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THE EVOLUTION OF THE FEDERAL RESERVE'S MANDATE IN RESPONSE TO
THE GLOBAL FINANCIAL CRISIS: THE CASE FOR FINANCIAL STABILITY

A Thesis

Presented to

the Faculty of Social Sciences

University of Denver

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

by

Laurel Celastine Mazur

June 2015

Advisor: Dr. Tracy Mott

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Author: Laurel Celastine Mazur

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ABSTRACT

This thesis looks at the evolution of the Federal Reserve's mandate and regulatory responsibilities as a result of the Global Financial Crisis. The onset of the crisis exposed the financial system to risks that had yet to be identified by the traditional microprudential regulatory framework, necessitating a rapid and unconventional response in order to prevent widespread financial collapse. Now, in 2015, as most of the scourges of the crisis are in the recent past, practitioners are beginning to not only pick up the pieces but attempting to reform the system to increase resilience in the future. One of the proposals taking center stage in this effort is an increased focus on financial stability in economic policymaking, in order to prevent the meteoric rise in unsustainable risk that contributed to the crisis arising just eight years ago. This need for reform is juxtaposed with the theoretical thrust to maintain central bank independence. The interaction between central bank independence and a financial stability mandate will be discussed, with a focus on macroprudential regulation.

The views expressed here are those of the author and do not necessarily reflect those of The Federal Reserve Bank of Richmond, the Board of Governors of the Federal Reserve System, or the Federal Reserve System.

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CHAPTER ONE: INTRODUCTION

The Financial Crisis of 2007-2008 changed the economic landscape of the United States and the world. As the largest financial crisis since the Great Depression, many widely-held thoughts and beliefs about the financial system, the global economy, and policymaking are being rethought in its wake. The Global Financial Crisis has been considered by some as a failure of the economics profession as the risks and weaknesses that plagued the system were not recognized by the vast majority of practitioners in the field. The Federal Reserve, the central bank of the United States, was positioned at the epicenter of the crisis response, enacting unconventional policies to keep the economy afloat. Now, in 2015, as most of the scourges of the crisis are in the recent past, practitioners are beginning to not only pick up the pieces but attempting to reform the system to increase resilience in the future. One of the proposals taking center stage in this effort is an increased focus on financial stability in economic policymaking, in order to prevent the meteoric rise in unsustainable risk that contributed to the crisis arising just eight years ago.

This thesis looks at the activities of central banks, specifically the Federal Reserve, from two distinct angles: the importance of central bank independence and the rise of a financial stability mandate. These two issues are related, as operational independence is a theoretical and empirical benchmark of optimal central banking and financial stability is an exigent need to be addressed for central banks around the world.

The Federal Reserve prides itself in being a central bank whose operations are independent of the government or any other interest group and the adoption of a financial stability mandate could potentially threaten the legitimacy of this established independence.

One may wonder, then, why a discussion of independence, specifically, is crucial in the consideration of a financial stability mandate. The exigency of a greater and more detailed focus on financial stability and macroprudential regulation has been emphasized and proven by the experience of the financial crisis. With little exception, there is widespread agreement that systemic risk in the financial system is dangerous and must be addressed, and that the world's largest financial institutions must be more closely monitored. There is also relatively widespread agreement that the Federal Reserve is a technocratic organization with a century of experience in economic policymaking, thus putting it at the fore of the emergence of a more comprehensive set of tools and mandates addressing financial stability. However, in the current structure of the Financial Stability Oversight Council, where the Federal Reserve is given a subordinate role, this expertise and experience is at risk of going unnoticed and their independence may be threatened. Therefore, the nexus between financial stability and the role of the Federal Reserve, with respect to central bank independence, is less well-defined and, thus, will be addressed here.

The thesis is organized as follows. Section two looks at the theoretical underpinnings of central bank independence, contrasting how independence is defined in the literature with how it may manifest in the post-crisis world. The issue of mandate adherence and mission creep will be of distinct concern as this issue is likely to arise as

the Federal Reserve, or any central bank, takes a more activist stance in maintaining financial stability. This section lays a foundation for the structure of central bank independence and serves as a reference point for the interaction of this independence and financial stability in later sections. Section three provides an overview of the Federal Reserve's actions during the crisis and looks specifically at the unconventional policies enacted by the Federal Reserve during this time. Though not directly related to the financial stability mandate, these policy actions set the stage for the Federal Reserve to be more activist, discretionary and innovative in policymaking, departing from their policy toolbox used in the past. These unconventional actions lay the groundwork for an evolving mandate and suggest that the nature of independence can evolve and change.

The specific discussion of financial stability, focusing on macroprudential policy options, begins in section four. The time and cross-sectional dimension of systemic risk are discussed as well as the policy options at the disposal of the central bank, or other regulator, for mitigation. Following this same theme, section five considers the different governance arrangements that have been advanced theoretically and in practice. This section culminates in a discussion of the specific benefits and challenges that may arise if the Federal Reserve is given a significant role in, or sole responsibility of, macroprudential regulation. Section six contains a discussion of the potential dual influences that central bank independence and the adoption of a financial stability mandate can have on one another. On the one hand, putting an independent, accountable and credible institution in charge of maintaining financial stability can greatly influence and improve the effectiveness of these policies. On the other, the cooperative nature of effective macroprudential regulation can serve to erode some level of independence that

may be deemed necessary for effective policymaking. Section seven will provide a brief proposal for the structure of macroprudential regulation in the United States, designating the Federal Reserve as the institution with responsibility for this policy function. The rise in importance of financial stability and macroprudential regulation, though conceptually in existence for decades, is, in practice, in a state of relative infancy. The conclusions made here are suggestive and will likely be altered and changed as more information is gained over the coming years.

CHAPTER TWO: CENTRAL BANK INDEPENDENCE AND THE IMPORTANCE OF MANDATE ADHERENCE

The concept of central bank independence was fundamentally changed as a result of the crisis. As is the case with many theories and ideas, in economics and other fields, one explanation can be predominant for a time until conditions change which invalidate it. In this case, the idea that independent central banks with a pre-specified mandate and a limited range of tools with which to fulfill that mandate represented the ideal institutional design for economic growth and low and stable inflation was overturned when the crisis occurred. Then, a central bank with the expertise and ability to enact reactionary and unconventional policies to keep the economy afloat was an immense asset. There has not been enough time for a new independence literature to rise out of the rubble of the crisis, but it can be confidently advanced that the concept of central bank independence has changed from what it once was. This section will look at the concept of central bank independence and mandate adherence as it has historically been advanced before looking at how it has changed in the last eight years.

Central bank independence has been a general tenet of ‘prudent’ monetary policymaking and central banking since the 1980s.¹ The idea is that the independence of the central bank will insulate monetary policymaking, and other central bank activities, from the influence of politicians. This is related to what is known as the time-

¹ Forder 1998, 307

inconsistency problem; it may be politically more attractive to spur economic growth, and possibly increased inflation, in order to gain favor with the public, than it is to prudently set policy according to the current economic conditions. The independent central banker is thought to be isolated from these pressures and, thus more able to keep macroeconomic aspects such as unemployment and inflation at a desirable level. As monetary policy operates with a lag, it is important for the central bank to be forward looking in its policymaking and rate setting. A driving factor of the popularity of central bank independence is the fact that, evidence shows, with independence comes lower inflation.²

Central bank independence is often considered in multiple categories including legal, goal and instrument independence. Legal independence represents the fact that, by law, the central bank is designated as independent without regard to operational, or other, consideration. Goal independence is the ability of the central bank, in this case the Federal Reserve, to set its own aims for monetary policy (e.g. a goal of 2% inflation). Although this is a strong indicator of independence, many central banks opt to announce goals in concert with the government in which they are located in order to build credibility. Given this need for credibility and accountability to the public, there is the view that “the institutional commitment to price stability should come from the government...”³ This designation of goals helps balance independence with accountability and is an important aspect in the operation of a nation’s central bank.

² Cukierman 1992

³ Mishkin 2009, 495

Instrument independence, “the central bank’s ability to independently set monetary policy instruments, for example, the level of the interest rates, to achieve its goals”⁴, is generally what most scholars and policymakers alike consider to be central bank independence. With a pre-specified mandate or set of goals to operate under, instrument independence grants the central bank the power to pursue whatever form of policy is necessary to achieve these goals. It must be noted that the importance of central bank independence is emphasized in the case of monetary policy. According to Kohn, “the regulatory functions of the Federal Reserve have involved a very high degree of cooperation and coordination with other agencies”⁵, and thus cannot be considered entirely independent. The independence of monetary policy is the crux of the theory of central bank independence issue and this is what must be maintained.

One of the seminal works on central bank independence is the index developed by Cukierman in 1992. Although this measures central bank independence in a relatively complex way, in practice, the index developed by Cukierman does not encompass all ways that independence can be eroded. This index provides an interesting starting point in which to analyze the unorthodox departure from other tenets of independence by the Federal Reserve. Central bank independence, as defined by Cukierman, is “not unconditional independence from government, but rather the independence to pursue the objective of price stability, even at the cost of other objectives that may be more

⁴ Mishkin 2009, 493

⁵ Wessel 2014, 96

important to political authorities.”⁶ Although many indices and measures of central bank independence have been created, Cukierman’s is often said to be the most complete. The behavior of central banks regarding independence during crises can still be categorized as a newly emerging field as the importance of central bank independence came into ‘vogue’ in the 1980s and 1990s.⁷ It is, therefore, relevant and important to recognize that the landscape of central bank independence is changing and cannot be assessed on, what are becoming, relatively antiquated indicators.

One of the ways in which central bank independence is assessed is by looking at a central bank’s adherence to their pre-specified mandate. The Federal Reserve’s mandate, originally set by Congress and amended in 1977, is stated as the maintenance of “maximum employment, stable prices, and moderate long-term interest rates”⁸ which is most often captured as the dual mandate of full employment and price stability. According to Pattipeilohy et al, “the monetary policy strategy of central banks should be considered against the background of their mandates.”⁹ Though many indicators exist, for the purpose of this paper, we will focus on the adherence or lack therefore, to the specified mandate as evidence for the drift away from central bank independence. Though many of the unconventional monetary policies were enacted with the explicit goal to ensure price stability, various factors indicate that this announcement was not sufficient and these goals have yet to be realized.

⁶ Cukierman 1992, 382

⁷ Mishkin 2009

⁸ http://www.federalreserve.gov/faqs/money_12848.htm

⁹ Pattipeilohy et al 2013, 5

Another important aspect of mandates with respect to central bank independence is the limits which are placed on the central banks in conducting policies. According to Capie, “if the central bank is to be independent in the sense in which, say, the judiciary is independent, then it requires a set of institutions to follow, just as judges required a set of laws to implement.”¹⁰ The mandate of a central bank is, thus, a factor put in place to disallow bank officials and governors from changing it as a result of differing conditions or needs. Though this seems to fly in the face of the general tenet of ‘independence’, it is a necessary factor to ensure that a central bank operates with the correct goals in mind. This leads to the conclusion that independent central banks are not able to adjust or change their mandates as a result of current economic or financial conditions but must adhere to the mandates outlined to remain accountable and independent.

The original theoretical thrust of central bank independence was to ameliorate the time inconsistency problem by disallowing politicians to manipulate monetary policy for their own goals and gains. As can be seen, and easily understood, this is generally not the aim of central bank independence, monetary policy, or even politicians in the response to financial and economic crisis. According to Alan Blinder in a 2012 speech: “My conclusion is that, in a crisis, preserving strict central bank independence is neither possible nor desirable.”¹¹ Central bank independence, though beneficial to keep political considerations away from the management of monetary policy, may be ineffective, and possibly even harmful, to the management of an economy during a financial crisis.

¹⁰ Capie and Wood 2013, 380

¹¹ Blinder 2012, 6

Instead, the addition of new missions and mandates, as well as extensive cooperation between the central bank and government officials may be necessary.

As can be seen by the behavior of the Federal Reserve during the crisis, economic growth and stability was paramount. Central banks are also focusing on financial stability and macro-prudential regulation. Many of the quantitative easing policies discussed in this study had the explicit aim and effect of enhancing financial stability and providing credit to struggling sectors. It cannot be argued that this is a negative mission and, in fact, was exigently needed to stave off the effects of the crisis. However, this is an indication of a changing mandate and, therefore, also is suggestive of less importance being placed on strict central bank independence. In addition, “even if narrow monetary policy independence remains intact, the boundaries between monetary and macroprudential policies are often blurred”, and this can operate as a threat to independence.¹² Though this is not a function specified by the mandates, it is also a rising concern in the international economy precipitated by the global financial crisis.

The truth is that the explicit goal of all involved in responding to a financial crisis is to keep the economy functioning to its maximum potential at the point considered. If this goes against a central bank mandate, or if central bank independence is temporarily undermined, it may be a secondary issue when compared to the efficacy of the economy. It can be fairly argued that the landscape of independence was greatly altered as a result of the financial crisis as it represented the first interaction of the independent Federal Reserve with a crisis of such a large size and scope. Given that the idea of central bank independence became popular in the 1980s, the experience of the Federal Reserve

¹² Marcus 2012

operating in a crisis of a vastly interconnected financial system and global economy is uncharted territory for the theoreticians of independence. Although mandate adherence is an important ingredient for the accountability and functioning of an independent central bank, the Federal Reserve's ability to adjust and implement policies appropriate for the current economic climate can also be seen as a valuable addition to, and aspect of, independence. If the Federal Reserve had been operating under a strictly rule-based monetary policy regime where the creation of unconventional monetary policies was not permitted, chances are that the economy would have suffered to a greater extent than was seen in reality. Though one can never assert the results of a counterfactual with certainty, the ability and expertise of the Federal Reserve to rapidly adjust and drastically alter the policy landscape is a positive attribute in unusual and exigent crisis circumstances.

Along with the effects of the Global Financial Crisis and the unconventional actions of the Federal Reserve has come a potential shift in the importance of independence. This was the first major crisis event to hit the United States, and reverberate globally, since the advent of central bank independence and, thus, we see that some of the generally accepted tenets may not apply. Therefore, it cannot be fully argued that the Federal Reserve's actions during the crisis constitute a breach of independence as this idea of independence is not fully developed in a crisis situation. In this case, the Federal Reserve's ability to rapidly adjust and enact policies to stave off the effects of the crisis could be a testament of greater independence than strict adherence to a pre-specified mandate and the policy tools used to fulfill it. The crisis rendered the dual

mandate of price stability and full employment temporarily moot while financial stability and emergency stabilization came to the fore.

The experience of the recent crisis calls for the question to be asked, what exactly is central bank independence? The nature of central bank independence has been fundamentally changed by the crisis, with the ebb and flow of various policy priorities being ranked according to circumstances, as opposed to pre-specified mandates. Since complete independence cannot be defined by a simple theory or idea and it is ultimately economic performance that determines the effectiveness of a given administration or crisis response, the crisis can be considered a stark turning point. In the aftermath of the crisis, the quick actions of the Federal Reserve, though, at times, going against their mandate and acceptable tools, may be considered the most valuable asset of independence. The ability to enact these policies without going through a lengthy process to get them approved by Congress or some other governmental body is considered an asset. Another important aspect concerning independence is how the general public views the Federal Reserve in the scope of its independence. There are many who see independence as a way for the Federal Reserve to conceal the scope of its powers from the general public and the government and, thus, call for the organization to be reined in. However, only considering the experience of the crisis, the Federal Reserve's ability to make quick, concise and effective decisions in order to keep the system afloat defined its independence. It could not be measured on an index or assigned a score, but, in the moment, it was effective. The choice is no longer between low and stable inflation and full employment (it is arguable if this was ever the 'real' choice anyway), but rather about

retaining the ability to adapt policies and responses to an ever-changing economic landscape. The importance of independence arose as a result of economic events and its downfall may also, with slightly less than forty years of theoretical supremacy, the idea of central bank independence is far from set in stone.

In the scope of economic theory, central bank independence is a relatively youthful idea which, given the experience of 2007-2009, should be flexibly calibrated commensurate with the current economic situation. Considering that the global economy, and specifically the financial system, is continually evolving, the adoption of a financial stability mandate would be a natural extension to the Federal Reserve's current mandate and should be an action accepted and condoned by the strictest advocates of central bank independence.

**CHAPTER THREE: OVERVIEW OF THE GLOBAL FINANCIAL CRISIS,
SYSTEMIC RISK ISSUES AND THE FEDERAL RESERVE’S
UNCONVENTIONAL MONETARY POLICIES**

In the depths of the financial crisis, the Federal Reserve’s traditional monetary policy tools became exhausted. Interbank lending was all but frozen and the system was suffering from a widespread crisis of confidence. The failure, or near-failure, of firms that were deemed ‘too big to fail’ had incited fear and uncertainty into the system and no end was in sight. Undetected systemic risks had emerged that threatened the foundation that the financial system of the United States had previously stood proudly upon and something needed to be done.

A notable shift in Federal Reserve behavior resulting from the crisis was their lending and support of investment banks that were, until recently, outside of the purview of their mandate. Many questioned the Federal Reserve’s legal ability and wisdom of lending to non-depository institutions. However, Article 13(3) of the Federal Reserve Act begins with the following:

“In unusual and exigent circumstances, the Board of Governors of the Federal Reserve System...may authorize any Federal reserve bank, during such periods as the said board may determine, at rates established in accordance with the provisions of section 14, subdivision (d), of this Act, to discount for any participant in any program or facility with broad-based eligibility, notes, drafts, and bills of exchange...”¹³

¹³ Federal Reserve Act, Article 13(3)

This specifies that the Federal Reserve, in exceptional circumstances, can lend to almost any eligible and legitimate business, corporation, or institution; therefore, investment banks would be included. The situation during the financial crisis was such that some of the most systemically important institutions were struggling, and these investment banks and institutions were outside the normally operating scope of the Federal Reserve. Therefore, Article 13(3) was invoked to save the economy from what could have been utter collapse and extensive international contagion.

Given that the Federal Reserve does have the ability and duty to take unusual steps in such a situation, what did it do in this case? The following section discusses the unorthodox policy programs implemented by the Federal Reserve in the initial aftermath of the financial crisis. It is important to note that every program implemented by the Federal Reserve during the global financial crisis is not mentioned, as that is outside the scope of this thesis. The programs discussed are: the Term Auction Facility, Primary Dealer Credit Facility, Term Securities Lending Facility, and Quantitative Easing.

The Term Auction Facility (TAF) was established in 2007 and was utilized in order to encourage lending to banks and other depository institutions to increase liquidity in the financial system. This was also undertaken to address the increasing interest rate spread, arising primarily as a result of the lack of trust in the interbank lending market. These were collateralized loans with a term longer than the general term, overnight loans generally disbursed at the Fed's discount window. Various assets were accepted as collateral but these loans were only given to institutions perceived to be sound.¹⁴ These loans were disbursed in 28-day and 84-day increments. There has been speculation that

¹⁴ Armantier 2008

this program was put in place in order to reduce the ‘stigma’ associated with banks borrowing from the Fed’s discount window. Far from being just a reputational issue, banks were reluctant to borrow from the discount window as it could signal distress or financial instability.

Auctions were held to disburse the funds that allowed the Federal Reserve to “control precisely how much, and when, liquidity would be injected into the markets.”¹⁵ This function also allowed a large amount of funds to be disbursed to a number of different institutions, allowing money and liquidity to flow to where it was needed most.

The Primary Dealer Credit Facility (PDCF), carried out on March 17, 2008, was implemented to provide short-term funding to investment banks that generally participate in open market operations and have a trading relationship with the Federal Reserve Bank of New York.¹⁶ Traditionally, primary dealers do not have access to a lender of last resort; however, in the modern financial context, “dealers are the institutions most likely to experience liquidity shortages.”¹⁷ Whereas the TAF injected liquidity into depository institutions, PDCF did so for dealers normally participating in the continually slowing repo market. This was the first time that the Fed lent directly to investment banks, which represented both the severity of the crisis and the financial importance of these institutions.

The loans granted by PDCF are based on collateral above the value of the loan itself. Originally only investment grade collateral was accepted; however, as the collapse

¹⁵ Armantier 2008, 5

¹⁶ For a list of primary dealers, visit http://www.newyorkfed.org/markets/pridealers_current.html

¹⁷ Adrian 2009, 4

of Lehman Brothers became imminent, the scope and type of acceptable collateral was expanded. In this action, “all the kinds of collateral then in use in tri-party repo – including non-investment grade securities and equities – became eligible for pledge in the PDCF.”¹⁸ This action allowed the primary dealers to make use of the loans on more amicable terms and to increase coverage of the PDCF “in the event that a failure of a primary dealer led to severe funding disruptions for the surviving dealers.”¹⁹ Moral hazard issues arose as a result of the funding of the PDCF as many analysts saw this as encouraging investment banks to take on riskier assets.

The Term Securities Lending Facility (TSLF) was introduced in March 2008, to further provide liquidity to markets in the face of the financial crisis. Specifically, TSLF “allows primary dealers over time to borrow up to \$200 billion in Treasury securities for a term of twenty-eight days by pledging as collateral other securities, including agency debt securities and MBS.”²⁰ This allows the primary dealers to hold Treasury securities as collateral for other transactions, allowing them to be more active in the repo market. As it occurs as an exchange for different types of securities, this does not change the composition of the institutions’ reserve and, thus, does not affect the Federal Reserve’s traditional focus on interest rate levels.²¹

In contrast to the PDCF, a standing facility, the TSLF was created as an auction facility; allowing primary dealers to approach the Fed as a group as opposed to being

¹⁸ Adrian 2009, 6

¹⁹ Adrian 2009, 7

²⁰ Fleming et al 2009, 3

²¹ Fleming et al 2009, 4

subject to individual scrutiny by the market. The eligible collateral to exchange for the Treasuries are separated into two ‘schedules’, one with Treasuries themselves, agency debt securities, and MBS securities, and one accepting all other investment-grade securities.²² As in the PDCF, collateral is only accepted with a ‘haircut’, meaning that the value of the collateral is above the value of the securities on auction.

The unconventional policy which is most often discussed in industry, academia and the media is quantitative easing. Officially ended in the latter part of 2014, the effect of and exit from these policies proves to be an important task for the Federal Reserve. Although many critics of unconventional monetary policies believe that quantitative easing, effectively, goes against central banks’ mandates, the effect has yet to be seen. One thing is certain; the implementation of quantitative easing programs has changed the monetary policy landscape that central banks had been acting within.

The policy is targeted, generally, at interest rate sensitive sectors such as housing and corporate finance and is aimed at decreasing interest rates to make investment more attractive. Central bank asset purchases provide the impetus for this change as their balance sheets are expanded while more liquidity is injected into the economy, providing the potential for an increase in the monetary base. In the case of the most recent crisis, especially in the United States, the primary targeted sector was housing; “the purchase of these assets...provided liquidity to a market that had dried up in the wake of the financial crisis and helped lower mortgage interest rates directly and provided credit lines to an

²² Fleming et al 2009, 5

important part of the economy.”²³ The transmission of lower interest rates to consumer sectors is also a crucial aspect of quantitative easing as this facilitates the effect that these policies have on the real economy.

Though the name quantitative easing implies a purely numerical or ‘magnitude-related’ measure of monetary policy, there is a more quality-based measure of easing commonly known as qualitative easing. Although not concerned directly with the quantity of assets held, qualitative easing affects the composition and maturity of assets held on a bank’s otherwise unchanged balance sheet. For banks such as the Federal Reserve, this manifested in the form of a switch between short-term and long-term securities which, in turn, was aimed at affecting long-term interest rates in the economy. However, “nonconventional monetary policies consisted mainly of qualitative easing until the failure of Lehman, while thereafter central bank balance sheets expanded strongly...implying a combination of both quantitative and qualitative easing.”²⁴ The synthesis of these two policy actions served to lower the interest rates in the economies considered, as well as worked to ensure that this transmission occurred at both the short and long end of the market.

Quantitative easing is an example of a set of policies, enacted in order to get the United States ‘back on track’ after the Global Financial Crisis. Essentially, conventional monetary policy actions were exhausted when the zero lower bound (ZLB) was reached for short-term interest rates. These policies, and the central bankers that implemented them, have been lauded for rescuing their economies from what could have been a

²³ Joyce et al 2012, F272

²⁴ Pattipeilohy et al 2013, 12

catastrophic collapse; however, whether or not these policies are beneficial or harmful in the long-run has yet to be seen. What is certain, though, is that the implementation of these policies and the methods which were utilized to undertake them were not in the ‘playbook’ of the Federal Reserve as specified by its mandates. Following is a description of the main policy actions and currently observable economic effects of quantitative easing.

The Federal Reserve enacted strong large-scale asset purchase programs (LSAPs), more commonly known as quantitative easing policies, increasing the balance sheet from \$0.9 trillion to \$4 trillion between 2007 and 2013.²⁵ The quantitative easing (QE) programs were enacted in three phases, aptly referred to as: QE1 (2009), QE2 (2010), and QE3 (2012-2014). In October 2014, the Federal Open Market Committee (FOMC) announced the end of quantitative easing but, at the time of this writing, the complete exit strategy has yet to be seen.

The first round of quantitative easing, QE1, occurred in 2009, when the Fed “announced a commitment to purchase \$300 billion of Treasury securities, \$200 billion of agency debt, and \$1.25 trillion of agency mortgage-backed securities.”²⁶ The Federal Reserve purchased assets from the GSEs (Fannie and Freddie) primarily to focus on the housing markets which were the hardest hit in the crisis.²⁷ As these were relatively short-term assets, they have since matured and are no longer on the Fed’s balance sheet. It can

²⁵ Labonte 2014

²⁶ Labonte 2014, 7

²⁷ Fawley 2013, 60

be argued that the effects of QE1 have been largely sterilized as it was enacted in the height of the recession and the emergency lending was exigently needed.

Likewise, the second round of quantitative easing, QE2, was targeted at increasing the Fed's balance sheet, this time through the purchase of exclusively Treasury securities. Also included in the announcement of QE2 was the intention of the Fed to continually replace maturing securities with requisite purchases of Treasury securities to maintain the size of the continually increasing balance sheet.²⁸

In 2011, the Federal Reserve embarked on the Maturity Extension Program, aptly nicknamed 'Operation Twist' (such a program had also been conducted in the early 1960s). The Federal Reserve sold \$400 billion in short-term securities (which are held on the balance sheet in normal times) and purchased \$400 billion in long-term securities which, essentially, had the effect of twisting the yield curve.²⁹ This is an example of qualitative easing as the size of the balance sheet did not change, but the composition was manipulated. The purpose of this program was to provide some stimulus to the economy but not as much as would have resulted from another QE program.³⁰

QE3, the most recent quantitative easing program, is that which engenders the most uncertainty and speculation as it has only recently been concluded but still no clear 'exit' is defined. Originally the Fed announced that it would purchase \$40 billion of agency MBS every month, then, after the end of the Maturity Extension Program, pledged to continue to purchase \$45 billion in Treasury securities per month thereby

²⁸ Ibid

²⁹ Fawley 2013, 74

³⁰ Labonte 2014, 8

expanding the balance sheet further.³¹ On October 29, 2014, the FOMC announced that the economy had reached a point of recovery where it was deemed appropriate to end the asset purchases associated with QE3.³² Although they continue to reinvest and keep interest rates historically low, the announcement served as an indication that an exit from these unconventional programs would be seen sooner, rather than later.

An interesting aspect to note about the QE programs enacted by the Fed is that they have, effectively, lowered the spread between short and long term interest rates, even on securities that were not directly purchased in the programs.³³ This shows that the transmission mechanism operated effectively in this case, as the goal was to both decrease interest rates in general and to see the spread decrease as well. Although inflation has not been seen as a result of these policies as of today, there is still muted fear, on behalf of the so-called ‘inflation hawks’, that this may occur either through monetary mechanisms or as a result of expectations. If this were to manifest, it could be concluded that these QE programs served to retroactively depart from the Federal Reserve’s mandate of price stability. Alternatively, some have advanced the thought that because 2% inflation has not been restored as a result of these policies, that they weren’t aggressive enough and this has, in effect, not done enough to fulfill the mandate of price stability.³⁴ It must be noted that the policies enacted by the Federal Reserve as a response to the crisis have been purely reactionary.

³¹ Labonte 2014, 9

³² <http://www.federalreserve.gov/newsevents/press/monetary/20141029a.htm>

³³ Baumeister and Benati 2010, 16

³⁴ Blinder 2012

The actions of the Federal Reserve also take on a quasi-fiscal character as evidenced by the large amount of Treasury securities that were purchased as part of the program. Some critics of these programs have advanced that this may be an action taken in order to implicitly finance or aid the fiscal deficit.³⁵ This would greatly undermine central bank independence as, under this scenario, the Federal Reserve would be working to enable government spending that otherwise might not have been possible. However, to this point, there is not much evidence to suggest that the policies enacted by the Federal Reserve completely go against the dual mandate of price stability and full employment, so this cannot be considered a full departure from central bank independence at this point in the research.

Although the Federal Reserve often stated price stability as the impetus for implementing quantitative easing programs, the timing of this implementation would suggest that these programs were enacted under dire and uncertain economic conditions. According to Blinder, “[in a crisis] the principle objective of the central bank changes. It’s no longer fighting inflation, which may be unnecessary or even counterproductive if a slump is imminent, but rather holding the financial system together.”³⁶ These programs were enacted to lower interest rates and provide funding to key sectors so that the economy of the United States could rise out of the crisis to the greatest extent possible. Though this may have been, indeed, necessary at the time, this motivation departs from their strict mandates that the tenets of central bank independence dictates that they follow. It can be asserted that the Federal Reserve and other agencies were not able to

³⁵ Kozicki et al 2011

³⁶ Blinder 2012, 4

identify emerging systemic risks in the economy which would eventually precipitate the onset of the crisis. An additional mandate of financial stability would seek to ameliorate this problem by proactively engaging financial institutions in policies and behaviors that would seek to avoid vast risk build-up.

It must also be noted that criticisms of quantitative easing, especially as the programs are winding down, are part of a relatively new field of study. Much of the research done on quantitative easing at this point is produced by the very banks that conduct these policies and, thus, the process is presented in a more positive light than it may otherwise be. We are, undoubtedly, still living in a global economy that has been jarred by the Global Financial Crisis and, thus, seem less concerned with central banks overstepping their bounds to such a degree as we have seen.

At this point in the aftermath of the Global Financial Crisis, generalization concerning the effectiveness and appropriateness of the Federal Reserve's unconventional monetary policy is difficult. This is, primarily, because of the time lag associated with both conventional and unconventional policies alike. Therefore, much of the criticism or praise of the Federal Reserve's policies between 2007 and today are backed merely by speculation and inference. As said by Jean-Claude Trichet, "it is difficult to know what to say about the recent past."³⁷ However, there are several takeaways from the crisis at this time that point to some necessary reforms to the structure and practice of central banking.

Much conflict and controversy has surrounded the use and usefulness of unconventional monetary policy in general. The risks associated with utilizing these

³⁷ Trichet 2013, 4

instruments are, by their very nature, unknown; however, with an interconnected economy on the brink of collapse, past experience cannot accurately inform present or future policy. Even considering the uncertainty surrounding these policies, “a full blown collapse of the financial system of the advanced economies would have borne an unacceptable cost for the entire global economy, for all societies and people of the world.”³⁸

To some, this section may appear as a tangential aside to the individual issues of central bank independence and financial stability; in actuality, the policies enacted and economic conditions experienced in the crisis may provide the conceptual ‘glue’ holding these two concepts together. It can be argued that, as a result of the crisis, the entire functional and theoretical landscape of optimal central bank independence was changed. This can be described, in part, through the mechanism of the muted importance of price stability and full employment during the crisis, as a direct result of ignored and almost wholly unnoticed financial stability issues in the economy. At the broadest level, the experience of the crisis teaches that a focus on price stability, full employment and microprudential institution-based regulation is simply not enough. An eye for financial stability must be integrated in the system lest systemic risk precipitates a crisis of this magnitude again. In a more granular sense, this is suggestive of the fact that the nature of central bank independence may be forever changed because of the crisis. The full detail of this imminent change is beyond the scope of this paper, but it must be noted that we may be on the cusp of a rethinking of the theoretical underpinnings of central bank independence.

³⁸ Trichet 2013, 24

A detailed account of the unconventional monetary policies enacted by the Federal Reserve is also illustrative of the need for financial stability as most were undertaken to stabilize the system and prevent it from collapsing. This revealed a gap in policymaking that a focus on price stability and employment, alone, will never fill. Taking the experience of the recent past into consideration, it is obvious that financial stability must be more carefully considered in the day-to-day operation of the Federal Reserve and other institutions like it. The question of whether or not the Federal Reserve should adopt an explicit financial stability mandate is more nuanced and will be discussed in a later section.

CHAPTER FOUR: THE ROAD AHEAD - ADDRESSING THE IMPORTANCE OF SYSTEMIC RISK AND MACROPRUDENTIAL REGULATION

One of the lessons learned from the experience of the recent crisis is the crucial role of central banks in maintaining financial stability. This departs from the Federal Reserve's dual mandate of full employment and price stability, however, is appearing to be an even more exigent cause, especially in the face of widespread financial crisis.

At its inception, one of the four functions of the Federal Reserve was the monitoring and maintenance of financial stability in the economy. By many measures, it appears as if this was long-forgotten when the Global Financial Crisis hit. With a system of complicated financial innovations and products that eluded even the brightest of economic minds and a financial system that was too big (or, to draw on Roubini, too interconnected) to fail, financial stability was virtually ignored while profits and risk bloomed. When financial innovation, enabled by technology, outpaces the ability of regulators to comprehend, much less control, a focus on overall financial stability is exigent. However, given the current economic perceptions and the dual mandate of the Federal Reserve, the sacrifices required to more wholly focus on financial stability may be great. According to Reis, "financial stability must pose a trade-off with the other two goals, so there must be situations where prices and activity are stable but financial instability justifies a change in policy that potentially leads to recession or causes

inflation to exceed its target.”³⁹ We live in a world where inflation is feared. Instead of viewing it as a monetary phenomenon that may happen for many different reasons, most of America considers inflation to have a potentially damaging effect on the U.S. economy. Much of the opposition to the unconventional monetary policies was advanced with this rationale: that quantitative easing and the rapidly expanding balance sheet of the Federal Reserve could trigger a large and damaging inflation. In reality, though, it appears as if we are at more risk of deflation, not inflation. As of January 2015, the inflation rate in the United States was -0.1%, far from the Federal Reserve’s 2% target.⁴⁰ This statistic has an important effect on how central bank independence is considered today. The evidence gathered proves that independent central banks do a better job at maintaining a low and stable inflation level, but what happens when this inflation becomes negative? This may seem like a small point to target in the literature, but, since the nature of the ‘dependent variable’ of central bank independence may be fundamentally changed in a crisis and recovery scenario, this opens up the possibility to a rethinking of the concept of functional independence itself.

The policies aiming to maintain the stability of the financial system are labeled macroprudential policies. Systemic risk and macroprudential regulation both fall under the umbrella of financial stability, though both exert opposite effects on the economy. Systemic risk threatens financial stability, whereas macroprudential regulation seeks to bolster this stability while also being prepared to restore it when shocks do occur. The purpose of macroprudential regulation is to essentially focus on those activities and firms

³⁹ Reis 2013, 10

⁴⁰ <http://www.bls.gov/cpi/cpid1501.pdf>

within the real economy and financial sector that have the potential to affect the system as a whole and threaten financial stability. Macroprudential policy can be applied in a more granular way than traditional macroeconomic policy, targeting certain institutions, exposures and sectors.⁴¹ This makes it more effective at targeting specific risk areas but also potentially subjects these policies to far more scrutiny. Though the idea of macroprudential policies have been around for decades⁴², only recently have these policy possibilities reemerged as a serious option for expanding bank regulation.

Up until now, the majority of the focus on financial institution (primarily bank) supervision was on microprudential regulation; assessing the risk factors and overall health of individual institutions. Regulators such as the Federal Reserve and the Federal Deposit Insurance Corporation measure the financial health of institutions by analyzing their balance sheets with respect to certain preset financial thresholds and the possibility of economic and financial shocks. Macroprudential and microprudential aim to protect the very actors that the prefix of the terms would suggest; macro seeks to protect the financial system and overall economic output, where micro focuses on individual institutions and protecting against consumer loss.⁴³

It must be noted that macro and micro prudential regulation do not exist independently from one another, but act in a synergistic way, aiming to ensure the health of the financial system. For instance, the main pillar of microprudential regulation, the

⁴¹ Haldane 2014, 68

⁴² The first mention of macroprudential policies was in the minutes of a Cook Committee meeting in 1979 and by the IMF, in the context of bank supervision, in 1998 (IMF 2011, 5)

⁴³ Borio 2003, 184

safety and soundness of individual institutions, is also crucially important for macroprudential regulation. If the health of individual institutions is kept intact, this will, no doubt, have an impact on the financial stability of the system from a macroprudential perspective. Microprudential and macroprudential regulation come into conflict in the inevitable situation when what might be optimal for an individual institution may be damaging to the system as a whole. What may be profit-maximizing for an individual bank, may contribute to the destabilization of the financial system; these possible adverse effects need to be taken into account while constructing the macroprudential framework.

Besides the institution versus systemic focus difference, macroprudential and microprudential regulation also differ in their respective assessment of the endogeneity of risk. Whereas traditional supervision and regulation have considered risk to be exogenous, occurring as shocks to the system; macroprudential considers risks as endogenous, created by the very institutions acting within the system. Macroprudential regulation considers risk on both the time and cross-sectional dimensions, employing specific ‘tools’ to combat each. The time dimension considers the cyclicity of bank behavior whereas cross-sectional looks at the effect of individual bank risk-taking. The time dimension seeks to tackle the issue of the procyclicality of bank risk-taking⁴⁴; where banks increase lending and draw down on their stored capital during good financial times, leaving them unprepared to ‘weather the storm’ when downturns in the business cycle occur. The general thrust of the macroprudential policies and tools aimed at the time dimension is to be a “countervailing force to the natural decline in measured risks in a

⁴⁴ IMF 2011, 8

boom and the subsequent rise in measured risks in the subsequent bust.”⁴⁵; in other words, to lean against the wind. These tools aim to build-up the resiliency of financial institutions to shocks, both large and small, that can reverberate across the financial system. Higher countercyclical capital and liquidity ratios, as proposed in Basel III, are examples of tools targeting the time dimension and will be discussed further in this paper.

According to Galati and Moessner, “the cross-sectional dimension focuses on the distribution of risk in the financial system at a point in time, and, in particular, the common exposures that arise owing to balance sheet interlinkages, similar exposures and associated behavioral responses.”⁴⁶ More simply, this dimension captures the specific regulation needed for the case of systemically important, or ‘too big to fail’, financial institutions. These specific institutions can be identified by their extensive size, complexity and interconnectedness with the financial system.⁴⁷ In addition, when many of these large financial institutions were converted to bank holding companies after the crisis (e.g. Morgan Stanley and Goldman Sachs), this brought them even more assured government insurance intervention in the event of failure. The bailouts for these large firms were quite contentious, leading many to believe that the system was favoring Wall Street over Main Street. The risk that the imprudent behavior of individual large institutions will reverberate to the system as a whole is captured by this dimension. This dimension also captures the growing linkages between financial institutions, both domestically and internationally, that may exacerbate the spreading of a certain risk

⁴⁵ Galati and Moessner 2012, 848

⁴⁶ Galati and Moessner 2012, 852

⁴⁷ Saunders et al. 2009, 139

factor or shock to certain sectors of the economy. The cross-sectional dimension is often compared to a ‘negative externality’ such as that produced by emitting carbon emissions in the context of environmental pollution.⁴⁸ A key component of macroprudential risk management, in the cross-sectional dimension, is to detect key characteristics of an institution that may make them either more vulnerable, or crucial, for systemic risk. For example, “the role of ‘banks’ as suppliers of liquidity services of next to last resort implies that financial distress at these institutions may have larger macro economic costs”⁴⁹. Tools intended to combat the endogeneity of risk on the cross-sectional dimension aim at detecting and measuring each large or systemically important institution’s individual contribution to systemic risk. This is an example where microprudential and macroprudential regulation coincide: a focus on individual institutions. It can be argued that, in this sense, macroprudential takes the already established regulatory regime one step further, from ensuring the health of individual institutions to working to ensure the health of the system as a whole; protecting it from the adverse systemic effects of some these institutions’ activities.

It has been clearly identified that macroprudential regulation seeks to improve financial stability while targeting systemic risks with the financial system that have the potential to reverberate to the real economy (as was seen in the recent crisis). The task of macroprudential policy is threefold: focusing on reducing the expected cost of weaknesses in the economy, reducing the impact of the failure of individual institutions,

⁴⁸ Acharya 2012, 135

⁴⁹ Borio 2003, 196

as well as reducing the probability that these institutions will fail⁵⁰. Bank and institution failures do happen and can indicate an increasingly efficient system when technically inefficient institutions are closed; however, it is essential to ensure that the majority of institutions, especially those that are large and systemically important, do not threaten financial stability. In the recent crisis, many of the institutions that would later ‘go under’ such as AIG and Lehman Brothers were not deposit-taking banks in the traditional sense. These investment banks and other institutions have, in the past, been subject to lighter regulation than other banks, with regulators operating under the assumption that the principles of market discipline may serve to adequately limit them. Prior to the crisis, there was less focus on regulation from the microprudential perspective, as the thought was that their dealings were primarily with sophisticated investors who would be able to glean more information, compared with the general depositor, about the institutions with whom they were placing their money. These types of large institutions became what is now commonly known as ‘too big to fail’ and generally are “complex and interconnected financial institutions that may not rely on deposits for a large share of their funding, and whose failure may spread and magnify losses throughout the financial system.”⁵¹ Even though these institutions do not perform functions similar to those of traditional banks, many of them provide services that these other financial institutions rely on. As was seen in the recent crisis, the shadow banking system also contributed significantly to the build-up of systemic risk, “amplifying both the procyclicality and cross sectional dimension of

⁵⁰ Nier 2012, 188

⁵¹ Murphy 2013, 3

system risk.”⁵² As these institutions have not traditionally been in the purview of supervision and regulation, it is important that macroprudential policies span this gap as the so-called “shadow banks” increase in importance and scope in the financial system. According to Nier, macroprudential regulation should consider two distinct, though potentially overlapping, sets of institutions: those that are individually systemic and collectively systemic.⁵³ The concept of individually systemic institutions is, likely, most widely known as a result of the crisis. These are the institutions that are ‘too big to fail’, whose failure has the potential to disrupt the entire system. It must be noted that, these institutions are often not banks in the traditional sense but, “may instead provide credit, insurance, and critical payment, clearing, and settlement services to other parts of the financial system.”⁵⁴ Collectively, systemic institutions may be individually small but, when taken together, have the potential to affect the aggregate weakness of the economy. For example, commercial banks, taken together, are considered collectively systemic as weakness or a specific shock in this sector has the potential to reverberate to the entire system. Under these definitions, it can be argued that virtually no financial institution or collective set of institutions, in the financial system can escape the classification, in some way or another, of being considered systemically important. Due to the scope of this definition, compounded with the experience of the recent crisis, the importance of macroprudential regulation is further highlighted.

⁵² IMF 2011, 32

⁵³ Nier 2012, 191

⁵⁴ Ibid

Macroprudential Policy Tools

Prior to further discussion on the formulation of macroprudential policy, the role of the Federal Reserve and possible implications of its adoption, it is crucial to understand the tools that are currently available for use in this policy domain.

There are many macroprudential policy tools that could be put in place to combat systemic risk. These tools can either be designed specifically for macroprudential policy or those that are already in place can be utilized with a macroprudential goal. According to the IMF, for a certain policy instrument to be effective for macroprudential regulation, it should meet the following four criteria: effective in limiting systemic risk and creating buffers to be called upon in periods of stress; limited opportunities for arbitrage; aimed at the roots of systemic risk; least distortionary as possible to the financial system and real economy.⁵⁵ Given the fact that the rise in prominence of macroprudential policy has occurred quite recently, assessments of these instruments by the aforementioned criteria are tenuous at best. Table 1 serves as a reference guide for the many macroprudential policy instruments to be considered. These instruments are divided on the time and cross-sectional dimension and looks at instruments both created exclusively to fight systemic risk and those that can be recalibrated from other regulation or policies to contribute to that aim.

Table 1 – Macroprudential Instruments

Category	Time- Dimension	Risk-Dimension
I: Instruments developed specifically to	• Countercyclical	• Systemic capital

⁵⁵ IMF 2011, 28

manage systemic risk	capital buffers	surcharges
	<ul style="list-style-type: none"> <li data-bbox="667 321 1029 422">• Through-the-cycle valuation of margins or haircuts for repos <li data-bbox="667 464 1029 527">• Levy on non-core deposits <li data-bbox="667 569 1029 705">• Countercyclical change in risk weights for exposure to certain sectors <li data-bbox="667 747 1029 852">• Time-varying systemic liquidity surcharges 	<ul style="list-style-type: none"> <li data-bbox="1073 321 1419 384">• Systemic liquidity charges <li data-bbox="1073 426 1419 489">• Levy on non-core liabilities <li data-bbox="1073 531 1419 667">• Higher capital charges for trades not cleared through CCPs

Table 1 – Macroprudential Instruments - *Continued*

Category	Time- Dimension	Risk-Dimension
II: Recalibrated Instruments	<ul style="list-style-type: none"> • Time-varying LTV, Debt-to-Income (DTI) and Loan-To-Income (LTI) caps • Time-varying limits in currency mismatch or exposure (e.g. real estate) • Time-varying limits on loan-to-deposit ratio • Time-varying caps and limits on credit or credit growth • Dynamic provisioning • Stressed VaR to build additional capital buffer against market risk during a boom • Rescaling risk-weights by incorporating recessionary conditions in the probability of default assumptions (PDs) 	<ul style="list-style-type: none"> • Powers to break up financial firms on systemic risk concerns • Capital charge on derivative payables • Deposit insurance risk premiums sensitive to systemic risk • Restrictions on permissible activities (e.g. ban on proprietary trading for systemically important banks)

Source: IMF (2011)

Time Dimension

The crux of the tools responsible for addressing the time dimension of macroprudential policy is the move towards countercyclical risk-taking on behalf of financial institutions. In the years leading up to the crisis, lending standards were relaxed and more risky assets were taken on the balance sheet during good financial times, causing an excessive buildup in risk when the tides turned. It is well documented that lending standards decline during market upturns when both borrowers and banks are overly confident and over-optimistic.⁵⁶ Countercyclical macroprudential tools are put in place not only to constrain excessive lending and risk-taking during good times, but also to have a sizable buffer for banks to operate on when these risky investments fail to pay-off or an overall shock to the financial system occurs. Care must also be taken, on behalf of the banks and regulators, to ensure that these countercyclical policies do not cause a contraction in the overall lending in the economy. Quantity based requirements, such as capital and liquidity, should not be set at such a level that banks are forced to restrict lending to meet these regulatory demands. A delicate balance must be struck between guarding the financial system from unpredictable events and shocks (such as the Global Financial Crisis), and also enabling credit creation to continue at a level consistent with economic growth.

Countercyclical Capital Requirements

One type of instrument used in this case is a countercyclical capital buffer, requiring banks to hold substantially more capital than is usually the case in good financial times. Not only does this buffer serve to protect the solvency of these

⁵⁶ Saurina 2012, 158

institutions during bad times, it also allows them to keep lending and reduce credit contractions during downturns. In the recent crisis, many banks were forced to cut back on lending in order to satisfy minimum capital requirements.

Although Basel III is moving towards capital allocation based on the probability of default (PD), loss given default (LGD), and the exposure at default (EAD)⁵⁷, there is increasing concern that this may not be adequate to protect against a systemically damaging event in the financial system. The rules outlined in Basel III will likely contribute to the resiliency of the financial system, but still only target the balance sheets and activities of individual banks. Countercyclical capital requirements, and all other macroprudential tools, require a system-wide scope, addressing the risk of concurrent shortfalls arising from “the interconnectedness of various institutions across a host of financial markets.”⁵⁸

Dynamic Provisioning

Dynamic provisioning, a form of loan loss provisioning, requires banks to set aside a certain amount of capital to cover expected losses from loans on their balance sheet. The capital requirements discussed above can be understood as a type of ‘counterpart’ to loan loss provisions, held in order to cover unexpected balance sheet losses. These provisions are, generally, determined by indicators considering the amount of loans made (on the expectation that a portion of these will go on to default) as well as two others that “take into account the effect of the business cycle on inherent losses and

⁵⁷ Saurina 2012, 174

⁵⁸ IMF 2011b, 75

therefore form the basis of the macroprudential dimension of the provision.”⁵⁹ As can be seen in Table 1, dynamic provisioning is considered a tool that could be recalibrated in order to enhance financial stability and is already being utilized in bank regulation.

Loan-to-Value and Debt-to-Income Requirements

Another tool contributing to the time dimension of macroprudential policy of banks’ balance sheets is a cap on the maximum loan to value ratio. This, essentially, establishes a floor at which a down payment on a loan is to be set; in other words, the loan cannot be more than a given percentage of the value of the collateral behind it. These constraints are intended to limit “the procyclicality of collateralized lending because housing prices and the capacity of households to borrow based on the collateralized value of the house interact in a procyclical manner.”⁶⁰ It has been established that lending standards decrease, and rapid credit growth results, during a cycle upswing. Mandating that a loan cannot be above a certain value when compared to the collateral which backs it, helps to constrain credit growth and reduces the potential losses of these loans. Given the experience of the recent crisis, lower maximum LTV ratios appear to be an attractive option as subprime mortgages and failing residential loans contributed significantly to the downturn. However, there is some doubt about how these higher ratios could contribute to preventing potential homebuyers from being able to afford the large down payment that may be required for a mortgage.

⁵⁹ Saurina 2012, 163

⁶⁰ Andriushin and Kuznetsova 2013, 82

Debt-to-Income ratios follow in the same vein, setting a cap on the maximum amount of debt a borrower can hold in relation to their monthly income.⁶¹ This, combined with the LTV cap, provides banks an extra layer of assurance on the probable security of their assets. Though currently utilized in bank regulation, these tools can be recalibrated to be more countercyclical in nature; possibly becoming more or less strict depending on where the economy is at in the business cycle.

Cross-Sectional Dimension

The key function of macroprudential policy in the cross-sectional dimension is regulating each systemically important institution in proportion to their individual contribution to systemic risk. There have been multiple methods proposed with which to identify which institutions would fall into this category and, contingent upon systemically important classification, how much incremental risk their failure would pose to the financial system.⁶² Although many tools have been proposed to deal with systemically important financial institutions (SIFIs), only a few will be explicated here.

One key to measuring, and thus regulating, the cross-sectional dimension of risk is to calculate each individual firm's contribution to systemic risk. It is relatively simple to determine which firms are likely systemically important, or too big to fail, by looking at their size, interconnectedness and prevalence across the financial system; even looking at the daily financial press could give one a sense of which firms hold these spots. However, for successful macroprudential policy, this definition must become more robust to figure out to what extent the effect of the failure of these individual firms would have

⁶¹ Ibid

⁶² Acharya 2012,138

on the financial system. Following this, cross-sectional macroprudential policy should apply to each firm in such a way to reflect the impact of their individual contribution to systemic risk. Acharya et al. propose a measure of systemic risk based on “how much of the economy’s capital is being put at risk by each firm and charge each accordingly so as to create incentives to allocate risk efficiently.”⁶³ This method would proceed as a stress test, looking at historical and current loss data for these systemic firms to detect how they might respond to various macroeconomic and financial downturns. Essentially, this method looks at the full amount of capital in the economy, what portion of this capital ‘pie’ each firm has control of, and how risky this position might be.⁶⁴ The result of these expected shortfall stress tests have a direct influence on the extent to which each systemically important firm is subjected to macroprudential regulation. A risk to this type of regulation is the extent to which firms can use regulatory arbitrage to ‘game’ the system. Given that these higher capital requirements and more stringent regulations may prove burdensome for the firms at whom they are targeted, there may be an adverse incentive to underreport asset risks for more lenient regulation in this respect. This is cause for concern, especially in cases where the riskiness of various assets is determined internally and not by an outside regulator. In the sense of financial stability, there is no benefit to these banks underreporting the risk that they may be exposed, or exposing the financial system to, as this would render the regulation ineffectual. However, since the imposition of regulation inevitably comes at a financial cost for firms, the regulatory structure should be such that opportunities for arbitrage are reduced.

⁶³ Acharya et al 2009, 289

⁶⁴ Ibid

With the potential limitations of firm, or sector, specific regulation in mind, below is a sampling of the tools at the disposal of regulators to manage and, ideally, mitigate the cross-sectional dimension of systemic risk.

Systemic Risk Tax

Following directly from the discussion of expected shortfall above, is the macroprudential policy option of a tax on the incremental portion of systemic risk produced by each firm. The basic foundation of this tool is the elementary economic concept that incentives work; “the idea of collecting a tax is the incentive effect of the tax, which is that if a bank creates a lot of risk, the bank will have to pay a higher tax.”⁶⁵ Instead of just making rational decisions in pursuit of maximum profit, systemically important institutions will be forced to, essentially, perform a cost-benefit analysis of these risk creating activities with respect to the tax that will be incurred. Given the size of many of these institutions, it will likely be the case that the tax will not completely deter them from engaging in risky activities; therefore, its effectiveness may be dampened. Another benefit of this tax, if allocated properly, is that it would provide a type of systemic risk insurance fund that could be used in the event of future financial strife.⁶⁶ This has the benefit of creating a financial buffer of money that comes directly from the coffers of the very institutions it is put in place to protect, not from the pockets of taxpayers.

⁶⁵ Acharya 2012, 136

⁶⁶ Acharya et al 2009, 293

Systemic Capital and Liquidity Surcharges

Following the tax on systemic risk discussed above, the systemic capital and liquidity surcharges would also be calibrated in accordance with each bank's contribution to systemic risk. Outlined in Basel III, the liquidity coverage ratio is put into place to ensure that banks have a large enough stock of high-quality short term assets to maintain functioning over a 30- day period of stress.⁶⁷ The capital surcharge is much similar to the countercyclical capital requirement described above but calibrated at, likely, a higher level for firms listed as systemically important. Not only do these large banks have more to lose in an event of fire sales, contagion or some other financial shock, but their losses and the subsequent reverberations around the system have a greater capacity to be large and damaging to the financial system. Having a larger buffer of capital and liquidity will, ideally, enable these banks to recover losses without having to rely on the market by selling them at fire sale prices. These actions can undermine the confidence of the entire financial system depending on their degree and can cause the funding markets to freeze, as was seen in the recent crisis. Forcing banks, likely much to their chagrin, to hold more capital will increase the internal cost of risky business while providing a cushion for recovery if these losses do occur. In addition, the requirement to hold more capital against assets could actually have the effect of offsetting some of the competitive advantage that these firms have, possibly making them less 'systemically important'. The potential decrease of systemic importance cannot be relied upon, as many of these firms are also closely interconnected with the financial system, allowing them to hold their systemic influence even as their size is reduced. The complexities of these firms is such

⁶⁷ BIS 2013

that targeting an individual aspect of the bank's balance sheet or business will not ameliorate any systemic risk they might cause. This reinforces the importance of the technical ability on behalf of regulators to generate effective policies with which to target the various avenues of risk arising from the cross-sectional dimension.

Central Counterparties

Another macroprudential policy tool targeting systemically important firms is the imposition of a central clearinghouse to deal between two counterparties in a financial deal. The presence of a central counterparty “through its opportunity to net across different asset classes and across dealers, can lead to a substantial reduction in risk and a substantial improvement in allocational efficiency.”⁶⁸ This mainly addresses the interconnectedness of banks through the derivatives market and can facilitate a consolidation of these activities to a small number of entities. Central counterparties can bolster the financial infrastructure and increase the resilience of the financial system to weaknesses in individual firms. In addition, “the failure of a systemically important utility...could have consequences as severe for financial stability as the failure of one or more systemically important financial institutions.”⁶⁹ Therefore, the use of central counterparties for financial utility services is potentially beneficial both for the stability of the individual firms and also of the widespread financial infrastructure. The presence of a central clearinghouse also brings the issue of moral hazard to the fore as while, in the event of failure, some still remains, “it [moral hazard] would be much more muted than in the case of individual financial institutions, both because the clearing corporation is

⁶⁸ Acharya et al 2011, 399

⁶⁹ Duff 2014, 197

more transparent...⁷⁰ These developments would be advantageous to the financial system as much of the activity that could cause excess risk at individual firms is consolidated into one, thus also increasing transparency. Therefore, a higher capital charge for transactions undertaken outside of the central counterparty system is another attempt at dis-incentivizing potentially excessive risk-taking in pursuit of macroprudential regulation.

Orderly Resolution of Systemically Important Financial Institutions

Another important aspect of macroprudential regulation, though not necessarily considered a ‘tool’, is the ability to allow large and systemically important institutions to fail without damaging the broader economy. During the recent crisis, there was a gap in understanding regarding the distinction between institutions that should have been allowed to fail and those whose failure would have disrupted the financial system; going forward, this can no longer be a question. Although failure of any one of these institutions will inevitably have an adverse effect, it is important, in a well-functioning financial system that those who make bad business decisions are allowed to fail, with owners and shareholders experiencing the brunt of the loss as opposed to taxpayers.⁷¹ Dodd-Frank Title II establishes the Orderly Liquidation Authority which outlines procedures for the liquidation of large bank holding companies and non-bank financial institutions.⁷² This can only be used when officials from the Treasury, the Federal Reserve and the FDIC agree that the standard bankruptcy procedure could cause

⁷⁰ Acharya et al 2009, 402

⁷¹ Baily and Elliott 2014, 182

⁷² Pellerin and Walter 2012

instability in the system as a whole.⁷³ A delicate balance must be struck between preventing the failure of systemically important financial institutions and running the moral hazard risk of having them believe that they are truly ‘too big to fail’.⁷⁴ There are still questions about the extent to which this provision can be used to completely prevent bailouts and the use of taxpayer money to rescue struggling institutions.

It is also important to realize that certain regulations or resolutions, though economically ideal, may be politically untenable. For example, after the banking crisis in Sweden, the government effectively nationalized failing banks, creating a so-called ‘bad bank’ with the remaining assets.⁷⁵ Although top management and shareholders’ equity was wiped out in the process, government funds were utilized in the process. Given the political backlash that occurred during the crisis-era bailouts, the creation of a bad bank with government money, though beneficial in the future, would likely fail in a society as averse to nationalization as the United States. The range of possible outcomes is bounded by those that would be allowable by the citizens of the country, for better or worse. Although this puts constraints on the extent to which regulators can act, the politicization of regulations is generally considered less of a breach of independence than a mere ‘fact of life’ that must be dealt with.

As can be seen, the macroprudential policy tools aimed at the cross sectional dimension of systemic risk have significant potential to decrease excessive risk-taking in the financial system. However, given the immense financial power of many of these

⁷³ Baily and Elliott 2014, 183

⁷⁴ Duffie 2014, 251

⁷⁵ <http://www.nytimes.com/2009/01/23/business/worldbusiness/23sweden.html?pagewanted=all>

financial firms, a balance must be struck between strong regulation and targeted incentives. Successful macroprudential policies aimed at systemically important firms will require a complex set of discretion and rule based regulation accounting for the size, interconnectedness and unique characteristics of each of them. When considering macroprudential regulation, one must keep in mind that, given that there exists no universally agreed-upon definition of systemic risk (and therefore no explicit mandate for macroprudential regulation), flexibility in this area of regulation is key. Those in charge need to be able to fluidly adapt to different risk factors, specific institutional situations and economy-wide developments and, “given the exceptional characteristic of each financial crisis, it is not advisable to solely base reform on past experience.”⁷⁶ It is essential to put the responsibility of macroprudential regulation in the hands of an institution, or group of institutions, that employ a long-term, forward-looking and adaptive perspective to regulation and the reduction of risk. Focusing only on the regulatory gaps that were important in the last crisis will not prepare us to stave off, or weather, the next. Proper governance, experience and expertise are needed to employ these macroprudential tools, making them effective at enhancing the stability of the financial system.

⁷⁶ Schuberth 2013, 123

CHAPTER FIVE: GOVERNANCE OF MACROPRUDENTIAL POLICIES AND THE ROLE OF THE FEDERAL RESERVE

The complexity, and relative conceptual infancy, of macroprudential regulation demands an equally careful and complex governance system to ensure its proper functioning. It may be most appropriate to use a quite casual, if not trite, question: who is best suited to take away the punch bowl? The punch bowl in this case is composed of the multitude of risky positions and actions taken by financial institutions in order to gain vast profit, potentially at the expense of financial stability. It is likely that the very institutions that macroprudential is designed to regulate will dissent and agreement will be scant. Macroprudential policymaking suffers as a result of two main aspects: the constant evolution of the financial system and a tendency towards inaction on behalf of policy makers. These two aspects will be considered in a discussion of the optimal governance structure for macroprudential regulation, what organizations should be involved and what actions they should take.

The potential for inaction on behalf of policymakers and regulators is one main risk facing the implementation, and effectiveness, of macroprudential regulation. Macroprudential policies looking to protect against systemic risk are crucial to the maintenance of financial stability, but, as of now, there are very few indicators and barometers with which the success of these policies can be measured. This, combined with the fact that these policies take a direct aim at specific organizations or actions

causing systemic risk, creates an environment where “given uncertainty regarding low-probability events entailing high costs, it is difficult to press the button particularly in good times.”⁷⁷ Macroprudential policies are generally undertaken during normal times when it may not be immediately apparent that they are needed. Given that their effects can be relatively immediate and transparent (e.g. reduction in lending because of increased capital requirements or individuals being denied mortgages because of more stringent loan-to-value requirements) it is likely that there will be significant pushback from many different players.

There is a significant time lag between when a policy is enacted to proactively combat financial instability and when the effect of this policy becomes evident; in fact, if the policy has its intended effect, the impetus for the policy may never be publicly observed. If the goal of macroprudential policy and the financial stability mandate is to prevent financial crises, their absence indicates success; though this absence may not provide sufficient rationale to the financial institutions being regulated. This is a conundrum to be dealt with as “while there is a constituency against inflation, there is hardly any against the inebriating feeling of getting richer.”⁷⁸ Macroprudential policies, then, need to be governed by a legitimate and accountable institution, or set of institutions, which will not fall prey to this tendency towards inaction either to please financial institutions, politicians or other organizations.

Another aspect to consider regarding the governance of macroprudential regulation is the amount of expertise required to effectively design and implement these

⁷⁷ Caruana 2012, 23

⁷⁸ Borio 2014, 80

policies. The financial system is constantly evolving and innovating, different institutions come to the fore while others fade into the background; the macroprudential regulator must always be aware of these changes. A decision must be made about whether macroprudential policy will be based on either rules or discretion. To maintain accountability, it is necessary for some rules governing the use of macroprudential policy to be put into place, but discretion is also highly important. A static set of rules will be quickly outpaced by the dynamism of the financial system. With this in mind, the macroprudential regulator should either be endowed with or possess the following three powers: information collection, designation and rulemaking/calibration.⁷⁹

The power of information collection is aimed at having access to the constantly evolving data on the financial system. Oftentimes this will not be concentrated in a single location or database and may only be available through interaction with individual firms which are not subjected to traditional supervision and regulation.⁸⁰ This requires a degree of trust and authority vested in the macroprudential regulator which can be enhanced by the governance structure under which it operates. Currently in the United States, this role is taken on by the Office of Financial Research which collects and provides data to support the Financial Stability Oversight Council (FSOC) and its constituent members in the pursuit for financial stability. Although, in theory, the Office of Financial Research provides a crucial service, much of the financial and institution-specific data could likely be more effectively gathered by the organizations in charge of routinely monitoring and supervising these institutions. Along with much of the structure of the FSOC, the work of

⁷⁹ Nier 2012, 194

⁸⁰ IMF 2011, 39

the Office of Financial Research may have to be recalibrated to achieve the optimal financial stability result, but this will be addressed in a later section.

A second required power of macroprudential authorities, designation, looks at the ability for the macroprudential regulator to designate given institutions as systemically important. This is an important aspect of the financial stability mandate as careful monitoring must ensue to make certain that all potentially systemically important institutions are considered. Labeling an institution as systemic will, under the macroprudential framework, subject them to more stringent capital, liquidity and other requirements when compared to their non-systemic peers. This, too, will likely instigate pushback as this status is not financially optimal for many institutions. The governance of the macroprudential authority must be such that the possible influences arising from these institutions will not affect their decision-making and the appropriate designation is made. One possibility of ineffective or imprudent designation is that “increasing the level of systemic risk imposed by a bank renders regulators more forbearing with that institution and more stringent with the other (non-systemic) institutions.”⁸¹ The power to designate institutions as systemically important also must transcend legal boundaries to include non-bank financial institutions.

Finally, the macroprudential governance structure must include a rulemaking and calibration power in its operations. This was alluded to above as, given the constantly evolving nature of the financial system, no one set of rules will be appropriate at all points in time and in all situations. If, for instance, a set of rules is calibrated given a certain level of risk at a unique point in time, it is likely that “they will be overly

⁸¹ Espinosa-Vega et al 2012, 210

burdensome some of the time and insufficiently tight at other times.”⁸² The systemic regulator must have the power to recalibrate these rules and tools when it deems necessary based on legitimate developments in financial markets and data. The calibration of the policy tools should consider the cross-sectional and time dimension of systemic risk separately as these may uniquely exert influence on systemic risk at certain points in time under certain conditions. This, along with the other required powers, commands an institution with a high level of technical expertise, coupled with relatively unfettered accountability as these policies and decisions will have a direct impact, and potentially immediate, effect on the financial system.

The governance structure of macroprudential regulations needs to have two key prerequisites for optimal functioning: a designated authority responsible for macroprudential policies with a clear mandate as well as a method for coordination across different economic policies.⁸³ The decision between having a single regulator in charge of macroprudential policy or a committee of various organizations will differ in each country considered, but these two prerequisites still apply. Given the fact that the benefits and results of macroprudential policies are not easily seen or interpreted, a clear mandate will be crucial to combat the tendency towards inaction seen in these types of policies.

A challenge for macroprudential policymaking is the natural asymmetry between different policy tools and their effects. For instance, some tools of macroprudential policies will effectively constrain credit while monetary policy may seek to spur credit

⁸² Nier 2012, 195

⁸³ IMF 2011, 34

and money supply growth in the economy during upswings, to prepare for and hedge against a downturn. As each arm of economic policy uniquely interact, it is necessary for the macroprudential authority to contain some mechanism for interaction to make sure that these policies are aligned to the greatest extent possible. This could be achieved through the establishment of committees consisting of the organizations in charge of each policy function (monetary, macroprudential, fiscal, crisis management, etc.) with the responsibility to coordinate policies to achieve different aims at various times in the business and financial cycle. Following this, an important consideration in macroprudential policy is how much the Treasury Department should be involved in such an organization, stemming from the degree of independence from the government that is necessary for each policy function. A clear benefit of involving the Treasury on the macroprudential committee is the legitimacy it brings to these functions as well as in the case where “primary legislation is required to increase the effectiveness of financial policies.”⁸⁴ This committee structure may be beneficial for a holistic approach to putting macroprudential regulation in the appropriate scope of economic policy actions, but issues of government involvement and independence may arise.

A clear mandate is crucial to both map out a path for macroprudential regulation to follow as well as to establish legitimacy and accountability of this new policy agenda. This mandate should simultaneously open up and constrain the use of policy tools in order to pursue a primary objective of preventing financial crisis with a secondary objective of ensuring financial stability, contingent on not interfering with other policy objectives. The immediate effects of macroprudential policies may be misunderstood and

⁸⁴ Nier 2012, 201

it is highly likely that they will be contested, therefore a legitimate and accountable institutional figurehead, endowed with the aforementioned responsibilities will be the key to the success of macroprudential policy. The pursuit of financial stability with the implementation of macroprudential policy is an important development in today's policy landscape, and "in the absence of an easily quantifiable measure by which to judge the performance of the macroprudential authority, the devolution of substantial powers...require a strong political consensus and a high degree of trust in the ability and integrity of the macroprudential policymaker."⁸⁵ For this and other reasons, it appears to be most appropriate that an accountable, legitimate and historically trusted institution should take on this responsibility; in this case, the Federal Reserve. Although an institution or committee specifically created with financial stability as its goal (for example, the FSOC) is beneficial and furthers the aim of financial stability, the lack of established performance, accountability or trust may be a disadvantage. In a theoretical and historical sense, the central bank appears to be the institution best suited to adopt an explicit financial stability mandate given its pre-established independence and expertise in the mandate of price and macroeconomic stability.⁸⁶ The Federal Reserve's sphere of influence reaches both within the pre-established policy and financial domain, putting it as a prime contender to take on the ever-increasing role of macroprudential regulator.

It can be argued that, even before the importance of financial stability came into the fore, the Federal Reserve was already working toward this aim. As one of the main regulators overseeing the supervision and regulation of banking institutions and the

⁸⁵ Nier 2012, 203

⁸⁶ French et al 2010, 34

lender of last resort to those same institutions, the central bank has been heavily involved in stability. These financial stability aspects have been embedded into the activities of the Federal Reserve since its founding in 1913; the crisis, and the rise of macroprudential regulation, is only switching the timing and orientation of this focus. Historically, the focus on financial stability has been *ex post*, cleaning up after bubbles burst, institutions failed, or credit markets took a turn for the worst.⁸⁷ This orientation is now changing as there is a renewed call for systemic risks to be identified before it is too late; the Federal Reserve is being called upon to be the ‘smoke alarm’ and no longer the ‘fire extinguisher’.⁸⁸ The Fed was the only organization with tacit responsibilities for systemic stability prior to the crisis, and it would follow that they would continue to accept and enhance these responsibilities today. As a result of this past experience and present capabilities, the Federal Reserve is at an optimal position to tackle systemic risk and take on the role of the macroprudential regulator.

The Federal Reserve possesses a high level of expertise and experience that can be smoothly applied to systemic risk management and the financial stability mandate. Given that macroprudential regulation/systemic risk management and monetary policy both target the macro side of the economy, if coordinated properly, these have the potential to mesh well. The Federal Reserve has a skilled workforce that can utilize their skills and capabilities in order to further the aims of financial stability. Another important aspect of the Federal Reserve’s activities is their participation in daily trading

⁸⁷ Moenjak 2014, 67

⁸⁸ Kroszner 2012, 380

relationships with financial market actors⁸⁹. The Federal Reserve is at a good place to monitor any developments in the financial system and is able to flag looming problems that it may detect. This occurs not only through trading but also through the regular supervision activities included in the Federal Reserve's microprudential duties. The regulatory duties included in microprudential regulation allowed the supervisors to gather information about the safety and soundness of financial institutions (mainly commercial banks and bank holding companies) that, when taken together, can inform the discussion of the current state of systemic risk. The Federal Reserve is involved, in one way or another, with almost every aspect of macroprudential issues and would be at an optimal position to apply this knowledge to another regulatory pursuit.

The Federal Reserve has also built up a wealth of knowledge in economic policymaking through the conduct of monetary policy. Given that both macroprudential and monetary policy are targeted at the health of the macro-economy, knowledge can be shared between the two policy tasks. Although macroprudential focuses more on the financial, as opposed to real, sector of the economy, "due to their existing role in monetary policy, central banks can bring expertise in the analysis of aggregate risks that can be brought to bear in the design of policies designed to reduce the expected cost of aggregate weakness."⁹⁰ A major difference between monetary policy and macroprudential policy is the timeframe during which each is effective in the event of a financial crisis or systemic event. The domain of macroprudential policy is *ex ante*, designed to build financial sector resilience and to reduce the probability that a crisis will

⁸⁹ French et al 2010, 39-40

⁹⁰ Nier 2012, 198

occur. Monetary policy, on the other hand can be utilized *ex ante* and *ex post*, as was evidenced by the unconventional monetary policies enacted after the crisis. It is important to put the aim and desired effect into context as, “regulation can only affect flows and not reduce the stock of debt.”⁹¹ It is important to realize that monetary and macroprudential policies are not, in fact, independent, but are inextricably linked as each can affect the other in a distinct way, either beneficially or adversely. Some argue that this may threaten the Federal Reserve’s independence⁹² (which will be discussed in detail below), but this dependence of mechanisms could also bolster support of the central bank taking on the role as macro-regulator. The ability for the Federal Reserve to operate both of these mechanisms of policy would allow them to utilize their already-established expertise in pursuit of a slightly different policy goal. If one organization is in charge of setting both arms of policy, more care will likely be made to ensure that they do not conflict or counteract one another without a need for a great amount of coordination between agencies.

The Federal Reserve and central banks more generally, are also less likely to fall prey to the tendency towards inaction regarding the implementation of macroprudential policy. This can be explained by the fact that the Fed is the lender of last resort in the case of a crisis. In the event that a crisis occurs, the central bank is expected to step in to clean up; acting, again, as the fire extinguisher for the financial system. In light of this, the Fed has a large incentive to prevent an unsustainable buildup of systemic risk by utilizing macroprudential policy tools as, if this is not done, it will be their responsibility

⁹¹ Ueda and Valencia 2014, 330

⁹² Landau 2012, 93

to address the unwinding of this risk position *ex post*. In addition, if these risks are allowed to grow to an unsustainable level, the Fed might have to utilize monetary policy to ‘lean against the wind’ and use monetary policy, as opposed to macroprudential policies, for stabilization. This can be very costly as reigning in excessive credit growth for the financial sector will lead to an overall credit contraction which could have negative consequences for growth in the real economy. Therefore, the Fed, as the macroprudential regulator, will be more likely to encourage timely and efficient policy actions in pursuit of financial stability.

In the century that the Federal Reserve has been in existence, it has gained a significant amount of credibility and trust. This factor, although almost exclusively reputational, is crucial for the smooth functioning of the governance of a new macroprudential regulatory structure. As has been repeatedly emphasized in the policy debate, academic literature and in this very paper, is the fact that macroprudential policies targeting specific sectors or classes of institutions will, almost inevitably, be contentious. The way the Federal Reserve approaches the setting of interest rates and conduct of monetary policy, with an emphasis on transparency and accountability, will also be advantageous for the conduct of macroprudential policies. This will be the case to a greater degree in such instances where the target of a given policy is less visible than inflation or employment and, thus, will be important to integrate in the policies used to avoid crises. Putting the duty to execute macroprudential policies for the aim of financial stability in the hands of the Federal Reserve would allow a well-equipped and time-tested

agency to take responsibility for what will inevitably be some controversial economic policy decisions.

Given the complicated and nuanced nature of macroprudential policy, care must be taken to organize and govern it in a prudent way. As a tendency towards inaction is likely to prevail under certain circumstances or arrangements, it is crucial to designate an accountable organization at its helm that is willing to do what it takes to ensure the stability of the financial system. Though no single entity would be a perfect choice, and any governance structure will require significant cooperation, the Federal Reserve is at a good position to adopt financial stability as a mandate and move forward with the execution of macroprudential policy. Given its history of expertise in monetary policy and supervision combined with the likelihood of its willingness to act and existing credibility, the Federal Reserve should play a key role, if not the singular leading role, in macroprudential regulation.

The structures with which the Federal Reserve conducts monetary policy and microprudential regulation are an optimal starting point for the successful implementation of macroprudential policy. The lynchpin of this success is said to be the operational independence granted to the Fed, which allows monetary policy to be conducted with a long-run scope, not subjected to political pressures. Although the consensus on the interaction between independence and an indicator of monetary policy effectiveness (e.g. inflation) has not been proven in the case of macroprudential policy, the different characteristics of independence are likely to improve the effectiveness of this class of policy as well.

**CHAPTER SIX: THE NEXUS OF FINANCIAL STABILITY AND CENTRAL
BANK INDEPENDENCE - SHOULD THE FEDERAL RESERVE ADOPT AN
EXPLICIT FINANCIAL STABILITY MANDATE?**

As can be seen from the discussion above, for many reasons, the Federal Reserve is an ideal organization to play a role, if not the leading role, in the push towards financial stability. To go one step farther, many economic actors and commentators, not least being the authors of the Squam Lake Report, advocate that “the central bank should be given an explicit mandate for maintaining the systemic stability of the financial system.”⁹³ However, the question still remains: if the Federal Reserve adds financial stability to its mandate, what will become of their ever sought after and oft spoken of independence? Because of the many institutions involved in the pursuit of financial stability and macroprudential regulation, it is inevitable that the landscape of central bank activities and independence will change. The interaction of central bank independence and a financial stability mandate runs in two distinct directions: the pre-established independence will likely benefit the functioning of macroprudential regulation, although this regulation may detract from independence. Although there are some areas where complete independence may not be able to be conserved, it is likely that the independence enshrined in the Federal Reserve will serve to further improve and strengthen the execution of macroprudential policies in pursuit of financial stability.

⁹³ French et al 2010, 43

As was mentioned earlier, central bank independence has been a general tenet of ‘optimal’ central banking since the 1980’s. This occurred as a result of many empirical and theoretical research studies that “amply documented that independent central banks achieve lower and less volatile inflation rates than those that are beholden to governments in power, and that they do so at no long-run cost to economic output.”⁹⁴ The widespread idea that central bank independence was, in fact, ideal was enforced by these studies, taking it beyond a theoretical musing to an empirical fact that lower and more stable inflation followed from independence. Fast forward to today and, starkly juxtaposed to this, there is the largely undefined and scarcely tested macroprudential regulation. Given that it is not even a decade from the onset of the crisis, which was the impetus for the rise in importance for macroprudential regulation, the costs or benefits are not nearly as well defined, or understood. According to Haldane, “the state of knowledge about macroprudential regimes today is roughly where monetary policy was in the ‘40s.”⁹⁵ Because of this, there is no way of knowing what effect the presence or lack of independence will have on macroprudential regulation, but, using the experience of monetary policy as an example, it is likely that it will help, rather than hinder, its effectiveness. Therefore, independence should be granted and defined in principle, based on sound logic and past experience on the conduct of successful macroeconomic policies.

Independence of the central bank, especially when that entity has a financial stability mandate, can actually be advantageous. These advantages primarily arise in the same way for financial stability as they do for price stability and monetary policy. One

⁹⁴ Cooley et al 2011, 65

⁹⁵ Haldane 2014. 65

specific benefit is the long-run view of independent central banks in the setting of policy, harkening back to the time-inconsistency problem discussed above. The thrust towards financial stability must focus on the long-term at an even greater degree than other macroeconomic policies as financial cycles tend to have an average duration double that of the traditional business cycle.⁹⁶ Also, “political authorities may have an incentive to distort macroprudential policies in the short run – for example by preventing the imposition of countercyclical capital requirements...to the detriment of long- or medium-term financial stability.”⁹⁷ It is likely that these short-term political tendencies would be exacerbated even further in the case of macroprudential policies as these target large and profitable financial institutions, producing more of an immediate and noticeable effect than monetary policy instruments. Given the financial strength of many of these institutions, combined with their intense lobbying powers, political entities may be more willing to relax those standards to facilitate acceptance. The isolation of an independent central bank from these pressures will allow macroprudential policies to be enacted proportional to the systemic risks generated by the financial system with minimal interference from specific interest groups or lobbies.

Adding financial stability to the Federal Reserve’s pre-established mandate has the potential to have multiple implications on their current dual mandate of price stability and full employment. Monetary policy is the most important duty of the Fed and its independence must be fully protected even if the structure of financial stability is more cooperative. A requirement of financial stability and macroprudential policies is that they

⁹⁶ Borio 2014, 72

⁹⁷ Duff 2014, 204

not impinge on operationally independent monetary policies. There is some concern that financial stability may counteract the prevailing monetary policy stance if they are working in the opposite direction. It can be argued, however, that monetary policy instruments, alone, can be employed to move towards financial stability. Monetary policy, if effective at ensuring price stability, promotes financial stability through low and stable inflation; combining this with the lender of last resort function, the Federal Reserve already employs some strong tools working towards financial stability. For instance, “some argued that monetary policy should be used to help lean on asset price bubbles while they were still in the early forming stage so they would not grow excessively large.”⁹⁸ Given the challenges related to accurately identifying and dealing with asset price bubbles, targeted macroprudential policies can be treated as a more efficient substitute to a contractionary monetary policy attempting to curb lending.

Macroprudential regulation specifically targets the financial sector whereas monetary policy is more broad based, operating with a price mechanism reverberating from the financial to real economy. Therefore, targeting macroprudential policy to specific institutions or activities in the financial sector will likely have less of an impact on the economy as a whole than if monetary tools were used. In addition, “severe financial distress can numb the effectiveness of standard macroeconomic tools, such as monetary and fiscal policies.”⁹⁹ In the long run, a financial stability mandate, though taking away some of the institutional focus on price stability and full employment, may actually be helpful as an effective financial stability regime could limit risk to a certain point where

⁹⁸ Moenjak 2014, 230

⁹⁹ Borio 2003, 187

instability is less likely. Care must be taken to ensure that financial stability does not significantly conflict or interfere with the functioning of monetary policy as this would be diluting the effectiveness of the Federal Reserve's primary mandate, thereby putting their credibility, and operational independence, at risk.

Although the objectives of monetary policy and financial stability may conflict at some points in time, the independence of monetary policy may necessitate the central bank to have a significant, or leading, role in macroprudential policy. If the central bank does not have primary control over macroprudential regulation, “delegating macroprudential authority to a government agency other than the central bank may threaten the bank's independence over its price stability mandate.”¹⁰⁰ As many of the instruments of both monetary and macroprudential policy effect both the price and quantity of money, coordination is necessary. Delegating both of these roles exclusively to the central bank will reduce the cost of coordination by housing both monetary policy and financial stability in one organization able to control the tools and mechanisms with which each is carried out.

Adding a mandate, possibly granted to the Federal Reserve by Congress, will be important for the preservation of operational independence. Accountability is complemented by the fact that the central bank enacts policies according to the aims set out by their mandate. An explicit financial stability mandate would pave the way for the Federal Reserve to take a more proactive and central role in preventing financial crises, *ex ante* as opposed to *ex post*. This has the potential to shield the Fed of the criticisms advanced that they were overstepping their mandate by enacting the unconventional

¹⁰⁰ Duff 2014, 205

policies taken during and after the financial crisis. Broadening the scope of the central bank's mandate does, in fact, carry risks but, given the increasing importance of financial stability and systemic risk, this is likely a necessary development.

Potential Challenges to Independence

The current structure for macroprudential regulation in the United States, established by the Dodd-Frank Act and led by the Financial Stability Oversight Council (FSOC), has the potential to undermine the independence of the Federal Reserve. The FSOC, which is chaired by the Secretary of the Treasury, has as its mandate:

“...to identify risks to the financial stability of the United States that could arise from the material financial distress or failure, or ongoing activities, of large, interconnected bank holding companies or non-bank financial companies, or that could arise out the financial services marketplace.”¹⁰¹

It goes on to say that the FSOC should, essentially, advise financial institution regulators of possible emerging liquidity, credit or market risk that could pose a threat to financial stability. The structure of the FSOC, with the Federal Reserve as one of several voting members, reduces their functional independence with respect to macroprudential regulation.¹⁰² Although the Federal Reserve is only one of multiple organizations involved in the FSOC, it is assumed that most supervisory and regulatory actions would be designated as the responsibility of the central bank as the FSOC has not implemented in-house procedures to do so. The combination of the lack of a clear FSOC mandate and the Federal Reserve's de facto responsibility for financial stability leads to reduced independence but also reduces the accountability it has for any subsequent policy

¹⁰¹Cooley et al 2011, 69

¹⁰²Duff 2014, 189

actions.¹⁰³ Although the establishment of the FSOC through Title I of Dodd-Frank lays the groundwork for a much-needed institutional macroprudential framework, reforms should be made in order to bolster the role of the Federal Reserve to ensure more effective and independent macroprudential regulation. The continuation of the FSOC in its current form, with no clear authority on policy implementation, could not only undermine the Federal Reserve's role and subsequent independence, but could dampen the effectiveness of macroprudential regulation nationwide.

Another specific question must be posed to assess the degree of central bank independence: independence from whom? Classically, central bank independence has constituted independence from government and politicians. However, with the onset of the crisis and resultant financial sector changes, there needs to also be assurance that banks are independent from the financial sector and the institutions that it contains. This is especially crucial when considering financial stability. Financial institutions, especially those that are deemed systemically important, have a vast amount of resources and lobbying power in political situations. Given that macroprudential policies are directed at these systemically important institutions, they are "likely to be subject to intense lobbying and political scrutiny from financial sector actors who would accuse regulators of taking away the punch bowl once the party gets going."¹⁰⁴ It is important to ensure that the Federal Reserve, or any macroprudential regulator, does not experience regulatory capture as a result of an inordinate amount of influence from the regulated institutions. Although this can manifest in many forms, one of the most discussed is that of the

¹⁰³ Ibid

¹⁰⁴ Duff 2014, 187

‘revolving door’ between the Federal Reserve, and other regulators, and the financial system. The revolving door is, essentially, the movement of “regulatory personnel between the official and private sector that allegedly incentivizes regulatory personnel to soften their regulatory stance due to the prospect of future lucrative employment.”¹⁰⁵ Given that macroprudential regulation is far more targeted than monetary policy, specific relationships can be built up between the regulators and the institutions, thereby making them more vulnerable to this regulatory capture. This adds another layer on to the conventional stance of independence from government that could pose challenges for the Federal Reserve in the future. Concerted efforts to ensure robust regulation in spite of lobbying and influence will be important to prevent regulatory capture.

The issue of democratic accountability must also be considered when looking at the possibility of a financial stability mandate for the Federal Reserve. The practice of central bank independence has been criticized on the grounds that an independent organization is making crucial economic policy decisions without being under the explicit purview of the government. Adding a financial stability mandate to this already strained relationship between independence and democratic accountability could further threaten the legitimacy of the foundations of central bank independence in some circles. This has the potential to put more pressure on the government to reevaluate the Federal Reserve’s independence which could hinder its effectiveness. Given the direct impact that macroprudential policies can have on individual sectors, financial institutions and even classes of borrowers, questions will arise on whether or not the central bank should be

¹⁰⁵ Lucca et al 2014, 17

‘allowed’ to enact these policies.¹⁰⁶ The presence of these criticisms will necessitate a more cooperative regime based on accountability on different levels and to different sectors. Again, this cooperative nature of financial stability cannot spill over into the conduct of monetary policy as this would serve to erode the operational independence which has been deemed necessary for execution of these policies.

The key to preserving the appropriate degree of operational, political and economic independence for the Federal Reserve, conditional on adopting a financial stability mandate, is to devise an appropriate institutional setup where the independence of the two macro policies is divorced from one another. The very nature of macroprudential policy is such that many organizations, regulators and governmental actors will need to be involved as each performs a specific function contributing towards the aim of financial stability. As mentioned earlier, though the presence of the Treasury would lessen the complete autonomy of the policymaking process, it also has the capabilities of turning these recommendations into legislation which could bolster the legitimacy of the policies. The optimal independence of Federal Reserve activities, then, will preserve full operational independence in monetary policy with a more cooperative structure for financial stability. Given that one organization must be granted differing degrees of independence for two different arms of policy, a delicate balance between the two is crucial. This is ultimately dependent upon “the appropriateness and robustness of institutional arrangements for financial stability.”¹⁰⁷ One way to enhance this separation is a strict exclusivity of the policy tools focused on macroprudential and monetary policy.

¹⁰⁶ Kroszner 2012, 384

¹⁰⁷ Landau 2012, 94

Whereas monetary policy primarily works through the ‘price’ mechanism of money through setting interest rates, macroprudential will move towards focusing on the ‘quantity’, looking at the amount of leverage, liquidity, capital, etc. in the financial system. It is inevitable that these policies will both conflict and complement each other at different parts of the financial and business cycles and in different situations; however, with the appropriate institutional setup, these conflicts should not pose an exigent risk to the continued effectiveness of macroprudential or monetary policy.

Given that the final structure of macroprudential regulation is still being debated and constructed, one cannot say with certainty what challenges may occur both for central bank independence as well as the push towards financial stability. One aspect is certain, though, that an organization with an in-depth knowledge of the financial system and experience in regulating it should have primary responsibility for this set of policy tools outside the realm of what has been utilized before. Bringing with it operational independence, time-tested experience and credibility, the Federal Reserve is at a prime position to take on this responsibility and it is likely that a failure to do so would do more harm than good to the effectiveness of macroeconomic policymaking.

CHAPTER SEVEN: FINANCIAL STABILITY PROPOSAL AND CONCLUSION

Taking the experience of the crisis and the evidence presented here into consideration, going forward, the Federal Reserve should be given more responsibility in ensuring the stability of the financial system. Ideally, this will come in the form of a specific mandate, highlighting the increased importance of macroprudential regulation and systemic risk recognition. The operation of this mandate should be carried out by the Federal Reserve in financial stability-focused research and policy departments as well as through cooperation with other entities and organizations throughout the country. Ideally, the structure and the functioning of the FSOC would be subsumed into the Federal Reserve but, given constraints, it may be more practical for the Federal Reserve to be given a leading role in the organization.

Going forward, central bank independence should be considered in the creation of new organizations and leadership plans for financial stability, but emphasis should not be unduly imposed. The nature of central bank independence has changed and it will evolve as the new post-crisis financial regulatory structure is created and honed. It can be argued that the indices, measurements and previous studies of central bank independence have been invalidated by the crisis, but the independence of the Federal Reserve in economic policymaking must still be considered. The question still stands: in a post-crisis world, what is independence?

It must be recognized that there is a limit to the Federal Reserve's effectiveness as a unilateral actor in the pursuit for financial stability. This arises primarily through the fact that the Federal Reserve is only responsible for regulating a subset of the financial institutions within the system. The adoption of these other regulatory responsibilities by the Federal Reserve would be inefficient and, therefore, cooperation with the other existing regulators will be important. In this construct, it is crucial to realize that, especially considering financial stability, independence is not autonomy. The Federal Reserve's policies and actions can still be independent from outside and government influence while engaging in information sharing and cooperation with other regulators such as the FDIC or SEC. The Treasury should also be endowed with a role, as the ability to turn tacit regulations into required legislation will be important in the effort to ensure compliance and build the legitimacy of macroprudential policies.

Though the trajectory of central bank independence after the crisis is still in question, it can confidently be asserted that the landscape has changed. Facing negative inflation as a result of a crisis of stability and confidence that reverberated around the world, the focus and thrust of central bank independence must be revised. The cooperative nature of financial stability may threaten independence, the presence of the Treasury may threaten independence, strong financial interests may even threaten independence, but this may be a sacrifice that will be valuable to make. The body of literature on this topic, specifically, is still in a nascent stage and there is vastly more work to do, and through this, many new questions will arise. It is no longer an issue of whether or not financial stability will threaten central bank independence, but in what

form the post-crisis central bank independence will take if and when the dual mandate expands to include the pursuit of financial stability.

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