1. Introduction

Since the 1980s, financial systems in developing and developed countries have been evolving with enormous speed. Most restrictions on the financial system have been lifted. Many potentially restrictive laws have been interpreted for the benefit of financial markets. Financial integration reached unprecedented levels. Many new financial techniques and products were developed. Major financial markets have experienced a transformation into a much more complex, more opaque and bigger system. In industrialized countries especially, financial systems are no longer based on the loan-deposit nexus dominated by deposit institutions.

During this period, central banking in many countries underwent several important changes too. Before the 1980s, central banks used to utilize various direct and indirect tools with the help of a relatively firm regulatory framework. These instruments include required reserve ratios, direct lending, discount window operations, margin requirements interest rate controls, credit controls, window guidance and open market operations (including expansion of their balance sheets or/and reshuffling the balance sheets). Several of the instruments which were part of the arsenal of central banking in the past no longer exist. Four main instruments are still available to central banks: required reserve ratios, margin requirements, discount window operations and open market operations. However, required reserve ratios and discount window operations lost their importance in the 1980s and early 1990s. Moreover, central banks have not utilized the tool of margin requirements since the mid 1970s. But central banks have used open market operations to control overnight interest rates although open market operations can be used for different purposes.

The financial system and central banking cannot be understood independently of one another. They form a symbiotic whole. On the one hand, central banking policy choices and the regulatory framework affect the financial system. On the other hand the effectiveness of central banking policies is determined by developments in the financial system. Central banks try to reach their targets mainly through exerting influence on the quantities and prices of financial assets by using their existing tools within the given regulatory framework. As Friedman (2000b:4) puts it “[m]oving
financial markets to an extent sufficient to affect non-financial economic activity is precisely what central banks seek to do.” It is natural to ask if the effectiveness of central banks has changed in response to the rapid transformation of financial markets and central banking. The legitimacy of this question became very apparent after the crisis of 2007 and 2008.

Recently, central bankers and monetary theorists have been forced to reconsider their theories and practices in response to an unprecedented crisis, which began in the US in mid-2007 and has quickly spread around the globe. Although central banks aggressively used their interest rate instrument before and during the crisis, their policies did not seem to produce the desired results. Central banking practices before the crisis were mainly based on moving overnight interest rates. This was believed to be enough to stabilize financial markets and reach inflation targets even in a world in which the financial system changes rapidly.

Most economists argue that the evolution of the financial system and of central banking has not diminished the effectiveness of monetary policy. Focusing on changes in financial markets, some argue that the speed and size of the response of market rates to the Fed has increased (Feldstein 1993, Sellon 2002). They imply that the influence of central banks increased in response to changes in the institutional structure in which central banks operate. Similarly, Draghi (2007), the governor of the Bank of Italy (2006–2011), claims that although the role of some channels in the transmission mechanism might have decreased, the influence of central banks on financial markets has become faster and stronger.

Other economists focusing on financial integration argue that, all in all, the power of the Fed or other central banks on financial markets has remained intact (Geithner 2006, Woodford 2007, Bernanke 2007a, Papedemos 2008). They argue that new developments only add some complexities to the analysis of financial markets (Bernanke 2007a) and force central banks to think harder about monetary policy (Geithner 2006). Similarly, Woodford (2007) cannot see any plausible mechanism through which new developments in financial markets can diminish the ability of central banks to conduct effective monetary policy.

For those economists who believe that changes in financial markets have not substantially undermined the capacity of central banks to implement their monetary policies, “all that matters is that the Fed be able to control overnight interest rates; this gives it the leverage that it needs in order to pursue its stabilization objectives [including price stability]” (Woodford 2002:88). This framework implies that central banks do not need extra tools beyond overnight interest rates. In other words, for them, relying solely on overnight interest rates and abandoning all other existing tools and not developing new ones is not an important problem for the effective-
ness of a central bank. In fact, the dominant view in macroeconomics, the New Consensus, embraces the idea that overnight interest rate targeting is enough for monetary policy. Many post-Keynesians also tend to accept a similar framework although they do not accept the long-run neutrality of interest rate policy (Lavoie 2005, Setterfield 2005 and Fontana 2006).

Before the crisis, many New Consensus economists went one step further and celebrated the “magical” success of central banks all around the world. For many, “the worldwide progress in monetary policy is a great achievement that, especially when viewed from the perspective of 30 years ago, is a remarkable success story” (Goodfriend 2007:65). Indeed, as Paul Volcker (2002:10) points out, “nonetheless, monetary policy here, and to some degree elsewhere, has achieved an almost mystical status.” Many economists attributed decreasing volatility in macroeconomics variables in most developed countries to the changing nature of central banking practices, although there were some counter voices. For example, Bernanke (2004a) argues that “improvements in the execution of monetary policy can plausibly account for a significant part of the Great Moderation.” Likewise, Goodfriend (2007:54) claims that the Fed proved that monetary policy is capable of sustaining low inflation and low unemployment together with mild infrequent recessions. This approach implies that during this period, central banking policies were capable of exerting great influence over inflation and output through their influence over financial markets.

This book challenges this framework by investigating the evolution of the US financial system and monetary policy since the 1980s. It combines historical and institutional analysis with some econometric and simulation exercises. The main argument of this study is that the influence of the Fed on US financial markets through which it tries to move its ultimate targets, output and inflation, gradually deteriorated due to fundamental changes in domestic and international financial conditions and in the main policy tools and regulatory framework of the Fed. As a result of the interaction of developments within the financial system and central banking, US financial markets have gradually increased their capacity to expand balance sheets and determine the price of financial assets (interest rates) independently of the Fed. In other words, the degree of endogeneity of balance sheet expansion and asset price determination within the financial system has increased.

More specifically, this book argues that there has been a gradual decoupling between the Fed policy rate and both quantities and asset prices in financial markets. In this sense, the whole period can be seen as a period of decreasing effectiveness of central banks because their influence over financial markets has gradually decreased.
These claims are supported in four main parts by addressing theoretical and empirical issues. The second chapter prepares the theoretical background for the discussion. This chapter argues that since the late 1980s four highly interrelated, dynamic forces have shaped the institutional structure of the US financial system and the effectiveness of monetary policy. These are: rapid innovation in financial markets, deregulation in the regulatory framework, policy choices of the Fed and increasing financial integration. All of these have symbiotically shaped each other. The immediate implications of these developments are: i) the transformation of the traditional US financial system based on loan-deposit nexus exclusively dominated by deposit institutions; ii) increasing competition; iii) increasing centralization tendencies and iv) most importantly, decreasing balance sheet constraints on financial firms. These developments have brought about two gradual interrelated changes in the relationship between the Fed and financial markets. I call these “the dual decoupling.”

First, there has been a decoupling between the Fed’s instruments and the quantities of assets (the size of financial institutions’ balance sheets) in financial markets. This means a greater degree of endogeneity of the credit expansion mechanism in US financial markets. Credit expansion has become much more independent of the influence of the Fed. Second, there has been a decoupling between overnight rates and the price of financial assets (especially medium- and long-term interest rates). This implies a greater degree of endogeneity of the prices of financial assets in financial markets independent of the Fed. Overall, this chapter states that the dual decoupling means a gradual reduction in the effectiveness of Fed policies.

The main contribution of this chapter is that it offers a new understanding of US monetary and financial history from 1983 to 2007. As opposed to the claims of many central bankers and monetary theorists, this book argues that the developments in the financial system and central banking policies undermined the effectiveness of the Fed.

The third chapter develops a theoretical framework to investigate the implications of balance sheet constraints. Furthermore, it introduces a simulation exercise demonstrating how changes in balance sheet constraints combined with other inner forces within financial markets can affect the growth of balance sheets. This chapter argues that financial markets have always had an endogenous mechanism of balance sheet expansion. However, the influence of this mechanism can be stronger in a world where balance sheet constraints decrease. The simulation framework developed here demonstrates the possibility of increasing endogeneity of balance sheet expansion of financial institutions in response to decreases in balance sheet constraints. The combination of existing channels of self-reinforcing expansion of balance sheets and decreasing
constraints may explain the explosive nature of US financial markets since the 1980s. Increasing the degree of endogeneity of balance sheets of financial markets, ceteris paribus, means that the Fed has less leverage on the credit expansion in the financial markets. In this sense, this chapter can be seen as a theoretical support for the decoupling argument. The analysis advanced in the third chapter is one of its first attempts to explain the mechanisms of financial expansion (or bubbles) within a realistic simulation framework based on balance sheet identities.5

Chapters 4 and 5 provide econometric support for the theoretical part of this book by targeting different literatures in monetary theory. The fourth chapter focuses on the relationship between overnight interest rates and the long-term rates in the US from 1983 to 2007. It presents evidence supporting the argument that there has been a gradual decoupling between the Fed interest rate and market interest rates. In other words, the Fed has been gradually losing its control over long-term interest rates. Both descriptive statistics and several econometric techniques robustly support this finding. Furthermore, this chapter demonstrates that the purchase of US assets by foreigners might have played some role in this process, although the findings concerning this are not very robust.

The main contribution of the fourth chapter to the literature is showing that, contrary to many economists’ claims, the period after 2001 is a continuation of a process which has been present since the late 1980s. Many economists explained the weakened relationship between the Fed and long-term rates as a phenomena belonging to the period after 2001 (Greenspan 2005a, Bernanke 2006, Rudebusch et al. 2006). However, this chapter clearly demonstrates that this process began earlier.

Chapter 4 focuses on the role of the Fed in the housing sector by exploring the interaction between the Fed monetary policy tools and the mechanisms of the housing boom. In other words, this chapter deals with the question: are the Fed monetary tools responsible for creating the current financial crisis by causing the housing boom? Several economists claim that the Fed created the current financial crisis by keeping its interest rates too low for too long (Taylor 2007, 2008, Sachs 2008). They have two main arguments to support their thesis. First, they support their claim by arguing that the Fed rate was very low relative to what the Taylor rule suggested at that time. Second, they point out that the timing of the housing boom and the low interest rate policy coincide. Therefore, for them, the Fed’s low interest rate policy must have contributed to the crisis. On the other hand, others defend the Fed by either investigating different paths suggested by Taylor-type rules or showing that the prices of houses may not be sensitive to the Fed rate (Dokko et al. 2009, Bernanke 2010 and Greenspan 2009, 2010a, 2010b). However, they failed to investigate direct
mechanisms through which the Fed might have contributed to the crisis. Fed policies might have contributed to the crisis by either enabling banks to expand their balance sheets or causing lower mortgage rates. This chapter focuses on the second channel, which is also called the interest rate channel, and also uses several descriptive and econometric techniques to examine the connection between the Fed rate and mortgage rates, including adjustable and short-term mortgage interest rates in the US. The relevant period for the analysis of this chapter is from 1990q2 to 2007q3, due to the availability of high quality data.

There are two main findings in this chapter. First, the responsiveness of mortgage rates (including adjustable rates) and relatively short-term interest rates to the Fed rate decreased substantially in the period during which the US housing boom took place. Second, the availability of foreign funds seems to especially affect long-term mortgage interest rates. The decreasing responsiveness of all mortgage interest rates including that of short-term interest rates to the Fed rate can be seen as further support for the decoupling hypothesis. In other words, the decoupling between the Fed and market rates was not only about long-term rates.

More generally this book can be considered as a contribution to the literature in line with the evolutionary-institutionalist economic school of thought’s methodology (Minsky 1957, 1986, Hicks 1967, Niggle 1991). It also has some apparent affinities with post-Keynesian monetary theory, although there are some important differences between existing post-Keynesian literature and the argument developed here. Finally, although this study sees the New Consensus as an improvement over the monetarist approach, this book can be seen as a critique of the New Consensus and monetarist approaches.

In line with both the institutionalist-evolutionary and post-Keynesian schools, this book gives much importance to the study of institutional and historical details to understand the role of monetary policy (Minsky 1957, 1986, Arestis and Eichner 1988, Niggle 1991, D’Arista 2009). It argues that the effectiveness (either short- or long-term) of a central bank mainly depends on the institutional framework in which the central bank operates. The institutional framework is largely determined by the interaction among the regulatory framework, the central bank’s choice of tools, international conditions and other dynamic forces within the financial system. Under different combinations of institutional structure, the power of a central bank over its economy can vary (be greater or lower). Therefore, monetary policy discussions should be institutionally and historically specific. There are no pre-prepared prescriptions or theoretical truths which can enable economists to understand monetary policy and its interaction with the financial system. As Hicks (1967:156) aptly puts it “monetary
theory is less abstract than most economic theory. It cannot avoid a relation to reality [. . .] It belongs to monetary history, in a way that economic theory does not always belong to economic history.”

One can argue that these points may be shared by the representatives of the monetarist and New Consensus approaches too. For example, one can maintain that Milton Friedman paid a lot of attention to institutional and historical details. Of course any sophisticated monetary theory needs to deal with historical and institutional events. In this sense, every theory has its own institutionalist and evolutionary moments. However, evolutionary and institutional theory cannot be reduced to using historical and institutional details to support non-changing rules of thumb in monetary theory. Friedman and the monetarists believe there are general monetary policy rules which can be applied to any time and any place. For him and Paden, “inflation is always and everywhere a monetary phenomenon” (Friedman and Paden 1983). In fact, two main tenets of the monetarist approach, exogenous money supply and constant money growth rule, are fundamentally in conflict with an institutional understanding of monetary theory. An institutional and evolutionary approach does not offer any monetary policy rule. It accepts the changing nature of the effectiveness of different monetary practices in response to changes in financial and regulatory structures. Understanding the relationship between central banks and the financial system requires constant investigation of ongoing trends within both the financial system and central banking policies.

For many economists, monetarism is dead, even in Europe where monetary targeting was an important part of central banking. There seems to be a New Consensus about monetary economics (Clarida et al. 1999, Romer 2000, McCallum 2001, Woodford 2003). This approach reduces monetary theory into three equations. The first equation represents aggregate demand as a negative function of the interest rate. The second equation can be seen as a Phillips curve. The third equation is a Taylor-rule type of interest rate setting strategy. This generic model shows how a central bank can influence the inflation rate but not output in the long run, given the assumption that current output is equal to potential output.

In this framework, there is only one interest rate in the model. The information content of all interest rates in an economy can be summarized with only one interest rate. And central banks, can directly control this relevant interest rate. Since New Consensus economists assume a very strong link between the official rate and all other market rates, they are satisfied with one interest rate in the model. The relevant interest rate they mention is the short-term official interest rate such as the federal funds rate in the US. Official interest rates are supposed to determine all other interest
rates. There are several interest rates in financial markets. Which one is the relevant one? New Consensus models, which have been the dominant view in macroeconomics since the mid-1990s, assume that “short-term interest rate policy, like moving the federal funds rate, must exercise its leverage over current aggregate demand through its leverage over longer-term interest rates” (Goodfriend 2007:64).

Woodford (2002:89) is very clear about the fact that monetary policy targeting the level of interest rates “seem[s] to be a sufficient channel for central banks to achieve their stabilization goals fairly well.” And “it has the advantage of acting relatively uniformly on spending decisions throughout the economy, allowing policymakers to stabilize inflationary pressures without creating undue allocative distortions across sectors of the economy.” Either because of faith or for modeling purposes, the New Consensus seems to be satisfied with the argument that “all that matters is that the Fed be able to control overnight interest rates; this gives it the leverage that it needs in order to pursue its stabilization objectives [including price stability]” (author’s emphasis) (Woodford 2002:88).

From an evolutionary and institutionalist perspective, this approach cannot be acceptable. The effectiveness of central banking tools can change in response to institutional settings and other changes in central banking. In this sense, the New Consensus model is as dogmatic an approach as the monetarist approach. In fact, the findings of this book invalidate the claims of the New Consensus. The findings of this book clearly demonstrate that there has been a decoupling between market prices and the Fed rate. It is not easy to defend the New Consensus by indicating the possibility of the Fed’s influence on the balance sheets of financial institutions. This book suggests that the decoupling of the Fed’s tools from the balance sheets of financial institutions has already taken place, although further research is necessary on this subject.

On the other hand, this study shares the basic tenets of the endogenous money literature. However, there are two very crucial implicit critiques of this approach in this book. First, most post-Keynesian literature has focused exclusively on the endogeneity of the money supply. However, this book implies that one should investigate endogeneity in terms of overall balance sheet expansion and overall asset price determination instead of purely focusing on the money supply (loan expansion) procedure. Second, this book implies that the degree of endogeneity of balance sheet expansion (money supply in most post-Keynesian literature) is determined by the institutional setting in which a central bank operates. In other words, the expansion of money supply or overall balance sheets of financial markets can be relatively more endogenous or less endogenous depending on historical and institutional conditions. In this sense, it would be much
more productive to focus on the degree of endogeneity of balance sheet expansion under different circumstances.

NOTES

1. In response to the current crisis, central banks around the world have tried to develop extra tools.
2. Others try to explain decreasing volatility in developed countries by the absence of strong shocks to these economies (Ahmed et al. 2004, Stock and Watson 2003).
3. This conceptualization was inspired by Friedman (2000a) though he discusses potential decoupling between the Fed tools and financial markets at the margin by exclusively focusing on the importance of the Fed reserves.
4. Since the whole expansion and contraction of balance sheets of financial institutions has considerable implications for the real economy and for the effectiveness of the central bank, for this book credit expansion means not only the expansion of conventional loans but also all other assets on the balance sheet of financial institutions.
5. During the process of preparing the initial manuscript for publication, I recognized that Alves, Dymski and De Paula (2008) also used a similar framework.
6. The new framework has three innovations compared to the old consensus (the IS-LM framework). First, there are three unknowns and three equations in this new framework. Hence, there is no need to assume that either price or output is fixed. Second, the money market equilibrium condition (LM), assuming exogenous money supply, is replaced with a Taylor-type of policy rule. Most of the versions of the model incorporate forward looking behavior and rely on expectations (Meyer 2001).
7. Formally the equations can be written as follows:

\[ y = y_0 - ar \]  
\[ \pi = \pi_{t-1} + b(y - y_p)_{t-1} \]  
\[ r = r_{t-1} + c(\pi + \pi_t) + d(y - y_p) \]

where \( r \) = current real interest rates, \( \pi \) = current inflation rate, \( y \) = current output, \( y_p \) = potential output. There are several variants of the same generic model that consists of three equations; namely, an interest rate rule, a Phillips curve and aggregate demand. The version used above is very similar to the version explained in Setterfield (2005:35–56 in Lavoie and Seccareccia 2005). A much more complicated model built on optimization of households and firms within a dynamic general equilibrium framework can be found in Clarida et al. (1999).
8. This framework implies that nominal rigidities caused by prices, wages or other factors make it possible for monetary policy to affect real variables in the short run, though monetary policy can only change prices in the long run. In fact, as Meyer (2001:4) points out, “the consensus model may bypass money but it retained the key conclusion [of monetarism or Wicksellian types of ideas] that central banks ultimately determine the inflation rate.” New Consensus economists mainly accept the idea that the main tool to fight inflation is short-term interest rates (overnight interest rates).
9. Paradoxically, although the interest rate in the first equation represents long-term interest rates, the interest rate in the third equation is overnight interest rates. This can create many problems even from a modeling perspective. First of all, this contradiction makes the distinction between long-term and short-term analysis meaningless. As a result, conclusions of long-run equilibrium analysis may not make sense. Second, accepting the fact that monetary policy can affect long-term interest rates in a predictable way, but not potential output, logically can put some extra strain on the models of the New
Consensus kind. In theory, it is argued that potential output can change only in the long run. Therefore, there is no theoretical reason to believe that long-term interest rates will not affect potential output.

10. Most of these models not only assume that central banks control nominal interest rates but also that central banks can determine real interest rates. In other words, central banks follow a real interest rate rule (Romer 2000). According to Romer (2000) this specific assumption gives the model a Keynesian character. He argues that central banks can follow a real interest rate rule because prices are not completely flexible. However, central banks can only exert significant influence on real interest rates if prices are very rigid which may not always be the case. Hence, this issue increases the complexity and ambiguity of short-term interest rate policy.