monetary and credit system, banks became subject to state control along historical evolution, which involved the development of a set of institutions and instruments such as the guarantee of deposits, rediscount operations, the acting of the central bank as lender of last resort and prudent regulation (Freitas, 1997). However, as shown by Minsky (1986), as capitalist agents search for profits, banks actively react to regulatory, institutional and macroeconomic changes in the environment. This is done through the introduction of financial innovations that, in most cases, make existing regulations obsolete, while also requiring improvements in the regulatory framework. The stages of development of the banking system, as summarized above, resulted from the interaction between the competitive dynamics of the banks and these changes.

In the mid-1980s, when a new form of organization of banking operations emerged, especially in the U.S., the interactive and dialectical process between banks and regulators resulted in the sixth stage of evolution of the banking system. This stage was marked by a significant increase in the share of liquid assets on both sides of the banks' balance sheets. The organization called “originate and distribute” was made possible by the securitization of debt (also called secondary securitization), by which illiquid assets (bank loans) are transformed into liquid assets (marketable securities distributed to non-bank financial institutions). This was done by selling the original loans or revenue streams associated to a Special Purpose Vehicle (SPV), an off-balance sheet institution. This stage is also marked by the expansion of securities based upon primary debt and the proliferation of various other types of securities as the main mode of financing for financial institutions, businesses and governments (also called primary securitization). The “market-based financial system where banking and capital market developments are inseparable” emerged at this moment as well as the stage of capitalism termed “money manager capitalism by Minsky (1986), characterized by highly leveraged profit-seeking organizations, such as mutual funds and private pension funds.”
At the beginning of the 21st century, however, the model of originate and distribute suffered a quantitative and qualitative change. This was due to the intensification of the process of regulatory arbitrage in an environment of historically low interest rates, caused by the loose monetary policy (adopted after the bursting of the stock market bubble and the terrorist attacks of September 11th, 2001) and the loosening of controls on financial institutions and markets. In this context, in order to increase their profitability, universal banks (or those with a commercial portfolio) in developed countries (specifically the United States) opted to promote strong credit expansion. To expand beyond the level allowed by the regulatory framework of Basel, they developed and began to negotiate two financial innovations to withdraw credit risks from their balance sheets. This was done in large volumes on the opaque and unregulated OTC markets.

At first, the main instrument was structured products, resulting from the combination of bonds and financial derivatives, among which were Asset Backed Securities (ABS), Mortgage-backed securities (MBS), Residential Mortgage-Backed-Securities (RMBS), and CDOs (Collateralized Debt Obligation) (Fabbozzi 1998). The banks packaged the granted loans and issued bonds on them, with or without including derivatives. They were then submitted to the rating agencies. These structured bonds were divided into several tranches, with different risks and returns proportional to the cash flow generated by the service of the underlying credits. Thus, universal banks were getting more resources in addition to fees and commissions, allowing them to grant new credits and raise their profits in a process of increasing leverage.

Secondly, banks also began to use credit derivatives which can be defined as a deferred settlement commitment between the “protection buyer”, the agent wanting to hedge or speculate on credit risk, and the "protection seller", who agrees to an income stream in exchange for taking on the risk of having to repay a loan affected by "events" stipulated in the contract. Like other financial derivatives, credit derivatives are a zero sum game in which the losses of some correspond with the gain of others, when ignoring transaction costs. In other words, there is only a transfer of risk. Nevertheless, these instruments whose boom occurred starting from
2006, have an important specificity: their main risk involves the principal of the operation, whereas in the others with underlying assets involving interest rates, exchange rates, equity indexes, etc. the risk is the margin. It also became common to issue structured products based on other products of the same type, i.e. securitization squared or to the nth degree, or “synthetic” versions of structured products backed by credit derivatives rather than granted loans called synthetic securitization.

From 2002, competition among banks and other financial agents working in the mortgage market fostered the proliferation of structured products and credit derivative backed mortgages - with varying degrees of risk, including those at subprime- in order to attract investors because of their highest yield. These housing loan portfolios were quickly packaged and securitized (MBS, RMBS). In such transactions, loans to purchase homes were aggregated and transferred to a group of investors who bought bonds that could be traded in the secondary securitized debt markets, whose collateral was the financed real estate. The mortgages were also packaged into CDOs and resold. These CDO aggregated mortgages, credit card receivables and receivables from auto loans, among others. These securities, organized by commercial and investment banks, were composed of several tranches, each with a different degree of risk classified by the major rating agencies. The logic behind these pools of mortgages and assets was the reduction of default risks through diversification of assets that were supposedly uncorrelated (Farhi and Cintra, 2009).

Therefore, in a genuine process of alchemy, a number of different financial instruments of varying risks were combined according to the assets included in their composition, so that some of those backed by subprime mortgages were eventually reclassified with an excellent credit rating. The repackaging of subprime mortgages and their endorsement by rating agencies enabled their purchases by institutional investors with higher risk aversion such as pension funds and insurance companies. Some of these tranches as well as those of average risk were exported to investment funds in Korea, Taiwan, Australia, China, France, Germany and the UK, among others. Given the excess of accumulated financial wealth from, for instance, currency reserves of Asian countries and oil exporters, the trading desks of

5 According to BIS data, the volume of these derivatives increased from U.S. $ 28.6 billion in 2006 to $ 57.3 billion in 2008.
international banks on Wall Street had orders to buy any U.S. debt rated “investment grade” (non-speculative).

The riskiest tranches, called Equities, which took the first losses from defaults and delays and had a higher yield, were partly transferred to hedge funds and leveraged through financing by the same banks that issued them. Another part served as underlying asset in the new issuing of CDO (CDO of CDO). In some of these instruments, a guarantee of payment was added, whether by the originating bank or by a credit derivative such as credit default swap or by mono line insurers.

The expansion of these structured products generated large volumes of high risk waste tranches, known in financial market jargon as toxic waste. Difficult to be passed on to other investors, these were eventually transferred to the SIVs. To carry these securities, SIVs issued commercial paper and asset-backed commercial paper (ABCP), that is, short-term debt backed by assets and relied on a contingent credit by the controlling financial institution as collateral. At the beginning, the risky management of “toxic waste” allowed windfall gains arising from the differences between interest rates in the two markets. With the rise of short-term interest rates in the U.S., starting in 2004, excess liquidity forced the collapse of long interest rates, reducing spreads and the profitability of these operations.

It was the credit derivatives and structured products (as well as their synthetic images) that enabled the banks to remove many of the credit risks from their balance sheets, in order to leverage their operations without keeping the capital ratios required by Basel I. Therewith, the nature of banking underwent another metamorphosis; the direct relations with borrowers that acted as a "leading indicator" of default risks were broken. Banks took on the increased role of intermediaries of resources in exchange for a fee (Kregel, 2008; Chick, 2009).

However, this metamorphosis could only happen in such huge volumes because other agents, more specifically a group of non-bank financial institutions, were willing to assume the counterparty of the transactions carried out by banks to remove these risks from their balance sheets, i.e., take on the credit risks against a return that, at the time, seemed high. This set includes institutional investors like insurance companies, pension funds, investment funds, hedge funds and conventional funds, the special investment vehicles (SIVs, conduits or SIV-lites), and the major investment banks (brokers-dealers), who all multiplied the hedge funds under their
management, making room in their portfolios for products and riskier assets, building highly leveraged structures.

These agents formed the so-called Shadow Banking System (SBS), a term coined by Paul McCulley (2007). This system includes all the non-bank financial institutions that adopted a business model similar to banks. They transform terms, degree of liquidity and credit risk level, but do not have access to deposit insurance and/or to rediscount operations and lines of last resort lending by central banks. These institutions are also not subjected to the prudential rules of the Basel Accords. It is worth mentioning that U.S. regional banks specializing in mortgage loans which do not have access to rediscount, and the Government Sponsored Enterprises (GSE) (Federal National Mortgage Association, Fannie Mae and Federal Home Loan Mortgage Association Freddie Mac) created with the purpose of providing liquidity to the U.S. housing market (Farhi and Cintra, 2009), are also part of SBS.

According to the economists of the FED (Pozsar et al., 2010): “Shadow banks are interconnected along a vertically integrated, long intermediation chain, which intermediates credit through a wide range of securitization and secured funding techniques such as ABCP, asset-backed securities, collateralized debt obligations, and repo. This intermediation chain binds shadow banks into a network, which is the shadow banking system. The shadow banking system rivals the traditional banking system in the intermediation of credit to households and businesses” (Poszar et al. 2010:2). The detailed description of these authors is broader than ours as it also includes in the SBS the "finance companies, asset-backed commercial paper (ABCP), conduits, limited-purpose finance companies, structured investment vehicles, hedge credit funds, money market mutual funds, securities lenders." In other words, in their view, all market-based financial institutions are part of the SBS, not only those directly engaged in assuming the credit risk of the banks.

Thus, in an environment of low interest rates, the institutions of SBS sought to raise revenues by replicating one of the largest sources of income for commercial banks,

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6 Paul McCulley is executive director of Pimco, the largest asset manager in the world.
7 The regulations before the outbreak of the crisis limited deposit insurance and credit lines of last resort to commercial banks. However, as detailed below, at the height of the crisis, several institutions of the shadow banking system had to be rescued by the monetary authorities. This extraordinary support lasted until mid-2009.
8 For a detailed description of the SBS, see Pozsar et al. (2010).
namely, raising money in the short term, operating with a high degree of leverage, and investing in illiquid asset-backed long-term credit, without, however, being able to create money, nor being included in the structure of regulation and supervision. Not being able to create money by directly granting credit, they used short-term funds raised in capital markets, primarily through the issuance of commercial paper and ABCP purchased by money market mutual funds, in order to take on the counterpart of bank operations, both in the market derivatives, selling protection against credit risks, and in structured products, acquiring the securities issued by banks with a return backed by the repayment of the granted loans. They became, therefore, credit market participants, obtaining short-term funds to finance long-term loans, such as 30-year-mortgage loans (Kregel, 2008; Guttmann; Plihon, 2008). The time mismatch with funds obtained within the money market made them highly vulnerable to a withdrawal of resources or loss of trust by short-term investors, and to balance sheet imbalances, where there is an impairment of assets against liabilities.

Transactions between banks and non-banks (members of the SBS) had the OTC markets as their locus. In these markets, unlike organized markets, there are no standard contracts, trading rules or clearing houses, which promote the compensation of positions and ensure the transfer of gains and losses. The absence of these clearing houses highlights a high risk of the counterpart’s default. This risk arises every time a position in derivatives presents a profit, as this income is equivalent to the loss of the counterpart to the transaction. Because they are subject to fluctuations in market prices, their potential amount is uncertain, increasing the risks of OTC derivatives in comparison to those traded on organized markets. Counterpart risk can take on a systemic nature due to a domino effect caused by the default of a financial institution active in OTC derivatives.

Emerged and developed in the United States, the OTC derivatives operations underwent a huge expansion and spread across the globe, in a context of intensification of the competitive dynamics of the banks, as well as broad financial deregulation. In the view of the supervision and regulation authorities in developed countries, the internal mechanisms of corporate governance and management and banking risks were

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9 Persaud (2002) had already underlined the shift of the investments of the insurers, who took prominent positions in SBS, to riskier assets due to the impossibility, in a context of low interest rates, of reaching the required benchmark to fulfill their obligations by investing in low-risk assets.

10 For more details on the funding mechanisms of the SBS, see Pozsar (2011).
extremely efficient and sufficient to contain systemic risk. As a result, a huge international network of cross-appointments was created, that eludes any oversight and whose scope and format are extremely opaque.

It is important to clarify that since the late 1980s, the OTC markets have recorded extremely high volumes of trading in financial derivatives, which enables financial institutions to cover their risks in foreign exchange rates, interest rates and market prices of other assets, to speculate on the trend in prices or to take arbitrage positions. While negotiations were restricted to those assets, the relationship between the banking system itself and the set of non-bank financial institutions (the future members of the SBS) boiled down to the credits granted by the first to the second and the fact that it was common to carry out operations between them, in which the risk stood at the margin. Only when these markets started to negotiate the structured products and credit derivatives, did these institutions begin to behave like banks without being so, leading to the emergence of SBS and thus the interpenetration of the balance sheets of the two systems.

Due to the opacity of the OTC markets, only after the outbreak of the subprime crisis was it revealed that the risks had not been diluted among a large number of small speculators, but were concentrated in certain portfolios of the SBS, causing a huge loss of confidence and the paralysis of the international interbank market (Adrian & Chin, 2010). At the beginning of the crisis in July 2007, negotiations on structured products froze due to the sharp increase in defaults on subprime mortgages, uncovering the huge failures of the basic assumptions employed in these asset pricing models (Taleb, 2007). Assets that were accounted as mark to market in the balance sheet lost their value due to the total lack of liquidity in their markets.

From the outbreak of the crisis to its conversion into a systemic phenomenon, after the bankruptcy of Lehman Brothers, the most acute episodes (Borio, 2008) involved precisely the institutions of SBS which faced a “bank run against non-banks” (Kedroski, 2007). In revealing movements of the importance that this system acquired, the Federal Reserve and U.S. Treasury had to bail out many of these institutions including investment banks, GSE and even insurers, providing capital or credit lines, allowing access to rediscount operations with the acceptance of mortgage-backed securities and others, or giving guarantees to money market
Therefore, the relevant part of the SBS briefly came out of the shadows. The Bank of England also adopted similar measures by means of swap operations.

In this process, institutions seeking to survive eagerly sold the assets to which markets still existed, depreciating their prices. Without the availability of capital reserves, and with assets whose liquidity had disappeared therein causing their price to be immeasurable, as well as facing the rapid shrinkage of their funding source, some relevant institutions of SBS such as the big U.S. investment banks, simply ceased to exist. In March 2008, the failure of Bear Stearns, the fifth largest U.S. investment bank, was only averted by the intervention and the guarantees offered by the Federal Reserve for its purchase with major devaluation by JP Morgan / Chase. The refusal of the U.S. monetary authorities to prevent the bankruptcy of Lehman Brothers triggered the purchase of Merrill Lynch by Bank of America, while Goldman Sachs and Morgan Stanley were allowed to become financial holding companies, subject to the Basel standards and to supervision by the Federal Reserve, and with access to the rediscount window.

Institutions specialized in mortgage loans also experienced strong tremors in both the U.S. and Europe. The sharp loss of confidence in institutions with assets backed by mortgages also reached the two large quasi-public agencies, Fannie Mae and Freddie Mac. These private companies, considered as "government sponsored enterprises", could obtain finance at a cost close to the U.S. Treasury, and, simultaneously, operate in a more leveraged way than other financial institutions. On July 30th, 2008, Congress approved their rescue by the Treasury. Several insurers also incurred huge financial losses and some medium-sized ones went bankrupt. The most striking case was the world's largest insurer, American International Group Inc. (AIG). Before being rescued by the Federal Reserve, it had declared $321 billion in losses and write downs. Moreover, it had taken a short position in protection against credit risks in the derivatives market in extremely high volumes. On September 16th, 2008, in an unprecedented action, the Fed provided a loan of $85 billion to AIG (later raised to $180 billion) because of the size of its position as a

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11 For details on the mechanisms of emergency liquidity assistance to the institutions created by the SBS during the crisis, see Adrian & Chin (2010) and Pozsar et al. (2010)
seller of protection in the credit derivatives market, turning it into one of the largest counterparts to the banks' operations.

The losses of some institutions of SBS ended up, in part, finding their way back to the banks' balance sheets. This was the case for the SIVs that had some form of guarantee from the banks that created them. However, there were situations in which agents of the SBS did not repay the short-term loans obtained from banks. They also used lines of pre-approved bank credit and/or had to resort to some form of public bailout to be able to pay what was owed on the credit derivatives market. It was these events that revealed the overlapping of the balance sheets of the two systems.

Following the typology of Victoria Chick, the almost inextricable interpenetration between the regulated banking system and the SBS in opaque OTC markets is the main feature of the new stage of development in the banking system, or more specifically, the seventh stage. These markets were the predominant stage for trading assets and liabilities between the institutions of the two systems. They became counterparts of each other in operations involving credit derivatives, where the risk is the principal of the operation as opposed to being at the margin, like in other derivatives, strongly increasing the risk of contagion from their balance sheets.

The emergence of the SBS and the interpenetration of the balance sheets of the two systems, underlying the emergence of the seventh stage, are simultaneous phenomena that also characterize a new stage of the “money managed capitalism” and the “market based financial system”, in which "money managers " and other non-bank institutions mentioned above become "shadow banks" due to the structured products and credit derivative transactions with the banks in the unregulated OTC markets. At this stage, the integration between banks and capital markets and the importance of "money managers" in the dynamics of financial systems (already in the sixth stage) are pushed to the limit. Thus, we propose a definition of SBS distinct from that suggested by some authors such as Nersisyan and Wray (2010), for whom "shadow banks" are synonymous with "markets" or "managed money". That is, for these authors as well as for Pozsar et al. (2010) SBS would have appeared simultaneously with "money managed capitalism", being one of its constitutive aspects.

In the new organizational form of banking at the seventh stage, the large internationally active banks promoted the capital markets as a source of income rather than hinder its development in favor of the traditional functions of commercial
banks (Plihon & Guttmann, 2008; Kregel, 2008). They increasingly became more like universal banks or "financial services supermarkets" by developing a wide range of complex and diverse activities directly or through off-balance sheet vehicles, such as retail, investment, insurance, asset management, fund management pension, etc. To raise revenues besides through managed investment funds, universal banks also began to provide asset management services through its various departments, provide financial insurance (hedging) as dealers in the derivatives market, offer credit lines on issues of commercial paper and other debt securities in the capital markets and to sponsor hedge fund, providing credit for their operations and copying their business strategies. This business model was implemented by the investment banking sector within the universal banks and was responsible for a relevant part of the heavy losses in the crisis.

The role of the rating agencies in the makeup of this new stage should also be pointed out. These agencies had an accelerated growth and recorded strong rises in profits with the expansion of the securitization of asset backed securities. By assisting financial institutions in the structuring of "credit packages", that backed the debt securities to ensure the best possible rating, the agencies had relevant participation in the creation of the myth that active bank credit could be priced and traded as "low risk" in secondary markets. Moreover, they incurred a serious conflict of interest, as a substantial portion of their income came from these activities.

The changes in the nature of banking in the seventh stage, however, did not alter its distinctive character. The banks remained the only financial institutions able to create money and liquidity because only their liabilities are convertible in the legal tender currency issued by the central bank.

3. Conclusion: the survival of the SBS and the challenges of regulation

The crisis highlighted several aspects of the international financial architecture, especially the seventh stage of the evolution of the banking system, which were, up until then, shrouded in shadow and were largely the result of a loosening of prudential controls. These aspects play a crucial role in the vast accumulations of risk in the system and its brutal transformation into losses that continue, until now, immeasurable. Its main features and the complexity of the relations between the banking system itself and the SBS were only brought to light by the huge losses of institutions belonging to the latter. The unprecedented volume of risks accumulated by these institutions became
the main protagonists in the crisis (as noted above), as well as disclosing its close interconnection with the traditional banking system.

During the period the SBS came to light, it shrunk for three reasons: (1) acquisition of some of its agents by the regulated banking system (e.g., purchase of Bear Stearns by JPMorgan Chase and Merrill Lynch and Washington Mutual Bank of America), (2) transformation of the remaining major investment banks (Morgan Stanley and Goldman Sachs) in bank holding companies subject to regulation and supervision, (3) failure of some institutions (Lehman Brothers, several regional banks and hedge funds). Thus, according to the broad definition of Pozsar et al. (2010), its liabilities, which totaled $20 trillion in mid-2007, fell to $16 trillion in 2010, a figure still higher than the traditional banking system liabilities which increased from $13 to $14 trillion during the same period.

These data provided by FED economists bring out the two main issues that currently shape the global financial system after the most critical moment of crisis. On one hand, the SBS went back to the shadow, again making it difficult to assess their positions, leverage and volume risk. On the other hand, the balance of the regulated banking system increased due to the inclusion of two major investment banks and large acquisitions during the crisis. According to Nersisyan and Wray (2010: p. 3), the rescue of financial institutions followed "a strategy of increasing the size and importance of the most dangerous institutions".

These concurrent developments point to a continuity and even an upsurge of a systemic threat. After the crisis, banks have become even more “too big to fail”, and non-banking institutions continue to be “too interconnected to fail”, according to the definition given in a testimony to the Senate by the Fed chairman Ben Bernanke (2008a), At that time, Bernanke acknowledged that “Our financial system is extremely complex and interconnected, and Bear Stearns participated extensively in a range of critical markets. With financial conditions fragile, the sudden failure of Bear Stearns likely would have led to a chaotic unwinding of positions in those markets and could have severely shaken confidence. The company’s failure could also have cast doubt on the financial positions of some of Bear Stearns’ thousands of counterparties and perhaps of companies with similar businesses”.

There is only one way to mitigate this threat. A profound change in financial supervision and regulation should be implemented to minimize the fragility of the deregulated, liberalized and carelessly supervised financial system, which had enabled
the emergence and fostered the expansion of the SBS. The historical observation shows that changes in prudential controls are made in response to crises that uncover shortcomings and dysfunctions that can generate a new crisis with similar characteristics.

Both the rules of the Basel Accords and the nationwide ones relied largely on the idea that financial intermediation would be macro economically neutral, and, for the most part, the self-regulation of banking institutions would be sufficient in achieving this goal because the bank institutions would be the first who would have an interest in staying healthy. The attention paid to the markets would restrict itself to the search of corrections of eventual malfunctions that would arise according to the dominant theory of asymmetric information. Aspects such as the leverage of agents or excessive exposure to a counterpart risk were not considered important by the standards of supervision and regulation that existed before the crisis. As stated by Borio (2011, pg 3), “prudential tools were exclusively calibrated with respect to the risk profile of individual institutions, assessed on a stand-alone basis, regardless of their relationship with other institutions.”

However, the implementation of effective reforms of supervision and financial regulation has encountered enormous obstacles. As previously, the most comprehensive proposals for reform that have been discussed and/or approved remain confined to a national scope, while the issues of international harmonization of these rules were entrusted to the Financial Stability Board (FSB), that has, theoretically, an expanded mandate in relation to its predecessor, the Financial Stability Forum (FSF).

For different reasons, the task of planning and implementing this reform has been called herculean. After several decades of financial deregulation, the aspects to be covered are extremely broad and diverse. To be effective, these reforms must abandon one of the basic principles of national prudential standards and the international agreements on regulation and supervision: corporate governance and risk management by banks have evolved to the point that it is probable that their decisions are the most effective in preventing episodes that could culminate in systemic risk. The crisis revealed how this principle was mistaken. It also showed that the interpenetration of balance extends across borders. Ideally, the same standards would be adopted internationally, and there would be only one supervisory and regulatory body. However, faced with strong resistance from the governments of the
United States and Great Britain, proposed reforms “follow the same approach adopted prior to the crisis.”

Last, but not least, there is the fact that these reforms have not been considered as high priority. In the EU, the lack of political urgency in their approval means that the different proposals slowly follow their way into the intricacies of legislation. The United States only appreciated and endorsed the establishment proposals of new prudential framework (Dodd-Frank-Law) in May/June 2010, after the Medicare vote. However, in November 2010, Obama lost the majority in the House, and the implementation of the reform virtually stalled due to opposition from large financial corporations and those elected by the Republican Party.

Despite the difficulties in implementing this law, its scope is interesting because it foresees that all banking and non-banking institutions rated "critical", those that can put the financial system at risk, are subject to extensive regulation. This includes the constitution of systemic capital reserves, estimated by the contribution of each institution to the systemic risk, and of countercyclical capital, accumulation of defensive reserves during periods of prosperity to be used during times of economic difficulties. The so-called "Volcker rule" is also considered in the legislation. It contains a ban on proprietary trading by large universal banks, to avoid speculative investments that do not benefit their clients and also seeks to restrict the possibility, widely practiced since 2009, of using the cheap money provided by the lender of last resort for these transactions. Financial markets are also subject to strict regulations. Firstly, new disclosure requirements for securitized assets, with their emitters being required to keep part of their own balance sheets, secondly, more stringent external controls by risk rating agencies, and lastly, creation of clearing houses in the OTC markets and greater standardization of instruments to enable them to be traded in organized markets. In contrast, the law will not prevent the persistence of huge financial institutions whose size only increased in the crisis.

In the EU, the reform proposals have clear differences in the measures suggested and the emphasis given to each of them. At several points they even seem antagonistic to those approved in the United States. Since 2009, the European Union and England have given signs that they intend to create a more competitive banking system with smaller players in order to eliminate the institutions too big to fail. This direction led to the collapse of the International Netherlands Group (ING) and the three largest British banks, The
Royal Bank of Scotland, Barclays and Lloyds, who were all nationalized in the crisis. The Obama administration seems disinclined to do so, especially after the major acquisitions and rescues recorded during the crisis. Moreover, the EU has greater demands for transparency and local registration of hedge funds, and before the deadline of June 2010, adopted the application of rules for the largest reserves of banks' liquidity.

The FSB, which meets in Basel, only registered breakthroughs in areas where there is clear consensus, such as an increase in capital reserves and a greater selectivity of the assets taken into account in these banks' capital, in order to change such institutions from “too big to fail” into “systemically safe”. The proposal also increases the capital for banks’ operations in the financial markets and requires an additional counter-cyclical capital conservation buffer of 2.5%. Finally, it introduces a maximum leverage ratio calculated on total assets and not on risk-weighted assets, whose aim is to restrict the total of assets in relation to capital. These guidelines have raised much controversy, both by the banking lobby, which has managed to stall its implementation, and by those who believe that “the architects of reform are working around the edges, taking current bank activities as somehow appropriate and trying to eliminate only the worst excesses of the 2000s (Wray, 2011).”

The set of regulatory reforms and improvement of supervision does not prevent future financial crises, given the very nature of banking and finance. The purpose of the discussions on the subject, both the current and the past, is to seek to reduce its scope and its macroeconomic impact. The fact that the ongoing reform of supervision and regulation of the financial system have left much to be desired increases the risk of repetition of similar events. The smaller the scope of the countercyclical policies is, the greater the impact will be, as long as the context of "financial liberalization" that gave rise to them is perpetuated.

A statement by Paul Volcker of the U.S. Senate in February 2010 can be regarded as a provisional epilogue:

“I tell you sure as I am sitting here, that if banking institutions are protected by the taxpayer and they are given free rein to speculate, I may not live long enough to see the crisis, but my soul is going to come back and haunt you.” (Palletta, 2010).

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