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On the Consequences of Having a Central Bank with an Open Market-Policy Transmission Mechanism when a Financial Crisis hits. The case of the Federal Reserve and a Minskian Call for a Return to the Discount Window as the Primary Tool of Monetary Policy

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"On the Consequences of Having a Central Bank with an Open Market-Policy Transmission Mechanism when a Financial Crisis hits. The case of the Federal Reserve and a Minskian Call for a Return to the Discount Window as the Primary Tool of Monetary Policy."

Thesis submitted to Levy Economics Institute of Bard College

By Domenico Viola

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Domenico Viola

ABSTRACT.

This thesis analyzes the case of the Federal Reserve and highlights the negative consequences of having a Central Bank that normally prefers the open market rather than the discount window as the primary tool for the provisions of legal reserves to member financial institutions when usual private short-term credit markets get frozen. The two main negative consequences identified are from both a *financial-economic efficiency* point of view of the Central Bank's lender of last resort primary responsibilities, and from a *juridical-legal* point of view with respect to the interpretative problems concerning the emergency liquidity Section 13(3) of the Federal Reserve Act. In light of such consequences, and adopting a Minskian perspective regarding the specific field of central banking and monetary policy, the thesis calls for a return to a Federal Reserve relying on the discount window, instead of open-market operations in its customer relationships with member financial institutions.

Keywords: Minsky, Monetary Policy, Discount Window-Central Banking, Open Market-Central Banking, System Relationship, Financial Institutions and Position-Making Usage Innovations, Financial Structure, Lender of Last Resort, Section 13(3)

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Introduction.

Hyman Minsky long stressed the differences between a Central Bank which chooses to conduct its monetary policy and to transmit to financial markets and the entire economy the related transmission mechanism through the use of the discount window rather than through operations on the open market.

His preference for discounting technique-based monetary policy usage is due to various reasons, both proximate and ultimate. The latter are related to the likewise ultimate goals of Central Banks identified by Minsky within his institutionalist view of central banking and monetary policy, i.e. the maintenance of long-term financial stability, and the promotion of long-term capital development of a country's economy. On the other hand, the proximate reasons which led Minsky to prefer having a Central Bank operating upon borrowed reserves through the discount window can be associated with its relative higher ability to maintain an intimate and regular business contact with member financial institutions, and of guaranteeing the fulfilment of what Minsky considered and identified as the guidance function of monetary authorities. Therefore, these proximate reasons are also linked to a Central Bank's higher ability to be preventive and responsive against possible financial fragility-inducing endogenous evolutionary developments within money and financial markets, to exert both the insurer rights to set balance sheets and business (behavioral) standards to the insured member financial institution, and to perform its examination and supervision functions. To put in other words, as opposed to an open-market-central banking framework, one based on the discounting monetary management technique is by far more effective in giving a Central Bank the ability and power to control and guide the economy toward long-term financially sustainable relations, and thus to attain the two above-mentioned long-term institutional goals.

Furthermore and important for the argument of this thesis, Minsky did not only want that the Fed returned* to the discount window-biased monetary management usage with respect to only member commercial banks and other depository institutions such as savings and loans associations and mutual banks. He also explicitly wanted the direct access to the Fed's discount window be provided to money market institutions, too, such as Government bond dealers (and also to other financial institutions such as credit finance houses, insurance companies and even business corporations). The reasons were mainly related to the need to extend the domain of financial system's stability, broadly speaking, by extending the domain of responsibility of the Fed via assignment of the Federal Reserve System-membership status to such money market dealers and/or to any other financial institution whose relative importance within the financial structure increases significantly, for example, both as main private refinancing channels for member commercial banks and as main financing direct source of corporate businesses.

The extension of the direct access to the Fed's discount window would thus augment the liquidity of the financial structure as a whole given the new liquidity status provided to more institutions' portfolios and thus to more types of financial assets that are turned out as guaranteed sources of re-financing (or funds) at a guaranteed-floor price, taking thus one possible element of financial instability away, i.e. the uncertainty related to the protection of specific money market institutions and markets by the Fed.

Furthermore, Minsky's proposal to extend the protection of the Fed's discount window to money market dealer institutions was also aimed at avoiding any possible delayed lender of last resort intervention in their support on the part of an open-market-Central Bank, whenever extraordinary liquidity (re-financing) needs arose, did not lead these institutions to bankruptcy and thus to further cumulative contagion in terms of liquidity and solvency problems for other interrelated financial

*When it was established with the relative 1913 Act, the Fed operated upon member financial institutions' borrowed liabilities by means of the discount window until the years of the Great Depression, when the shift to the open-market-monetary management technique occurred and still is in force.

and non-financial institutions, and to relatively higher income and jobs losses. Therefore, because of these financial and economic inefficiency problems that may arise from delayed lender of last resort interventions of an open market-Central Bank in favor of non-member relevant money market institutions, this thesis will focus on the empirical-historical case of the various Fed's interventions for (non-member) money market primary dealers during the period in which various kinds of emergency liquidity facilities to the benefit of these latter were set up and provided for.

The same kinds of financial-economic inefficiencies highlighted by Minsky already in the early 1960s which arise from having an open-market-Central Bank dealing with crucial, non-member money market-institutions' extraordinary refinancing needs, were repeated roughly half a century later by the same Fed between late summer 2007 and summer 2008.

As an analysis conducted through the lens of Hyman Minsky's thought and in particular, using his insights into the fundamental differences between discount window and open – market central banking, the thesis will necessarily start by examining the “maverick economist ‘s*’ view of the subject and in particular, his insights on the fundamental differences between discount window and open – market-central banking, along with the reasons that led him to prefer having a Central Bank (Fed) operating its monetary policy mechanism through the discount window, rather than through operations in the open market and to extend access to the window to other financial institutions other than merely commercial banks. Part two will deal with today's Federal Reserve's discount window mechanism, with particular reference to the 2003 reform of the same mechanism, along with the following analysis of an open market-Fed's interventions aimed at rescuing (among many others), non-member money market institutions such as primary dealers, during the period between late summer 2007 and summer 2008.

In addition to that, part three will deal with the implications that would have followed from having a discount window-Fed carrying out its lender of last resort responsibilities to the benefit of commercial banks and of primary dealers which would have thus had membership status to the Federal Reserve System, and thus direct access to the Fed's window. These implications are framed around the different kind of interventions which would have resulted under a discount-window-central banking approach since the time liquidity pressures on various short-term credit markets for such non-member money market institutions started to develop. In addition to that, a brief juridical-type of analysis with relation to the use of the emergency liquidity facilities-Section 13(3) legal provision of the Federal Reserve Act will be carried out so as to highlight the juridical controversies arising from the spread use of the Section by an open-market-Fed when liquidity problems for non-member money market institutions occur.

Finally, the last part (four) presents specific policy proposals to reform today's Fed discount-window framework by putting forward the monetary management technique reform of returning to the discount window as the main source of borrowed reserves for member commercial banks, and to extend the direct access to the window to money market primary dealers, too. Needless to say, this proposal follows Minsky's thought and insights on the topic, and draws on the empirical evidence of financial and economic inefficiencies, and juridical-interpretative problems arising from lender of last resort interventions for non-member money market primary dealers on the part of an open market-Fed, during the global financial crisis.

**The term “Maverick Economist” is taken from professor Wray's book “*Why Minsky Matters: An Introduction to the Work of a Maverick Economist*” (2015).

Methodology.

This thesis rests on different kinds of analysis: theoretical-interpretative, logical, and empirical. The structure of the thesis itself will be composed of three main parts plus a final section in which conclusions and policy suggestions to reform today's Fed - private banking system relation will be detailed reflecting the Minskian-type of analysis in the previous sections.

In their turn, the analysis of each of the three parts will differ in nature. The first part is based on a theoretical-interpretative analysis of Hyman Minsky's thought concerning central banking and monetary policy, whereas the second part rests mainly on an empirical analysis of the (open-market-)Fed's interventions during 2007 and 2008 to the benefit of member commercial banks and non-member money market primary dealers. Finally, the third part is based on a logical-type of analysis. The methodology in structuring the whole work can be thus understood through the following "labels":

- What Minsky teaches us about the topic,
- How the Fed's discount-window framework works today and how the Fed rescued member commercial banks and non-member primary dealers as open-market-Central Bank during the crisis,
- What implications follow had the Fed's monetary policy usages been biased toward the discounting technique, and so
- How the Fed's discount window mechanism can be changed in light of the financial and economic inefficiencies, and of the juridical-interpretative problems arising from the open-market-Fed's interventions;

Given that the ultimate goal of this thesis is to extend Minsky's policy prescriptions for discount window- central banking to today's Fed, part one will be framed by his writings specifically related to the topic of central banking and monetary policy and thus, also, to his explanation of the differences between the two types of monetary policy approaches and of the reasons leading him to prefer the discount-window technique.

Therefore, the rationale of part one is to explain the underlying theoretical (and practical) reasons that led Minsky to prescribe the institutional reform of the Fed – domestic financial markets system relation. His preference for the discount window as the prime, "*steady source of reserves*" for financial institutions (not just commercial banks), cannot be understood if alienated from his endogenous financial fragility view that provided him with theoretical basis for his broad policy prescriptions, which also framed his central banking and monetary policy institutionalist view.

Part two of the thesis is divided in two sub-sections. The first one deals mainly with institutional and juridical(-Regulation A-linked) aspects of today's Fed discount window framework by focusing on i) financial institutions that are currently statutorily eligible to be classified as depository institutions; ii) the pre-2003 reform Fed's discount window framework, and iii) the role that the discount window has within the Fed's overall monetary policy framework. The analysis continues with the 2003 reform of the Fed's discount window-lending framework, explaining the changes and the claimed driving-reasons of the changes in the structure of the Fed's discount window, ending with a description of both current post-reform discount window facilities, and a historical and juridical brief overview of Section 13(3).

In addition to this first sub-section of part two, sub-section two will focus on the use by the Fed of its discount window (and of its open market operations) during the Global Financial Crisis, specifically on the interventions in favor of member commercial banks, and non-member money

**Another Minsky's direct intellectual contributions to debates held for the Federal Reserve authorities includes his research study to the Commission on Money and Credit, titled "*Financial Crisis, Financial Systems, and the Performance of the Economy*" (1960).

market dealers. The analysis will be conducted with reference to the i) various emergency-facilities/programs implemented for these kinds of financial institutions by the Fed between winter 2007 and summer 2008; ii) underlying motivations that justified the creation of each facility by the Fed for non-member primary dealer institutions; iii) structure of the transaction and collateral requirements; iv) volume of transactions; v) price-terms of the various programs. Furthermore, in the case of the emergency lending facilities implemented thus with invocation of authorization under Section 13(3), a juridical-type of analysis will be also attached to the institutional-financial examination of the various emergency programs.

The choice of the Fed is simply related to the vast work on the US Government monetary institution that Minsky provided throughout his academic career and to his intellectual contributions and direct participation within the debate about the “*Fundamental Reappraisal of the Discount Mechanism*” organized by the Steering Committee appointed by the Fed Board (Minsky 1970)**. The methodology followed in the analysis of the Fed was based on the decision both to highlight some of the main *juridical* aspects concerning the discount window itself and emergency lending (through the same discount window), and mainly to deal with the main economic and financial-inefficiency aspects of the whole Fed's interventions during the Crisis. Therefore, the analysis of the Fed will have both a Minskian-type economic and financial perspective and a "juridical touch." In particular, the juridical analysis will be derived from and inspired by some of Walker Todd's and Alexander Mehra's writings (Todd 2015, 2018a; Mehra 2010). With regard to the main normative provisions, Regulation A and Section 13(3) will be the main, though not only, sources of juridical knowledge shaping our examination of today's Fed discount window mechanism framework. The focus on Section 13(3), in particular, is justified by the relation to current discussions by Todd on occasion of the XXth anniversary of the Bear Stearns-J.P. Morgan deal (Todd 2018a, 2018b), and in particular to the importance that it had in the whole range of Fed's intervention for non-member primary dealers, specifically, and its relevance to our proposal for a discount window-Fed.

After analyzing Minsky's view of what a Central Bank does and should do, and his analysis of discount window versus open market central banking, after analyzing how the Fed discount window-lending framework has been structured after Minsky's death and how the Fed responded, in particular, to the emergency refinancing needs of primary dealers, the third part of the thesis will deal with the financial-economic inefficiency and juridical implications following from the alternative institutional-operative scenario with the Fed operating as a discount window-Central Bank and granting direct access to the window also to money market primary dealers."

Whereas, the economic and financial view that will serve to analyze briefly the collateral effects of the Fed's *overall response* to the crisis will rely on a Minskian perspective (Minsky 1959, 1960, 1972, 1986, 1992), and on Wray's critical "*overview of the crisis response*," in order to highlight the main criticisms concerning such interventions which content should (have) be(en) absolutely different if the structural basis for future financial crisis are not maintained (Wray 2012, Ch. 5).

The methodology used in the brief analysis of the linkages between the critical features of the global Fed's interventions during the GFC and the subsequent maintenance, if not reinforcement, of the financial crisis-inducing structural features of the U.S. financial system follows that contained in Kregel, “*Beyond the Minsky Moment: Where We've Been, Why We Can't Go Back, and the Road Ahead for Financial Reform*” (2012).

The entire structure of the thesis has been thus framed to allow the reader to grasp the underlying logical analysis supporting and leading to the conclusions embodying my final policy suggestions that call for a shift in the Fed-financial markets system relation in line with Minsky's thoughts on the topic. Such policy prescriptions will be justified in light of the two elements of financial (and economic) inefficiency aspects, and juridical interpretative problems of the Fed's interventions in favor of non-member primary dealers.

Literature Review.

After the burst of the Global Financial Crisis (GFC), some mainstream economists have re-discovered or “re - read” Minsky, specifically referring to his Financial Instability Hypothesis (FIH), and they even labelled the same 2007-08 large-scale financial crisis as a “Minsky Moment,” rather than as “Minsky Process*”.

Other than fundamentally mis-interpreting Minsky’s view about capitalist economies and his deep and detailed explanations of the *processes* that endogenously increase financial fragility leading to the decrease of the domain of macroeconomic stability and thus to financial crisis; other than completely ignoring Minsky’s long devotion and contributions to the field of financial regulation, supervision and bank examination, the New Monetary Consensus club and some members of the Federal Reserve System have also neglected Minsky’s insights specifically concerning the issue of “*Central Banking – private banking system relations*”, and with this, his explicit predilection for a discount window – Central Bank (Minsky et al. 1960*, Minsky 1969, 1970, 1972c, 1977, 1992, 1993). This is quite singular for a theory (the New Monetary Consensus), which places such a huge prestige on central banks and on the (alleged) short-run macro-economic management and stabilization powers of their fine-tuning-type of monetary policy, and after that, as said, the burst of the GFC led them to re-discover Minsky.

Throughout his entire academic career, Minsky (1957, 1960, 1969, 1970, 1972c, 1977, 1986, 1992) always favored and prescribed (to the Commission on Money and Credit, first and then to the Fed), the use of the discount window, rather than the open market, as the primary, steady source for bank reserves. In his research study for the Commission on Money and Credit (Minsky 1960), he had already advanced explicit policy proposals that saw the Fed returning to the use of the discount window as the prime tool for the conduct of monetary policy, and thus for operating upon borrowed bank reserves. “*The day-to-day open market operations in the money market should be replaced by easier and wider access to the discount window at posted rates to iron out temporary market difficulties*” (Minsky 1960, pp. 379). On the other hand, “*Open market operations should be undertaken in order to effect permanent increases in the money supply*”, while “*seasonal adjustments in the money supply should be the result of discount rather than open market operations*” (Minsky 1960, pp. 379 – 380).

However, there are, of course, some specific reasons why Minsky predicated the return to discount window central banking that were obviously related to and supported by his broad two-price theory of financial instability theoretical framework (Kregel 1992), and that were related to what he believed a Central Bank should do. His view of what a Central Bank should do markedly differed from both the old neoclassical synthesis discretionary fine-tuning approach, and the monetarist fixed “money”-growth rate rule approach to monetary policy (Minsky 1957, 1970, 1972a, b, c, 1977, 1992).

Indeed, for Minsky, the *ultimate* goal of Central Banks and of monetary policy should be that of maintaining the long-term financial stability of financial markets and thus of the economy as a whole, with the Central Bank contributing with other relevant Government agencies to pursue the crucial task of policy makers of stabilizing instability**, by means of capital and financial assets prices long-run stabilization, and that of promoting the long-term capital development of the economy (Minsky 1957, 1960, 1970, 1972c, 1977; Kregel 1992).

For Minsky, the same existence of Central Banks is in sharp contrast with the usual corollary of self-stabilizing, full-employment seeking markets of the neoclassical price theory (Minsky 1977).

*Hereafter Minsky 1960.

**Indeed, as Kregel (2010, pp. 2) reminded us, Minsky’s view about financial crisis was not one of “moments”, but one that dealt with “*sustained, cumulative processes in which periods of stability induce an endogenous increase in potential financial fragility*”. Fragility provides the fertile ground for financial instability, leading to a process of debt deflation and a full-blown Minsky crisis.

He highlighted how Central Banks exist because of the endogenous, cumulative tendency of capitalist economies with sophisticated, complex and interdependent financial institutions and usages to increase the weight of speculative and Ponzi financial relations within the financial structure during periods of relative tranquility, especially during periods of economic booms, and thus to tend toward systemic financial instability. Put it other words, central banking exists because speculative and Ponzi finance exist, and it increases in importance whenever the weight of these two kinds of conceptualized financial relations dominate the whole financial structure relative to hedge finance relations (Minsky 1977, 1986, 1992)

Therefore, for Minsky, Central Banks are important exactly because of the endogenous cumulative tendency of capitalist economies to generate fragile financial conditions conducive to financial instability and, harking back to Keynes' insight about the fundamental role of economic policy in general, Central Banks are also important because economic policy can affect the development path of an economy (Minsky 1977, 1992).

Minsky underlined that the Central Bank is the public, State's (in the U.S. federal) institution holding the prerogative of being the monopoly issuer of the liabilities (reserves and banknotes) that reside at the top of the hierarchy of socially accepted liabilities. These liabilities are thus needed by member commercial banks to ultimately settle tax and other payment obligations toward the Government, to meet clearing losses to other member financial institutions, and to acquire foreign exchange at guaranteed terms (Minsky 1959a, 1959b, 1977, 1986, 1992). Being the monopoly issuer of something which is therefore valuable for member institutions, i.e. of reserves and banknotes, not only is the Central Bank able to exogenously set and hit the overnight inter-bank rate, but it can always be able to affect member financial institutions' behavior and portfolio preferences, within a non-convertible flexible exchange rate monetary regime, where it enjoys full control of its portfolio** (Minsky 1977, 1992).

In his historical and institutional analysis of central banking and of monetary policy with particular reference to the Federal Reserve, Minsky always highlighted that the primary responsibility of Central Banks is to be the lender of last resort to financial markets, and not individual institutions, as they exist. Moreover, he always highlighted how the Federal Reserve was created through the relevant 1913 Act exactly for lender of last resort purposes, by providing flexible (or infinitely elastic) currency to solvent but illiquid member commercial banks*** (Minsky 1959a, b, 1960, 1977, 1986, 1992, 1993a; Kregel 1992).

The Central Bank is the operator of monetary policy, being able to operate upon the reserve base and on overall financing terms. The Central Bank is the fiscal agent of the Government, and (in a fixed-exchange regime), the protector of "exchange" values (Minsky 1959a, 1977).

Using today's technical jargon, for Minsky the proximate policy variable target is not the growth rate of some narrowly defined "money supply" (monetarism), but should be the structure of policy rates, whereas the ultimate variable target that Central Banks can and should control is not current output prices, but financial and capital assets prices, as mentioned before.

Minsky long stressed that Central Banks cannot control the "money supply," and thus determine its pace (Minsky 1972a, 1977, 1986). In fact, the level and growth rates of money supply are endogenously determined by the demand for credit by business firms (and households in the case of debt-finance consumption), and the acceptance and the accommodation of that demand by the

*See Minsky (1986, Ch. 1, pp. 11) on the difference between the concept and the policy and political task of stabilizing instability and the concept of eliminating instability which is an impossible task to achieve given the very endogenous nature of capitalist economies to tend toward increasingly fragile financial relations.

**See Wray (1998, 2005, 2007), for a discussion on the trade-off between the exchange rate regime and the ability of a Central bank to exogenously control the overnight interest rate target.

***For a detailed analysis of the events and reasons that led to the making-process of the Federal Reserve Act see also Willis (1916).

financial system. Or to put in other words, the relevant portion of the whole “money supply” which is related to the generation of aggregate demand “*emerges out of the economy’s financial processes*” (Minsky 1977, pp. 15, see also Minsky 1972a, 1986). The composition itself of the aggregate supply of money depends on the evolution of the entire economy, and thus changes as result of financial institutions and practices innovations and also of financial regulatory measures. In a (capitalist) world in which competition among capitals for profits exists and leads profit seeking-financial (and non-financial) institutions to innovate as a way to find new sources of profits, in response to existing profit opportunities and/or to regulatory constraints upon potential profits, the growth rate of the money supply will be decoupled from the behavior of the reserve base.

Therefore, not only is the Central Bank unable of controlling the “money supply”, but it is also an ineffective regulator of the volume of loans to businesses and households by means of fine-tuning quantitative changes (Minsky 1960, 1969, 1972a, 1977).

In fact, Minsky pointed out how the US financial structure had evolved so much since the period 1907 – 1913, when the debates and projects for the establishment of the Federal Reserve System were underway, producing a radical change in the relative weight of the Fed’s two main roles as “regulator of the economy” and as lender of last resort (Minsky 1960, pp. 370). This reduced the ability of the Federal Reserve as regulator of the economy, given that the effectiveness of a Central Bank’s actions and thus the effectiveness of monetary policy transmission mechanism is determined by the set of existing financial institutions and position-making usages being thus a function of the ongoing institutional and financial structure (Minsky 1960, 1970, 1977, 1992). Financial usages-innovations-induced portfolio transformations or “shifts” that allow the financial system to finance business activity during a boom do inhibit the ability of a Central Bank to control the volume of loans, and in particular to reduce it in order to restrain an undue speculative-inflationary expansion (Minsky 1957, 1969, 1970). Indeed, since his early academic career, Minsky (1957) pointed out the endogenous nature of financial innovations and the way monetary policy can induce new financially destabilizing* money market institutions and usages innovations, and he also explained (1960, 1969, 1970, 1972a), that the ability of the Federal Reserve as regulator of the economy by means of quantitative (or reserve base), and interest rates induced-policy changes had diminished as result of such mutations.

He noticed that, already by the second half of 1950s and 1960s, financial institutions and usages innovations had decreased the importance of member commercial banks within the financial structure, increased that of non-member money market institutions, while also changing the kind of relation between member commercial banks and their customers (Minsky 1957, 1960, 1969, 1972a, c, 1986). In fact, member commercial banks were increasingly relegated to play the institutional-conventional role of proximate lenders of last resort for various non-member money market financial institutions, whereas the role of initial supplier of finance for business activity (and households’ consumption expenditures) was increasingly shifting toward these latter institutions (Minsky 1957, 1960, 1969, 1986).

One example of these evolutionary dynamics was right the late 1960s shift of business corporations to finance and refinance their position by issuing short-term commercial papers, rather than by obtaining short-term credit from member commercial banks (1969, 1986). In fact, member commercial banks were increasingly relegated to playing the institutional-conventional role of proximate lenders of last resort for various non-member money market financial institutions,

*Minsky highlighted that financial institutions and position-making usages, in their turn, introduce new layers of payment commitments, and reduce the liquidity of the financial system as liquidity-decreasing portfolio transformations through which activity is financed in new ways, with either new liabilities invented or by assigning new uses to old instruments (Minsky 1957, 1986, Ch. 4).

whereas the role of initial supplier of finance for business activity (and households' consumption expenditures) was increasingly shifting toward these latter institutions (Minsky 1957, 1960, 1969, 1986). One example of this evolutionary dynamic was right the late 1960s shift of business corporations to financing and refinancing their position by issuing short-term commercial papers, rather than by obtaining short-term credit from member commercial banks, that were in their turn taken (purchased) by money market commercial paper dealers (Minsky 1969).

On the other hand, he stressed that the evolution of the financial structure toward increasing fragile portfolio-financial relations led to a logical increase in the importance of the Fed's lender of last resort function (1960).

Since the late 1950s, Minsky recognized that the lender of last resort function of a Central Bank (CB) has "*preventative as well as rescue aspects*" (Minsky 1959a). For simplicity, we can also differentiate the two aspects by referring to CB day-to-day refinancing operations (or reserve policy), and lender of last resort functions, respectively. However, in this case, for Minsky, to distinguish did not mean to separate. Indeed, as we shall see below, Minsky did criticize the Fed for such separation, pointed out the direct conflict that arises between the two kinds of operations from such separation and advocated the return to discounting technique-based monetary policy (Kregel 1992). For Minsky (1959a, 1960, 1992), a Central Bank should be "preventive", that is it must prevent financial conditions conducive to financial instability from developing. In fact, "*central banks are the institutions that are responsible for containing and offsetting instability and, by extension, they have a responsibility to prevent it*" (Minsky 1992, pp. 9).

Indeed, as Minsky highlighted, given that, as lender of last resort, a Central Bank has the responsibility to intervene whenever financial stress emergency circumstances occur, it has also the right and the responsibility to "*control and prevent business practices that tend either to create or to worsen financial crisis*" (Minsky 1986, Ch., pp. 51). Specifically, the right itself to control and prevent the development of fragile financial practices and usages stems from the right of an insurer to set balance sheet and business standards to the insured institution.

In this case, the insurance itself is simply related to the liquidity status that the protection of the Central Bank's discount-window gives to any private financial asset which is declared eligible for discounts at the window or as collateral against Central Bank's credit.

Given the endogenous, inherent tendency of the financial system to evolve toward an increasingly fragile structure (dominated by speculative and Ponzi financial-portfolio relations), during protracted periods of relative tranquility, with the crucial role played by financial institutions and position-making usages innovations, a Central Bank must *guide* the evolution of the financial structure and system by affecting member financial institutions' behavior and portfolio preferences. Indeed, as Minsky stated, "*Central banking is a learning game in which the central bank is always trying to affect the performance of a changing system. Central banking can be successful only if central bankers know how the institutional structure behaves and correctly assess how changes affect the system. Central banks have to steer the evolution of the financial structure.*" (Minsky 1992, pp. 10) For Minsky, a Central Bank should be preventive against what he called the "standard scenario" of financially sophisticated and capital assets – using capitalist economies (Minsky 1970, 1977). Such standard scenario consists of endogenous cumulative, sustained process of runaway investment booms and inflation, culminating then in deep debt deflations and depressions (Minsky 1977, pp. 6). For Minsky, the upward direction of the business cycle is the fundamental source of (endogenous) financial fragility and thus instability in a market capitalist economy, with the financial structure tending toward ever complex and interdependent, thus increasing fragile financial-portfolio relations. Such endogenous, cumulative financial fragility dynamics materialize themselves in the form of liquidity-stretching speculative portfolio transformations. During protracted periods of relative stable and good times, the amount of debt and debt servicing relative to income-cash flows from operations increases (i.e. layering increases faster than income or

balance sheet payment increases faster than income payments), the liquid asset-to-illiquid asset-ratio within economic units' portfolios decreases, and thus the inside-to-outside and quasi-outside assets-ratio augments, i.e. portfolio payments increase faster than both balance sheet and income payments, with the nominal value of inside assets increasing both because of quantitative changes and because of price changes due to capital gains (Minsky 1970, 1986, 1993a).

Therefore, the resulting ever "*closer articulation*" between cash inflows from operations and cash outflows leads financial and non-financial institutions not only to require continuing flows of cash from refinancing sources to succeed in honoring their payment commitments (i.e. their viability is much more dependent upon the behavior and the performance of money and financial markets than before), but also to be less able to withstand a relatively small shortfall of cash flows from operations or from normal refinancing sources and/or an increase in refinancing costs,

Therefore, the probability that a "*not unusual event*" can force economic units to engage in painful sales of positions to make position increases. (Minsky 1970, 1986, 1993a). The sources of the endogenous tendency of a long-lived and expensive capital assets-investing economy with a sophisticated, complex and interdependent financial system to explode during protracted periods of tranquility is simply the result of time financial relations due to the existence of money (debt)-contracts, and of the effects that the recent historical time path of the economy (with his legacy of recent past income and financial outcomes, and of liabilities and payment commitments), and current "market" outcomes exert on profit-seeking non-financial and financial institutions boards' *degree of uncertainty*, and thus *expectations* (toward future financial and economic outcomes of operations), and *taste for risk* which, in their turn, drive their respective speculative portfolio decisions. Such tendency toward a speculative and Ponzi-finance-dominated financial structure during protracted periods of relative stability is the "*unchanging attribute*" of modern capitalist economies (i.e. "*stability is destabilizing*", Minsky 1986, pp.), which must then be coupled with the crucial role of institutions, policy, and usages in determining the "*path the economy traverses*" (Minsky 1986, Ch. 7). Given the endogenous innovative nature of profit-seeking financial (and non-financial) institutions, the guidance-of the financial structure or the determinant of financial practices-function (Minsky 1959a, 1969) requires that the Central Bank, not only be aware of the conditions conducive to institutional and usage innovations within money and financial markets, but also be *responsive* to institutional, financial practices and position-making usage changes by re-examining and adapting monetary policy tools, operations and financial regulation, along with its domain of responsibility, to money and financial markets changes*.

Indeed, Minsky always relativized the appropriateness of the Central Bank's domain of responsibility, of monetary policy tools and operations, and financial regulatory measures to the evolutionary status reached by the structure of financial institutions, relations and usages each time. In addition to that, he highlighted the feedback existing between monetary policy transmission mechanism and the institutional structure of financial markets and of the economy as a whole, in that financial institutions and usages innovations affect the effectiveness of Central Bank's actions and operations, and, in their turn, these latter affect the evolution itself of the financial structure (Minsky 1957, 1959a, 1969).

In light of his view of the evolutionary nature of profit-seeking financial institutions, instruments and usages, a Central Bank should thus be discretionary in the determination of its policy prescriptions, operations and tools, and in defining (extending) its domain of responsibility (Minsky 1959a, 1969, 1977). No fixed rules can be thus set and followed according to Minsky, given the ever-evolving and complex nature of the environment in which a Central Bank operates and which it must guide in order to guarantee the maintenance over time of a stable monetary environment: the "*appropriate central bank action in any situation depends upon the institutional structure*" (Minsky

*See also Minsky and Campbell (1987, 1988).

1977, pp. 16). A Central Bank should actively guide the evolution of the financial practices and structure in order to be successfully “preventive”, and also in order to aid the “*extraction and the allocation of the surplus*” (Minsky 1977) in the economy within a long-term capital development economic-policy perspective. With regard to this latter function and capital development goals, in perfect line with the policy outcomes of his two-price theory of financial instability, Minsky (1977, 1978, 1992) proposed that the Central Bank should induce member commercial banks (and money market intermediary dealers, as we shall see below), to finance (relatively more) labor intensive production processes with relatively short gestation periods and inexpensive capital goods so as to strongly minimize the financially destabilizing and inflationary factors that are inherent in alternative types of (more capital intensive) investments (with more expensive capital assets and longer gestation periods).

The guidance function is thus aimed at directing the system to the maintenance of a relatively higher portion of hedge financing arrangements within a country’s financial structure (Minsky 1992), and also to avoid a possible incompatibility between the Central Bank’s monetary policy stance and the existing regulatory-institutional framework generating further destabilizing thrusts, as it was the case with savings depository institutions (Minsky 1969).

Put it other words, for Minsky a CB should “lean against” speculative and Ponzi financing structures by inducing member commercial banks (and/or selected money market institutions) to resort to financial assets that are linked to the ownership of manufacturing or commercial inventories thus reflecting short-run business activity (Minsky 1992).

His endogenous view of financial institutions, instruments and position-making usage innovations, and thus his endogenous money view, his awareness of the inherent systemic destabilizing effects of such changes as additional layers of payment commitments within the financial structure and as liquidity-decreasing portfolio transformations, along with his awareness that a feedback exists between a Central Bank’s monetary policy effectiveness and the evolution of the financial structure, led Minsky to emphasize the role (or function) of a Central Bank (in his case the Fed) as the regulator and determinant of *financial practices*, thus as *guider of the financial structure*, rather than as a regulator of the economy through fine-tuning quantitative changes, as was the case in the old neoclassical synthesis (and of the new monetary consensus, today).

Indeed, as mentioned before, since his early career (1959a), he always preferred a long-run financial stability perspective for central banking and monetary policy rather than prescribing short-run economic stability objectives (see also Minsky 1959a, 1969, 1970, 1977, 1986). This entails a Central Bank emphasizing the qualitative powers of the preventive aspect of its lender of last resort primary responsibility, by selecting the hedge-finance-based financial instruments that it will protect by thus affecting relative prices, rather than any quantitative powers of short-run variations of reserves and of policy rates inherent in the neoclassical fine-tuning approach to monetary policy. For Minsky a Central Bank can affect the course of the economy only because of its power and ability to affect banks’ and other financial institutions’ practices, not because of its alleged ability to control somehow the defined money supply.

In addition to that, for financial stability reasons, Minsky rejected the old neoclassical synthesis fine-tuning approach to monetary policy, as he did reject the idea of monetarists that monetary-policy-induced disinflationary processes are painless and easy to achieve without any negative effect on the solvency of financial institutions*, especially when the financial structure is already weighted toward speculative and Ponzi finance (Minsky 1972a, 1977).

It is possible to distinguish some *proximate* and *ultimate* reasons that led Minsky to advocate the (re-) use by the Fed of the discount window as the main, steady source of member financial

*The lagged negative effects on the solvency of savings and loans associations and of commercial banks during the late

institutions’* daily refinancing operations. The *ultimate* theoretical reasons leading Minsky to prefer the use of discounting operations as the primary tool through which operating upon bank reserves can be related to the two ultimate goals of the Central Bank and of monetary policy themselves identified above, and to the relatively higher ability of a discount window-Central Bank to achieve the two. In fact, as we shall see below, as opposed to an open market-Central Bank, a State’s monetary institution which conducts its monetary policy by means of the discount window, is by far much abler to guarantee the attainment of long-term financial stability and capital development of a country’s economy, thanks to the peculiar kind of system relationship characterizing and distinguishing a discounting technique-based monetary management framework from an open-market one (Minsky 1960, 1970, 1972c, 1977).

Therefore, the *proximate* reasons can be understood by looking at the operational differences between a discount window and an open market – Central Bank in terms of the properties of system relations that this latter has with member financial institutions and financial markets as a whole. An open market-Central Bank operates upon bank reserves by means of purchases and sales of either government debt or private debt. Since the time the Fed shifted to dealings on the open market, rather than discounting operations at the window, to operate upon reserves (see below), the Fed has chosen the former type of financial instruments to carry out its open market operations, even though, as Minsky pointed out, it could have also operated with private liabilities** (Minsky 1977). An open market-Central Bank lets member financial institutions refinance their positions via private refinancing channels (i.e. Treasury bills markets, and/or other money markets such as the commercial paper or the certificates of deposit one, according to the relevant position-making market/s and instrument/s used each time). It uses open-market operations mainly for fine-tuning purposes (usually to sell government bills and bonds to drain reserves and increasing the structure of policy rates, i.e. discount rate and overnight rate), especially when a private-debt/investment-led inflationary expansion develops, as it was during the 1960s-early 1970s old neoclassical synthesis-based fine-tuning monetary policy period (Minsky 1960, 1969, 1972c, 1975, 1986, 2013).

On the other hand, a discount window – Central Bank operates upon reserves by means of either daily purchases or daily discounts of pre-defined eligible assets that are thus accepted as collateral for credit (Minsky 1977, 1992). Within a discount window-central banking institutional framework all member financial institutions will get their position-making needs accommodated directly and mainly at the discount window by their Central Bank (Federal Reserve District Bank in the U.S. system), rather than mainly by private refinancing channels. As opposed to a discount window-Central Bank, an open market-Central Bank does not have the power to benefit from continuing knowledge of ongoing institutional, financial practices and position-making usages changes within money and financial markets, as the continuing, regular and intimate business relationship which discount window-central banking allows (Minsky 1986, 1992).

As a result, given the endogenous innovative nature of profit-seeking financial institutions and position-making usages which render the robustness of the financial structure a transitory feature of this latter, especially during periods of high and/or rising interest rates and/or of speculative and

1980s generated by the 1979-82 Volcker-monetarist experiment which, along with relatively cheaper banks’ deposits-penalizing payment systems innovations and the change in the international influence of the United States during those years, strongly contributed to the industry bankruptcy are one example of the negative financial repercussions of monetary policy attempts to dis-inflate the economy (Minsky 1993a, see also Wray 2010).

*In the U.S. commercial banks and other depository savings institutions such as savings and loans associations. In other countries such as the U.K. member institutions used to be only money market discount houses, and not commercial banks (Minsky 1960, 1992).

**With the only exception of the open market purchases and Quantitative Easing (QE) programs for long term securities such as Agency Mortgage-backed Securities (MBS) carried out by the Fed in the aftermath of the Global

inflationary economic boom, an open market-Central Bank will lose its ability to be responsive to money and financial markets institutional and usages changes and thus also to *guide* and *control* the evolution of the financial structure and markets toward financially robust relations (Minsky 1969, 1986, 1992).

In particular, Minsky explained how in an economy with a complex financial structure, as it was and is in the case of the US, where member financial institutions' position – making activities are no longer carried out via sales of government bills in predisposed secondary markets, an open market-Central Bank mainly operating in Government debt does completely lose its direct business contact with member commercial banks, and does therefore lose its ability to guide the evolution of position-making usages and of financial relations. (Minsky 1992, pp. 12)

This was both valid during the 1960s, when commercial banks shifted to liabilities management position-making techniques, with a subsequent increase in the ratio of purchased liabilities – to – service liabilities (and thus in the overall system financial fragility*), and today, with capital management techniques that have replaced the former since the late 1980s. (Minsky 1970, 1986, 1992, 1993a, 1996) With regard to the guidance function, as Minsky explained (1977, 1992) the ability of a Central Bank to affect member banks' asset portfolio preferences, thanks to the above-mentioned superior institutional position that its liabilities enjoy, allows it to be able to relate variations in reserves directly to the asset structure of member institutions. Indeed, a discount-window-Central Bank “*takes a stand,*” through its qualitative-selective powers to choose the “*types of instrument it wants to see used,*” and thus the type of “*activity it wishes to see financed*” (Minsky 1977, pp. 18 – 19). Specifically, the performance of the preventive and thus of the guidance function by a discount window-Central Bank would imply that the eligibility for continuous rediscounting (or for the Central Bank's “*co-financing*”) be assigned to business activity related-private financial assets that embody *short-term hedge financing arrangements* (Minsky 1992). The guidance of the financial structure-function will be thus carried on by a discount window-Central Bank through a pattern of relative prices differentials between eligible, and thus protected assets and non-eligible, thus non-protected assets, with the former thus enjoying better, more favorable refinancing terms than the latter. Put it other words, the evolution of the financial structure will be guided through the Central Bank's (Fed's) portfolio to “*a favored interest rate in the market for the eligible paper*” (Minsky 1992, pp. 14). The participation of a discount window-Central Bank in the co-financing of specific hedge finance-based business activity (and also debt-financed households expenditures, see below) financing arrangements, and thus its ability to induce member commercial banks to resort to relatively safer banking and financial practices is the main proximate reason leading Minsky to call for the return to a discount window-Fed with reference to member commercial banks (Minsky 1992). The ability of a discount-window-Central Bank to influence the way business is financed, and the crucial importance of the same guidance function in maintaining financial conditions conducive to long-term systemic financial stability were very clear in Minsky (1969, 1992). Indeed, it is the ability specific to a discount window-Central Bank of inserting itself at the beginning, rather than at the end, of the lending-borrowing arrangements-making process between member commercial banks and their business firms' customers, when the present value of future cash flows (gross profits) after taxes of each relevant investment project is calculated (Kregel 2012). The importance of the ability of a discount window-Central Bank to

Financial Crisis (see Felkerson 2011, Wray 2012, and Matthews 2013).

*The increase in the system financial fragility or the “*stability domain of the system*” (Minsky 1970) that occurs with the increase in the purchased-to-service ratio of commercial banking liability composition is due to the latter capital value being ultimately dependent on the behavior of the respective refinancing money markets, .i.e. they are inside assets, which distinguish them from service liabilities such as demand deposits which capital value is not liable to possible financial stress occurring within money and financial markets, when the institutional framework provides for full government or federal insurance of member banks' non-equity liabilities (see Minsky 1970).

guarantee the successful attainment of long-term systemic financial stability goals were also clear in Minsky (1969, 1972c), when he proposed that the Fed change the structure of the mortgage (from fixed to variable interest rates-fully amortized mortgage), in order to render its fine-tuning monetary policy stance compatible with the viability and solvency of depository savings institutions such as mutual savings banks and savings and loans associations which used to issue retail and wholesale time deposits subject to Regulation Q ceilings-rate and federal “insurance” (Minsky 1969, 1970, 1972c)*. The Fed would have then guide[d] the “*evolution of mortgages in the direction of the adoption of variable-interest rates – mortgages*” by making them eligible for discounts at the window (thus excluding alternative mortgages), by extending the window to money market dealers of such mortgages operating in selected secondary markets (and thus to promote secondary markets in such specific instruments), or alternatively, he proposed to render these assets semi-outside assets by means of extension of the Federal insurance (Minsky 1969, pp. 6, see also Minsky 1972c). Furthermore, the nature of the system relationship characterizing a discount window – CB responds exactly to that characterizing the main relationship on which capitalism is based as Keynes pointed out, i.e. a system of borrowing and lending relationships based on margins of safety (Minsky 1975, 1986, 1993a). That is, discount window-central banking requires that the lender, i.e. the CB, examines the borrowing (member) financial institutions’ balance sheets as these latter approach the discount window. This type of relationship gives the lender the right to comprehend how the borrowing member institutions will repay the loan, introducing therefore a regular, continuing business relation between the Central Bank and its member financial institutions (Minsky 1986, 1992). As the logical result of the typical borrower-lender-type of relation inherent in discount window-central banking, as opposed to the purchaser-seller-type one of the open market-approach, member commercial banks (and/or other financial institutions’) balance sheets examination becomes a simple outgrowth of the monetary management discounting-technique** (Minsky 1970,

*This incompatibility consisted of the contrast between the then 1960s-early 1970s old neoclassical theory-based fine-tuning monetary policy which contributed to the then long-term increasing trend in interest rates and the then Q regulatory framework that prohibited member commercial banks to pay any interest on demand deposits, and set ceiling interest rates on other liabilities such as time and certificate of deposits issued by these latter and by other member depository institutions such as savings banks and savings and loan associations. The incompatibility between a long-term interest rate monetary policy by the Fed and the existing Regulation Q-based institutional framework was due to the interest rates gaps that it generated between regulated non-equity liabilities (such as retail time deposits) of insured depository savings institutions and other non-regulated instruments (such as certificate deposits, commercial paper and wholesale time deposits), which yields were subject to the increasing pattern of open-market rates (Minsky 1969).

As Minsky explained, the Regulation Q-discriminatory ceilings rates-type of monetary policy adopted “by the Fed” was a dangerous control technique (1972c), in that it did induce a run on member, insured, regulated commercial banks and depository savings institution. In fact, the interest rate differentials that the above-mentioned incompatibility gave rise did create new arbitrage, thus profit opportunities within money markets which induced non-member, non-insured and thus non-regulated money market institutions to innovate by either creating new liabilities and/or assigning new usages to old instruments in order to thus capture the incompatibility-induced profits opportunities. Whereas member, “protected” commercial banks innovated in their position-making usages by both creating new liabilities and by assigning new (position-usages) functions to old liabilities in order to protect themselves from non-member, non-insured, thus non-regulated money market institutions innovations. These financial instruments and usages innovations such as it was the case of the early 1960s certificates of deposits (and later of the post-1966 credit crunch commercial papers), did reduce the ability of regulated depository savings institutions to compete for funds with non-regulated money market institutions because they could not pay higher, competitive open-market rates on their regulated deposit liabilities in line with the then increasing open-market rates (Minsky 1969, 1972c; see also De Rezende 2011).

**Much like a person going to the butcher’s shop to buy some meat is not asked by the seller of the product to show up its books, a member commercial bank which, under an open market-central banking framework, “purchases” reserves from its Central Bank in exchange of some of its securities holdings will not have to show its books. On the contrary, the asset swap (borrowed reserves against eligible assets) occurring within the sphere of the borrower-lender nature of the relation characterizing the discount-window technique implies the typical creditworthiness analysis performed by any commercial bank against its customer.

1986, 1992). With a discount window-central banking institutional framework, a Central Bank can and does simply exert the right of an insurer to set balance sheet macro-prudential standards for the insuree so as to ensure that prudential (hedge) financial practices are followed.

As a result, the main proximate reasons that led Minsky to prefer and to call for the use of the discount window, instead of open market operations, as the “*prime weapon*” for channeling monetary policy to money and financial markets and thus to the entire economy, are related to his prior policy prescriptions to have the Central Bank perform its *preventative* and (thus also) *guidance* function, which means having a Central Bank which is always able to constrain the endogenous tendency of capitalist economies toward increasing financial fragility, and thus toward financial instability, and to have a Central Bank which is much abler to be *responsive* to financial institutions, practice and usage changes by means of continuing, intimate business relationship with member banks and/or other financial institutions (Minsky 1970, 1977, 1986, 1992).

And therefore to have a Central Bank that can and does use its insurer right to set prudential financial practices-balance sheet management standards, and perform its right as lender to supervise its member borrowing institutions and examine their respective balance sheets (Minsky 1986, Kregel 1992).

In addition to that and in line with his dynamic view of capitalist economies and of financial markets, Minsky prescribed that the financial institutions and assets that must have direct access to the Federal Reserve’s discount window should adjust and extend to those financial institutions whose importance is increased within the financial structure, and to those institutions and assets which serve member commercial banks as position-making channels and instruments over time (Minsky 1969, 1992). Indeed, it was not the case that he criticized the post-war Federal Reserve’s tightly administered-discount window whose direct access, given the post-Great Depression shift to open market operations as the main tool through which conducting monetary policy, could not have been extended by definition to new financial institutions (Minsky 1969, 1992).

His proposal to extend direct access to the Fed’s discount window to, for example, money market “intermediary” dealers such as Government bond dealers, and to sales finance companies (1960, 1969, 1970, 1972c, 1990, 1992), and to abandon Treasury bills and bonds as the main instrument through which to operate upon borrowed reserves (1992), demonstrates likewise his dynamic view of monetary policy and of financial regulation, given his willingness to have a discount window-Central Bank (Fed) which extends its domain of responsibility to other previously non-member money market institutions as the financial structure evolves*.

Indeed and importantly, not only did Minsky want the Fed to return to discounting technique-based monetary policy with respect to its relationship with member commercial banks, but he also proposed to extend the direct access to the Fed’s discount window to “*selected money market takers (dealers)*” (Minsky 1970), in particular to Government bond dealers (Ibid. 1957, 1960, 1969, 1972c, 1990), to other financial institutions such as consumer credit houses (Ibid. 1960, 1969, 1972c, 1990, 1992), insurance companies, and even to ordinary business corporations (Ibid. 1992). There are specific reasons for which he always prescribed the extension of the Fed discount window to money market dealers and to other financial institutions, such as sales finance companies. With regard to these latter, the main reason is that being their liabilities “*considered well-nigh money by the lender*” (Minsky 1960, pp. 375), and thus given their relevant role as proximate part of the payment system, it would have been much wiser for the Federal Reserve to

*Minsky’s proposal to shift to discount window-central banking is not only a proposal for a reform of the Federal Reserve’s monetary management technique, but it is likewise and obviously a form of financial regulation per se, specifically of regulation of the Fed’s asset swap-type of relationship with member financial institutions and financial markets as a whole. See also Kregel 2014 on Minsky’s *macro-prudential* and *dynamic* approach to financial regulation.

provide these institutions with direct access to its discount window as a way of guaranteeing that no liquidity problems can induce solvent organizations to incur into insolvency crisis through forced sales of their consumer instalment paper positions for which thin secondary markets existed at that time (Minsky 1960).

On the other hand and importantly, Minsky also prescribed the extension of the Federal Reserve's discount window to Government bond dealers (Ibid. 1960, 1969, 1972c, 1970, 1990, 1992), because of the increasing relevance of this kind of money market intermediary dealers within the U.S. financial structure both as private refinancing or position-making channels for member commercial banks, and as true direct suppliers of finance to business corporations as takers (purchasers) of the relevant commercial papers (Ibid. 1957, 1969, 1986). Therefore, in the case of government bond dealers and other commercial paper money market dealers, his was a proposal tending to "*expedite the growth*" of the relevant market, rather than opposing it (Minsky 1969, pp. 8).

Minsky's preference for the extension of the membership status to such money market institutions can be further understood both with reference to the upward path of the business cycle and to the peak of the cycle when liquidity "stresses and strains" occur and which might lead to a financial crisis.

With regard to the former, his call for the extension of the Fed's discount window was aimed at increasing the liquidity status of these money market financial institutions' portfolios so as to turn their (newly eligible) assets in guaranteed sources of cash at a minimum price (Ibid. 1969, 1970). A discount window-Fed would have either created new secondary markets for new eligible, thus protected, money market papers or if secondary markets in such assets already existed, then would have simply benefited from the protection that the new eligibility status provided to the newly eligible private liabilities held in portfolios. This would have obviously required that the prudent balance sheets requirements, along with supervisory and examination procedures belonging respectively to the insurer-insuree, and lender-borrower-type of relations being applied to new money market financial institutions.

With regard to the peak of the business cycle when financial relations are much tighter and liquidity problems may occur, the protection granted to these money market institutions against any sort of refinancing problem thanks to their direct access to the only secure source of liquidity within an economy, i.e. the Central Bank ('s discount window), simply guarantees that these latter respective lenders or creditors do not get forced to massive sales of positions to make position, without thus leading other related units to suffer from penalizing portfolio adjustments and thus from further capital or net worth value downward pressures (Minsky 1960).

Indeed, as Minsky highlighted (1960), the exclusion of these institutions from the direct access to the window could imply that any delay in the Central Bank (Fed)'s intervention would generate further cumulative capital values downward pressures for them and their creditors, with subsequent higher financial and capital value losses, and income and job losses.

For Minsky, there was no reason not to grant money market intermediary dealers, such as Government bond houses, full membership to the Federal Reserve System given that these money market institutions ultimately have access, even though indirect, to the Federal Reserve's discount window, because of its lender of last resort responsibilities to prevent any financial crisis occurring and generating a debt deflation process followed by a deep depression (Minsky 1960). Indeed, any member commercial bank will resort to the Central Bank's discount window if an unexpected withdraw of funds by Government bond dealers or by any other client money market financial institution exceeding the normal line of credit usually granted in normal times occurs (Minsky 1960). Such indirect access used to materialize and still materialize itself through the "*subterfuge*" of the so-called "two-tiers system" of proximate (usually member giant commercial banks) and ultimate (Federal Reserve) lenders of last resort (Minsky 1960, 1986).

The Federal Reserve System was a legislated response to the 1907 financial crisis, in particular, and

also to the various repetitive financial crisis occurring during the entire 19th century. The 1907 financial crisis was endogenously determined by the relative growth in banks' financial leverage ratios as result of a period of acceptance and accommodation of increasing business firms' demand for financing the acquisition of capital assets, and by the financial fragility-contributing inefficiencies inherent in the government bond – backed national currency issued by national banks set up with the promulgation of the National Bank Act in 1863* (Minsky 1986, Kregel 1992).

The first ultimate purpose that led to the creation of the Federal Reserve System was therefore that of serving *lender of last resort responsibilities*. Through this latter crucial function, the Federal Reserve System provided “flexible” (or by in-elastically providing) currency to illiquid but solvent member financial institutions (at that time in the U.S. system mainly commercial banks), at a fixed price (discount rate) that was exogenously set by the same Federal Reserve Board (Minsky 1977, 1986, Kregel 1992). In addition to that, member depository commercial banks used to position – make through continuous rediscounting of eligible assets at their Federal Banks District Banks' window, with monetary authorities being thus closely involved in the day – to – day financial operations of the economy (Minsky 1977). In fact, the Federal Reserve exogenously determined the discount rate at which it was ready to accommodate the endogenously determined *day-to-day short-term refinancing needs* of member banks, while also choosing the types of private debts that were eligible for (re-)discounting. Therefore, monetary authorities were likewise closely involved in the day – to – day financial operations of the economy (Minsky 1977).

The twelve Federal Reserve District Banks, which during the 19th Century and up to the 1913 Federal Reserve Act, had served as the main clearinghouses of the country with New York as the leading center, became the main re-discounting source (re-discounting from the perspective of the borrowing member financial institution), with the eligible private assets serving as collateral for short-term loans being tied to the flows of goods linked to real production and trade processes (Minsky 1977, 1986, Kregel 1992).

As a result, the Federal Reserve emerging out of the 1913 Reserve Act was one used to operate within “*real bills*” *doctrine-based discount window-central banking* framework, and a hierarchical institutional system was established with member commercial banks lending (at the time mainly) to business customers and the Federal Reserve (District Bank) lending (i.e. re-financing) to member commercial banks (Minsky 1986, Ch. 3).

However, from the Great Depression onwards, the Federal Reserve changed its monetary policy usages through which it kept its respective business relationships with member financial institutions and financial markets as a whole, by shifting to the open-market-based monetary management technique (Minsky 1977, 1986, Kregel 1992).

Specifically, the profound change in the Fed mechanism of supplying routine reserves to financial institutions that occurred in 1935 was neither the result of the New Deal public spending programs – determined increase in the stock of Government debt, nor the result of policy decisions driven by specific theoretical principles (Kregel 1992). Already during the 1920s, the Federal Reserve District Banks discovered that they could manage banks' non-borrowed reserves through open market operations. They started to purchase and sell bankers' acceptances and Treasury certificates, being able to do that given that these latter were the preferred assets for large banks with which they substituted their excess reserves (i.e. they were the main position-making instruments), although open market policy did not yet constitute the main tool through which the Fed used conducted monetary policy (Kregel 1992). Such open market dealings in banks' acceptances and Treasury

*See Willis (1916) for a detailed institutional analysis of the various U.S: monetary, financial and banking system since the establishment of the First National Bank in 1791 to the final creation of the Federal Reserve System by means of the respective Federal Reserve Act in 1913.

certificates were carried out mainly for managing domestic liquidity conditions, and also to allow Great Britain to return to the gold standard (Kregel 1992). Eventually, the change in the Fed's monetary management usages was simply the result of *necessitated* legislated changes (see below). Such juridical-institutional modifications became necessary given the extraordinary refinancing needs of a collapsing U.S. banking system which, in light of the gold standard – determined convertibility constraint, became increasingly unbearable for the Federal Reserve System. In addition to that, the September 1931 failure of the Bank of England and the subsequent UK abandonment of the gold standard*, financial markets started to fear that the U.S. government would have been the next to default, leading thus to an increase in withdrawals of gold on the foreign exchange (coupled with the domestic ones; Kregel 1992).

If the Fed had accommodated the needs for its liabilities (reserves and notes) through re-discounts, the wave of gold redemption by both foreign and domestic economic units would have become a tidal wave, thus forcing the US Government to default on its “gold payments.”

The alternative, quite unrealistic in the very short-run, would have been to increase the stock of gold in order to back an increase in the Federal Banks reserves and notes, according to the pre-defined gold – Fed liabilities ratio. Otherwise, the only way for the Federal Reserve to sustain the necessary-to-the-domestic-banking-system increasing issues and to release gold to meet the rising foreign demand could have been this latter substituting government security for discounts, i.e. selling government bonds to member banks in exchange for eligible short-run commercial bills as collateral (Kregel 1992). Unfortunately, given the debt-deflation process underway after the 1929 October Stock Market Crash, depository institutions lacked enough eligible collaterals to obtain the required refinancing at the Fed window, while the Fed Act, as seen before, did not provide government securities for the eligibility status needed for discounts, but such status was only assigned to “real bills.” Therefore, open market dealings in government debt could not have been carried out (Kregel 1992). With respect to that however, the 1932 (not the widely known 1933) Glass – Steagall Act represented the legislative solution for the US Government and the Fed. This latter, in fact, provided for the backing of Federal Reserve Banks' notes with Government Securities, instead of short-run commercial bills, for an emergency period of one year (Kregel 1992, Kennedy 2015). As a result, the Federal Reserve could have then purchased, rather than sold, government securities from financial institutions meeting their liquidity needs, relaxed money market financing and re-financing conditions (i.e. reduce the discount rate), allowed member banks to meet their depositors' redemption demands, without necessarily suffering from a potential depletion of gold supply. The use of open market operations as the primary source for bank reserves, which had begun with the enactment of the 1932 Glass-Steagall Act, was institutionalized three years later with the establishment of the Open Market Committee with the Marriner Eccles' Banking Act (Kregel 1992). Therefore, it was the rigidity in the range of eligible assets for re-discounts at the “Fed” 's window, along with the then ongoing decline in banking holdings of stocks of the same “real bills” collaterals and of the increasing emergency liquidity needs by financial institutions coupled with the gold convertibility constraint, that ultimately led to the demise of the discount window mechanism as the primary and steady source for banks reserves (Kregel 1992). The problem of the rigidity in the width of the range of eligible assets and institutions in allowing the Fed to halt any pressure of large-scale necessity to sell out position to make position was recognized by the same Minsky in the above – mentioned research study submitted to the Commission on Money and Credit (Minsky 1960). In fact, the “*Central Bank, [...]*,”

*For a detailed analysis of the historical events that led to increasing pressures on the US (Hoover) Government ability to honor the gold convertibility constraint, and later the Roosevelt administration to implicitly abandon the gold standard to relieve market pressures on the Government and to allow it to carry out the needed refinancing operations to the benefit of the U.S. banking and financial system see Burns (1975), and Kennedy (2015).

stretched its responsibility and made it possible to maintain asset values on the stock exchange after some initial decline in stock prices in 1929” (Minsky 1960, pp. 375). Needless to say, such rigidity in extending the direct access to the discount window to new financial instruments and institutions was in perfect contrast with his endogenous view of financial institutions, instruments and usages innovations and his conceptualization of such innovations as liquidity-stretching portfolio transformations, and thus his view of the increasing financial fragility-inducing powers of financial innovations. Indeed, even though he didn’t dislike the underlying view of the “real bills” doctrine itself, he did specify that there is no reason to limit the “*protection of a guaranteed market*” (Minsky 1977, pp. 18) to only “real bills”-type of instruments, but the Fed, if established by policy decision, can and should extend the eligibility status to more and different type of instruments (which possibly, but not necessarily, guarantee an adequate flow of cash to the member institution; Minsky 1977).

However, as opposed to Kregel (1992), Minsky held that the demise of the discount window as the primary weapon through which to operate on bank reserves was due to the increased weight of the New Deal Roosevelt government deficit spending and thus of government debt that replaced the “*nonspecie reserves of banks*” (Minsky 1986, in Kregel 1992). After the above – mentioned institutional and monetary policy usage change, the Fed did no longer use the same tool (discount window) and instruments (short-term commercial private debt or “real bills”) as it did for lender of last operations to affect its reserve balances and to affect the volume and direction of lending (Minsky 1986, Ch. 3). In particular, the ability of a Central Bank to control the direction of lending and thus influence the composition of private investment, was totally left to the private sector. With open market operations in government debt as the normal functioning source of bank reserves, the Fed no longer had the chance to keep an “*intimate and continuing business relation*” with member commercial banks. The “normal-functioning banking-asset basis of relations” between itself and its member banking and other depository financial institutions ceased to exist, between thus making it lose its power to affect these latter financial practices and usages by defining certain business and balance sheet standards which conform to (Minsky 1986, Ch. 3). Unfortunately, as Minsky noted, such loss of power by the Fed to control and guide the behavior of member commercial banks “*was not offset by an increased sophistication of Federal Reserve examination and regulation of banks*” (Minsky 1986, pp. 53). Since then, the Federal Reserve has always been an open market-Central Bank, with the various dealings in the open market serving for the control of the volume of banking loans-function by means of fine-tuning quantitative and price adjustments, while leaving the discount window the instrumental role in carrying out lender of last resort-rescue function and responsibilities.

CENTRAL BANKING AND MONETARY POLICY IN MINSKY, AND HIS PREFERENCE FOR DISCOUNT WINDOW-CENTRAL BANKING.

What Should and What Does a Central Bank Do According to Minsky.

Minsky stressed how a Central Bank (CB hereafter), is fundamentally inconsistent with the neoclassical theory of prices and thus with the view of a full-employment equilibrium - seeking, self – stabilizing capitalist economy* (Minsky 1977, pp. 6). Indeed, “*If Central banking is useful and important, then presumably there are shortcomings and flaws in a capitalist economy without central banking*” (Minsky 1977, pp. 6), and these “shortcomings and flaws” reside exactly in the “*two price system nature of capitalism,*” as explained before (Minsky 1993b, pp. 14). For Minsky CBs exist and are important because speculative and Ponzi finance exist and because the inherent, endogenous cumulative tendency of capitalist economies to increase the weight of speculative and Ponzi financial postures in the financial structure during periods of relative stability *does* exist, as the history of capitalism has overwhelmingly demonstrated (except during the “Trente Glorieuses”; Minsky 1986, 1992, pp. 9, 1993b). As a result, CBs are important because of the endogenous tendency of capitalist economies to increase financial fragility and thus to generate financial conditions conducive to financial crisis, along with the recognition, taken by Minsky from Keynes, that economic policy itself does affect and can positively guide the course of the development of the economy over time. (Minsky 1977, 1993c, pp. 3-4) In sharp contrast with all neo-classical – based theories (old and new neoclassical synthesis, monetarism, new classical school and real business cycle), for Minsky, the conceptual distinction between short and long run doesn’t exist at all because in a monetary production capitalist economy money is *never* neutral**. Any economic agent will issue liabilities to finance positions in real and/or financial assets, and the financial system will accept these liabilities, whenever expectations of future cash flows (gross profits-after taxes in case of firms, disposable income for households) allow the borrowing units to generate cash flows sufficient to regularly meet cash payment commitments on the emitted liabilities and leave a margin of safety (this latter being a function of the ruling standards by which cash and very-liquid assets, expected future income-yields of illiquid capital assets and expected ability to service financial commitments are valued by borrowers and lenders over time). Therefore, in the type of world in which we live, given the existence of money-denominated debt contracts and related financial payment commitments, the expected net monetary return will always matter for any economic unit in taking his or her own speculative portfolio decisions (in particular investment decisions)***.

*With regard to the logical structure of neoclassical theory, Minsky stated: “*In the light of the current state of capital theory it is known that the proposition that an investing economy with money and capital assets generates a growth equilibrium rests upon a prior assumption that investment goods and capital asset prices are always equal. This equality assumption is equivalent to assuming that the economy is now and always will be in equilibrium. Assuming the “result” that a theory is “designed” to prove is clearly not admissible. The buttressing of neo-classical theory by the assumption that capital asset prices are equal to investment goods prices reduces neo-classical theory to a tautology.*” (Minsky 1978, pp. 4)

**See Smithin (2003) for the distinction between short and long run in economic theory resulting from the neoclassical theory-view of neutrality of money. See Fontana (2006) on the distinction between the strong and the weak “classical” versions of the neutrality of money proposition characterizing different strands of “neoclassical theory”.

***We may go further and look at the *ultimate* cause of the non-neutrality of money in a radically uncertain world in which money - denominated contracts (liabilities and assets) exist. We know from the neo-chartalist tradition that the money – denomination of social debt-credit relationship is historically due to the imposition of the “sovereign” of payment commitments denominated in the money unit of account chosen by this latter (Wray 1998). That is money is a creature of the public authority (except in peculiar cases such as the Eurozone and the fourteen sub-Saharan countries *using* the Franc of the African Financial Community, a foreign currency issued by two “independent” central banks, once called the Franc of Franco-African Colonies). Therefore, we may say that the *ultimate* source of the non-neutrality of money in monetary production economies is the imposition by the sovereign of money-denominated payment commitments on its own constituency to be paid to the same “sovereign’s” public offices. This imposition is *sufficient*

Money cannot be neutral in a world in which money-denominated liabilities exist. And “*once a debt structure denominated in money exists, the absolute level of prices, wages and profits matters; the ability to fulfill contracts entered upon the past, and the current expectations that contracts entered upon today will be fulfilled, depend on what has happened and **what is expected to happen to money prices***” (my emphasize; Minsky 1985). To put in other words, “*for producers*” and for any other profit-seeking financial and non-financial institution “*nominal values (money prices) matter: money is not neutral*” (Minsky 1986, Ch. 7, pp. 160; 1993b). Logically this has also a strong implication for the pattern of “institutional-political goals” of a CB and of monetary policy, which, in Minsky, are not divided into short and long – run goals, but can be defined as proximate and ultimate goals*. In light of Minsky-s two-price view of endogenous financial instability, the proximate goals of a CB and of monetary policy can be expressed in terms of the “*twin objectives*” of avoiding both “*run-away investment booms and inflations and deep debt deflations and depressions*”, whereas the ultimate goals refer to:

- the maintenance of *financial stability* over time, and
- the promotion of the *capital development* of the economy (Minsky 1977, pp. 6).

In particular, Minsky’s policy proposals of both reforming the financial structure of the economy and the policy techniques and approaches of government institutions is not that, impossible by the very nature of capitalist economies, of eliminating instability, but rather that of eliminating those factors which tend to amplify instability (Minsky 1972c, 1986). In addition to that and by definition, the ultimate goal of maintaining financial stability over time, thus of constraining those endogenous forces that tend to turn the financial structure in a fragile system and thus tending to generate the “thrust toward incoherence”, is a necessary prime condition for having long-term capital development of a country’s economy.

For capital development purposes, the aim for the CB is that of “*develop[ing] monetary and financial institutions and usages which effectively finance development and simultaneously keep the financing techniques from fueling inflation*” (Minsky 1977, pp. 22). With regard to this, a CB that conducts its monetary policy through the discount window as the prime policy tool will be able to carry such institutional and political ultimate goal on more effectively than a CB serving itself of open market operations as prime tool of monetary policy (see next paragraph).

Minsky’s analysis of central banking is based on the presumption that the monetary and financial, thus also the institutional “*environment in which central banking is carried on in a modern, developed economy is complex*” (Minsky 1959a, pp. 1). The complex nature of the environment in which a CB takes its decisions and execute its operations is mainly due to the endogenous character of innovation, in particular, for the purposes of our discussion, financial institutional and usages, within capitalist economies, that make the financial and economic structure continuously evolve over time in response to profit opportunities. (Minsky 1959a, pp. 1) Another element determining the complexity of the environment in which CBs operate through the financial system is given by the changing nature of the “*standards by which the performance of an continuously evolve over time in response to profit opportunities*. (Minsky 1959a, pp. 1)

and is the technique mostly used in history to create a private demand for the State-issued IOUs denominated in the State’s money unit of account, thus to monetize the economy, and thus to the *subsequent* money-denomination of also private debt-credit contracts, to the formation of “markets” and price lists (on the issue of the ultimate reason of non-neutrality of money in monetary production economies see Bracci (2017).

*This distinction was not explicitly made by Minsky, but is based on my interpretation of his writings on the topic of central banking and monetary policy, which correctness and validity have been confirmed by my supervisor professor Randall Wray(?). If the neoclassical short-run-long-run dichotomy is flawed because money cannot be neutral within the capitalist structure, then the debate on the relative efficacy of Central Bank’s operations in the short or on the long term issues becomes flawed, too.

Another element determining the complexity of the environment in which CBs operate through the financial system is given by the changing nature of the “*standards by which the performance of an economy as well as the performance of the financial markets are judged,*” which, in their turn, are liable to changes “*as time passes and as knowledge of the old system increases.*” (Minsky 1959a, pp. 2) As a result of the inherent ever-evolving nature of financial institutions and money and capital market usages, the efficacy of central bank actions, thus the appropriateness of a specific set of “*policy institutions, objectives and operations*” are both relative concepts, i.e. depending on the current institutional structure (Minsky 1959a, 1969, 1977). The appropriate character of CB actions depends on the ruling institutional arrangements characterizing the financial structure of the economy in a specific historical time and on the ruling usages and conventions in finance, and in particular, in the way financial institutions carry out their own position-making techniques (Minsky 1957, 1959b, 1969, 1977, 1986, 1992). With regard to the efficacy of CB actions, “[...] *if a period of rapid changes in the structure or in the mode of functioning of financial markets occurs, then the efficacy of central bank actions has to be re-examined*” ” (Minsky 1957, pp. 171; 1969), while “*the assignments and operations of the policy agencies must always be responsive to changes in the environment.*”(my emphasize; Minsky 1959a, pp. 2; 1969). CBs must be responsive to financial institutions and usage innovations by adapting its own monetary policy operations and design of financial regulation policies to such changes. As a result of the evolutionary character of financial and money markets, and thus of the dynamic character of CB appropriate actions, there cannot be any fixed, universal rules governing its operations as to the best way to maintain a stable monetary and financial environment (Minsky 1969, 1977, pp. 16). In fact, “*discretion remains an essential element in monetary policy, since the meaning of a stable monetary environment changes as the economy and particularly the financial system evolve.*” (Minsky 1960, pp. 374, 1969)

Minsky distinguished two main broad functions of a CB, determining both what they do as monetary institutions and the way they influence the operation of the economy, and that he described as they historically arouse, from legislated institutional and usages evolutions, and in particular, in the case of the Fed, in response to repeated endogenously – determined financial crisis. The two are the *control* and the *support* functions. Specifically, in the upward direction of the business cycle, where the source of fundamental instability of capitalism resides and where the “*run-up of prices and profits*” naturally occurs (Minsky 1978, pp. 16), it is the *control*, along with the *guidance* function (this latter being also part of the support function) of the Central Bank that must bear much of the load of responsibility trying to “suffocate” the thrust toward incoherence. Whereas, when after periods of protracted stability an unstable financial structure emerges before a financial crisis hits, it is the lender of last resort - *support* function that must get activated in order to abort the possibility that cumulative debt-deflation processes generate and a deep and long depression ensues. Other institutional “*standard functions*” of the Central Bank are that of being a “protector of ‘exchange’ values,” and of being the “fiscal agent of the Government” (Minsky 1977). The ability of the CB to effectively carry out all of these functions depends upon the existence of an “*effective functioning*” Government (Minsky 1977, pp. 13). For this is meant a Government that is able to enforce a domestic “tax” system that is properly – structured toward domestic* sources of “revenues” so as to allow for a sufficient internal demand for Government IOUs and thus for a sufficiently solid and spread domestic private sector’s desire to acquire, use and hold Government “money”. In fact, given that taxes and other forms of State-imposed payment commitments can only be paid in CB liabilities (banknotes and reserves), Federal Reserve liabilities

*The necessity to have a Government tax (or other public payment commitments) system relatively biased towards domestic sources of revenues is due to the uncertainty linked to sources of Government revenues that depend on the rest-of-the-world ability to pay. In fact, Minsky noted that “*Incidentally, even if a country’s government has a large source of revenue from say oil or a tax on exports is necessary to have a regular flow of funds from the domestic economy to the Central Bank. Thus a tariff for revenue, excise taxes or income taxes are necessary even in the face of large government revenues*” (Minsky 1977, pp. 15).

will have “value” for (i.e. be accepted by) the private sector, with households and private businesses who will “*need to scramble for that which is accepted in payment of taxes*”. (Minsky 1977, pp. 13; 1986, Ch. 3) Business firms, households, and non-member financial institutions do receive Government spending and pay taxes to the Government through the banking sector, which in this case serves the function of financial agent or intermediary for the same Government. Indeed, in a (dirty) flexible exchange rate monetary regime, CB reserves (and banknotes) constitute the superior liability within the hierarchy of socially accepted IOUs. This superior position arises from the range of usages that the holder of these liabilities can, if not have to do with them. In fact, banks will ultimately need to have reserve balances in order to:

- First, and most importantly as said, settle households, businesses, other non-bank financial institutions’ tax and other payments to the Government; then also to
- be able to acquire foreign exchange at more or less guaranteed terms;
- be able to meet clearing losses to other financial institutions;
- be able to meet redemption demands by depositors at par;
- be able to acquire government bills and bonds;

As a result, given the superior position of CB liabilities that leads banks to want to keep them on hand, and given the fact that usually CBs maintain a monopoly of currency issue, in a flexible exchange rate monetary system, CBs do have the ability of exogenously set and hit the short-term inter-bank interest rate on borrowed reserves and can potentially affect banks’ asset portfolios (Minsky 1992, pp. 10). As opposed to a fixed exchange rate regime, in a flexible exchange rate monetary regime, the CB has the ability to control the overnight rate (and the structure of long-term rates) and thus to control its own portfolio given that, there are no legal provisions that force monetary authorities to buy or sell on demand, at a fixed price, all of some its assets (be these gold in a gold standard or a foreign currency), that are offered or demanded to them (Minsky 1992, pp. 10; Wray 2007).

Control Functions.

The control function of the monetary authorities are “*aimed at achieving a desired state of the economy*” (Minsky 1972a), by affecting the “*volume and direction of lending*” (Minsky 1960, pp. 371), and thus the level of economic activity. The meaning of such desired state being a function of the macroeconomic variables chosen as final targets of monetary policy by the dominant economic theory guiding policy actions in each historical period (for instance, current output prices stability for monetarism and/or today’s new neoclassical synthesis). For instance, policy instruments to achieve the “desired state of economy” and that belong to the sphere of the control function can be open market operations, discount window, reserve requirements, interest rate ceilings, direct controls in the form of bank supervision and so forth.

Support Functions.

On the other hand, two types of support functions can be distinguished: the first one refers to the support of particular markets, given thus the concern by the monetary authorities about their financial viability, such as the housing, government, state and municipal bonds market. In addition, the other main support function is that for which the same Federal Reserve was created in 1913, i.e. the Lender of Last Resort function attaining to the “*overall viability of financial markets*” (Minsky 1972a). “*In fact, the Federal Reserve was largely created for this second, the support, purpose: to prevent monetary crisis and the ensuing debt deflation process.*” (Minsky 1972a).

Possible trade-offs or Inconsistencies between the Control and the Support Function.

As Minsky argued, there are various possibilities that there are trade-offs or inconsistencies between the two kinds of main functions of the CB (Minsky 1960, 1970, 1972a, c, 1977). In particular, he referred to the use of open market operations by the post-war Fed, under the guidance of the old neoclassical synthesis fine-tuning-type of policy prescriptions, aimed at acting on the reserve base of member commercial banks and thus on financing terms in order to affect economic activity.

As he explained: “[...] if there is an attempt to constrain the economy by “tightening” upon money, the likelihood of financial instability increases. The active use of monetary policy in a buoyant economy implies that the central bank must stand ready to act aggressively if financial instability develops.” (Minsky 1960, pp. 371). If disinflationary fine-tuning restrictive monetary policies are implemented within an already fragile institutional system and fragile financial market conditions “tending toward increased instability” (Minsky 1972c, pp. 7), then they may well “either trigger or amplify a debt deflation process” (Minsky 1972c, pp. 7)*.

Furthermore, if fine-tuning monetary policies are “passively” carried out (as disinflationary monetary policy strategy) within a “stable institutional environment,” then they won’t even be effective, given the dynamic nature of capitalist economies where thus financial institutions and usages innovations exist and where money is (thus) endogenous and a much broader concept than reserve and banks’ demand deposits. (Minsky 1957)

As Minsky said,

“The Federal Reserve tries to control the aggregate ability of banks to finance or to create deposits by regulating the reserves available to banks. If banks and financial markets were simply deposit-creating automatons and only affected economic activity by way of the excess or deficit of cash in portfolios, then the attempt to control the economy by controlling bank reserves might have some merit. In fact, banks are complex profit-seeking organizations that have a multitude of actual and potential types of liabilities and that innovate in response to profit opportunities”

(Minsky 1986, Ch. 13, pp. 356)

After protracted periods of economic and financial success, when the change in the expectational climate has fully occurred, then profit-seeking business firms (corporations) will increase their demand for financing new additions to the stock of capital (i.e. investment), and also financial institutions will be willing to emit new liabilities to finance positions in corporate debts (and stocks) that in the previous, more “sober” expectational climate either would have received tighter financing conditions or wouldn’t have received any financing at all (Minsky 1970). “Once euphoria sets in, they [financial institutions] accept liability structures – their own and those of borrowers – that, in a more sober expectational climate, they would have rejected” (Minsky 1970, pp. 10).

Given current expectations of future returns on capital and related financial assets, and thus given the ongoing increase in their present values, the rising investment demand will also induce financial institutions to finance the desired additions (and positions) to the stock of capital assets by means of “liquidity-decreasing portfolio transformations” (especially where a complex financial system exists; Minsky 1970, pp. 10). Therefore, given the power of cash-economizing financial usage and practice innovations to increase the lending ability of financial institutions for a given amount of the reserve base, the amount of investment financed in the short-run will be simply “independent of monetary policy” (Minsky 1970, pp. 10-11). Tight money market conditions – both in terms of the

*As we shall see in the next paragraph, it was right for the (further) destabilizing effects of stop-go behavior of the amount of borrowed reserves that Minsky preferred leaving open market operations a more passive role. This passive role consists of steadily accommodating increases in the amount of only non-borrowed reserves (rather than borrowed reserves) of member financial institutions, while leaving discount window policies the role of accommodating endogenous adjustments of borrowed reserves (1960, 1969, 1972c).

level and change of the rate of interest and other financing terms, too – result from demand for financing pressures, and not because of constraints on “money supply” (Minsky 1970). As a result, *“those who weigh money supply heavily in estimating money market conditions will be misled”* (Minsky 1970, pp. 13). If the demand for financing new investments and the willingness on the part of the “ephor” of the economy to accommodate such desires to expand exert pressures on the existing productive capacity of the economy, then inflationary pressures will likely result (Minsky 1970). Given that at current short-term interest rates the demand for financing is still higher than the supply of finance, a possible CB’s passive constraint on the reserve base aimed at stopping the growth of the reserve base rate of growth will only lead to an increase in interest rates (Minsky 1957).

Such an increase in short term rates induced both by increasing debt-equity ratios and by fine-tuning, restrictive monetary policies will create new profit opportunities within money markets (Minsky 1957). Such profit opportunities will be exploited, again, through institutions and usage innovations both in terms of *“new ways to finance business and new substitutes for cash assets”* (Minsky 1957, pp. 184), which, as said before, will be effective in actually increasing the lending ability of the financial system, while decreasing the total liquidity of the private sector (even in the case of an unchanging total quantity of “money”). The effect that increases in the rates of interest by the CB has on the institutional framework will thus both make the CB’s tight money policy, at least in part ineffective, through the compensative effect generated by financial innovations, and make the system more financially fragile and crisis-prone (Minsky 1957, 1960). In fact, the further layering of the financial structure that innovations by financial institutions and practice introduce and generate *“implies that the risks to the economy increase, for insolvency or even temporary illiquidity of a key non-bank organization can have a chain reaction and affect the solvency or liquidity of many organizations”* (Minsky 1957, pp. 184). From a financial stability perspective, things can get worse if the institutional framework of the monetary system is such to contrast with the current stance of monetary policy*. In particular, if the former incorporates interest rate ceilings (these latter being another type of CB’s control function) on specific liabilities of various depository institutions (such as those on time deposits and certificates of deposit that used to be in place in the U.S.; Minsky 1969, 1972c), then the CB may have the *“power to induce a run”* (Minsky 1972c), on those institutions which liabilities are regulated. Indeed, such a power is *“a dangerous control technique, as it reinforces the inherent instability of finance. Once used it then requires more extreme actions to offset the resultant pressures than would have been necessary in its absence,”* allowing for the same inconsistency between the CB control and support function (Minsky 1972c, pp. 7; see also Minsky 1969). Finally, for its dis-inflationary fine-tuning strategy to be concretely effective, the CB will have not just to passively constrain the reserve base, but it will have to strongly reduce it (Minsky 1957, pp. 184). Nevertheless, within an already fragile financial system it may well require the CB to activate the LOLR-support function, given the possible disruptions of financial relations that the strongly restrictive stance of monetary policy generates, in which case the just-explained trade-off will manifest itself again.

*The positive interest rate differentials that this kind of inconsistency between interest rate ceilings-embodied institutional system and the stance of monetary policy gives rise to is another factor inducing institutional and usage innovations in money markets, given the new profit opportunities that emerge out. These innovations concern the sphere of non-bank financial “intermediation” which, not being liable to the interest rate ceilings, is able to enjoy a competitive advantage over member commercial banks. In addition and subsequently to that, such inconsistency (must also) concern the sphere of the regula, which, by suffering from the CB-induced competitive disadvantage with respect to the “fringe banking” system and by the ensuing CB-induced run of funds from their balance sheet, must innovate in their (at the time Minsky wrote), liability management position-making techniques (which lead to an increase in the purchased-to-service liabilities ratio which thus augments global financial fragility; see Minsky 1970, 1986, De Rezende 2011, Kregel 2014). Such financial institutions and usage innovations induced by the above-mentioned inconsistency will thus contribute to further render the financial structure more fragile. It is for these financial

Lender of Last Resort.

As Minsky said, the CB is that institution which has the “*primary responsibility*” of “*preventing unstable monetary and financial conditions from developing,*” and for that purpose it is the only institution which has the “*weapons which can be used to prevent financial crisis from developing and to offset any destabilizing event that occur in the financial markets*” (Minsky 1959a, pp. 4). To put in other words, the CB is and must be a Lender of Last Resort, and thus must limit substantial net worth and subsequent liquidity losses caused by the burst of a financial crisis endogenously generated by financial institutions and usage innovations, and thus by the process of gradual “economizing of cash” in the economy leading to and occurring during a speculative boom (1957, 1960, 1970, 1986). The LOLR function is the main responsibility of today’s CBs and the main responsibility for which the Federal Reserve System was set up with the 1913 Fed Act, after a series of several financial crisis had occurred in the 19th century and at the beginning of the 20th century, culminating with the 1907 Knickerbocker Trust Crisis (Minsky 1986, Ch. 3). In fact, the “*Federal Reserve System as it is organized and as it has functioned is a lender of last resort to the commercial banks*” (Minsky 1960, pp. 375). Whenever depositors feared that member commercial banks were not able to meet their demand for redemption of their deposits, that is whenever banks’ assets started to not perform and the non-performing status was perceived to be, *ceteris paribus*, permanent, disorganized queues of panicked depositors run at banks’ tellers. Given that a secondary market for “real bills” did not exist, a bank could not sell out its position to meet depositors’ demand for the liquidation of their claims without suffering substantial losses and eventually being forced to declare bankruptcy. Therefore, the Federal Reserve was created with the main practical purpose of (re-)discounting banks’ assets (at that time “real bills”), in case commercial banks’ extraordinary need to position-make arose. This backup source of refinancing of banks’ positions thus leads the CB to acquire, to stand ready to purchase, or to accept as collateral (otherwise non-performing) financial assets from financial institutions facing liquidity pressures. The provision of a quickly available (infinitely elastic) currency (CB notes and/or reserves) allows borrowing financial institutions to meet their own financial payment commitments in times of difficulties, thus to readily convert their non-equity liabilities (i.e. “deposits”) with CB risk-free liabilities in depositors’ portfolios. Therefore, by acting on the “*value of the inherited structure of assets and the refinancing available for various portfolios*” (Minsky 1986, Ch. 3, pp. 43), the LOLR allows banks to avoid widespread selling out positions to make position and thus subsequent collapses of financial and related capital asset values, and so the erosion of net worth.

This avoids insolvencies not only of distressed financial institutions, but also of other previously solvent institutions having assets with falling prices in their portfolios (Minsky 1986, Ch. 3). Capital asset values are thus indirectly supported, and the fall of investment (and consumption) demand and thus the losses of income and employment that would have followed to asset values drop and bankruptcies are also avoided (Minsky 1986, Ch. 3). By supporting financial and real assets prices, and thus by avoiding a cumulative destruction of capital values, as a LOLR the CB provides a floor to the nominal values of banks’ portfolios, and indirectly to the prices of capital assets that appear on the mirroring financial assets in those portfolios. The LOLR must thus provide for free access to discount windows not only to illiquid, but solvent member financial institutions, against good collateral, at penalty interest rates. As LOLR the CB “*has the responsibility of preventing any financial crisis, no matter what its source, from developing. This implies that if widespread financial distress threatens any significant sector of the financial system, the central bank will quickly move in support of the threatened sectors to prevent the distress from developing into a crisis*” (Minsky 1960, pp. 374).

fragility-inducing reasons that Minsky wanted that the Federal Reserve gave up “*its flirtation with ceiling rates...*”, if the CB had to maintain its fine-tuning, restrictive policy stance to attenuate inflationary pressures over (usually the peak of) the business cycle (Minsky 1972c, pp. 7)

The target of such a crucial support function, which as said is aimed at preventing a “*potential source of large-scale cumulative illiquidity*” from developing (into a full-blown financial crisis), is not and should not be single, specific institutions, but financial markets as a whole. “*[...] the central banks must be a lender of last resort to financial markets as they exist*” (Minsky 1959a, pp. 5; Minsky 1960, 1972, 1986). In fact, the so-called “bail-out” should be devoted to the entire financial system and not to individual institutions, otherwise the CB LOLR function would end up by institutionalizing “*inefficiency and incompetence in the economy*” (Minsky 1972c). Put in other words, the CB support function exists not to prevent “*shocks due to the failure or the embarrassment of particular enterprises, but to prevent cumulative debt deflation processes following upon shocks*” (Minsky 1972c, pp. 7).

In addition to that, although prompt LOLR interventions can avoid capital and financial assets prices falling more and more rapidly than current output prices, i.e. can avoid debt deflations followed by deep depressions, such interventions are not without side effects. In fact, there is a sort of path dependency effect on the desired liability and asset structure by profit seeking financial and non-financial institutions generated by prompt LOLR interventions that, if coupled with Big Government deficits, set the “*stage for subsequent inflationary bursts*” (Minsky 1986, Ch. 3, pp. 45). The influence of prompt and especially repeated LOLR interventions simply induces financial and non-financial institutions to take more risks in their speculative portfolio decisions, i.e. they take more speculative-type of financing arrangements, given both borrowers and lenders’ expectations that future borrowed funds will be forthcoming at not-prohibitive conditions to allow the borrowing unit to meet its cash payment commitments and thus, to remain liquid and operative (1986; Ch. 3).

In particular, if the LOLR repeatedly protects and validates financial institutions that introduced and engaged in new speculative and/or Ponzi financing usages and practices that strongly contributed to the increase in the system financial fragility, then “*the central bank virtually assures that there will be another crisis in the near future unless, of course, it outlaws the fragility inducing financial practices*” (Minsky 1992, pp. 18). As a result, “*central bank lender-of-last-resort interventions must lead to legislated or administered changes that favor hedge financing*” (Minsky 1992, pp. 18).

The “guidance” or “determinant of financial practices” function.

The third of the three most important functions of a CB highlighted by Minsky is the guidance or the “*determinant of financial practices*” function, which is “*an outgrowth of its lender of last resort responsibilities*” (Minsky 1959a, pp. 1 – 5; 1969). The outgrowth-to-the-LOLR function nature arises “*because the Federal Reserve has the responsibility, so to speak, to pick up the pieces when things go wrong, it must be concerned with and guide the growth and evolution of financial practices in periods of tranquility as well as when circumstance forces it to intervene.*” (Minsky 1986, Ch. 3, pp. 45). As a result, he argued that “*the lender of last resort functions of the central bank must be so organized that they can respond to changes in financial markets. In particular this function has **preventative** as well as **rescue** aspects.*” (my emphasize; Minsky 1959a, pp. 6). For Minsky the guidance function is ultimately aimed at inducing financial institutions and businesses practices toward the use of hedge financing arrangements, and so at permanently maintaining a safe and stable financial structure in which the “*possibility of financial distress for a particular unit spreading to a financial crisis for the economy is slight*” (Minsky 1960, pp. 372). Therefore, “*the evolution of financial practices must be guided to reduce the likelihood that fragile financial situations conducive to financial instability will develop. Central Banks are the institutions that are responsible for containing and offsetting financial instability, and, by extension they have a responsibility to prevent it*” (Minsky 1992, pp. 8)

Given that through its monetary policy operations the CB is always trying to affect the performance of an ever-evolving and complex system, central banking is a “*learning game*” which requires the

CB to continuously “know how the institutional structure behaves and correctly assess how changes affect the system” (Minsky 1992, pp. 10). Central bankers must thus be aware of the “conditions which induce institutional changes in the money market and knowledge of the typical effects of such institutional changes should enable the Federal Reserve or the legislating authorities either to take preventive measures or to be ready to minimize the effects of a “crisis” when one occurs” (Minsky 1957, pp. 172; 1969). Put in other words, “Central banks have to steer the evolution of the financial structure” (Minsky 1992, pp. 10; see also Minsky 1969), and need to have continuing knowledge of money and financial markets’ evolutionary dynamics.

That described here is a “qualitative”-type function in that, given the powers of a CB to “protect or to penalize particular financial practices and institutions” by affecting the “terms on which particular activities are financed, that is to affect relative prices”, the CB can and should use these powers to affect the way business activity is financed (or the surplus is extracted), thus to affect the behavior of the system, and the allocation of the same surplus (Minsky 1959a, 1977, 1992).

As we shall see later, Minsky’s highlighting of the evolutionary nature of capitalism and of the systemic financial fragility-increasing effects generated by financial institutions and usage innovations, also led him to prefer the use of the discount window on the part of a CB as its primary tool through which to conduct monetary policy and thus realize monetary policy transmission onto the financial and economic structure of a country.

With respect to this, a CB can affect the “course of the economy” not because of alleged powers to affect short-run levels of aggregate demand and thus of income and current output prices outside somehow defined supply-side long-run “equilibrium”-determined levels, but because of its powers to affect, guide the “evolution of banks and financial practices,” exactly by means of the discount window as the main tool through which stabilizing financial and capital asset prices (see next paragraph; Minsky 1969, 1977, pp. 13;). The CB must be a “regulator of financial practices” that “leans against” speculative and Ponzi financial arrangements (Minsky 1959a, 1992), and not a fine-tuner of the short-run course of economic activity by means of either the growth rate of some narrowly defined “money supply” (monetarism) or a short-run policy interest rate (old and new neoclassical

synthesis). As Minsky stressed, the guidance of the financial structure function not only is, but *must* (or at least, should) also concretely be an outgrowth of the LOLR responsibilities of a CB, in that such function follows “from the right of an insurer to require reasonable and prudent behavior of the insuree. If a lender of last resort agrees to pick up the pieces in case of a problem, it has a right and a responsibility to control and prevent business practices that tend either to create or to worsen financial crises.” (Minsky 1986, Ch. 3, pp. 51). The insurance is the liquidity status that eligibility-for-CB’s-discounts attached to a private liability/financial asset gives this latter, given the risk-free and liquid nature of and thus the privileged position occupied by CB’s liabilities within the hierarchy of socially accepted liabilities (or the monetary system; see the next paragraph; Minsky 1969, 1970, 1986, 1992). Put in other words, the discount window protection, itself, turns the newly eligible asset into a “reliable source of cash” for its holder, at a guaranteed price (Minsky 1970, pp. 59-60). With the conditional guaranteed refinancing that a discount window CB gives to specific classes of assets, the liquidity of the financial system will increase (Minsky 1986, Ch. 3). In fact, “a measure of the liquidity of a financial system is the relative importance of such protected assets” (Minsky 1960, pp. 319). However, like any sort of “medicine,” also this protection – determined liquidity status given by a discount window-CB has its own side effects, in particular on the desired balance sheet structure of profit seeking financial and non-financial institutions which will accept ever less conservative thus riskier balance sheet structure*.

*As Minsky reminded us, this collateral effect on profit-seeking financial and non-financial institutions’ acceptable and desired balance sheet structures due to the discount window protection was very clear after the introduction of the

Furthermore, the guidance function should be also aimed at affecting the development path of the economy by setting particular hedge-finance based financing arrangement at special overall financing terms to be devoted to the provision of finance to specific sectors of the economy that are part of broader Government's political-economic objectives (Minsky 1959a, 1960, 1977, 1992). In the U.S., this third function of affecting financial markets practices and usages *"has often been vested in special purpose authorities which usually are guided by precise legislative rules"** (Minsky 1959a, pp. 7). With regard to the institutional role of these Government agencies Minsky stressed that *"a properly organized and administrative central bank would, by its guaranteeing and endorsing, have made some of these special agencies quite unnecessary"* (Minsky 1959a, pp. 6).

Protector of Exchange Values.

The protector of exchange value – function is an inheritance from the gold-standard, fixed-exchange rate monetary regime that had been in force for a relatively brief period of time in the history of monetary economies and that was in force when various CBs, Fed included, were established. In fact, *"historically the primary mandate of a Central Bank was to maintain convertibility between its liabilities and hard money (or "specie") or some other currency at some pre set level"* (Minsky 1977, pp. 9). During the gold standard, a rationale for fine-tuning monetary policy (at that time, where no interbank markets for federal funds existed, the policy rate was the discount rate) existed. Under such monetary regime, whenever the CB experienced a net drain of gold supply, regardless whether the drain were domestic or on the foreign exchange, *"the rule that Central Banks were supposed to follow called for raising the borrowing rate and decreasing the quantity of Central Bank liabilities outstanding"* (Minsky 1977, pp. 10). In the case of unfavorable exchanges on the international foreign exchange markets, the idea was of reducing domestic interest rates so as to lower the price of domestic financial and capital assets relatively to both foreign interest rates and asset prices (Minsky 1977, pp. 10).

*Fiscal Agent of the Government**.*

The fiscal agent of the government – function is the *"key property of a Central Bank"* and it is of *"vital importance for the domestic power of a Central bank"* (Minsky 1977, pp. 13 - 14). Whenever the Government runs a fiscal deficit, then the reserve base of member commercial bank increases. As Minsky puts it, given that the *"[...] government has undertaken income sustaining obligations [bills and bonds, my add], and underwritten some types of intangible assets [i.e. social security, unemployment benefits, liabilities of protected commercial banks and other financial institutions and so on, my add], it may need to issue bills and bonds to meet such financial commitments*

Federal Reserve System. In fact, the increased liquidity status of the financial structure of the U.S. economy strongly contributed to *"the boom of the 1920s, and because of the financial practices that developed during the boom, [to] the series of crises that ran from 1929 through the winter of 1933"* (Minsky 1986, Ch. 3, pp. 53).

*Among these sectors there are for example the housing and farming sectors (see Minsky 1959a).

** To be sure, as Minsky noted (1959 "Fundamentals"), the Fiscal Agent of the Government is not a function that must be necessarily performed by the CB, as well as the monopoly issuance of (bank) notes and the holding and managing function of *"international monetary or financial reserves of an economy"* must not necessarily involve the CB. In fact, following his historical perspective to the study of capitalist economies institutions such as the CB, Minsky (1977, pp. 13) reminded the case of the U.S. between 1837 and 1863, after the experience of the First and Second National Banks and until the promulgation of the National Banking Act, in which *"there were no national laws and no Central Bank"*, and each State had its own banking laws and state-chartered independent banks, and the *"Federal Treasury had a network of independent offices which for most of this period only accepted specie"* (Minsky 1977, pp. 13; for a detailed historical-institutional analysis of the legislated and evolution-driven changes in the monetary, financial and banking system of the U.S. since the birth of the Republic until the enactment of the 1913 Federal Reserve Act see Wilson 1916)

(Minsky 1960, pp. 379). In that case, the CB “*must see to it that these bonds are easily sold for money; which means that the central bank will engage in expansionary open market operations*” (Minsky 1960, pp.379). However, in such a case, open market operations are not carried out on a discretionary basis for fine-tuning proximate objectives aimed at “regulating the economy” via (borrowed) reserves manipulation, but they would be carried out as “*rather... natural extension of the central bank’s responsibility to be a lender of last resort to financial markets as they are actually constituted*”. (Minsky 1960, pp. 379) The fiscal-agent-of-the-Government function is a type of support function for the bills and bonds markets. Finally, the previously – mentioned crucial importance of the ability of the Government to levy payment commitments on the private sector, which are denominated in its money unit of account, is likewise related to the importance of this CB function (Minsky 1977, pp. 14).

Controller of the Money Supply and Financing Conditions: The Central Bank as the Operator of Monetary Policy.

Minsky always rejected the exogenous-fixed money supply view of both the old neoclassical synthesis (traditional IS-LM model) and of monetarism*. The relevant money supply for the generation of aggregate demand within a capitalist economy is the endogenous residual outcome, thus determined (not determining), by the dynamic financing processes involving business firms’ (and households) who demand credit to finance their expenditures and positions in assets and the financial system, strictly speaking, which supplies finance by accommodating the demand for it. (Minsky 1977). Because of financial institutions and usage innovations that allow the endogenous creation of “quasi” or “funny” money**, the effective money supply remains therefore determined by the decisions of banks and other financial and non-financial institutions, whereas the composition of the overall money supply changes as result of financial institutional and usages innovations and other exogenous, institutional decisions of financial regulation. In particular, financial innovations, and deregulation policies that have occurred in the U.S. since the 1980s render the concept of money supply vague given the increasingly weakening of the line of demarcation distinguishing the various liabilities within an economy***. Put in other words,

*With their new kind of quantity theory of money, monetarists re - placed a great prestige and importance on central banks and monetary policy, respectively, assuming an alleged ability of monetary authorities to determine “money supply” and with the pre-supposed direct linkage between nominal aggregate demand and money supply, to determine thus the level and growth rate of aggregate demand. Given the “naturally”, supply side- determined equilibrium level of unemployment, any short-run disequilibrium is the result of both monetary and fiscal authorities to “*go against nature*” (Minsky 1972 evaluation of US mon pol I or II). In the case of monetary policy, according to monetarism discretionary changes of the growth rate of money supply over that of total income by the Central Bank are one vehicle through which generate inflationary pressures on the economy and destabilizing macroeconomic effects. On the other hand, old neo-classical synthesis also assumed that monetary authorities can exogenously control the reserve base (which is functionally related to an assumed endogenous overall money supply; see Minsky 1972a), but they give importance not to the quantity of money per se, but to the impact on interest-sensitive aggregate demand components (mainly private investment) that “*ruling financing conditions*”, mainly interest rates, can have (Minsky 1977). Therefore, the two then standard views both believe in the ability of the Central Bank and thus of monetary policy to determine the “*short-run course of events*”, either through the quantity of money or through the influence of quantity of money changes – determined ruling financing conditions (Minsky 1977). Even though the old neoclassical synthesis recognizes the asymmetry existing with regard to the effectiveness of monetary policy transmission mechanism on relevant macro-economic variables such as aggregate income and employment (i.e. monetary policy is recognized to be effective in slowing down economic growth during expansionary phases of the business cycle, whereas it is ineffective in stimulating growth during a recession; see Wray 2007).

***Quasi-monies are liabilities of non-bank speculative financial institutions that are perceived as good payment instruments as traditional commercial banks’ demand deposits, and that thus also reflect a need for financing of both investment and consumption expenditures to be satisfied (Minsky 1974, Ch. 4)

***On the vagueness of the concept of “money supply” see Lindsey and Wallich 1991 and Smithin 2003.

anyone can create money, the problem is to get it accepted (Minsky 1972a, 1986). Money, having a “*broad nature*,” doesn’t correspond only to a narrowly defined “money supply,” and as especially in an environment of economic boom or high (or permanently rising) interest rates financial institutions and instruments innovations are introduced, the CB cannot be able to control the money supply. As Minsky said:”

“In the short run, market behavior dominates Federal Reserve actions in determining the effect of finance on income, while in the longer run the introduction of new financial usages and the evolution of both new and old financial practices rule the roost” (Minsky 1986, Ch. 3, pp. 55)

Furthermore, the endogenous and systemic nature of financial instability in capitalist economies likewise renders the CB unable to control the money supply, given the structural need for capitalist economies, especially with sophisticated and complex financial institutions and usages, to have the (main) CB (lender of last resort) support responsibilities operative when the “*need to monetize assets*” arises for the State’s monetary institution (Minsky 1972a). In that sense, in a financially sophisticated capitalist economy as is the case of the U.S., it is much more the case that the CB reacts to changes in, rather than controls, the relevant “money supply” (Minsky 1972a, c, Minsky 1977). In today’s technical jargon, the intermediate target of monetary policy is not the (growth rate of) somehow defined “money supply,” but the overnight inter-bank interest rate that the CB, as a good monopolist, sets at an exogenously preferred, pre-determined rate, letting quantities (its liabilities) adjust according to market demand. In addition to such issue and as a result of his endogenous money view, Minsky did not only provided a positive-type of analysis by explaining why the CB cannot control the money supply, but he also went further by providing normative analysis saying that the CB itself should not even try to control the money supply, given the possible inconsistencies, or trade-offs between such control-type function and the other (lender of last resort) support function, that have been just mentioned (Minsky 1972a). In fact, the elimination of inflation is not “*simple and costless*” as monetarism postulate, given that the financial system and its behavior, which are completely ignored by neoclassical-based theories such as monetarism, matter from the perspective of the impact of monetary policy actions on financial markets stability (Minsky 1977). As Minsky underlined, “[...] *because the neoclassical economic theory that underlines monetarism ignores financial system behavior the question as to whether central bank actions to control inflation may have repercussions on the stability of the financial system is ignored in the monetarist policy prescriptions. Monetarism is not a valid guide to policy for an economy in which financial interrelations are important*”. (Minsky 1977, pp. 3)

Rejecting the exogenous money view of both the old neo-classical synthesis and of monetarism, Minsky held that a CB is however able to “*operate upon domestic money supply and financing terms by means of various weapons and instruments*” (Minsky 1977, pp. 16). From this, according to the relative choice of the mix of such “weapons and instruments” to use, a Central Bank can and does determine the *kind* of system-relations that it has with other banking and financial institutions that directly or indirectly (by absorbing liabilities of other direct lending institutions and/or borrowing business firms) finance business firms, non-bank financial institutions, and households. The two weapons are the discount window and open market operations; the instruments are the relevant financial assets and reflecting liabilities chosen as eligible assets for discounting operations and/or purchases/sells on the open market. Here comes the preference for the former weapon and thus the preference for the discount window as a primary tool to conduct monetary policy on the part of Minsky, which is the main topic of this thesis and that will be analyzed in the next paragraph.

Two Central Banking – Private Banking System Relation: Discount Window versus Open Market - Central Banking.

“The more the Central Bank furnishes reserves and domestic currency to banks and other units by means of discounting private debt the more powerful it is, the more bank reserves and domestic currency are the result of government debt owned by the Central Bank the weaker the Central Bank as a controller and guide to the economy”.

(Minsky 1977, pp. 14)

Minsky long stressed the fundamental differences between the two main types of system relation between a Central Bank (CB) and its member institutions (or broader financial markets) and thus the economy. According to the relative choice of the mix of “weapons and instruments” to use in conducting its monetary policy, a Central Bank can and does determine the *kind* of relation that it has with other banking and financial institutions* that directly finance business firms, corporations, non-bank speculative financial organizations and households, and other key money market position-taking financial institutions acting as the proximate refinancing source for member commercial banks (for example, government bond houses; see Minsky 1960). The two weapons are the discount window and (operations in) the open market; the instruments are relevant financial assets and reflecting liabilities used each time. Two types of “*central banking – private banking system relation*” can thus be distinguished (Minsky 1977, pp. 17). One in which the contact, business relation between the CB and financial markets is realized by means of the discount window – weapon and the financial instruments used reflect private debt. Therefore, in this case, the CB’s discount window constitutes the “*normal functioning source*” of “*bankers money*”** (Minsky 1959b, 1986), for member banks and other money market institutions***. The discount window becomes not only the weapon through which the CB operates as lender of last resort in the domain of the rescue aspect of its crucial support function, but becomes also the normal source for a significant proportion of member banks’ reserve position, specifically it becomes the main source of banks’ borrowed reserves (Minsky 1960, 1969, 1972c, 1986, Ch. 3). The other type of relation is such that the contact is achieved by means of the operations-in-the-open–market–weapon, the instruments (usually) used (by the Fed) consist of government bills and bonds, with the reference market being then the government securities market (Minsky 1977, pp. 17). The former central banking – private banking relation framework gives thus rise to Discount – Window – Central Banking (DWCB), whereas the latter to Open Market – Central Banking (OMCB). As Minsky specified, OMCB can (and could) also exist without necessarily operating in Treasury securities, if not only with them. Indeed an open – market–CB can peacefully manage the short-run volume of

*Minsky (1960) also preferred that financial institutions financing consumption expenditures, such as consumer finance houses or sales finance companies, should be member of the Federal Reserve System and have access to the Fed’s discount window. The reason was to protect what became an important component of the payment system, the short-term liabilities that such financial institutions (also) issued which its lenders considered “*well-nigh money*” (Minsky 1960, pp. 375).

**In his “*Fundamentals of Central Banking*” (1959b), Minsky distinguished between three types of money: the public’s money, bankers’ money and international money. The former consisted of commercial banks’ demand deposits and State’s currency (coins and banknotes). The second one mentioned above consists of Federal funds (reserves). The third type of money was represented by the US dollar and his underlying conceptual logic was related to the then institutional framework characterizing the international monetary system of the gold exchange standard. As a result, international money is no longer a relevant concept in today’s institutional pattern of widespread non-convertible currency regimes. In addition to these three types of money, Minsky included also “*near – money*”, i.e. short-term financial assets that are not means of payments, but can be liquidated easily with reserves and/or banknotes at prohibitive costs.

***Whereby the institutional structure allows money market institutions to be member of the Central Bank system as it was in the case of the Bank of England, which although did not provide for discounts to commercial banks (‘ financial

aggregate liquidity (or borrowed reserves) within financial markets, by purchasing and selling financial instruments which reflect private debt, such as certificates of deposits, commercial papers and/or bankers' acceptances. In fact, in general terms, "*central banking can exist and can be effective in the absence of government debt*" (Minsky 1977, pp. 17). A discount window-CB is one that operates by *discounting* (or re – discounting, from the perspective of the borrowing financial institutions) pre-defined eligible assets or by making *advances* against such eligible assets that are thus accepted as collateral, usually on a short – term basis. An open – market CB operates through outright or temporary purchases and sales of usually, as in the case of the Fed, government debt. Having a CB acting as the "*normal – functioning supplier*" of borrowed reserves to member banks through its discount window implies that, with such an institutional framework, the system produces a quick transmission of CB's changes in the accommodation terms to member institutions' business financing terms policy, given that, in a DWCB framework, the discount rate becomes the "*crucial rate in determining financing terms*" (Minsky 1977, 1986, and, Minsky 1992, pp. 15). As a result, "*the control of borrowing terms by Federal Reserve banks affects the terms on which banks can profitably lend to their customers*" (Minsky 1986, Ch. 3, pp. 53).

This was very clear with the type of pre-Great Depression Federal Reserve – member banks system relation that was in force in the US, in which the very short – term nature both of Fed loans at the discount window and of the types of private debt eligible for discounts ("real bills"), produced a "*steady flow of cancellations*" on both sides of the Fed and member banks' balance sheets* (Minsky 1977). Another attribute of having the discount window as the main source of routine reserves for banks is that the relation between the total quantity of reserves and the CB actions in terms of changes in the discount rate is much more market – determined than the case of OMCB (Minsky 1977). This is due to the fact that, in DWCB, for any bank holding eligible papers the discount rate is an "*effective cost of doing business*", thus any CB change in borrowing terms makes market demand for discounting very elastic and thus makes the market the source of the initiative to changes in the quantity of discounts. (Minsky 1977) As the statement at the beginning of this paragraph makes us understand, Minsky's preference for DWCB was mainly aimed at stressing the effectiveness of the CB's power "*as a controller and guide to the economy*" that is inherent in such monetary management operative technique, absent, on the contrary, in OMCB (Minsky 1972, 1977, 1986, 1992).

This can be further understood by looking at the first, crucial for Minsky, "attribute" that fundamentally differentiates DWCB from OMCB. In the former framework, monetary authorities do have regular, every-day, and intimate business relation with member institutions *and* do directly participate in private financing activity (Minsky 1977, pp. 17; Minsky 1986, pp. 52). On the other hand, an open – market-CB does not have such direct continuing business relationship with member banks and does not directly engage in any co-financing of private activities except, logically, when it needs to activate its lender of last resort rescuing function in order to prevent a "*threatened debt – deflation*" to occur (Minsky 1977). The crucial necessity for a member bank to "*bring reserves to target levels,*" whenever for example the various eligible *short- run* private debt contracts are extinguished, gives rise to the above-mentioned continuity character of business relation between the discount – window CB and its member financial institutions (Minsky 1992). The daily extinction of the related portion of the reserve base will induce net borrowing banks to resort to the discount window to make position. As Minsky explained:

"If the Federal Reserve acts as a normal-functioning supplier of funds to banks through the

assets), it did provide loans for money market discount houses (Minsky 1957, 1960, 1977, 1992).

*Discounts to member financial institutions and reserve deposits on the Fed balance sheet; commercial, industrial or agricultural private debt and bank deposits on member banks' balance sheet.

discount window, then as long as banks value this source of funds they will conform to business and balance-sheet standards set down by the Reserve banks. On the other hand, if Federal Reserve credit is supplied to banks by means of open-market operations in government securities, then the customer relationship between a member bank and the Federal Reserve loses its power to affect member-bank behavior.”

(Minsky, 1986, Ch. 3, pp. 52 – 53)

Therefore, in OMCB the above – mentioned guidance or determinant-of-financial practices function is not performed and thus the “*preventive*” aspect (or abilities) of the lender of last resort function that Minsky used to distinguish from the mere, widely – known, “*rescue*” function is completely absent (Minsky 1959a, 1969).

In particular, if the financial structure is “*robust*,” that is banking portfolios are heavily biased toward Government liabilities (i.e. Treasury bills), and private liabilities that reflect hedge financing arrangements, and banks make position by selling Government debt, then “*it is all-right for the central bank to operate mainly in Treasury debt*” (Minsky 1992, pp. 11). However, adopting a Minskian perspective, we know that a robust and safe financial structure is always a transitory phenomenon, and in the transition toward an increasing fragile structure, member commercial banks make position through other financial instruments than Treasury bills or through different ways (i.e. liability-management position making techniques or today’s capital management techniques)*. As a result, “*if Treasury debt is not used as the position-making instrument, even as the operations of the central bank are mainly in Treasury debt, no direct business contact exists between commercial banks and the central bank*” (Minsky 1992, pp. 11). Open-market operations are thus an “*inept way to guide the financial system*” when Government liabilities are not the position-making instruments of member banks (Minsky 1992, pp. 12). Therefore, in line with the previously-mentioned Minsky’s dynamic view of central banking and monetary policy, CB’s monetary management techniques must change and be responsive to financial institutions and usages innovations in position-making activities, by relating “*variations in reserves to the assets owned by banks*” (Minsky 1969, 1992, pp. 12). “*In a fragile financial environment, central banks cannot blindly follow rules and apply techniques that were successful when the financial system was more robust*” (Minsky 1992, pp. 12). Thanks to the very continuative and borrowing-lending and insurer-insuree nature of the kind of customer relationship that characterizes the discount-window technique, the CB has the *right* and the *ability* of both imposing balance sheet standards to induce member institutions to tend toward “*short-term hedge financing arrangements*” (Minsky 1992; thus to maintain the stability of capital and financial assets over time), and of examining member institutions’ balance sheets. In particular, with regard to the former element, the “*sustaining of hedge financing by business is a major, proximate policy objective of the Federal Reserve. The more the Federal Reserve can tilt banking toward financing trade and production inventories with short-time spans, the more stable the financial system and the smaller the special refinancing needed to prevent a full-blown crisis*” (Minsky 1992, pp. 20).

*An example of a safe and stable financial structure, where commercial banks used to make position by selling Treasury bills in the Treasury bills market was that of the U.S. during the early post-war era (Minsky 1986), until the early 1950s when federal funds market before, and the Certificates of deposits later in the early 1960s, thus liability-management position-making techniques were introduced (Minsky 1957, `1986). Since those years until securitization did not become a spread (capital-management) position-making techniques for commercial banks, these latter kept innovating through new reserve-economizing liabilities as position-making instruments leading to an increase in the ratio of purchased-to-service liabilities that thus contributed to increase the system financial fragility, given that, as opposed to the latter type of banking liabilities, the former capital values are dependent upon money and capital markets system performance and stability (Minsky 1970, 1986). On the evolution of commercial banks’ position-making usages during the post-WWII period see (Minsky 1986, Ch. 3 – 4; Wray 1990).

Indeed, a discount-window-CB “*takes a stand,*” through its selective powers to choose the “*types of instrument it wants to see used,*” and thus the type of “*activity it wishes to see financed*” (Minsky 1977, pp. 18 – 19). Specifically, the performance of the preventive and thus of the guidance function by a discount – window CB would imply that the eligibility for continuous rediscounting be assigned to financial assets (bank loans and/or money-market papers) that reflect short-term business activity, and that are thus “*tied to the ownership of business inventories*” (Minsky 1992, pp. 13 – 14). The non-eligibility status would be left to those assets that reflect either speculative or Ponzi financing schemes.

The protected status these assets enjoy within financial markets will make them receive more favorable terms than the non – eligible, non - protected assets being thus treated as “*preferred risk class*” assets (Minsky 1992, pp. 14). This is a logical consequence of the new *liquidity status*, at a guaranteed (floor) price, that the new eligibility status assigned to the now protected asset gives this latter, relative to the ultimate non-liquid status of other speculative and Ponzi-finance based (thus) non-protected financial assets. Being reliable sources of cash for their holders, these protected assets will receive more favorable terms than those assets that are not eligible for (re-)discounts at the window, i.e. “[...] *bank and money-market rate for financing by means of ineligible paper*”, i.e. that incorporates speculative and/or Ponzi-financing arrangements, “*will be at a premium over the rate on eligible paper,*” i.e. hedge financing structures. (Minsky 1992, pp. 15) As a result, “*the guidance of the structure of financing relations will run from the Federal Reserve portfolio to a favored interest rate in the market for the eligible paper*” (Minsky 1992, pp. 14). Therefore, the ability of a discount window- CB to incentivize the issue and acquisition of liabilities that entail hedge-financing arrangements allows it to contain the “*tendency toward fragile financing structures,*” and thus to “*blunt the tendency toward fragile financing structures*” (Minsky 1992, pp. 14). Nevertheless, the leaning against speculative and Ponzi finance that should characterize the modus operandi of a (discount-window) CB does not entail that speculative and Ponzi finance will no longer exist. In fact, as we already explained, in a capitalist economy the thrust toward an increase in the weight of speculative and Ponzi finance within the financial structure will always take place, especially during and after periods of relative tranquility. Moreover, as Minsky argued, “*the need to structure deals means that bank loan officers and loan committees will always face situations when activity they are financing is really a Ponzi deal-in that next-stage borrowings are expected to provide the funds to meet the interest and the principle.*” (Minsky 1992, pp. 19). In a capital asset-investing economy with complex and sophisticated capitalist financial organizations, Ponzi financing arrangements are a commonly used way to finance investment in the production of capital assets with long gestation periods. “*Consequently, capitalism without financial practices that lead to instability may be less innovative and expansionary; lessening the possibility of disaster might very well take part of the spark of creativity out of the capitalist system*” (Minsky 1992, pp. 19). However, as Minsky underlined, in an institutional system with a discount-window-CB with member commercial banks acting as underwriters and brokers (and/or dealers) of either intermediate or long-term bonds and equities of insurance companies, money market mutual funds, pension funds and other private agents is “*conducive to hedge financing*” (Minsky 1992, pp. 20). The discount-window-CB will be thus able to look at member commercial banks’ balance sheets in order to assess the solidity of the financing (re-financing and/or contingency financing) structures between them and the various non-bank financial institutions that they are financing.

As Minsky explained, a discount-window CB should “*look through the veil of the bank’s balance sheet to the balance sheets of the organizations that the banks finance,*” be they business corporations, or institutional funds (Minsky 1992, pp. 13). Indeed, the right of a lender is a right of looking “*over the shoulders of borrowers in order to be assured of their continued probity or creditworthiness. The Federal Reserve, as the potential actual lender to commercial banks, would have the right to look over the shoulder and comment on the adequacy of a bank’s practices*”

(Minsky 1992, pp. 16). It is clear that if the CB uses the discount window also to meet the endogenously – determined member bank’s day-to-day refinancing needs, then the direct *borrower-lender*-type of relation that will result (instead of the mere *seller-purchaser*-type of relation characterizing OMCB), will allow monetary authorities to have the right to examine member banks’ books. (Minsky 1992, pp. 12) Bank examination is thus an outgrowth of DWCB. With respect to that, Minsky recalled that any lender has the right to ask the borrower the legitimate question “*how are you going to re-pay me?*”. As a result the CB’s management should be guided by the same principle (Minsky 1992, pp. 13). He stated:

“The Federal Reserve’s powers to examine are inherent in its ability to lend to banks through the discount window. [...] central banks have a right to knowledge about the balance sheet, income and competence of their clients, banks and bank managements. This is no more than any bank believes it has a right to know about its clients.” (Minsky 1993U.M.).

By lending against specific hedge-finance assets that are eligible as collateral at the discount window, the CB creates a new (relatively protected) secondary market for them. If those assets were already refinanced within money markets before they received the discount window protection, then the CB protection will simply allow for an increase in the liquidity of portfolios of those money market institutions that purchase and hold those assets as key-position taking (money market) institutions.

For Minsky, “*each bank should have a line of credit at the discount window and be able to borrow up to its line at a preferred rate*” (Minsky 1992, pp. 15).

The quantitative criteria to establish the line of credit at the preferred discount rate for each institution will be this latter capital and surplus account, “*thereby inducing banks that have high asset capital – ratios to retain earnings*” (Ibid.). Penalizations would be both in price and in quantitative terms. With regard to the former, a penal rate* would be applied to any member institution that would end up borrowing above its granted line of credit. Whereas in the latter case, an undue increase in non-eligible papers in the portfolio of a member institution would imply “*a review of the availability of credit [...]*” for the same (Minsky 1992, pp. 16).

As Minsky underlined, “*a penal rate at a discount window to a market maker is always a transitory phenomena. Lending rates and bid-asked differentials will tend to adjust so that quite quickly the penal rate no longer embodies a penalty. The significance of the penal discount rate – open discount window technique is that, to protected markets, funds are always available in virtually an unlimited quantity at the price determined by the Reserve Banks: the adjustment of reserves and of positions is in response to rising prices and changing profitability-not to an administered all or none availability variable*” (Minsky 1972c, pp. 7).

Open Market Operations in Minsky.

Therefore, as said already, for Minsky the “prime weapon” of the Federal Reserve should be the discount window, instead of open market operations. What should therefore be the role of open market operations? Minsky left these the role of determining the overall amount of banking system *owned* reserves, whereas, as mentioned before, the main source of borrowed reserves for member institutions should be the discount window (Minsky 1960, 1972c). The total amount of reserves, both owned and borrowed, should then be determined by “*market reactions to posted terms [at the discount window] and open market operations*” (Minsky 1972c). In line with what said above, with a DWCB, open market operations won’t thus be “*the source of funds for evening out reserve needs and need not be engaged in for purposes of stabilizing money markets*” (Minsky 1972c). Instead, as explained before, operations for such purposes had to be assigned to the discount window (mechanism).

Put in other words, Minsky's proposals of monetary policy techniques reform assigned open market operations the role of being the institutional tool through which the CB performs its "*dynamic function*" which, in his policy proposal, "*should take the form of a regular systematic increase in the reserves of the commercial banking system*" or of the provision of "*money for growth*" (Minsky 1960, pp. 374 -79).

Minsky preferred open market dealings be carried out with the aim of making the amount of the banking system owned (or non-borrowed) reserves follow a steady growth path in order to eliminate what during those years (1966 – 1970), had been a financial instability-exacerbating factor, namely the stop-and-go behavior of the reserve base (Minsky 1972c). Such destabilizing behavior was exactly related to the fine-tuning approach to monetary policy adopted under the policy advising of the old neoclassical synthesis economists. Therefore, "*the above monetary management techniques will have the owned reserve base grow at a steady pace while the tightening or easing of credit takes the form of higher or lower interest rates at the discount window*" (Minsky 1972c, pp. 7). He also proposed that "*over the long – run these reserves should be furnished in exchange of government debt*" (Minsky 1960, pp. 374).

Not only the control function had to be extended to "*cover the entire financial system*" (1960, pp. 379), than what was true during the post-WWII period and still today, but its fine-tuning, short-run economic activity stabilization directive should also be "*replaced by a directive to keep stability in the financial markets and provide money for growth*" (Minsky 1960, pp. 379). Put in other words, for Minsky the CB should not be the regulator of the economy, and it thus should abandon day-to-day open market operations-control techniques in the money market. The CB should be instead the regulator of financial practices and usages, and should rather use the discount window for purposes of ironing out temporary money and financial market difficulties (Minsky 1959a, 1960, pp. 379).

Extending Discount Window Direct Access and Protection to Money Market Intermediary Dealers in Minsky.

As Minsky explained (1986, Ch. 3, pp. 48), in modern capitalist economies, any prudent unit whose daily operations are characterized by the financing and refinancing of own liabilities as in the case of commercial banks, i.e. that engages in speculative finance, will have different alternative financing channels available and also, a proximate emergency refinancing source in case the usual channels either become too expensive or are interrupted. No financial institution with relative large holdings of short-term liabilities stocks would not protect itself from the (worst) possibility (ever) of being forced to sale out its positions to make position (Minsky 1960, 1977, 1986).

Because of the need to give any financial institution's liabilities a, in Minsky terms, higher liquidity premium than its assets, usually different money market intermediary dealers, and non-bank speculative financing organizations (or "shadow banking institutions") keep one or more deposit accounts at some commercial banks (both as their clearing account in carrying out normal business operations and) as their proximate backup source of liquidity, given the specific institutional position held by commercial banks' demand deposits within the hierarchy of socially accepted liabilities or "monies."* (Minsky 1960, 1970, 1977, 1986, Ch. 3 – 4) These backup facilities "*function as their proximate lenders of last resort*"** (Minsky 1986, Ch. 3, pp. 48). In their turn, these proximate lenders of last resort for money market intermediary dealers and other non-bank financial institutions must have access to the discount window "*in times of potential crisis*" (Minsky 1960, pp. 376).

Among these money market financial institutions resorting to such institutional-financial usage, there are money market intermediary dealers operating in secondary markets, such as Government bond dealers, or also some consumer finance houses such as sales finance companies (Minsky 1960, 1969). In a long-lived and expensive capital assets-investing economy with the corporate form dominating like that of the U.S., that is, in an economy with high needs of refinancing because of the relatively higher weight of speculative finance, secondary markets and money market intermediary dealers operating as position-takers in these markets play an essential institutional role. In fact, with their role as dealer markets and institutions, i.e. takers of significant amounts of stocks of positions in specific inside assets, secondary markets and their respective financial institutions allow for the smooth functioning of financial markets (and indirectly, the smooth functioning of assets and output markets, too; see Minsky 1977, 1986). Being institutional takers of positions in stocks of financial assets they simply transform an inside asset into a "*reliable*

*Liquidity creation can be conceived, in Minsky terms, as the ability of an organization to make its own liabilities embody a higher liquidity premium than its own assets (Kregel 2010), and must be conceived as the leveraging of a financial institution's liabilities onto the liabilities issued by another institution which social acceptability is higher than that enjoyed by the former IOUs.

For instance, non-bank financial organizations do create liquidity by leveraging their liabilities onto commercial banks' deposits that serve, as said, as clearing devices and as their backup source of liquidity during periods of particular financial stress. Exactly as banks do give their deposit liabilities a higher liquidity premium than their assets, and thus create "liquidity" (as long as there exist the State's ultimate guarantee of their liabilities), by leveraging on the State's IOUs (mainly CB's reserves and banknotes; see Kregel 2010, and Nersysian and Dantas 2017).

**In the post-war history of the U.S. economy, the role of proximate lenders of last resort has usually been held by a "*consortium of typically giant commercial banks*" (Minsky 1988, Ch. 3), or other Government agencies such as the FDIC which, with its role of "insuring" commercial banks' non-equity liabilities, Minsky considered to perform proximate lender of last resort functions given that, as in the case of private commercial banks, the FDIC or Government guarantee of private liabilities ultimately or implicitly means CB's guarantee (see Minsky 1986, 1988). The "two-tier"-lender-of-last-resort-system has been the traditional usage and has been adopted until the last Global Financial Crisis (see part two of the thesis).

source of cash,” at very low costs whenever the need to obtain cash arises (Minsky 1960, 1970, 1986). However, as opposed to brokers, dealers, being holders and owners of stocks of financial assets, even though for a relatively brief period, need to finance their positions (Minsky 1960, 1970, 1986). Usually under normal circumstances Government bond dealers*, and other money market financial institutions, finance and refinance their positions by issuing repurchase agreements to sale to commercial banks, non-bank speculative financial institutions, and/or business corporations. In particular, *“the earlier argument about refinancing a position applies with special force to any money market or financial market dealer”* (Minsky 1970, pp. 59)

From a financial stability perspective, Minsky underlined that

“if the Government bond dealers play a key role in evening out the reserve position of the commercial banks and if they finance their positions by borrowing temporary excess reserves from commercial banks or otherwise idle cash balances from corporations, the central bank must guarantee that no wave of general illiquidity can result from the lack of liquidity of these institutions” (Minsky 1960, pp. 375).

As he observed in his 1960 research study for the Federal Reserve-designated Commission on Money and Credit, *“As the Government bond dealer must have a guaranteed refinancing source in case they are unable to borrow enough from their normal sources to maintain their position, the Federal Reserve System has agreed to a subterfuge by which one of the New York City banks guarantees financing to the Government bond dealers and this bank in turn has access to the discount window on an unrestricted basis. [...] This New York bank will lend to the Government bond dealers regardless of its own money position because of the privileged position it occupies at the Federal Reserve Bank of New York.”* (1960, pp. 375-76).

Relevant money market institutions like Government bond dealers do have thus indirect access to the discount window by means of the “two-tier system” of lenders of last resort, in that, if any (giant) commercial bank is forced to borrow at the Federal Reserve Bank’s discount window, because of unexpected emergency liquidity demand by money market dealers, *“we can expect that the credit will be granted”* (Minsky 1960, pp. 377). In particular, *“the Federal Reserve Bank apparently will lend to this [New York] bank without limit as long as the bank is forced to use the discount window because of its activity in financing the Government bond market”* (Minsky 1960, pp. 376). Therefore, from a LOLR perspective, if the Federal Reserve is the lender of last resort to all the various lenders of last resort then it is logically incoherent to leave out of the discount window protection crucial money market intermediary dealers institutions, such as Government bond dealers (Minsky 1960, pp. 374). There is no reason not to allow money market institutions such as Government bond dealers, to have direct access to and the protection of the discount window and refinance their positions directly with the CB. As Minsky stated,

“The only source of refinancing that can be truly independent of any epidemics of confidence or lack of confidence in financial markets is the central bank. Thus if the set of protected assets is to be extended by the organization of secondary markets, the stability of the financial system will be best increased if the dealers in these secondary markets have guaranteed access to the central bank.”
(Minsky 1970, pp. 59)

*Specifically, Government bond dealers’ main creditors are commercial banks, non-financial corporations, states, local governments, foreign central banks, and so on (Minsky 1960).

And he added, “*it might be highly desirable to have the normal functioning of the system encompass dealer intermediaries who finance a portion of their position directly at the Federal Reserve discount window*” (Minsky 1970, pp. 59). As a result, the Federal Reserve’s peg in these secondary position-taking markets exists and turns the new eligible assets into “*guaranteed sources of cash at guaranteed prices,*” thus transforming them in quasi-outside assets and leading to an increase in the financial stability domain of the system (Minsky 1970, pp. 59-60).

Instead of having a clearing and proximate stand-by line of backup credit at commercial banks, money market financial institutions like Government bond dealers should have direct access at the Federal Reserve System, and be members of the system and hold a reserve account at their own regional District Bank*. Given the typical decentralized institutional structure of the Federal Reserve System, the shift to the discount window technique and the extension of the window protection to money market institutions will require regional money markets, where the “*regional Reserve banks would then have a lender’s relation with individual banks and with the district’s money market*” (Minsky 1992, pp. 16). On the other hand, with regard to sales finance companies, Minsky posited an argument in favor of extending the discount window direct access to them too, following the same lines of logical reasoning. Sales finance companies (or consumer finance houses) issue both long-term and short-term liabilities on the open market by borrowing idle cash balances from corporations or commercial banks, and/or from other non-bank financial institutions to finance the acquisition of consumer instalment papers (i.e. to finance households’ consumption expenditures). In addition to that and like Government bond dealers, they hold “*stand-by lines of credit*” from member commercial banks as their source of proximate emergency refinancing (Minsky 1960, pp. 377). The sales finance companies can resort to such proximate back-up source of liquidity either as the usual short-term refinancing channel reduces credit, or because actual near-term cash flows fall short of expectations. Nevertheless, once commercial banks’ stand-by lines of credit become too small relative to the short-term refinancing needs of the institution, this latter will resort to long-term refinancing channels (Minsky 1960, pp. 377). However, as Minsky stated, “*it is possible that the consumer credit houses are forced to go to the long-term market at a time when long-term lending is not readily available due to uncertainty*” (Minsky 1960, pp. 377). As a result, in a time where aggregate demand may be already falling, the consumer credit houses may reduce their own financing of consumption expenditures, being forced to defensive portfolio adjustments and thus contributing pro-cyclically to the recessive dynamic (Minsky 1960). Furthermore, consumer credit houses might even either receive tighter price-term credit conditions or get their credit from commercial banks reduced if these latter portfolio are fragile and are thus forced to engage in defensive portfolio adjustment, too. In the former case, non-bank financial institutions will see their cost of doing business increasing, whereas in the latter case either the only ultimate refinancing source intervenes, i.e. the CB (or the Federal Reserve in our case), or quick sales of financial assets (consumer instalment papers) will be forced with the possibility of bankruptcies of the institutions and subsequent losses of net worth, income, and jobs. As Minsky stated:

“If a commercial bank is forced to borrow at the Federal Reserve Bank’s discount window because a consumer credit house unexpectedly draws upon its line of credit, we can expect that the credit

*Minsky outlined how the regional, district setup of the Federal Reserve System was useless and incompatible with an institutional framework-biased toward the open-market monetary policy technique, given that only the New York Federal Reserve Bank was and is designated to conduct operations on the Government bills and bonds open market on behalf of the system. However, if the shift to DWCB occurs then such kind of arrangement is compatible with the different technique.

will be granted. Hence both the consumer credit houses and the Government bond dealers do have indirect access to the discount window of the Federal Reserve System; there is little doubt in my mind that in times of emergency if the commercial banks refuse them accommodation such access will have to become direct. There is no reason why approved Government bond dealers and approved finance houses should not have access to the Federal Reserve System now, when no crisis threatens. The Federal Reserve's attitude toward such changes in its technique of operations has the appearance of a mystical transformation of a convention into a matter of ideology"
(Minsky 1960, pp. 377).

THE FEDERAL RESERVE DISCOUNT WINDOW FRAMEWORK, AND THE CONSEQUENCES OF FOLLOWING AN OPEN MARKET-APPROACH TO CENTRAL BANKING DURING THE GLOBAL FINANCIAL CRISIS.

On today's Federal Reserve Discount Window Framework.

Today the Federal Reserve extends loans at the discount window to depository institutions either by making advances secured by pre-defined eligible assets serving as collateral or by discounting such accepted collateral. Usually, a Federal Reserve District Bank extends reserve loans by making an advance (Fed Regulation A, Part 201.3 "Extensions of Credit Generally", Title 12, Chapter Two of the Code of Federal Regulations). Each of the twelve Federal Banks can extend loans only to the member institutions within its respective district. The loans are very short-termed, usually overnight, and at the nominal value of the established collaterals, a haircut is priced by the Federal Reserve Banks. A depository institution is one which is allowed to issue deposits and which thus maintains a "reservable transaction accounts", i.e. liabilities subject to reserve requirement, or "non-personal time deposits*" (Fed Regulation A, Part 201.2 "Definitions"). In addition to that a depository institution must be either:

- an *insured bank*;
- a *mutual savings bank*;
- a *savings bank*;
- an *insured credit union*;
- a *Member* (as defined in section 2 of the Federal Home Loan Bank Act; see Regulation A, Part 201.1 "Definitions"); or
- a *savings association* that is an insured depository institution or is anyway eligible to apply to become an insured (see Regulation A, Part 201.1 "Definitions");

On the contrary, according to current Regulation A, the definition "depository institution" does not apply to "a financial institution that is not required to maintain reserves." These are institutions that i) are organized for the aim of only doing business with other financial institutions, ii) are owned primarily by the financial institutions with which it does business, and iii) that do not perform business with the general public. (Regulation A, Part 201.1 "Definitions"). These latter mainly are bankers' banks, corporate credit unions plus other financial institutions (Federal Reserve, Discount Window and Payment System Risk 2015). In addition to that, also US branches and agencies of foreign banks that keep reservable liabilities, subject to Regulation D reserve requirements, are allowed to access the Fed Discount Window on the same conditions of domestic financial institutions (see Regulation A, Part 201.1 "Authorities, purpose and scope"). Specifically, Regulation A establishes the general policies governing Fed Discount Window lending to depository institutions, whereas the statutory framework that governs lending to member institutions is contained in section 10B of the Federal Reserve Act**.

*According to Fed Regulation D, Part 204.2 "Definitions" states a non-personal time deposit is a time deposit, including a money market deposit account or any other savings deposit such as passbook or statement savings accounts, "representing funds in which any beneficial interest is held by a depositor which is not a natural person". (For broader and more detailed legal meanings of non – personal time deposits see Fed Regulation D, Title 12, Chapter Two of the CFR, Part 204.2(f)(1), "Definitions")

**See Fed, Regulatory Reform, Discount Window Lending:
<https://www.federalreserve.gov/regreform/discount-window.htm>)

Currently, in implementing its monetary policy, the Fed adopts open market operations as the main source of normal functioning reserves to depository institutions (and currency to the public), thus as the main source through which it operates upon its reserves, and as the main tool through which carries out short-run adjustments of in federal funds. As a result, the discount window fulfills a complementary role to the pursuing of Fed's monetary policy (Madigan and Nelson 2002; Carlson and Rose 2017). Discount window operations (advances against eligible collateral) are aimed at performing the role of "short-run safety valve" to offset any negative discrepancy between the volume of aggregate reserves supplied through open market operations and the demand for them on the part of member institutions, therefore avoiding any excessive "tightening" of money market conditions.

An Aside on the Federal Reserve's Discount Window Framework Before the 2003 Reform.

A below-market rate lending framework characterized the pre-reform Fed discount window. Specifically, the adjustment credit facility allowed the Fed to lend on short-term basis, usually overnight, to depository institutions demanding reserves in change of the security provided by pre-defined eligible collaterals. The adjustment credit facility functioned as a "safety valve" for any positive discrepancy between the demand for reserves and the open market operation – supplied reserves that can occur in any operative day within, to use Minsky, bankers' money markets, given fluctuations of affecting factors (Madigan and Nelson 2002). Therefore, basically such facility represented the Fed's discount window. As the adjustment credit rate was below* the federal funds rate on uncollateralized overnight interbank loans, the Fed required that depository institutions had to first exhaust all possible alternative market refinancing sources, provide explanation of their needs to borrow at the window, in order to avoid arbitrage possibility. In addition to that, the Fed also prohibited member institutions using borrowed adjustment reserves to finance sales of federal funds. As a result, the previous regulatory framework required that any Federal Reserve District Bank had to "evaluate the financial situation of each borrower to determine that both the reason for borrowing at the discount window and the depository institution's use of borrowed funds" were "appropriate" (Johnson, pp. 2, 2002b). On the other hand, the extended credit facility was available to institutions that did not have any other refinancing source to draw upon and credit was on a long-term basis.

*During the decade previous the reform it was usually 25 – 50 basis points lower (Johnson 2002a, b)

2003 Institutional Reform of the Federal Reserve Discount Window: Primary and Secondary Credit Facilities/Programs.

On January 9, 2003, an important institutional reform was put in place by the Federal Reserve Board of Governors, which radically modified the institution's Discount Window mechanism framework and thus associated procedures (Johnson 2002a, 2002b; Carlson and Rose 2017). By amending specific provisions of Regulation A*, the Federal Reserve Board of Governors reform produced the substitution of the previous *adjustment* and *extended* credit programs/facilities with the new *primary* and *secondary* credit programs/facilities, while leaving the then already existing *seasonal credit* program basically unchanged**. Therefore, the number of discount window facilities remained always three. The reform also reorganized and streamlined previous provisions of Regulation A, while likewise amending the penalty provision contained in Regulation D, in order to “conform the calculation of penalties for reserve deficiencies to the new discount rate framework” (Johnson, 2002b pp. 1). The rates for both the extended and the seasonal refinancing accommodations of the Fed were set through formulas that were based on market rates and were set usually at or above the (then) Discount rate (adjustment credit rate).

The Fed authorities expressed concern not only in explaining the details of the various institutional and operative changes that the reform would have entailed, but also in specifying the motivations that led the Fed Board to formulate and then implement such discount window structure transformation. As opposed to the discount mechanism in force before 2003, with the new one the Fed shifted from a below-market rate lending framework to an *above* – market rate one. In fact, both the primary and the secondary credit facility rates are set above the fed funds and other money market rates (see below). Precisely, the former is set at a premium over the upper limit of the FOMC's fed funds rate range target, whereas the latter is set at a premium over the former (Johnson 2002a, 2002b; Carlson and Rose 2017). Initially, the primary credit rate was placed at 100 basis points above the overnight interbank lending rate, with the accompanying flexibility provision that in case of “financial emergency,” defined as “*a significant disruption to the U.S. money markets resulting from an act of war, military or terrorist attack, natural disaster, or other catastrophic event,*” the spread could have been lowered up to even full equalization between the discount and the cash - rate. (Extensions of Credit by Federal Reserve Banks, Section 201.51(d)(2); see also Johnson 2002a, 2002b; Carlson and Rose 2017)

Other than the first four possible scenarios, the real catastrophic event marked by the 2007 – 08 Global Financial Crisis was the one that, for example, led the New York Fed Trading Desk to lower the penalty spread up to 25 basis point in the mid-August 2007, after three UK-based BNP Paribas hedge funds “broke the buck” (see below).

On May 17, 2002, the Fed Board published for public comment a proposed modification to its Regulation A of Title 12, Ch. 12 of the CFR (Madigan and Nelson 2002). The Board explained to the public that the proximate goal of such reform was to “*improve the functioning of the discount window and the money market more generally,*” and that such reform did “*not represent a change*

*Regulation A is the first part (201) of Title 12, Chapter II, of the Code of Federal Regulations (CFR). This latter constitutes Federal Reserve own regulations through which the board of the institution implements in part laws, other than those established by the Federal Reserve Act, that pertain a wide range of banking and financial activities. (See Fed, Regulations: <https://www.federalreserve.gov/supervisionreg/regabout.htm>)

**The Seasonal Credit program is available for small institutions, usually located in agricultural and tourist areas, that prove to be liable to intra-year seasonal swings in their loans and deposits (Fed web-site, Regulatory Reform, Discount Window Lending; Johnson 2002a, 2002b; Carlson and Rose 2017).

in the stance of monetary policy” (Johnson 2002a, 2002b; Madigan and Nelson 2002). Importantly, with the discussed reform, the Fed did not mean to change the primary tool through which it supplies normal functioning reserves to depository institutions and through which it implements monetary policy, that is, the Fed still remained an open – market central bank, with the discount window representing a “complementary tool” both in normal and in financially distressed times. (Federal Reserve 2015; Carlson and Rose 2017). However, the just – mentioned proximate goal mainly coupled with the specific *ultimate* goal to “*reduce institutions’ reluctance to use the window as a source of back-up, short-term liquidity*” (Board of Governors 2003). Therefore, with this remarkable change, the Fed Board wanted to address the problem of stigma related to discount window borrowing by sharply reducing it. As Carlson and Rose (2017) reminded us “*many of the changes and innovations to the administration of the discount window over the past few decades have been the results of efforts to address stigma.*” The basic idea centering around the analysis concerning the motivations that led to implement such reform was that the design of the previous discount window framework, itself, contributed to nurture stigma. In fact, it was believed that the below-market rate structure obliged the Fed to set up a “*considerable administration*” procedure for evaluation of borrowing requests in order to avoid arbitrage on the part of potential borrowers (Madigan and Nelson 2002; Carlson and Rose 2017). Arbitrage opportunities simply existed for depository institutions that could refinance their positions at the window at the then adjustment (discount) rate to then lend the borrowed reserves within the interbank or other money markets. As a result, as mentioned before, the Fed examined each borrower’s funding situation, ensuring that other alternative private refinancing sources were exhausted and that the use of the borrowed funds was appropriate, with the depository institution not able to finance any sale of reserves with such funds (Madigan and Nelson 2002). These were deemed to be not only credit administrative procedures difficult to render consistent among the twelve Federal District Banks given the subjectivity character of the relevant evaluations, but also to be “*somewhat burdensome to the institutions,*” which made them reluctant to resort to the discount window (Madigan and Nelson 2002). Specifically, member institutions pointed to the uncertainty concerning their overall discount window borrowing “*privileges*”^{*} given the difficulty in formulating and explaining the various below-market rate framework – necessitated rules (Madigan and Nelson 2002). The Fed authorities claimed that the requirement of preventive search for other - than - discount window private refinancing sources contributed to make depository institutions even more reluctant to approach the window given that, as said, a possible turning to the Fed would have sent messages of financial weakness to the markets (Madigan and Nelson 2002). These penalizing factors induced by the pre – 2003 Fed discount window lending framework were claimed to even inhibit the effectiveness of such otherwise precious central bank’s tools in “*buffering shocks to money markets,*” during more financially stressed periods, and thus in stabilizing reserve interbank markets through the ceiling that the discount rate should have placed on the federal funds rate. (Madigan and Nelson 2002, Carlson and Rose 2017) Nevertheless, although with a below-market rate framework such arbitrage opportunities exist for member depository financial institutions, all that the Fed needed to do to eliminate them was to keep the primary or discount rate equal to the inter-bank cash-rate-target. Therefore, with the (then new) above-market rate lending framework the Fed could keep the

^{*}The choice of putting brackets at the word *privileges* stems from its meaninglessness, given that in a Minskian theoretical framework the discount window should be the main, normal, source of functioning reserves for *all* banking and financial institutions. Therefore, the discount window should be and should be conceived as the main tool through which the Fed should carry out its monetary policy.

aggregate amount of reserves credited through the discount window low not through administration of the same monetary authority, but through the (now positive) price differential mechanism between the primary rate and the fed funds rate (and other money market rates) (Madigan and Nelson 2002).

With the above-market rate structure, the Fed has managed its intermediate target (federal funds rate) through the so-called “corridor system” before the Global Financial Crisis, that has been usually associated with a shortage of reserves*. After the outbreak of this latter and the Fed’s huge intervention to stabilize financial markets and to set a floor to a vast range of financial assets’ prices, and with subsequent QE policies, the corridor system has been replaced with the so-called floor system. This produced a decoupling between the ability of the Fed to achieve its overnight rate target and the (enormous) amount of reserves stocks in the system. With respect to that, the ability of the Fed to conduct its monetary policy in a world of high volumes of reserves has been maintained thanks to the role played by the positive deposit facility rate that the Fed set exactly to provide a floor for the federal funds target rate.

*See for example Lorie K. Logan (2018), “*Operational Perspectives on Monetary Policy Implementation: Panel Remarks on the “Future of the Central Bank Balance Sheet”*”.

Primary Credit Program/Facility in Today's Federal Reserve Discount Window Framework.

The primary credit facility is available to all depository institutions that are deemed to be sound according to the criteria and results of the relevant examination procedures (see below). Primary loans are granted on a short-term basis, typically overnight, at the discount (primary) rate that is, as said before, above the FOMC's upper limit of the federal funds range target. With the above-market pricing feature of the post-2003 reform Fed Discount Window framework, monetary authorities expected that depository institutions would rely on primary credit only as a "*backup source of funds*" to satisfy temporary and unexpected needs, rather than a normal source of routine reserves. Therefore, they demonstrated again a reluctance to use the discount window as the prime tool for keeping (continuous and intimate) business contact with member banks. In addition to that, the complementary to – open – market – operations role assigned to the discount window loans in the pursuing of monetary policy and thus in the effective achievement of the targeted federal funds rate by the Fed, also explains the reluctance of this latter to be(come) a Discount Window Central Bank. In fact, the primary credit program facilitates Fed monetary policy objectives functioning as a ceiling to the effective overnight interbank lending rate during particular temporary liquidity strains within the interbank and other money markets with the Fed acting as lender of last resort (i.e., the primary credit facility serves as temporary "*safety valve*"). Also, with the last resort supply of reserves during a financial crisis the primary credit facility keeps ensuring the stability of the payment system. Furthermore, primary credit can be also extended up to a few weeks if the individual depository institution cannot temporarily access alternative market refinancing sources at reasonable terms (Federal Reserve 2015). As mentioned before, with the 2003 reform the administrative procedures were drastically streamlined, in line with the shift from an administrative to a pricing approach of the Fed discount window lending. Monetary authorities do not require member banks to provide explanations of the reasons and also uses of the borrowed federal funds in order to obtain primary credit. In fact, there are no restrictions on the use of reserves borrowed at the window and the minimum type of information necessary to obtain a loan usually consists of the amount and the term of the loan. Specifically, primary loans are granted on a "*no-questions-asked, minimally administrative basis,*" whereas on the use of funds, contrary to the previous adjustment credit program, borrowed federal funds at the primary facility can be used to finance the sale of reserves, an expansion of the borrowing institution balance sheet and even to catch up arbitrage opportunities. (Federal Reserve Discount Window, Payment System Risk, Primary and Secondary Lending Programs)

Only if the "*pattern of borrowing request strongly indicate that a depository institution is not generally sound,*" then Reserve District Banks will require additional information (Federal Reserve 2015). As opposed to the requirements demanded for accessing the pre-existing adjustment credit program, depository institutions do not need to have first exhausted alternative market refinancing sources in order to be able to access the primary facility. This change is related to the fact that, as opposed to the previous adjustment program, the then new primary credit facility was available only to sound depository institutions.

Secondary Credit Program/Facility.

Depository institutions that do not satisfy the soundness eligibility criteria for accessing the primary credit facility will have to obtain credit from the secondary program. Like the primary credit, also the secondary one serves to meet mere "*backup liquidity needs,*" when "*in the judgement of the Reserve Bank, such a credit extension would be consistent with a timely return to a reliance on market funding sources*" (Federal Reserve, Regulation A of the CFR §201.4(b)). It is

provided on very short – term basis, usually overnight, at a premium rate over the primary (discount) one, usually 50 basis points higher, with the spread subject to changes. The secondary rate is simply a penalty rate for troubled financial institutions. In addition to that, secondary credit can also have longer maturity if it allows to facilitate an “*orderly resolution of serious financial difficulties*” (Regulation A of the CFR §201.4(b)). Given the nature of the borrowers, the secondary credit facility implies a higher degree of Reserve Bank administration and oversight. Monetary authorities must gather relevant information on the overall financial conditions of the borrowing institutions and their reasons for obtaining advances (or discounts) by the referring Federal District Bank which must be consistent with the above – mentioned objectives of the program. (Federal Reserve 2015)

Seasonal Credit Program/Facility.

Seasonal credit is extended to small depository institutions located in agricultural and tourist areas that usually experience large intra-yearly swings in refinancing needs due to “expected patterns of seasonal variations in their loans and deposits (Regulation A, 201.4(b)).

Indeed, “*Seasonal credit is available only to depository institutions that can demonstrate a clear pattern of recurring intra-yearly swings in funding needs.*” (Federal Reserve). The interest rate applied to seasonal credit is variable usually set at a slight mark-up (10 basis points) over the federal funds rate.

Federal Reserve Banks are allowed to extend seasonal credit only if the eligible small borrowing institution’s refinancing needs exceed a pre-determined threshold that “the institution is expected to meet from other source of liquidity”, and that it demonstrates the seasonal character of its refinancing needs and that these latter persist for at least four weeks (Regulation A, 201.4(b)).

Emergency Credit Facilities: Section 13(3), an historical and legal brief.

As post-GFC Dodd-Frank Act-modified version of Section 13(3) states, in “*unusual and exigent circumstances*”, the Federal Reserve Board, with the *prior approval of the Treasury Department*, and through the affirmative vote of *not less than five* members of the (seven Governors of the) Board, can establish emergency liquidity programs or facilities with “*broad – based eligibility*”, in order to discount notes, drafts, and bills of exchange. (Federal Reserve Act, Section 13(3.A)) Before proceeding to such emergency accommodations, the Federal District Banks have to first ensure themselves that “*any participant of the program of facility with broad-based eligibility is unable to secure adequate credit accommodations from other banking institutions*” (Fed Act, Section 13(3.A)). In addition to that, any emergency credit facility must be provided to meet demand for reserves of *the whole* financial system and not to aid *single* institutions. Furthermore, the Fed Board should establish all those procedures that avoid institutions that are insolvent borrowing from the emergency programs* (Fed Act, Section 13(3.B)). Interestingly, Section 13(3.D) of the Act establishes a “confidential provision” with regard to the informational report** that the Board must provide to the Committee on Banking, Housing, and Urban Affairs of the Senate and the Committee on Financial Services of the House of Representatives, as dictated by sub-paragraph C of the same

*According to the above-referred Section of the Act, these procedures may require a “certification from the chief executive officer (or other authorized officer) of the borrower, at the time the borrower initially borrows under the program or facility (with a duty by the borrower to update the certification if the information in the certification materially changes), that the borrower is not insolvent” (Fed Act, Section 13(3.B)).

**Such report must include, other than the information mentioned above, the justification for the exercise of authority by Reserve Banks to provide the assistance, other information on the material terms of the assistance such as its

Section. The information that must be kept “confidential” is related to the *identity, amounts borrowed, and details concerning the assets or collateral pledged* of and by any participant to such emergency lending programs (Ibid. Section 13(3.D)).

Section 13(3) lending powers were granted to the Federal Reserve Act by an amendment, Section 210, included in 1932 Emergency Relief and Construction Act, as an early form of federal stimulus program, before the the Fed and the Reconstruction Finance Corporation had clearly divided division of responsibilities (Mehra 2010, pp. 230; Todd 2016, 2018). The first restriction within Section 13(3), as enacted, was that before a Federal Reserve Bank could discount any financial paper, this “*had to be “endorsed and otherwise secured” to the Bank’s satisfaction*” (Mehra 2010, pp. 230). In addition to that and importantly, the second restriction set collateral requirements for “individuals, partnerships, and corporations” eligibility to discounts equally to those for the loans made to member banks* (Mehra 2010, pp. 231). The precision of the legislators with respect to the range of eligible collaterals was aimed directly at limiting the ability of the Fed to extend emergency financial assistance to investment banks and other similar firms, which most of their holdings were composed of investment securities that were determined ineligible (Mehra 2010, pp. 231). Given that investment or securities financial institutions’ portfolios are quite devoid of usually eligible assets to serve as collateral for discount window emergency loans, representatives of the Securities Industry Association had begun lobbying to render discount window loans available to securities firms, since 1991 on (Todd 2018). It was in 1991 that Section 13(3) was amended** to remove the collateral eligibility restriction, “*so that, for the first time, a Reserve Bank could extend emergency credit to an investment bank or securities firms*” (Todd 2016). The original institutional purpose of such Section was that of providing *secured* emergency loans (*discounts, not advances*) against sufficient collateral to entities being, indeed, devoid of any other market credit source (Mehra 2010). In fact, the purpose of the legislation was the “*containment of system liquidity (rather than solvency) risks by means of secured lending against sufficient collateral*” (my emphasize; Mehra 2010, pp. 273). In addition and importantly, as Doctor Todd reminds us, Section 13(3) was used rarely during the 1930s and never after 1936 (until the Global Financial Crisis; see below) and it did not contain the word “Lender of Last Resort” (Todd 2016). Finally, the third procedural-type restriction contained in the original Section required the “*affirmative approval of five of the Fed’s Governors before a[n emergency] loan can be made.*” (Mehra 2010, pp. 232).

duration, the interest, fees or other form of revenues received by the District Banks, the requirements for the recipient concerning the employee compensation, distribution of dividends, or any other corporate decision for exchange of the assistance plus the “expected cost to the taxpayers of such assistance.

*In line with the then “real bills” doctrine explained above, under Section 13(2) of the FRA, Reserve Banks “*may accept as collateral notes, drafts, and bills of exchange that have been —issued or drawn for agricultural, industrial, or commercial purposes, or that have proceeds that will be used for such purposes.*”³² Such instruments must have a maturity period of no more than ninety days.³³ Furthermore, instruments —issued or drawn for the purpose of carrying or trading in stocks, bonds or other securities, other than Treasury securities, are expressly ineligible for discount” (Mehra 2010, pp. 231).

**The amendment was effected through Section 473 of the Federal Deposit Insurance Corporation Improvement Act (the “FDICIA”), which removed the proposition “of the kinds and maturities made eligible for discount for member banks under other provisions of this Act” from the original Section 13(3). As result of such modification, “*all notes, drafts, and bills of exchange became eligible for discount, so long as they were endorsed or secured to the satisfaction of the Federal Reserve Bank*” (Mehra 2010, pp. 232).

Federal Reserve's intervention for Member Commercial Banks and for Primary Dealers.

The Federal Reserve (Fed) response to the whole GFC period can be divided in three stages. These latter conform to the chronologically ordered sequence of interventions, with each stage having its own set of objectives to meet. The first stage of the Fed's action aimed at providing short-term credit to (allegedly) solvent banks, other depository institutions and primary security dealers and investment banks (Felkerson 2011; Wray 2012). In particular, loans through stage one – credit facilities were aimed at “*improving aggregate liquidity and also the distribution of liquidity across financial intermediaries*” (Bernanke 2009, in Felkerson 2011 and Wray 2012). Stage one liquidity programs go from the Term Auction Facility (TAF; see below) to the AIG (eventually failed) rescue. On the other hand, stage two crisis facilities involve an “*even larger departure from conventional LOLR operations*”, as the Fed, faced with the inability or unwillingness of various financial institutions to refinance other key financial institutions positions, decided to support and validate what were deemed as crucial credit markets (Felkerson 2011, Wray 2012, pp. 57). The aim of such stage loans was that of restarting the flow of credit to households through liquidity provisions to financial intermediaries that would have then purchased liabilities issued in key financial markets (Felkerson 2011; Wray 2012). This stage goes from the quickest implemented Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF) to the Term Asset-Backed Securities Loan Facility (TALF). Finally, as stated by the same Fed, stage three interventions constituted an “*expansion of traditional open market operations*” for the goal of further supporting the “*functioning of credit markets through the purchase of long-term securities for the Fed's portfolios*” (Federal Reserve, 2011 in Wray 2012, pp. 60). Under this stage the assets purchased involved a range going from “direct obligations of housing-related government-sponsored enterprises (GSEs) to agency GSE MBSS, along with following rounds of Quantitative Easing (QE; Wray 2012). Only these latter will be missing in our analysis given that QE does not represent a LOLR operation, being instead part of the “monetary policy arsenal,” although it represents an “unconventional” type of monetary policy (Wray 2012). In this (part of the) thesis the analysis will be focused on the various liquidity provisions the Fed provided to member commercial banks through auction-format-based facilities, and on the short-term credit provisions to money market primary dealers effected through various emergency liquidity facilities under invocation of Section 13(3).

Liquidity Provisions to Depository Commercial Banks.

The day after the announcement of BNP Paribas* on August 9, 2007, the Fed started to operate through monetary policy conventional tools to address disruptions within interbank lending markets. Since August 2007 and March 2008, the Fed operated both on price and non-price terms of liquidity provisions by reducing the primary credit – overnight federal funds target rate spread and by lengthening the repayment period of the loans at the discount window. Whereas immediately after, the FOMC started to engage in expansionary open market operations** (Bernanke 2009; Fleming 2012). However, in this initial period of conventional tools-conducted positive

*It was on August 9, 2007, that BNP Paribas declared that three of its hedge funds could not meet withdrawal demands because of illiquid short-term credit markets that consequently made it difficult to determine the three subsidiaries' net asset value. Such announcement led to a reassessment of the counterparty credit risk by financial institutions, with a consequent increase in the perceived risk of lending at longer maturities (Fleming 2012). All of this led to the disruption of the well - functioning of interbank markets manifesting in terms of increasing spreads between the London interbank offered rate (LIBOR) and the overnight indexed swap (OIS) rate, this latter being a measure of average expected overnight rates (Fleming 2012).

**The FOMC started to ease its open-market purchases during September 2007, after the FRBNY had cut the spread

monetary policy operations, the Fed's actions did not succeed in significantly ameliorating *“rapidly worsening conditions in opaque markets for securitized products such as mortgage-backed securities (MBS)”* (Felkerson 2011, pp. 3). On December 12, 2007, the Fed announced the Term Auction Facility (TAF) authorized under Section 10B of the Federal Reserve Act. The stigma associated with borrowing at the discount window, initially led depository commercial banks to be reluctant to re-discount their positions at the Fed, desiring thus to keep resorting to market refinancing channels. With both liquidity rationing prohibiting re-funding costs and lengths of maturity loans, short-term credit markets were no longer a reliable source of funds for a vast range of financial institutions. As a result, in order to both address elevated pressures in short-term refinancing markets and to address the (alleged) problem of stigma, the Fed decided to set up an auction framework – based liquidity facility (Felkerson 2011; Flemming 2012). By following the “free”-market approach, through the use of the auction format, *“The Federal Reserve expected that”*... as *“no individual institution can have any assurance of winning funds and where settlement takes place with a lag”*, this *“would have much less stigma than a standing facility.”* (Madigan 2009) With the auction format, the relationship framework is not one normally occurring in LOLR operations. In the former case, the borrowing institutions that act and go to the window as a group, rather than individually, determine not only quantities they wished to be supplied by the CB, but also the price terms (Matthews 2013). In the case of the TAF, *“Although the Fed set a minimum bid rate, the loans were made at the lowest rate that would deplete the total amount of funds that were to be auctioned that day.”* (Matthews 2013). The duration of the TAF was from December 2007 until March 2010 and involved more than 4000 individual transactions (Matthews 2013). From the perspective of the price terms of loans, the weekly average interest rates applied at this facility was 1.27 percent, with the highest rate of 4.65 run at the beginning after continuously being reduced, spiking only during the Lehman Brothers' failure, at 0.25 percent in January 2009 (Matthews 2013). Whereas in the case of non-price terms, such as the allowable maturity period, loans ranged from 28 to 84 days (Felkerson 2011; Flemming 2012). From the perspective of the number and composition of borrowing institutions, 416 unique commercial banks participated at the reference auctions and of these the majority were US commercial banking subsidiaries of larger foreign parent banks (Felkerson 2011; Matthews 2013). Of the 25 largest borrowers, among which 19 were foreign institutions, each borrowed in excess of \$47 billion, comprising 72 percent (\$2,767 billion) of the total TAF loans, which eventually amounted to \$3,818 billion (Felkerson 2011). On the other hand, the 19 largest foreign depository institutions borrowed 69 percent (\$1,909.3 billion) of the overall amount obtained by the top 25 (Felkerson 2011). The Fed authorities confirmed that all loans were repaid in full, with interest, in agreement with the terms of the facility (Felkerson 2011). However, as the same Madigan (2009, pp. 188) states in a footnote of his paper: *“To be sure, the fundamental problems of the banking system stemmed from losses and erosion of capital, and the situation was not adequately stabilized until governments contributed capital and provided guarantees to the banking system. Nonetheless, the TAF and comparable actions surely acted as at least a palliative by addressing panic-driven demands for liquidity”* (my

between the primary rate and the overnight target rate from 100 basis points to 50, on August 17 of the same year, whereas the FOMC cut the overnight interbank target rate by 50 basis points (Bernanke 2009; Felkerson 2011). The primary credit – federal funds rate spread was furtherly reduced to 25 basis points later, on March 16, 2008 (Felkerson 2011). Always on August 17, the maturity period of discount window loans was brought to 30 days, from overnight, and later, in the latter day, it was extended at 90 days (Felkerson 2011; Bernanke 2009). Since August 2007 to December 2008, the Fed lowered ten times the overnight interbank lending target rate, lowering it from 5.25 percent to practically zero at the end of such reference period (Felkerson 2011; Fleming 2012).

emphasize). As it was the case for much of the broad spectrum of financial institutions, that of the depository commercial banks subsidiaries of the largest financial holding companies was a problem of insolvency, not of liquidity, thus a problem involving the resolution-task which, under current institutional and legal arrangements, the Treasury department, not the Federal Reserve, is on charge for.

Liquidity Provisions to Dealers.

Primary Security Dealers* are highly leveraged money market position-taker firms that issue short-term repurchase agreements backed by collateral to finance a large volume of positions in relatively illiquid long-term (investment) grade securities, such as Treasury bonds, agency-debt securities, agency mortgage-backed securities and so forth (Fleming 2012). Their main role is to operate as proximate refinancing source for many financial institutions, while making position “*by operating upon their liabilities,*” being in their case, as said, mainly repos (Minsky 1986, pp. 82). In their turn, primary dealers’ financing and refinancing sources are various repo investors such as Money Market Mutual Funds (MMMFs) and securities lenders (Madigan 2009). Primary dealers usually have commercial banks as both their clearing institutions and (proximate) backup source of liquidity, even though their actual ultimate last resort source of funds is always the Federal Reserve System in distressed liquidity market circumstances (Minsky 1986)**.

In the second half of 2007 and in particular at the beginning of 2008, repo markets experienced liquidity strain. Repo investors started to doubt the creditworthiness of their borrowers and the quality of their assets, thus fearing losses on their loans given the questioned quality of the respective collateral (Fleming 2012). Such fear of secured funding market lenders manifested both in price and in quantity terms, i.e. by increasing the applied haircuts (the difference between the current market value of the collateral and the funds lent), by demanding higher compensations for the newly perceived riskier collaterals, and by suddenly stopping liquidity provisions against other types of collateral altogether (Fleming 2012). As a result, the increased freezing of short-term repo markets begun to sharply impair the refinancing ability of primary dealers. Therefore, as both conventional and unconventional LOLR demonstrated to fail to adequately relieve pressures on short-term credit markets, on March 7, 2008, the Fed announced that it would have to undertake single-tranche open market operations (ST-OMO) consisting of a series of term (28- day) repurchase transactions with primary dealers posting eligible collateral under normal open market operations (Felkerson 2011). Even though the Fed is authorized under Section 14 of the Federal Reserve Act to engage in open market dealings, the ST-OMO can be well considered an *unconventional* LOLR response, given that their “*explicit purpose was to provide direct liquidity support to primary dealers,*” i.e. to investment banks (Felkerson 2011). The Fed expected that these term repurchase open market operations totaled \$100 billion a month and in 375 transactions, the Fed lent a total of \$855 billion dollars (Felkerson 2011). All the then-extant nineteen primary dealers participated to the open-market purchase program, of which nine were foreign-based institutions. These latter were involved in 77 percent (\$657.91 billion) of all transactions performed and, in fact, the largest participating institutions were headquartered in foreign countries*** (Felkerson 2011, Wray 2012).

*At that time, among the largest US primary dealer banks we found financial institutions such as Merrill Lynch (taken over by Bank of America on September 2008), Bear Stearns (taken over by JP Morgan on March 2008), Morgan Stanley, Citigroup, Bank of America (Felkerson 2011).

**As said in the first part of the thesis, in the case of the U.S. such ultimate character has materialized exactly through LOLR operations executed with the “two-tier” or the separate intermediation scheme (Minsky 1986, Ch. 3).

***These were Credit Suisse (Switzerland), which received 30.3% of the total nominal amounts of the operations,

participating institutions were headquartered in foreign countries* (Felkerson 2011, Wray 2012). The average rate applied was higher than that of the TALF, 1.93 versus 1.48, respectively, even though along with that applied to the TSLF (see below), ST-OMO were characterized by the “*lowest interest rates for individual banks in the course of the Fed’s response to the crisis*” (Matthews 2013, pp. 8-9). After the peak rate of 3.51 applied during October 2008, the interest rate was sharply reduced until it reached 0.5 percent roughly, with two investment banks, Goldman Sachs and Morgan Stanley paying 0.1 percent(!) on loans received during December of the same year (\$200 and \$50 billion, respectively; Matthews 2013). In addition to that, the top eight borrowing institutions benefited by an interest rate equal to 1.8 percent, slightly lower than the average applied. On the other hand, the top three cumulative borrowers, Credit Suisse, Deutsche Bank, and BNP Paribas paid a combined average rate of 1.8 (Matthews 2013, pp. 9).

Liquidity Provisions to Primary Dealers and the beginning of the spread use of Section 13(3).

For the purposes of our thesis, the TSLF and TOP facilities are important as they mark the first use by the Fed of the powers given under Section 13(3) of the FRA. Supplementary to the liquidity provisions provided for through ST-OMO, and to keep addressing the wider spreads in the repo markets, on March 11, 2008, the Fed announced the Term Securities Lending Facilities (TSLF). With this latter facility, the Fed would have unconventionally extended a conventional open-market program in order to “*promote liquidity in the financing markets for Treasury and other collateral and thus to foster the functioning of financial markets more generally*” (Federal Reserve 2008, in Felkerson 2011). Auctions begun on March 27 of the same year. Under the TSLF, the Fed lent Treasury securities, instead of reserves, establishing a “*two-fold classification scheme for eligible collateral under the TSLF*” (Felkerson 2011, pp. 14; Matthews 2013, pp. 10-11). The first collateral included federal agency debt, federal agency resident-mortgage-backed securities (MBS), and non-agency AAA/Aaa-rated private label residential MBS; whereas the second group included agency collateralized-mortgage obligations (CMOs) and AAA/Aaa-rate commercial-mortgage-backed securities (CMBS; Federal Reserve 2008 in Felkerson 2011).

The interest rates paid throughout the entire duration of the program were set via single-price auction arrangement (Matthews 2013). The average rate applied under the TSLF was of .38 percent, with a peak of 3.22 percent reached in October 2008. The lowest rate, .10 percent, was paid by the German bank Dresdner for a loan of \$1.1 billion, whereas the three top cumulative borrowers, Citigroup, Credit Suisse, and Deutsche Bank, paid a rate of .42 percent (Matthews 2013).

On July 30, 2008, the Fed announced also the TSLF Options Program (TOP), in order to “*facilitate access to liquidity in funding markets during periods of elevated stress, such as quarter-ends*” (Felkerson 2011). With such TOP, participants were allowed to purchase the right, not the obligation, to borrow funds if it became necessary. The number of participating primary dealers to the TSLF program was eighteen, whereas only eleven participated to the TOP facility, and eight were foreign-based institutions (Felkerson 2011, Wray 2012). Under the TSLF, the Fed lent \$1,940 billion, whereas under the TOP the overall amount consisted of \$62.3 billion, for a cumulative \$2,057 trillion (Felkerson 2011, Wray 2012). Within the two programs, only the nine largest participating institutions obtained 86 percent of total loans, whereas 51 percent of the total accrued to foreign-based institutions* (Felkerson 2011). All loans are said to have been repaid on

Deutsche Bank (11.8%), BNP Paribas (11.3%), RBS Securities, United Kingdom (8.2%), and Barclays Capital (7.8%) (Felkerson 2011, pp. 13).

*The largest TSLF and TOP borrowing institutions were Citigroup Global Markets (\$348 billion), RBS Securities Inc.

time in full, with interest, within the terms of the program (Felkerson 2011).

The Fed's Co-Financing of J.P. Morgan's Taking-Over of Bear Stearns: Rewarding Bad Behavior and Making J.P. Bigger.

Bear Stearns Companies, Inc.* case represented the first example of the Fed offering emerging assistance (through alleged authorization under Section 13(3) of the FRA) to a single institution, during the whole “bailout” period of the crisis, and it was the first time, since the Great Depression, that it assisted a securities firm rather than a “commercial bank.” (Felkerson 2011; Todd 2018) However, this event did not actually mark a true LOLR operation by the Fed, but was merely a co-financing action of a take-over operation of Bear Stearns by J.P. Morgan. Throughout early – mid March 2008, Bear Stearns had been experiencing severe refinancing problems, as short-term credit market participants refused to allow it to position-make through selling of securities (in the case of Bear Stearns mainly MBSs)-backed repos, given the questioned quality of the collateral (Mehra 2010, Felkerson 2011). In fact, its lenders (be they money market funds, pension funds and so forth), did refuse to extend both the maturity length of existing loans or to further provide for new loans, with in the meanwhile Bear Stearns’ cash balances collapsing from \$18 billion to \$2 billion just between March 10 and 13 (Mehra 2010). This latter was simply the result of another run on a non-FDIC-insured, Federal Reserve-non-member, financial institution triggered by, indeed, non-protected creditors** (Minsky 1988). Unbearable refinancing problems led Bear Stearns to inform the Fed, on Thursday, March 13, that given money market conditions, it could no longer meet its payment commitments on their liabilities at par as they become due. At that time, it is estimated that Bear Stearns had leveraged its capital up to 35 times(!) and therefore, the company had less than 3 percent of risk-absorption capital cushion during a period of significant market volatility (Todd 2018). If an emergency loan had not been extended Bear Stearns would have had to file for bankruptcy the following day (Felkerson 2011). The day after, March 14, the Fed did extend an (emergency) overnight loan to allow it to meet its financial payment commitments to its securities repurchase market creditors and thus to avoid bankruptcy (Mehra 2010). However, even that overnight loan was not sufficient to stop liquidity runs and stocks price from collapsing (Mehra 2010). In order to avoid the bankruptcy of the stressed institution, representatives from the Fed, the US Treasury, and J.P. Morgan begun negotiations reaching a first agreement on Friday, March 14 of the same year (Felkerson 2011). This latter involved the authorization by the Fed to the Federal Reserve Bank of New York (FRBNY) to extend a (bridge) loan to the benefit of Bear Stearns through the separated intermediation scheme, with JP Morgan acting as a conduit channeling the loaned reserves to the beneficiary primary securities dealer (Felkerson 2011, Todd 2018). The loan itself amounted to \$12.9 billion against collateral with a current nominal value of \$13.8 billion that was repaid on Monday, March 17, with roughly \$4 million of payments in interest (Felkerson 2011,

(\$291 billion), Deutsche Bank *Securities* (\$277 billion), Credit Suisse (\$261 billion), Goldman Sachs & Co. (\$225) (See Felkerson, pp. 15).

*Bear Stearns Companies, Inc. was an investment bank that used to operate as both primary securities dealer and broker within money and capital markets. It was one of the main clearing brokers for credit-linked derivatives and mortgage-backed securities, including a great deal of subprime mortgages that represented the financial contracts and relative markets from which the 2007-08 GFC triggered (Todd 2018).

**Generally speaking, Government guarantee of financial institutions non-equity liabilities must be *full* (100%) if a run on a “bank” must be avoided. Indeed, with respect to that, the case of the Northern Rock bank (UK) is indicative. Before the crisis it benefited of a 90% coverage ratio by the UK Government and when doubts about its solvency (i.e. quality of its assets) emerged, runs on the institution did occur and were not stopped until the Government decided to extend its guarantee up to 100% (see Wray 2007, pp. 53).

pp. 17). This temporary bridge loan allowed Bear Stearns to operate “*while courting potential buyers*” (Felkerson 2011, pp. 17). As one can learn, for example, from Minsky’s “Stabilizing an Unstable Economy” (1986, Ch. 3), conduit lending has been quite the norm in the case of the Fed LOLR operations in the post-war period, and as Doctor Todd reminds us, conduit lending “*skates on thin moral ice, but it avoids full invocation of Section 13(3)*” (Todd 2018).*

Negotiations kept going through Friday, March 14, to find a taking-over partner for Bear Stearns, with the leading candidate remaining still Bear Stearns’ principal clearing bank: JP Morgan Chase (Todd 2018). J.P. Morgan did want to purchase the company, especially its huge holdings of illiquid MBSs, so the Fed agreed to *purchase* the failing institution’s assets (Mehra 2010, pp. 237). Sunday, March 16, J.P. Morgan agreed to carry out a provisional merger with Bear Stearns until negotiations led to the final structure of the take-over deal to the benefit of, this time, JP Morgan (Felkerson 2011). The purchase of Bear Stearns was preceded by a special agreement with the US Treasury that allowed the FRBNY to take “*onto its books \$30 billion of Bear Stearns’s bad assets so that JPMorgan Chase could take over what remained of the Bear*” (Ferguson and Johnson 2009a).

Over that weekend JP Morgan and Bear Stearns executives had reached a previous agreement that saw the taking-over institution pay \$2 per share that would have allowed it to purchase the entire firm, building and all at only \$240 million, when Bear Stearns’ shares had a value of \$170-plus only a little over a year earlier (Todd 2018). Nevertheless, Bear Stearns’ shareholders immediately objected to such a very low price-sale until the final agreement was reached a week later, with JP Morgan raising its offer to \$10 per share, which covered the entire value of the Midtown Manhattan Bear Stearns’ headquarters building at \$1.2 billion (Todd 2018, Ferguson and Johnson 2009b). However, still on Sunday, March 16, the Fed faced a dilemma. All Bear Stearns’ foreign subsidiaries offices in London and Europe were scheduled to open overnight Sunday New York time, but not all of the Board five members were present when the loan needed approval** (Todd 2018). Therefore, five Governors were not physically present to “*vote approval of Section 13(3) emergency lending declaration to fund Bear Stearns so that it could open on Monday*” (Todd 2018). However, as Doctor Todd reminds us: “*When commercial banker do this sort of thing for their customers (disbursing loans before all relevant documents are signed), they draw criticism from bank examiners, if not criminal charges.*”*** (Todd 2018).

This final deal of the Bear Stearns acquisition by JP Morgan was reached on Tuesday, March 18, with the FRBNY established Primary Dealer Credit Facility under invocation of Section 13(3) of the Fed Act only for Bear Stearns (Todd 2018). With such an emergency facility, the then-Timothy Geithner-led FRBNY did not lend against collateral posted by the ultimate borrowing institution, but instead, *purchased* assets from the same Bear Stearns for the above-mentioned market value of \$30 billion (Todd 2018). The deal involved the creation of a subsidiary corporation (or special purpose vehicle), Maiden Lane LLC I (ML I), funded by the FRBNY and JP Morgan Chase with a contribution (*loan* to ML) of \$28.82 and \$1 billion, respectively. The SPV simply served as holder of the assets purchased from Bear Stearns for the approximate market value of \$30 billion, with the

*Although that of Bear Stearns was not truly a LOLR operation, as said before.

**As Doctor Todd reminds us, one of the five Board members, Frederic Mishkin was in Helsinki, Finland, and would have not arrived to the US by the day the emergency loan had to be extended (Todd 2018).

***The other version refers to different regulatory interpretations that claimed that the Fed Board did not lack of any legal authority to carry out the loan. Such regulatory interpretations stated that the Fed Board could and did satisfy statutory requirements for supermajority votes whenever all “available” Board members unanimously provided for their vote (Todd 2018).

illiquid purchased assets serving as collateral to the FRBNY for the loan extended (Mehra 2010, Felkerson 2011, Todd 2018). The idea or the primary goal of the purchasing transaction was that of “remov[ing] these assets from Bear Stearns’ balance sheet, and so facilitat[ing] its acquisition by J.P. Morgan” (Mehra 2010, pp. 238). The \$1 billion loan to ML I was submitted by JP Morgan Chase through a note subordinated to the Fed’s (Ferguson and Johnson 2009b; Todd 2018). Therefore, J.P. Morgan only agreed to assume a \$1 billion “first loss” on the possibly over-value assets of the taken-over institution, after, however, having acquired also Bear Stearns’ headquarter building whose value was \$1.2 billion that well compensated for that first loss (Todd 2018). In addition, J.P. Morgan limited itself to guarantee Bear Stearns’ “*ongoing trading obligations between signing and closing*” (Mehra 2010).

With regard to the invocation of Section 13(3) by the Fed to carry out its loan to ML (I) that served to then purchase Bear Stearns’ securities, there were three reasons that made Fed authorities “*exceed the scope*” of Section 13(3) (Mehra 2010, pp. 238-41). These concerned the i) *loan/asset-purchase* structure; ii) requirement of a loan made “*to the party that needs assistance*”; and iii) *discount/advance* distinction (Mehra 2010, pp. 238-41).

With regard to the first aspect, as said before, in the original language of the Section that was in force before Dodd-Frank legislation amendments (see part three of this thesis), only loan transactions were contemplated, assets purchases were not. The Fed could have invoked Section 14 of the FRA, which admits asset purchases (and sales) for the purposes of carrying out open market operations, but even this Section does not allow securities issued and backed by private corporations to be included in the restricted set of admitted assets (mainly Treasuries and agency securities) (Mehra 2010). In addition to that, with regard to the second element, Section 13(3) required that the borrower had to be the same party that is unable to obtain credit elsewhere, and therefore the loan must be extended to *such* party (in the original language this could be an individual, partnership or corporation; Mehra 2010). In the case of the Bear Stearns-J.P. Morgan deal, the contrast between the direct borrower (being this ML) and the party that really was unable to “secure credit elsewhere” (Bear Stearns) is evident. Finally, with regard to the third element, we saw that, originally, Section 13(3) admitted only discounts, rather than advances. Given that ML did not hold any asset when the FRBNY approved the loan, and indeed the loan served the ultimate purpose to purchase Bear Stearns’ assets, this must then be seen as an advance, rather than a discounting operation, because “*a loan secured by the borrower’s own pledge of future payment is an advance, not a discount.*” (Mehra 2010, pp. 241)

The Primary Dealer Credit Facility (PDCF).

Exactly on the same day JP Morgan agreed to take over Bear Stearns to avoid its bankruptcy, the Bernanke-led Fed announced the creation of a liquidity facility to further assist primary dealers. The Primary Dealer Credit Facility (PDCF) was officially announced by the Fed on March 16, 2008, “*in an attempt to prevent the effects of the Bear Stearns situation from disrupting markets*” (Felkerson 2011). Again, invoking authorization under Section 13(3), the Fed set up an emergency credit facility through which it inelastically provided overnight refinancing for primary dealers, at their initiative, at the discount window primary credit rate, in order to try to relieve liquidity pressures in repo markets (Felkerson 2011; Fleming 2012). Therefore, the PDCF was “*effectively the extension of discount window lending to primary dealers.*” (Fleming 2012, pp. 7). Under such an “emergency discount window-for-primary dealers facility,” the Fed required a broader range of collateral than that set for both open market operations and the TSLF too, with an applied haircut that would have protected the Fed from counterparty credit risk (Felkerson 2011; Fleming 2012).

Initially, the relatively broader range of eligible collateral consisted of investment grade securities, but following the Lehman Brothers failure and subsequent liquidity pressures in capital markets the range was expanded to comprehend all “*forms of securities normally used in private sector repo transactions*” (Felkerson 2011, pp. 18). As opposed to other liquidity programs, in the case of the PDCF, the eight participating foreign-based institutions borrowed only six percent of the total loans “disbursed” (Felkerson 2011). However in the foreign field, the Fed did approve loans to United Kingdom-based subsidiaries of domestic financial holding companies such as Goldman Sachs and Co., Morgan Stanley, Merrill Lynch and Citigroup (Felkerson 2011; Fleming 2012). The latter three institutions, along with Bear Stearns and Bank of America, constituted the group of the five largest borrowing institutions at the PDCF, obtaining 85 percent of the total loan amounts, equal to \$7,610 billion. Over its entire duration until February 1, 2010, the average rate applied to PDCF loans was equal to 1.39 percent, going from the initial peak of 3.25 percent to the lowest .5 percent of December 2008, remaining at such level until the cessation of operations on February 1, 2010 (Felkerson 2011; Matthews 2013). The largest three cumulative borrowers, Citigroup, Merrill Lynch, and Morgan Stanley benefited from over \$6 trillion loans, in total, with a combined average rate of 1.065 percent. Citigroup benefited of the lowest average rate, .885 percent, among all the participating primary dealers (Matthews 2013, pp. 12). All loans have been repaid in full, with interest, and in agreement of the term of the (emergency) facility (Felkerson 2011).

ON THE IMPLICATIONS OF HAVING A DISCOUNT WINDOW-FEDERAL RESERVE WITH PRIMARY DEALER BANKS AS MEMBERS OF THE SYSTEM.

In this part of the thesis, the implications of having a DWCB institutional and monetary policy-operative framework rather than an open-market one when strong liquidity pressures within private short-term credit markets occur will be examined. The main implications highlighted are two. The first is the financial (economic and social) efficiency aspect, whereas the second is the Section 13(3)-related juridical-interpretative problems of the “LOLR” intervention for member commercial banks and primary dealer banks carried out by an open-market-Fed rather than one operating with the discount window as the prime tool through which operating upon reserves.

Implications of Having a DWCB framework: Member Commercial Banks, Stigma and auction-format-based facilities.

First, with regard to the stigma issue, assuming that the claim that the stigma really constitutes a problem, is something valid, by definition, with a DWCB institutional framework a stigma would not have been an applicable concept. All member depository financial institutions, including commercial banks’ subsidiaries of the largest financial holding companies, would have had as their main refinancing source the(ir) Federal Reserve (District Bank), rather than market refinancing channels. As a result of that, no auction format-based liquidity facility would have been necessary in that the discount window itself would have been the main and only applicable liquidity-providing facility. If member commercial banks needed concessionary back-up refinancing by the Federal Reserve System, then they would have had to show their books. Therefore, they would have had to demonstrate whether or not they would have been “*fully viable at normal incomes with a restructured debt and normal financing terms*” (Minsky 1992), and as we have seen before, member depository commercial banks were not. As a result of that, the Fed authorities would not have supported the equity prices of such institutions “artificially” through credit provisions, but would

have stepped back and allowed Treasury Department authorities to perform restructuring plans aimed at recapitalizing and resolving insolvent member commercial banks.

Implications of Having a DWCB framework with (member) primary dealers: financially efficient intervention and the uselessness of Section 13(3).

If at the time the progressive tightening of short-term credit markets were underway, money market primary dealers had also been members of the Federal Reserve System under a DWCB institutional framework, thus enjoying direct access to the window, then by definition the establishment and implementation of the ST-OMO facility wouldn't have been necessary.

First, under both normal and financially stressed circumstances, money market primary dealers (mainly affiliates of the largest financial holding companies) would have refinanced large holdings of their positions in illiquid long-term investment grade-securities at the Fed's window rather than only or mainly in private repo markets. Therefore, the Federal Reserve System, not money market mutual funds and private security lenders, would have constituted their normal and emergency refinancing institutional source.

With a DWCB framework, and with primary dealers being members of the system, whenever the repo markets tightened their price-term credit conditions and started to reduce refinancing credit to primary dealers, these latter would have resorted directly at the Fed's window in order to satisfy their refinancing needs. The direct access to the discount window would have thus prevented primary dealers from suffering increases in haircuts from repo market investors, thus relatively higher refinancing costs, along with curtailments of short-term credit. The refinancing ability of primary dealers could not and would not have been got impaired and thus also a possible freezing of the repo market itself (and of other short-term credit markets) wouldn't have negatively affected these essential money market institutions.

If at the time repo-markets experienced liquidity strains during August 2007 and in particular at the very beginning of 2008, a DWCB institutional framework had been in force and primary dealers had been member institutions, it wouldn't have been necessary for the Fed to wait for so long (that is until March 2008) to intervene in support of liquidity stressed primary dealers. It would have been unnecessary for the Fed to resort to single open-market-type of transactions. As Minsky said with reference to the exclusion of money market intermediary dealers from the Fed's discount-window direct access and protection:

“The possible ill effects of a restricted responsibility by the Federal Reserve System for financial stability are obvious. In times of potential financial crisis, the commercial banks which today must act as middleman between some of the institutions and the Federal Reserve System may be unwilling to act. In a developing financial situation a delay while the Federal Reserve System makes up its mind to aid the nonbank institutions in distress may result in what would have been a manageable sectoral distress developing into a full-fledged crisis” (Minsky 1960, pp. 378).

Therefore, a discount window Fed wouldn't have waited for money market primary dealers to incur any risk of bankruptcy because of initial liquidity problems. As opposed to OMCB, under a DWCB, any potentially fatal effects of commercial banks' reluctance to act wherever their portfolios are financially fragile and of the Fed's delays as to whether or not to intervene are simply eliminated “a priori”. In our case of the relative choice between discount window versus open-market-central banking with particular regard to CBs' LOLR intervention for primary dealer banks, financial

efficiency is defined as the amount of financial assets market-based values and of net worth losses for these latter institutions* that materialize for any given U.S. dollar-denominated reserve “disbursed” by the Fed. In addition to that, given that relatively higher financial assets values and net worth losses mean relatively higher declines in investment and consumption expenditures**, thus in aggregate income and jobs, then the concept of financial efficiency from the point of view of a LOLR intervention must necessarily encompass economic and social losses. In the case these “unconventional LOLR” response of the Fed to the benefit of these primary dealers would simply have been a conventional response to what would have otherwise been *member* financial institutions that may have needed emergency refinancing. Therefore, the two additional facilities, the TSLF and the TOP, provided as supplement to the ST-OMO liquidity provisions, wouldn’t have been necessary under the DWCB institutional framework with money market primary dealers as member institutions, too. As a result, under this latter arrangement, the Federal Reserve would not have needed to resort to the use of Section 13(3), and the single-price auction arrangement that was established to set the interest rates paid on the various carried out swap transactions (under the TSLF) would not have been necessary, as a discount window-Fed would simply have applied the current discount rate target. However, with regard to the aspect related to the spread use of Section 13(3), it must be specified that, among the various emergency liquidity facilities set up through invocation of Section 13(3)***, only the TSLF revealed to be the one that didn’t exceed the legal scope of the provision, eventually. The main reason was that such facility extended only collateralized loans to primary dealers, with the collateral being primary dealers’ securities-back repos (Mehra 2010).

Implications of Having a DWCB framework with member primary dealers: Bear Stearns, Section 13(3) and Insolvent Institutions.

With regard to the co-financing of the Bear Stearns-J.P. Morgan take-over deal, in the case of the DWCB framework, the whole operation would have been unnecessary as, being Bear Stearns, another *member* money market securities company institution, the refinancing problems arising since early-March 2008 after the tightening of short-term credit conditions in the repo markets would have not led to liquid balances collapse. Stock market prices wouldn’t have plummeted and final risk of bankruptcy for the institution would have been thus avoided.

If the whole Bear Stearns-J.P. Morgan take-over deal would not have thus been necessary, then, under a DWCB framework with money market primary dealers members of the system, the

*And thus also for financial institutions holding their outstanding repo liabilities (commercial banks, money market mutual funds and so forth), for primary dealer banks’ stockholders, and for the creditors of the institutions holding both primary dealers’ liabilities and shares.

**The coefficient determining how much investment and consumption expenditures diminish for any dollar of financial assets and of net worth losses on the part of banking and non-bank financial institutions is not something given, but it depends on institutional arrangements characterizing the financial, banking and productive system, and thus the financial structure of a country’s economy. The institutional and financial structure of the economy will indeed determine, in its turn, the extent of portfolio adjustments needed on the part of business firms and households and thus the amount of investment and consumption expenditures collapse. In a financially sophisticated, complex and interrelated financial structure like that of the U.S, with high relevance of external finance and relatively high current leverage ratios for both the corporate business and households sectors, and a relatively broader spectrum of non-protected quasi-money private liabilities (or inside assets), it is much more than probable that one dollar of money market primary dealers’ financial assets and net worth losses has a stronger negative impact on investment expenditures and on debt-financed consumption expenditures.

***See Table 1 in the appendix.

related call of and use of Section 13(3) by the Fed would not have taken place. As mentioned before, in the case of Bear Stearns, the Fed non-application of the special Section would also have meant to avoid exceeding the scope. In particular, for the purposes of our discussion, it would also have meant to avoiding disobeying the “to-the- party-that-needs-assistance”-legal provision, given that in case of DWCB the direct borrower, thus the legally admitted party to be assisted, would have been the same Bear Stearns (and not ML I). In addition to that, it is clear that with a DWCB arrangement the Fed would have provided loans, instead of asset purchases, and discounts, rather than advances. Since Bear Stearns was obliged to show its books to the (New York) Fed authorities, in case of ascertaining insolvency conditions because of the non-performance status of its assets, then the Federal Reserve would have left Treasury authorities the task of carrying out the resolution-for-bankruptcy procedure. The Federal Reserve performs and must perform refinancing of last resort functions for financial markets as a whole, whereas, under current institutional and legal arrangement it cannot engage in re-capitalization operations of single insolvent institutions, be these equity-prices-supporting operations direct or indirect.

Implications of Having a DWCB framework with member primary dealers: PDCF and Section 13(3).

Having a discount window Fed would have meant that the Bear Stearns situation would have been dealt with differently than the actual open-market Fed eventually did. There would have not been any further disruptive developments as they were during mid-March 2008. However, with a DWCB framework, had primary dealers had further necessity to draw concessionary refinancing from the Federal Reserve System, the invocation of Section 13(3) and thus the establishment of the Primary Dealer Credit Facility would have been unnecessary. In the case of the PDCF, the use of the Section by the Fed meant abuse of the eligibility criteria for assets that could have not served as collateral for discounts at the window under the then-Section 13(3). In fact, the primary concern raised by such a facility with respect to the legal scope of Section 13(3) relates to the range of eligible collateral under emergency assistance lending, which was not restricted by the Fed to eligible credit instruments, including even impermissible private corporate shares (Mehra 2010, pp. 252). However, as one of the three largest facilities in terms of cumulative transactions volume*, the PDCF, remained in the scope of the then-Section 13(3), given that the series of loans extended to primary dealers were secured, even though of longer maturity than the usual overnight (emergency lending) loans (Mehra 2010). As a result, through its quick intervention, a discount-window-Fed could well have avoided asset values and net worth losses on the part of all money market primary security dealers involved. Therefore it could well have avoided further subsequent liquidity problems and asset values and net worth losses on the part of these financial institutions, their respective asset-backed repo-liabilities holders (commercial banks, money market mutual funds, and other institutional investors), and the creditors of these latter institutions**.

*See (Felkerson 2011, Wray 2012)

**Except in the case of, for example, FDIC-guaranteed commercial banks- depositors who do benefit from any possible pass-through of their reference banks' losses on their “deposits”.

Critical Remarks of the Fed's Global Intervention and of the Post – Crisis Dodd – Frank Legislation from a Minskian Perspective.

The Fed's overall response to the GFC was unprecedented in terms of cumulative loans volume, even with respect to the interventions following the 1929 Stock Market Crash (Wray 2012). In particular, the target of the overall loans and asset-purchases effected in the period 2008-2010 was extremely concentrated in that, excluding the central bank liquidity swap facility (CBLS), only fourteen (of the largest) financial institutions (in the world) obtained 83.9 percent (\$16.41 trillion) of all the Fed's action, with the six largest institutions obtaining over a half (53.5 percent) of total transactions. (Felkerson 2011, Wray 2012 Ch. 6, pp. 65). In addition, the six largest foreign-based financial institutions accounted for roughly a quarter (23.4 percent) of total cumulative loans (Felkerson 2011, Wray 2012, pp. 64). Furthermore, the Fed's *loans* were supplied below-market, thus subsidizing interest rates, and with emergency lending being characterized, as for instance the case of Bear Stearns demonstrates, by maturity terms that are "unusual" for the adjective "emergency" or "bridge"-related notion.

From a Minskian perspective, the Fed decided to validate the existing-by then-failing extremely layered and interrelated, thus fragile, money-manager capitalism financial structure. In its turn, this validation also meant that the too-behemoth-to-fail financial institutions were literally rescued, and the existing risky (and often fraudulent) financial practices and risky assets, along with the originate-to-distribute business model, were validated.

As Minsky (1992, pp. 18) said:

"Whenever the Federal Reserve steps in and refinances some positions, it is protecting organizations that engaged in a particular type of financing, and is expected to do so again. But it is an untoward expansion of speculative and Ponzi finance that causes the fragility that leads to a crisis-prone system. The Central Bank virtually assures that there will be another crisis in the near future unless, of course, it outlaws the fragility inducing financial practices. Clearly central bank lender-of-last-resort interventions must lead to legislated or administered changes that favor hedge financing".

As we shall see below, the legislative, financial regulation response following the GFC (Dodd-Frank Act) practically validated the existence of too-big-to-fail institutions and of those speculative and Ponzi financial usages and structured-finance products underlying the asset-securitization position-making technique, that the Fed's intervention (and bailout-under Section 13(3) in particular) did save and restore, respectively.

Overall, the Fed adopted the SPVs legal-institutional approach to carry out its broad operations. That was the case of the Bear Stearns – J.P. Morgan deal*. Much like the expedient used by banks with the shift to the capital-management position-making (asset-securitization) technique**, the

*Along with the cases of the AIG restructuring plan, of the Asset-backed Money Market Liquidity Facility (AMLF) and of the or CPFF). For a detailed analysis of the broad Fed's intervention during the global financial crisis see Felkerson 2011, Wray 2012, and Matthews 2013; for a detailed analysis of the Fed's intervention from a juridical and legal point of view see Mehra 2010.

**Banks created legally and financially independent SPVs (and special purpose entities) to shift risky assets off their balance sheets in order to thus hide the risk undertaken, circumvent regulatory capital and liquidity constraints, avoid supervision and examination, be able to thus assume higher risk and to increase leverage ratios so as to maximize

Fed also resorted to such legal-institutional arrangements to circumvent the constraints contained in pre-GFC Section 13(3) (Wray 2012, pp. 42). Until the beginning of the first round of QE, most of the Fed's monetary policy actions had been performed through invocation of Section 13(3), therefore consisting of emergency financial assistance. Over 40 percent of the \$29 trillion dollars of cumulative lending were effected via "improper" or of questionable legality, use of Section 13(3) (Wray 2012). Globally, the Fed's intervention during the global financial crisis, with the peculiar case of Bear Stearns illustrated above, three primary reasons the respective transactional framework "*exceeded the scope of the Fed's Section 13(3) authority*" were related to the "*loan/asset-purchase*" distinction, to the "*to the party that needs assistance*" requirement, and to the "*discount/advance*" distinction. (Mehra 2010, pp. 236).

As Wray remarked (2012, pp. 43):

"In all these respects, the law was "stretched" if not subverted. In all those respects, this looks like "bailout" and not "liquidity provision"."

The GFC was *not* a mere liquidity crisis, instead it was a solvency crisis that involved the largest financial holding companies' structured-finance products (related, in particular, to the housing and commodity markets), leading to a subsequent liquidity crisis within capital markets. The Crisis did begin with runs on short-term non-deposit liabilities, i.e. commercial papers that were backed with the trashy structured-finance assets, and also involved, as seen, other short-term liquidity markets such as the wholesale interbank and repos markets (Felkerson 2011, Wray 2012). The perceived failure of long-established institutions such as Citibank, AIG, and Merrill Lynch preceding the Lehman bankruptcy led to the refusal of rolling over their short-term non-insured non-deposit liabilities, thus contributing to the disintegration of financial relations and of confidence triggering a price and debt deflation process that quickly led the real economy into a deep recession (Kregel 2016). This thus forced, in Minsky terms, the selling out of positions to make positions, with the subsequent collapse of various structured-finance assets' market values, most of which stopped having any market, making it impossible for the biggest "banks" to meet any creditor demand. As financial markets stopped both rolling-over short-term purchased liabilities of big financial institutions and demanding the various junk assets, financial institutions did not manage to meet the tidal wave or redemptions and "*stock prices collapsed, margin calls were made, and credit ratings agencies downgraded securities and other assets,*" with the financial behemoths starting to fail* (Wray 2012, pp. 38). Only (the badly targeted and not so that) Big Government interventions and the (huge) Big Fed interventions prevented the economy from collapsing from a deep recession to an obscure 1929-33-like deep depression.

profits. (see Wray 2012; Wray and Tymoigne 2014; Kregel 2016) This is just another case of financial institutions innovations carried out for purposes of changing the way financial institutions before (Kregel 2016), and commercial banks later, made position in order to exploit new possible sources of profits.

*A distinction here must be done between the largest financial institutions (commercial banking, and investment banking subsidiaries of the biggest financial holding companies) and small-medium sized banks. These latter indeed were not holders of the most troubled assets, and it was the GFC and the subsequent deep recession to render their assets non-performing, even though the various home equity and commercial loans some of them made turned out to be risky, eventually (Wray 2012).

We may thus say that the Fed, as was quite clear with the case of Bear Stearns*, acted much more as a federal development bank, which normally recapitalizes insolvent institutions, rather than as a Central Bank acting as LOLR. However, globally the Fed did not actually recapitalize failing or insolvent institutions, in that it did not provide any equity infusion, but it purchased troubled assets through SPVs in order to take them off the balance sheets of the beneficiary institutions. With the purchase of troubled assets of various financial institutions through the SPVs created, the Fed *“could conceivably turn a failing bank into a solvent bank”* (Wray 2012, pp. 39). Both the Treasury** and the Fed preferred the “deal-making approach” to the “resolution-by-authority” approach, trying to rescue failing institutions through the just-seen alternative ways of indirect recapitalization-via-Spvs without however resolving them (Wray 2012, pp. 40). When an institution is insolvent, it is the Government***, not the Central Bank, which, by providing for infusion of equity, *“seize[s] the institution, fire[s] the management, and begin[s] resolution”* (Wray 2012, pp. 39). Historically, in the U.S. the approach to resolution has entailed the Federal Reserve to provide for quick conversion of the failed depository institution deposits, with the FDIC stepping in to effect liquidation of assets or to arrange for a merger of the insolvent entity with another (Minsky 1986, Wray 2012). Unfortunately, with both the deal-making and the bailout approach the moral hazard risk will be high, given that the largest financial institutions management has learned that risky behavior won’t be punished, instead it will be rewarded. In fact, the deal-making approach and the bailout through which the Fed actually rescued insolvent financial institutions and *“extended the principle of lender of last resort activities to entirely novel areas”* as non-bank speculative financial organizations (or the “shadow” banking system), protecting bondholders and make stockholders, securities holder and the millions of defrauded homeowners to take the burden of losses (Wray 2012).

Therefore, by rescuing and rewarding bad financial practices of an extremely inefficient financial system, the Section 13(3)-led Fed safety net has produced perverse incentives on the part of big institutions’ management. As Minsky said in his *“Money and Lender of Last Resort”* paper (1985, pp. 18):

“There is an open question of how the U.S. central bank can fulfill its duties as lender of last resort without encouraging banks to adventure; there is a “moral hazard” problem with regard to the protected multibillion-dollar banks that does not exist for smaller banks. They can bias their asset and liability innovations toward instruments that can compromise their liquidity and equity and expect to be protected”.

*Along with the case of the AIG. As former Federal Reserve Bank of Cleveland Governor, Lee Hoskins, and Walker Todd remarked: *“The bailouts of Bear Stearns and AIG put the Fed in the business of making fiscal policy, a function that belongs to Congress”.* (Hoskins and Todd, “Twenty Years After the Fall of the Berlin Wall”, paper offered to the Annual Minsky Conference, at the Levy Institute of Bard College, on April 17-18 2018).

**Before the Fed intervened through extensive use of its various credit facilities, the then-Paulson-led Treasury asked Congress for funds to face the crisis obtaining \$800 billion about to carry out the TARP or troubled asset relief program established with the Bush administration’s Emergency Economic Stabilization Act of 2008, thus avoiding resolution of the then insolvent financial institutions

***. When the roughly \$800 billion used to shift of troubled assets off the TARP-eligible financial institutions’ balance sheets was not sufficient, he then tried to recapitalize them without resolution, by buying their stocks. The Treasury simply preferred the “deal-making” approach to the “resolution-by authority” approach (Wray 2012).

And he continues:

“[...] one way in which an efficient banking system can be brought into being – a system in which the ability of banks to force the Federal Reserve’s hand by means of period threats of failure is Attenuated - is to make the relation between the bank and the Federal Reserve a normal banking relation” (Ibid, pp. 18).

This, of course, *“implies a shift away from open-market operations central banking and a return to the discount-window central banking that guided the system over its first decades” (Ibid, pp. 18).*

He disregarded policies aimed at increasing capital requirements on its own as a policy to attenuate the moral hazard problem, in that this *“may be inefficient if it lowers profitability”* of banks, given the necessary essential role that profitability plays within a capitalist economy. Here again, Minsky’s idea is that of making the Fed(eral Reserve Banks) to really become *“bankers to bankers,”* giving them thus the ability (and right) to *“structure and supervise credits that are normal in banking,”* and so to impose *“balance sheet standards”* to which bankers must adhere (Minsky 1985, pp. 18; 1986, Ch. 3).

In a U.S. financial system that has become increasingly concentrated in the last two-three decades*, with the moral hazard risk furtherly nurtured by the kind of the Fed’s and Treasury’s “deal-making” approach and bailout (not just “LOLR” for this latter), and in light of the Dodd-Frank legislation that did not provide for any downsizing of the largest financial institutions (see below), the shift toward a discount-window-Fed may thus be well appropriated in order to attenuate the bias toward speculative or Ponzi scheme-based innovations.

*The main factors that contributed to the increasing concentration of the U.S. financial system have been the endogenous evolution of the U.S. financial structure toward money manager capitalism and thus “managed money” business, deregulation that validated post-War II financial institutions and usages innovations within the investment banking sector, and allowed then commercial banks to shift from traditional banking toward market-based finance, late 1980s S&Ls crisis that led to the failure of various commercial banks and of the thrift industry, globalization and securitization that allowed already multibillion-dollar banks to increase their market and profit share, and to the too-big-to-fail policy since the Continental Illinois crash. Indeed, the number of commercial banks in the U.S. financial system has halved since the late 1980s, with the number of reference institutions going from 14,000 since 1934 to 1985, which had even remained constant in the period, to 7,000 of the years around the GFC (See Wray and Nersisyan 2010).

Post-Global Financial Crisis Dodd-Frank Act legislation.

In the aftermath of the Global Financial Crisis, the US Government authorities provided for some changes in the financial regulatory framework in order to allegedly make the financial system more resilient to crisis. The most notable designed regulatory measure was the 2010 Dodd-Frank Act (hereafter DFA), which was enacted on July 21, 2010. The two main pillars of this Act are i) some regulations aimed at better managing the risk generated by the functioning of the financial system through what have been labelled “systemically significant” financial institutions, and ii) some institutional mechanisms for bankruptcy liquidation, thus dissolution rather than *resolution*, of such systemically significant bank and non-bank financial institutions without any permanent public assistance (Kregel 2012). Therefore, for the designer of the Dodd-Frank Act, the main weaknesses of the US financial structure were not to be found in the significant bigness and integration of the complex multi-functional financial behemoths characterizing the US “financial system,” strictly speaking. On the contrary, for them, the central weakness of the US financial system was to be found in the “*absence of a mechanism to allow all bank and non-bank financial institutions to fail without public assistance,*” sic! (Kregel 2012).

For the purposes of our thesis topic, among the main elements of the DFA we find the Financial Stability Oversight Council, the so-called Volcker Rule, and the modifications applied to Section 13(3) of the Federal Reserve Act.

The Financial Stability Oversight Council (FSOC).

The DFA gives mandate and authority to the FSOC to identify all systemically important institutions, be they financial or non-financial, while also having the legal power to apply additional regulations to those established by the relevant regulatory agencies (Kregel 2012). The institutional objective of the FSOC is that of “*providing collective accountability for identifying risks and responding to emerging threats to financial stability.*” To do so, the FSOC serves its legal mandate and authority by making request for data and analysis to the other product of the DFA, the Office of Financial Research, while being also mandated to design and compile financial information databases from all market participants to “*aid in the identification of unstable financial practices and conditions*” (Kregel 2012).

The “Volcker Rule”.

The “Volcker Rule’s” (hereafter Rule) legal provisions provide for a sort of shield of federally-insured deposits much in line with the spirit of the 1933 Glass Steagall Act, by limiting proprietary trading with the use of proprietary funds for financial speculation on the part of banking institutions qualifying for federal non-equity liability “insurance,” and from any other explicit or implicit government guarantee (Kregel 2012). Therefore, the ultimate purpose of the Rule is thus to protect the banks’ ability to meet their depositors’ redemption demands, by prohibiting them from using any of its deposits or capital funds to take excessive leveraged positions the value of which depends on changes in the price of financial assets (Kregel 2012).

The willingness of regulators to reintroduce the Glass-Steagall functional separation within the realm of the Gramm-Leach-Bliley Act (GLB Act) generated not-insignificant difficulties in the interpretation of the Rule. In fact, it is difficult to distinguish when such derivative-based activities prohibited by the Rule to provide services to banks’ clients are carried out for these latter or for the benefit of risk hedging by the bank itself (Kregel 2012).

Other difficulties of the 1999 GLB Act that the Rule addresses are dealt with the regulatory areas of

the DFA concerning the banks' ability to engage in dealer activity in derivative contracts, and the insertion of derivatives clearing and trading functions within the purview of regulated market institutions (Kregel 2012). With regard to this area of concern, the "Lincoln amendment" provides for the major burden of regulation by prohibiting banks engaged in swap market activities from benefiting from any "federal assistance," be it FDIC insurance and/or access to the Fed discount window or any other Fed credit facility, and for the source of interpretative difficulties (Kregel 2012). In that sense, Dodd-Frank legislation provides for the elimination of the federal insurance benefit for a generic category identified as "*swap dealers*"*. However, the push-out provision may well allow banks to keep operating directly in derivative contracts either to hedge its own risks or as part of hedging services for its own clients through affiliation without thus being classified as a "swap dealer," while keep benefiting from federal insurance protection (Kregel 2012). Indeed, a depository institution that is part of a bank or a savings and loan holding company structure can create its own affiliates** as long as these conform with Section 23A and 23B of the Federal Reserve Act, and to any other necessary requirement established by the Commodity Futures Trading Commission (CFTF), the SEC, and the Federal Reserve (Kregel 2012).

Section 1101 Amendments to Section 13(3): Emergency Liquidity Provisions.

Section 13(3) underwent further amendments after the Fed abused it with bailout interventions. In fact, it was with the legal force of Title XI of 2010-Dodd Frank Act that the "*Congress drew a tight rein on the Fed [...]*" (Todd 2016). First, under Section 1101 of Dodd-Frank, the borrower is no longer constituted by individual, specific institution or institutions, but becomes the "*participant in any program or facility with broad-based eligibility*" (Dodd-Frank Act, Title XI, Section 1101 in Todd 2016). As Todd explains, "*this change was made to eliminate firm-specific bailout loans*" and that "*single-firm assistance programs do not qualify as broad-based programs under Section 13(3).*" (Todd 2016, pp. 315-16). However, what "broad-based eligibility" means exactly is not specified. The Section requires the Fed and the Treasury to set out a "*joint rulemaking procedure aimed at ensur[ing] that any emergency lending program or facility is for the purpose of providing liquidity to the financial system, and not aid a failing financial company [...]*" (Dodd-Frank Act, Title XI, Section 1101 in Todd 2016 and Kregel 2012). Therefore, as we can see, exactly in line with the above-mentioned core principle of Dodd-Frank legislation guaranteeing that no government support is provided for failing financial firms, Section 1101 changes produced a shift in the emergency loans target toward the whole financial system rather than the single, specific institution. In addition to that, the Section prohibits resorting to Section 13(3) to provide for assistance to insolvent borrowers (Todd 2016, Kregel 2012). The Section also requires that "*[...] the security for emergency loans is sufficient to protect taxpayers from losses and that any such program is terminated in a timely and orderly fashion.*" As Todd explains, this provision was apparently motivated by the fact that "emergency" liquidity programs tended to last for too long

*"Swap entities" are defined as "*any swap dealer, security-based swap dealer, major swap participants, [or] major security-based swap participants*" (Kregel 2012).

**The possibility that the holding company structure with its affiliates give to get around existent regulation is not something new (even though, to be sure, in the case above it is the same "push-out" provision to allow depository affiliated institutions of holding company structures to escape Volcker Rule restrictions on swap dealing activities). For example, in the early 1920s, national commercial banks served of the holding company structure to have state-chartered affiliates that could engage in capital market activities, that during the later "roaring twenties" of finance-industrial capitalism became very remunerative. Being state-chartered affiliated companies, national banks could escape the more stringent federal regulation in the field of securities underwriting and dealing activities (see Kregel 2010; Kennedy 2015).

periods of time (as also seen in the second part of the thesis dealing with the Fed bailout; Todd 2015, pp. 316). Also, the “*policies and procedures established by the Board shall require that a Federal reserve bank assign, consistent with the sound risk management practices and to ensure protection for the taxpayer, a lendable value to all collateral for a loan executed by a Federal reserve bank*” (Section 1101 in Kregel 2012). With respect to that, Todd states that this provision embodies an implicit criticism addressed to some loans extended by the FRBNY during the crisis, as for example, those supplied to AIG, that were “largely secured by liens of the common shares” of the borrowing insurance company which value would have then evaporated as this latter later failed (Todd 2016). Furthermore, with Section 1101, as opposed to what ruled before, any emergency program must receive *prior approval* from the Treasury. “*This latter provision appears to be aimed at clarifying that the Treasury has to be politically accountable for funds lent under Section 13(3) and that it cannot hide behind the fiction that the Fed is independent and cannot be controlled in such circumstances*” (Todd 2016, pp. 316). If such approval from the Treasury is attained, then the Fed Board is required to report information concerning the emergency loan* to the Senate and House Banking and Financial Services Committees within seven days, and the reports must be updated every 30 days (Kregel 2012; Todd 2016).

Fundamental Critical Aspects of the Dodd-Frank Legislation Major Elements: a Minskian perspective.

First of all, the underlying idea to the object of the mandate and authority given to the FSOC, that of focusing on single, individual “systemically significant” both financial and non-financial institution, is in sharp contrast to Minsky’s view of the causes and nature of financial crisis within financially sophisticated, complex and interdependent capitalist economies. In fact, as explained in the first part of this thesis, for Minsky the *endogenous* generation of *systemic* financial instability does not stem from “irrational” idiosyncratic features of a single individual institution. On the contrary, it is the normal result of a cumulative, sustained process of increasing financial fragility nurtured by the long-run evolution of an initial robust financial structure toward a fragile one, in light of the endogenously, profit seeking-driven responses to innovation and regulation (Kregel 2012).** Therefore, the FSOC won’t manage to really identify the endogenous ongoing financial instability developments, given the lack of a “position-making” view of the crisis within economies with financial institutions, usages and practices innovations, that belong instead to the theoretical approach followed by Minsky. In addition to the unchanged view of the causes of *systemic* “risk” or financial instability, the other major element of the DFA, i.e. the OLA procedure and related resolution plan, would have been also rejected by Minsky, as they do “*little to reverse the trend toward larger and larger multifunction bank conglomerates*” (Kregel 2012, pp. 40). Indeed, as he stated in his paper “Money and Lender of Last Resort” (1985, pp. 18),

“When I think of reforms that can really attenuate instability, I am forced into rather far-fetched changes: increasing equity, sharply limiting bank size, and returning to the discount window as the

*The reports information must include i) the justification for the loan; ii) the identity of the recipients; iii) the date, amount and kind of assistance provided; iv) duration, collateral pledged and respective value; v) interest and fees; vi) limitations of corporate actions; and vii) expected cost of provided assistance for taxpayers. (Kregel 2012; Todd 2015).

**Indeed, it would be correct to talk about “Minsky Half-Century”, referring this latter right to the long-run evolution of the US financial structure since the post-war period, indeed of a Minsky “moment”, identified this latter with the initial disruption of the subprime and Alt-A mortgage market (Kregel 2012, Ch. 1; Kregel 2014)

Put it other words, what matters is not the drop that makes the vase overflow, but it is the *process* that eventually leads the vase to get over-filled of water.

prime source of reserves”.

Finally, as Kregel reminds us (2012, pp. 45-46), for Minsky, Section 13(3) emergency lending should become *normal*, thus *permanent*, as part of the daily lending – borrowing business relations between a discount-window CB and the financial system, in particular with money market intermediary dealers (i.e. securities companies such as Bear Stearns). In fact, as explained above, in a complex, layered financial system, many financial institutions such as money market intermediary dealers, non-bank financial organization and so on, that engage in speculative finance, will rely on commercial banks as their proximate source of backup liquidity when cash flows go short (or the usual, routine refinancing channels reduce credit), and extraordinary needs for refinancing arise. However, given that CB liabilities reside at the top of the hierarchy of socially accepted liabilities, during periods of financial stress what seemed to be the ultimate LOLR for money market financial institutions, i.e. commercial banks, becomes only the *proximate* source of backup refinancing as they resort hierarchically to the CB as the only truly reliable source of liquidity. Therefore, there is no reason not to allow money market intermediary dealers, for example, to have direct access to the window and refinance their positions directly with the CB.

With the Dodd-Frank Act financial institutions would have kept functioning as before (except for the above-analyzed not-so-stringent Volcker rule provisions), being only subject to the new rules for their rapid bankruptcy liquidation. Put in other words or in Minsky’s words, Dodd-Frank legislation provides for a very good example of the “*piecemeal approach*” to financial regulation that at best produces only cosmetic changes which will only “*make a bad situation worse*” (Minsky 1986, in Kregel 2012). Furthermore, the Dodd-Frank Act and other post-crisis bank reform legislation focused only on regulated financial institutions, while completely neglecting the non-regulated or “shadow” financial sector (Kregel 2012). As former Comptroller of the Currency, Edward Ludwig stated: “*That means that many, if not all, of the practices that led to the last financial crisis can be practiced almost without restraint in the shadow system*” (Ludwig 2016 in Wray 2018).

Moreover, the DFA simply limited itself to validating the extremely layered, thus complex, fragile and interrelated financial structure of the money manager capitalist stage that the previous Fed intervention had restored after the outbreak of the GFC.

As a result, in light of the way the Fed bailout was structured and implemented, and given the piecemeal and patchwork type of financial regulation as represented by the Dodd-Frank legislation, another financial crisis or “Armageddon” is just a matter of time.

CONCLUDING REMARKS: A CALL FOR A RETURN TO A DISCOUNT WINDOW-FEDERAL RESERVE.

This thesis analyzes the field of Central Banking and Monetary Policy, in particular, policies related to the Central Bank's (in our case the Federal Reserve's) institutional-operative relationship with the domestic banking and financial system. In light of the two main critical points identified above, i.e. financial inefficiency and interpretative-juridical problems, related to the intervention of an open-market-CB (Fed) during periods of high liquidity strains within private short-term credit (repo and commercial paper) markets*, I propose a shift or better a return, to the DWCB technique on the part of the Federal Reserve. In light of Minsky, such revision of the Federal Reserve's prime monetary management tool will involve both a revision of the kind of system relationship between the Federal Reserve and currently member depository financial institutions, and the extension of the direct access to and protection of the discount window to money market primary dealer banks.

Discount Window-Fed for Current Member Depository Institutions.

First, in line with Minsky, I propose that the Fed shifts from open market to DWCB in its relationship with currently member depository institutions.

Under a DWCB framework, all the eligible assets acquired and held by member financial institutions will thus become, in Minsky's terms, a "*reliable source of funds*" that will thus be refinanced and/or sold at a guaranteed floor-price whenever needed. This will lead automatically to an increase in the liquidity status of member institutions' portfolios.

Much like the current Canadian institutional arrangement of central banking-private banking system relationship, I propose that the Fed establishes and provides for the set of current member depository financial institutions overnight draft facilities through which it can inelastically supply routine borrowed reserves at an exogenously fixed price. As Minsky said, "*in a complex financial structure, each bank will have a variety of ways to make position. A net deficiency of reserves, however, will lead to some banks borrowing at the discount window*" (Minsky 1992, pp. 14).

Today, financial institutions resort to various private refinancing channels such as the federal funds market, the commercial paper, and the repo market. I propose not to eliminate these markets, but to add the discount window as the main position-making channel for current member institutions. The newly re-established DW-Fed would simply leave these latter short of reserves without supplying and replenishing them through expansionary open-market operations, thus forcing them to re-discount their eligible financial papers at the window on a continuing basis. The structure of interest rates will remain as currently is. The primary credit rate (discount rate) will be the "preferred rate," at which member institutions will borrow at the window, whereas the secondary credit rate will be applied as a penalty rate to institutions whose demand for credit will exceed the granted overnight draft threshold. In line with Minsky (1992, pp. 15), I propose that each member depository financial institution has its granted credit line equal to its own capital and surplus account so as to induce financial institutions with high asset-capital ratio to retain earnings. In addition to that and in line with Minsky (1960), seasonal credit adjustments will also be provided through the discount window. The interest rate applied to seasonal credit will remain at the small spread of a decimal percentage point over the overnight interbank rate. The Federal Reserve will have to set the discount rate equal to the overnight interbank rate on reserves borrowed on the federal funds market, with the discount rate becoming the determinant rate for all other financing terms in the economy, as result of the return to DWCB. In this way the shift from the open market

*Such as those that occurred between late summer 2007 and autumn 2008.

to the discount window as the main normal and ultimate back-up source of refinancing for member institutions won't constitute any positive opportunity cost. Furthermore, although there will be a negative spread between the seasonal and the primary discount rate, there won't be any actual possibility for member financial institutions to profit from the differential because of their specific location and portfolio composition characteristics that render them objectively suitable only for seasonal-type credit programs.

Extension of the Fed Discount Window to Primary Dealer Banks.

In line with Minsky, I propose that direct access to and protection of the Fed's discount window be also extended to money market primary dealer banks, with these latter becoming new member institutions of the Federal Reserve System. Under the new DWCB institutional and operative framework, primary dealer banks will carry out their normal, daily refinancing operations at the discount window, while financing their positions on private repo markets, and will have the Federal Reserve as their only, ultimate lender of last resort institution. Therefore, the shift to DWCB eliminates the typical U.S. institutional two-tier system of proximate and ultimate lenders of last resort for money market primary dealer banks, which, as Walker Todd reminded us, usually "*skates on thin moral ice, but it avoids full invocation of Section 13(3).*" With regard to this latter type of financial institution, the new Federal Reserve System membership status acquired mainly means that the Federal Reserve makes it clear to financial markets that it will stand ready either to buy or to lend against eligible collateral assets held by primary dealer banks in case they suffer from extraordinary needs of liquidity.

If, from a financial stability point of view, both the Fed's global intervention during the crisis and the Dodd-Frank legislation that followed, constituted the wrong responses to the inherent high financial fragility of the extremely layered, thus complex and interdependent U.S. money manager capitalism financial structure, then the next financial crisis will be only a matter of time. As seen throughout our analysis, given the financial inefficiency and juridical-interpretative inconsistencies which arise from the intervention of an open-market-CB that ultimately needs to guarantee the financial stability and viability of the whole system, and thus also, and in particular, of money market institutions such as primary dealer banks, it is believed that the return to DWCB is more than justified.

As result of the changes proposed, a discount window-Fed won't need to adopt auction-format-based facilities for member commercial banks and/or for any other member financial institution, given the inapplicability of the stigma concept to member institutions within a DWCB framework. In case of a next financial crisis, under a DWCB institutional and operative arrangement, any member commercial bank that will need for concessionary back-up refinancing will have to show its books to the Federal Reserve authorities. Whenever any member commercial bank is insolvent then the Fed will allow Treasury authorities to carry out the necessary restructuring and reorganization of the institution. In addition to that, in case of a next financial crisis, a discount window-Fed will be able to know money market primary dealer banks' balance sheets developments *before* they become extraordinary liquidity problems for an entire financial sector, and finally an insolvency crisis for both primary dealer banks and their creditor financial institutions such as commercial banks, and other non-bank financial institutions. In fact, a discount window-Fed would be able to avoid having any possible liquidity crisis for money market primary dealers be transformed into a solvency crisis for them, their creditor financial institutions, and the rest of the financial system. If the CB, as the ultimate LOLR for the entire financial system is the only institution which can render the need for virtually any institution to sell out its positions to make position unnecessary, then the direct access to the protection offered by the discount window would

prevent (new member) primary dealer banks' serious refinancing difficulties from leading to large-scale cumulative necessities to sell out positions and thus to large-scale cumulative illiquidity problems, followed by financial assets and net worth losses.

To refer to the cases analyzed in part two, a discount window-Fed doesn't need to wait for meeting money market primary dealer banks' extraordinary refinancing needs until (or only after) insolvency for a single institution becomes concretely possible, as was the case of Bear Stearns. It was shown how repo-markets experienced liquidity strains since late summer 2007 and in particular at the beginning of 2008, with the first ST-OMO, whose explicit purpose was that of furnishing direct liquidity to primary dealers, established only at the beginning of March 2008. A discount window-Fed would not have needed to wait for so many months before intervening in support of what would have otherwise been member institutions (and would not have needed to resort to single open-market transactions). In addition to that, a discount window-Fed, with money market primary dealer banks as member institutions, doesn't need to wait for (at least) one money market primary dealer bank's failure to further extend emergency liquidity to other equivalent institutions, as was the case of the Federal Reserve between March and summer 2008, following the Bear Stearns – J.P. Morgan taking-over deal*. Therefore, a discount window-Fed will be able to ensure a more financially efficient intervention (this time, only as merely a LOLR). Financial efficiency is defined as the amount of financial assets market-based values and of net worth losses for money market primary dealer banks (thus also for the holders of their outstanding repo liabilities (commercial banks, money market mutual funds and so forth, for their stockholders, and for the creditors of the institutions holding both primary dealers' liabilities and shares), for any given U.S. dollar-denominated reserve "disbursed" by the Fed to rescue each needy member institution. In addition to that, given that relatively higher financial assets values and net worth losses mean relatively higher decline in investment and consumption expenditures**, in aggregate income and jobs, then the concept of financial efficiency from the point of view of a LOLR intervention must necessarily encompass economic and social losses. It is therefore much more reasonable and financially efficient for the Fed to shift to DWCB and to extend the reach of its discount window to money market primary dealer banks well *before* that the next crisis bursts, rather than after particular liquidity strains in short-term credit markets develop and pressures for money market institutions to massively selling out of positions to meet payment commitments*** arise. Furthermore, without the possibility under a DWCB framework that liquidity crises for primary dealer banks eventually become solvency problems, it will be much less likely that the Fed becomes subject to the strong criticism that it is trying to support insolvent institutions, as it was during the GFC. A discount window-Fed will no longer need to invoke Section 13(3) and to set up various emergency liquidity facilities in order to provide money market primary dealer banks with direct (PDCF) or indirect

*As Kregel (2012, pp. 46) reminds us, "*the same was true in the case of Lehman, which was allowed to fail – and then the window was opened to other broker-dealer institutions*", with the Fed that again needed to invoke Section 13(3) given that these latter financial organizations are not member of the Federal Reserve System.

**Pressures on non-member and non-federally insured financial institutions materialize through "runs" or "tidal wave of redemptions" on the part of dealer banks' creditors. With the new membership status that primary dealer banks should acquire in case of the shift to the Fed to the discounting technique, if the Fed does intervene promptly as lender of last resort for financially stressed money market member institutions, then their creditors may not massively exert the right to call for the redemption that is embodied in any repo contract, despite the lack of the FDIC insurance. However, it may be required that a discount-window Fed facing institutional LOLR responsibilities to the benefit of member primary dealer banks doesn't apply any haircut on primary dealers' eligible assets to reduce the likelihood that runs develop, given the lack of federal guarantee on their repo-liabilities. This will allow money market primary dealers to redeem their liabilities at par.

(ST-OMO and ML I-Bear Stearns) access to the window, in case of extraordinary refinancing needs of these latter institutions. Therefore, emergency lending will be simply substituted by normal last resort refinancing for member institutions on the part of the Federal Reserve.

The uselessness of Section 13(3), in the case of primary dealer banks, will allow the Fed to avoid all possible juridical-interpretative problems such as those related to inconsistencies concerning the party-that-needs-assistance, the discount versus advance-distinction, and the loan-asset purchase structure provisions. Even though the change in the beneficiary subject has been made with Dodd-Frank Section 1101 amendments to Section 13(3), it would still be possible for an open-market Fed to invoke the (new modified version of the) emergency lending-Section in case of financial stress for a broad set of otherwise non-member primary dealer banks (under OMCB), and thus to aid financial institutions that may be ultimately insolvent.

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Appendix.

Table 1.

CREDIT FACILITY	Date Announced	Eligible Borrowing Institutions	Supporting Federal Reserve Act Section
Term Discount Window Program	August 7, 2007	Depository Institutions	
Term Auction Facility (TAF)	December 12, 2007	Depository Institutions	Section 10B
Central Bank Liquidity Swaps (CBLS)	December 12, 2007	“Banks”*	Section 14
Single-Tranche Open Market Operation	March 7, 2008	Primary Dealers	Section 13(3)
Term Securities Lending Facility (TSLF)	March 11, 2008	Primary Dealers	Section 13(3)
Primary Dealer Credit Facility**	March 16, 2008	Primary Dealers	Section 13(3)
Term Securities Lending Facility Options Program	July 30, 2008	Primary Dealers	Section 13(3)
AMLF	September 18, 2008	Depository Institutions***	Section 13(3)
Commercial Paper Funding Facility (CPFF)	October 7, 2008	Commercial Paper issuers	Section 13(3)
Money Market Investor Funding Facility	October 21, 2008	Money Market Investors	Section 13(3)
Term-Asset Backed Securities Loan Facility (TALF)	November 25, 2008	Asset-Backed Securities Investors	Section 13(3)
Agency Mortgage-Backed Securities Facility (AMBS)	November 2008	Primary Dealers	Section 14

*The proximate counterpart of Central Bank liquidity swaps agreements are foreign Central Banks, the ultimate borrowing institutions are foreign-based banks that re-discounted their assets with their jurisdiction Central institution.

**With the PDCF, we also implicitly include the Bear Stearns – JP Morgan Chase takeover deal.

***With the AMLF, depository institutions function as intermediary conduit lenders to the ultimate borrowing institutions that were mainly prime money market mutual funds.