Frameworks for Implementing Macroprudential Policy

A Comparative Examination of the BoE and FSOC

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Executive Summary

Macroprudential Policy: Tools and Objectives

Following the financial crisis of 2007-2009, academics and policymakers have increasingly focused on how to build a safer, more resilient financial system. One area that has gained considerable influence is that of macroprudential policy. In Part I: Macroprudential Policy Overview, this report explains the conceptual foundations underpinning our understanding of macroprudential policy, and suggests frameworks for effective implementation.

The opening chapter identifies a consensus definition of macroprudential policy as the implementation of the macroeconomic and financial tools needed to keep the economy in balance and to mitigate systemic risk. This chapter suggests a framework for identifying and monitoring systemic risk, and reasons that systemic risk emerges in both the time dimension and the cross-sectional dimension. There are a variety of possible indicators of systemic risk, and the appropriate indicators for systemic risk in the time dimension may be different than for monitoring systemic risk in the cross-sectional dimension. A well-performing systemic risk monitor focuses on the following points: the growth in total credit and macroeconomic drivers of imbalances, and financial linkages between financial and domestic real sectors. The chapter also puts forward general principles for institutional design of a macroprudential authority, and recommends that the central bank should play an important role to ensure harmony with monetary policy. Further, the authority should be given clear mandates and sufficient powers to prevent the build-up of systemic risk. Finally, the chapter gives a brief overview of the new Basel III regulations and how they are related to macroprudential policy and concludes that an optimal regulatory framework would ensure that microprudential regulation takes into consideration systemic externalities, while macroprudential policies should be informed by their impact on individual institutions. Mitigating systemic risk promotes the safety and soundness of individual financial institutions, and therefore these policy areas are highly complementary if they are implemented in a coordinated fashion.

The following chapter gives a detailed overview of the various macroprudential tools available for implementing macroprudential policy. A key finding is that there are many overlapping targets between macroprudential policy and other policy areas. This report categorizes macroprudential tools in accordance with their two primary objectives: limiting the build-up of systemic risk (the time dimension), and increasing resiliency of the financial system to potential shocks (cross-sectional dimension). The instruments to address systemic risk can be credit-related, liquidity-related, or capital-related. The level of development, type of exchange rate regime, and the nature of shocks may also play a role in the selection of policies in different economies. Historically, while emerging economies have used liquidity measures, advanced economies were more focused on credit related tools until the crisis. Countries with fixed exchange rate regimes tended to use macroprudential tools more frequently due to the limited capacity of monetary policy adjustments to successfully impact credit growth. The main policy choices in using macroprudential tools are: “single or multiple policies”, “broad based or
targeted policies”, “fixed or time varying policies” and “rules (automatized) or discretionary policies”. Macroprudential policy instruments are more often used on a discretionary basis due to the difficulties in accurately predicting outcomes of policy actions with quantitative models. Macroprudential policies are generally effective, but there are tradeoffs in choosing the mix of tools. Using a single tool can better address the risks from a single sector or market because it is easier to calibrate, communicate, and assess effectiveness. However, use of multiple instruments may be too complicated to accurately predict outcomes. Macroprudential instruments also can be costly for the financial sector and other agents. Some tools may even have a negative impact on GDP growth, especially when the targeted sector represents a large share of the economy. Side-effects of an instrument can be mitigated with other instruments and elimination of side effects can increase the marginal utility of each tool. It is important for policymakers implementing macroprudential policy to minimize the side-effects and design a clear set of policies.

The final chapter in this section of the report provides a brief overview of the interactions between monetary policy and macroprudential policy. The analysis reveals ample overlap between the transmission mechanisms of monetary policy and macroprudential policy. While these two policy areas may occasionally conflict, they have the capacity to operate as complements. The financial crisis has underscored both the importance of financial stability, and the limitations of traditional microprudential regulatory tools in containing systemic risk. The need for macroprudential policy is clear, but its success is contingent on policymakers understanding how the instruments for implementing macroprudential policy interact with transmission mechanisms of monetary policy. By understanding that these two policy areas do not operate in isolation, and coordinating policy actions, policymakers can increase the effectiveness of both. Monetary policy should take financial stability into account, and determine to what extent systemic financial vulnerabilities can be offset with macroprudential tools. When the risks stemming from financial vulnerabilities cannot be adequately contained with macroprudential tools, monetary policy should adjust in support of macroprudential goals. Similarly, macroprudential policy should be aware of the goals of monetary policy. When financial vulnerabilities are low, macroprudential policy should adjust in support of monetary policy goals. By operating in this way, both monetary policy and macroprudential policy are likely to be more effective, and economic outcomes should be improved.

Macroprudential Policy in the United Kingdom

In the aftermath of the financial crisis, the Bank of England experienced a drastic reorganization. The existing financial industry regulator, the Financial Services Authority, was split into two new regulators, the Prudential Regulation Authority and the Financial Conduct Authority. Further, the Bank was given a mandate to support the stability of the UK financial system. In support of that mandate, the Financial Services Act 2012 created the Financial Policy Committee (FPC) within the Bank. The FPC is charged with identifying, monitoring, and mitigating systemic risks to financial stability. To that end, the Committee can issue general recommendations, recommendations on a comply-or-explain basis to the regulators, and directions to the regulators within a macroprudential scope defined by the Treasury and approved by Parliament.
Thus far, it is difficult to judge the effectiveness of the Bank’s forays into macroprudential policy. While the FPC’s efforts certainly may have mitigated systemic risks and increased resilience, it is exceedingly difficult to gauge its effectiveness at this early stage. Indeed, many of the FPC’s most significant policies have yet to be implemented on a wide scale or even at all. That said, the FPC has proved extremely adept at finding governmental and institutional support for its policies and acquiring new powers. Since its establishment on statutory footing in April of 2013, the FPC has been assigned two responsibilities under the European Union’s Capital Requirements Directive, obtained three relatively broad and flexible powers of direction, and issued 26 unique recommendations, almost all of which have been swiftly implemented.

The FPC’s success in achieving implementation and in accumulating powers over the regulators can be attributed largely to three factors. First, the political climate in the UK has been quite supportive of the FPC and the Bank of England generally. The process by which the FPC obtains new powers of direction, for example, involves a good amount of consultation and analysis both publically and with the government, as well as explicit approval from Parliament. In practice, the Treasury and Parliament have mostly approved of the FPC’s requests for new powers in an efficient, precise manner. At most, they have undertaken to narrow the scope slightly or specify certain definitions of the terms of the power.

The second factor underlying the strength of macroprudential policy in the UK is the simplicity of its financial and regulatory system. Crucially, the shadow banking sector in the UK is small relative to the U.S., allowing the Bank a more direct path to both regulation and data collection. The Bank’s macroprudential view of the financial system, then, is far clearer and regulatory policies might therefore have more predictable effects. In addition, the fact that there are only two regulatory bodies allows for easier cooperation, coordination, and transparency.

Finally, the strength of the institutional design of the Bank of England very much supports the policymaking of the FPC. The Bank’s overall mandate for financial stability, coupled with clear information flows among all parts of the Bank, allows for a very well-communicated, consistent approach to macroprudential policy. The FPC, the Monetary Policy Committee, and the microprudential regulators all contribute to the financial stability discussion, through membership overlap, joint meetings, and information sharing. The result is macroprudential policy that aims to be strong, clear, and coherent.

**Macroprudential Policy in the United States**

In the United States, the financial regulatory structure changed far less following the financial crisis than it did in the United Kingdom. There are currently eight regulatory agencies with responsibility for supervising financial markets and financial market participants. The Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation, the National Credit Union Administration, and the Federal Reserve System regulate the banking industry; the Securities and Exchange Commission (SEC) and Commodities Futures Trading Commission regulate securities and derivatives markets; and the Federal Housing Finance Agency regulates the government sponsored enterprises. Because none of these regulators have the authority to regulate all financial markets, a council, the Financial Stability Oversight Council (FSOC) was
created to coordinate macroprudential supervision. The Council is chaired by the Secretary of the Treasury and the heads of the U.S. regulatory agencies are members. The FSOC has the power to designate systemically important financial institutions and market utilities and to force the heads of the regulatory agencies to meet. However, authority for implementing macroprudential supervision remains with the regulatory agencies. Even if the members of the Council agree that a market or activity poses a risk to financial stability, the Council may only make recommendations to the regulatory agencies and must rely on them to actually address the source of risk.

Thus far, the FSOC has been fairly successful in persuading the regulatory agencies to address sources of structural risk. The extension of intraday credit in the tri-party repo market, which the FSOC highlighted as a risk to financial stability, has declined to levels with which the FSOC is comfortable. While the changes to money market mutual fund regulation that the FSOC recommended to the SEC have not been implemented for retail funds or for government-only funds, the SEC has announced new regulations for prime institutional money market funds, which are the type of money market mutual funds that saw the largest withdrawals during the financial crisis.

There are signs however that the FSOC structure may make implementing countercyclical macroprudential policies difficult. U.S. financial markets are very flexible, and it is easy for risk to migrate from one part of the market in which countercyclical policies are being implemented to another part of the market in which they are not. This appears, at least initially, to have been the case with the FSOC’s efforts to address excessive risk taking in the leveraged loan market. When the banking regulators announced that loans that enabled leverage of more than six times EBITDA would be scrutinized, these loans migrated to asset management products, which were not subject to the regulatory guidance. A risk retention rule, which was issued by the banking regulators and the SEC and requires sponsors of asset backed securities to retain at least five percent of the credit risk of assets collateralizing asset backed securities, seems to have been more successful in reducing risk taking in this market. The episode highlights the importance of coordination among the regulatory agencies, without which risks to financial stability will not be addressed and will rather migrate from one segment of the market to another.

Efforts should be made to ensure that all of the regulatory agencies whose heads comprise the FSOC understand their role in and responsibility for maintaining financial stability. Certain regulators have expressed concern that the FSOC threatens their independence and have reacted negatively to FSOC recommendations. However, when there is broad agreement among the members of the Council that a certain market or activity poses a risk to the financial stability of the United States, the FSOC should use all of the powers at its disposal to ensure actions to address the risk are taken by all regulatory agencies. While the Council may not have authority to implement macroprudential policies itself, its ability to recommend changes on a comply-or-explain basis and to designate institutions as systemically important gives it considerable power. If it does not use this power and rather relies on the regulatory agencies to do only what they think is necessary, risks are likely to migrate from one market to another and go unaddressed.
Chapter 1: Conceptual Foundations of Macroprudential Policy

The global financial crisis has sparked significant financial reform efforts, and one particular area of interest in the financial and economic literature is the potential role of macroprudential policy in the post-crisis financial system. Although macroprudential policy and its implementation is the topic of much discussion, there is no single definition of macroprudential policy.

This chapter offers an overview of the definitions for macroprudential policy put forward by policymakers and academics and distills the key features of these definitions. In doing so, this chapter suggests a framework for identifying and monitoring systemic risk, and provides an analysis of the shift in regulatory frameworks from a microprudential to a macroprudential focus. The chapter will also discuss different institutional designs for implementing macroprudential policy. Finally, the chapter gives a brief overview of the new Basel III regulations and how they are related to macroprudential policy.

Defining Macroprudential Policy

The FSB, IMF, and BIS in the Update to G20 Finance Ministers and Central Bank Governors in 2011 define macroprudential policy as follows:¹

“...macroprudential policy is a policy that uses primarily prudential tools to limit systemic or system-wide financial risk, thereby limiting the incidence of disruptions in the provision of key financial services that can have serious consequences for the real economy, by dampening the build-up of financial imbalances and building defenses that contain the speed and sharpness of subsequent downswings and their effects on the economy; identifying and addressing common exposures, risk concentrations, linkages and interdependencies that are sources of contagion and spillover risks that may jeopardize the functioning of the system as a whole...”

In this definition, three points stand out:

1. Macroprudential policy tools are primarily prudential in nature
2. Macroprudential policy’s objective is the limitation of systemic risk (or the limitation of the financial risk which affects the whole system.)
3. By minimizing financial risks, macroprudential policy aims to prevent these risks from having negative effects on the real economy.

In other words, macroprudential policy is the implementation of the macroeconomic and financial tools needed to keep the economy in balance and to mitigate systemic risk in the financial sector. Macroprudential tools include requirements and constraints that regulators have implemented either via legislation or by mandate in the economy and financial sector. These tools could be related to the macroeconomy and/or the financial sector of a country.

¹ FSB, IMF and BIS, “Macroprudential Policy Tools and Frameworks- Update to G20 Finance Ministers and Central Bank Governors”, 14 February 2011.
The term “macroprudential” means an approach to financial regulation that fills the gap between conventional macroeconomic policy and traditional microprudential regulation of individual financial institutions. Due to having broad meaning, macroprudential policy overlaps with other policies such as monetary policy, fiscal, and structural policies, competition policies, microprudential policies, and crisis management and resolution policies.

The Usage of the Term “Macroprudential” in the 21st Century

The two graphs below present the usage of the term “macroprudential” in the web and in academic publications.

Figure 1.1: Usage of “macroprudential” term

Since 2008, the charts demonstrate that the use of the term “macroprudential” has become more common. For example, searches for “macroprudential” in Google have risen steadily since 2005.


3 IMF, “Key Aspects of Macroprudential Policy”, 10 June 2013.
Moreover, the term has also appeared more frequently in academic publications. This is especially true for the last two years shown in the chart, 2008 and 2009, where the use of “macroprudential” was drastically higher. In the near future, as macroprudential policy becomes more important and policymakers reach a stronger consensus on its definition, the usage of this term will likely increase as it becomes a more popular research subject in the financial and economic world.

**Systemic Risk**

As it is mentioned above, the main purpose of macroprudential policy is to prevent systemic risk. For that reason, systemic risk is an important issue for policymakers to understand. So, what is systemic risk?

**Definition of Systemic Risk**

The Group of 10 defined systemic financial risk in its Report on Consolidation in the Financial Sector in 2001 as follows:⁵

> “Systemic financial risk is the risk that an event will trigger a loss of economic value or confidence in, and attendant increases in uncertainty about, a substantial portion of the financial system that is serious enough to quite probably have significant adverse effects on the real economy.”

Others have defined systemic risk as a “trigger event” which results in a chain of negative economic results. A “trigger event” might be caused by an economic shock or an institutional failure. Additionally, systemic risk could result in a financial institution and/or market failure, or significant losses or volatility in financial markets.⁶

**The Dimensions of Systemic Risk**

Systemic risk emerges in both the time dimension and the cross-sectional dimension.⁷ In the time dimension, the build-up of risk over time interacts with the macroeconomic cycle; the associated policy problem is how to address the procyclicality of the financial system.⁸ On the other hand, in the cross-sectional dimension, systemic risk prevention is focused on specific firms and/or sectors at a given point in time.⁹

There are a variety of possible indicators to observe the development of systemic risk. The appropriate indicators for systemic risk in the time dimension may be different than for monitoring systemic risk in the cross-sectional dimension.¹⁰ Possible indicators include ratios such as leverage ratios, maturity and currency mismatch ratios. CDS spreads, and lending spreads could also be selected from banks’ balance sheets and from various markets to monitor

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systemic risk.\textsuperscript{11} Additionally, statistical and simulative models such as VAR models, micro stress tests, and network simulations could be used to monitor systemic risk in a more forward-looking way.\textsuperscript{12} A brief taxonomy of systemic risk indicators is presented in the table below.\textsuperscript{13}

**Figure 1.2: A Taxonomy of Systemic Risk Indicators**

<table>
<thead>
<tr>
<th>Time-varying dimension</th>
<th>Cross-section dimension</th>
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<tbody>
<tr>
<td><strong>Main indicators</strong></td>
<td><strong>Statistical &amp; simulative</strong></td>
</tr>
<tr>
<td>Macro indicators</td>
<td>Impulse-response analysis (VAR models)</td>
</tr>
<tr>
<td></td>
<td>Markov regime switching (VIX)</td>
</tr>
<tr>
<td>Bank balance sheet indicators</td>
<td>Micro Stress tests</td>
</tr>
<tr>
<td></td>
<td>Conditional correlation matrices</td>
</tr>
<tr>
<td>Market-based indicators</td>
<td>Option or CDS i-PoD</td>
</tr>
<tr>
<td></td>
<td>Tail risk &amp; Distribution higher moments (skewness; curtosis)</td>
</tr>
<tr>
<td></td>
<td>Co-Risk analysis</td>
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<tr>
<td></td>
<td>Time-varying multivariate distress dependence</td>
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</table>


**Identification and Measurement of Systemic Risk**

The tools that have been developed for monitoring systemic risk can be categorized in four different groups:\textsuperscript{14}

1. Indicators of financial distress based on balance sheet and market indicators
2. Early warning indicators
3. Indicators based on Vector Auto Regression Models (VARs)
4. Macro stress tests.

In implementing macroprudential policy it is necessary to establish a well-performing systemic risk monitor. This monitoring system should focus on the following points:\textsuperscript{15}

1. The growth in total credit and macroeconomic drivers of imbalances

\textsuperscript{15} *Ibid* p.16.
2. Financial linkages between financial and domestic real sectors and between each sector and the rest of the world
3. The structure of the financial system and linkages within and across key classes of intermediaries and market infrastructures.

**Microprudential and Macroprudential Policy**

While macroprudential policy focuses on the whole financial system and aims at mitigating systemic risk, microprudential policy aims to protect individual institutions. In this regard, while macroprudential and microprudential policies have two different objectives, it is hard to separate them easily because there are interconnections between each policy area.

A comparison of macroprudential and microprudential policies is presented in the table below:

**Figure 1.3: Macro vs. Microprudential perspectives**

<table>
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<tr>
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<th>Macroprudential</th>
<th>Microprudential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proximate objective</td>
<td>limit financial system-wide distress</td>
<td>limit distress of individual institutions</td>
</tr>
<tr>
<td>Ultimate objective</td>
<td>avoid output (GDP) costs</td>
<td>consumer (in)vestor/depositor protection</td>
</tr>
<tr>
<td>Model of risk</td>
<td>(in part) endogenous</td>
<td>exogenous</td>
</tr>
<tr>
<td>Correlations and common exposures across institutions</td>
<td>important</td>
<td>irrelevant</td>
</tr>
<tr>
<td>Calibration of prudential controls</td>
<td>in terms of system-wide distress; top-down</td>
<td>in terms of risks of individual institutions; bottom-up</td>
</tr>
</tbody>
</table>


In the table, the macroprudential and microprudential policies are compared with five different points which are proximate objective, ultimate objective, model of risk, correlations and common exposure across institutions, and calibration of prudential controls. When analyzing the microprudential side of the table, one sees that protection of consumers and individual institutions is the main objective of this policy area. Microprudential policy also aims to limit distress at individual institutions. It does not focus on financial system-wide distress. The ultimate objective of macroprudential policy, conversely, is to avoid output costs at a macroeconomic level.

Despite the differences outlined above, it is difficult to completely separate microprudential and macroprudential policies because their tools may overlap. In other words, one policy could easily affect the other policy. Federal Reserve Chair Janet Yellen commented in a recent speech about the interconnection between microprudential and macroprudential policies:¹⁶

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¹⁶ Federal Reserve Board of Governors, “*Improving the Oversight of Large Financial Institutions*”, at the Citizens Budget Commission by Janet L. Yellen, 3 March 2015.
“While the Federal Reserve looks closely at the individual safety and soundness of large financial firms, as I noted earlier, it is not sufficient to view each of these firms in isolation. The safety and soundness of large firms affects, and is affected by, the stability of the broader financial system. In the decades of relative financial stability leading up to the crisis, it is fair to say that the Fed focused too much on individual firms and not enough on their role in the financial system and the implications of those firms’ operations for financial stability. To use an apt metaphor, we looked closely at the trees and not as intently as we should have at the forest. One of the most fundamental changes in the Fed’s oversight of large institutions since the crisis, a principle that undergirds everything I will discuss today, is elevating the importance of financial stability in that oversight.”

The following table demonstrates the overlap between macroprudential and microprudential policies. As seen below, the majority of tools could be implemented both in micro and macro level supervision of the financial system. Thus, the implementation of these tools may lead to conflicts of interest between authorities. In this case, these conflicts of interest could limit the tools’ effectiveness. In some cases, tools which might not be managed effectively among responsible authorities could destabilize the financial system as a whole.
As mentioned above, there could be tensions between macro and microprudential policies because each policy may have an effect at the micro and macro level in the economy. To decrease the tension between micro and macroprudential policies, the IMF recommends the following steps: \(^\text{17}\)

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• There should be separate, but compatible mandates for each policy. This policy guidance should be well-documented and include clearly defined responsibilities of authorities. If it is possible, transparency, accountability and independence protection mechanisms could be established.

• The authorities should be open and transparent in their communication and information sharing. This helps coordination of the policies and, as a result, the authorities could notice developing imbalances within the economy or specific sectors sooner.

• To prevent conflicts in the use of specific policy tools, the policy tools could be different within separate authorities.

Given the important role that some individual institutions play in the build-up and spread of systemic risk, an optimal regulatory framework would ensure that microprudential regulation of these institutions takes into consideration systemic externalities created by the institution’s activities. Similarly, macroprudential policies should be informed by their impact on individual institutions observed in microprudential supervision. Mitigating systemic risk promotes the safety and soundness of individual financial institutions, and therefore these policy areas are highly complementary if they are implemented in a coordinated fashion.

**Institutional Models of Macroprudential Authority** 18

*Factors Affecting Institutional Design*

Institutional design of the macroprudential authority is important and it has direct effects on governance, implementation and effectiveness of macroprudential policies. There is not a one-size-fits-all model and several factors may have an effect on the policy choices of different countries. Some emerging countries may lack human resources for the jobs that require highly qualified staff. The monetary policy regime and the power of the Central Bank may have an impact on institutional design. While the Central Bank’s undertaking macroprudential policy-making along with its traditional objectives can be regarded as an over-concentration of power, in a country where the Central Bank is less effective (for example in a currency board regime) it may not look so inconvenient.

Historically, existing institutional structures affect a new institution’s design and mandates. For example, the creation of the Office of the Comptroller of the Currency within the Treasury in the US in 1863 – 50 years before the Federal Reserve System – has shaped an institutional framework in which the Treasury has a stronger say in many (prudential) policy areas compared to other countries. Legal traditions matter as well, since in some countries institutions are backed by constitutional provisions which give them advantages in undertaking a new mandate. On the contrary, in many other countries macroprudential institutions are only established by an executive decree or a memorandum of understanding (MOU) which undermines their effectiveness. Imbedding concrete prudential rules in the law may reduce adjustment possibilities and restrict the policy space of macroprudential authorities as well. Last but not least, delegation

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18 This section is mainly based on the IMF paper which defines and analyzes stylized institutional models. (Nier, Osiński and Jácome)
of power to technocrats and interest groups plays an important role in institutional design, indicating the political aspects of making decisions about creating a new authority.\textsuperscript{19}

\textit{General Principles for an Effective Macroprudential Body}

Even if country specific circumstances are important and should be considered in the first place, general principles for an effective body can be inferred from the experience of different countries. The first prerequisite is to give the Central Bank an important role to ensure harmony with monetary policy. While complex and fragmented regulatory structures may reduce effectiveness, assigning the Central Bank as the sole authority may damage its credibility in times when macroprudential objectives conflict with its traditional objectives. Collecting reliable data and making it fully available for the macroprudential authority is an important step for effective regulation. Only a few financial authorities, including the FPC in the UK and the FSOC in the US, have extensive power for collecting data. The authority should not lack clear mandates and sufficient powers to prevent the build-up of systemic risk. If decision-making powers are distributed among agencies, a coordination committee would be useful but may still be insufficient to deal with collective action problems. Fiscal and competition policies should be in coordination with macroprudential policies.\textsuperscript{20}

Centralizing the macroprudential and monetary policy making under the monetary authority is a controversial issue. There may be a tradeoff between the central bank’s credibility and policy coordination in some cases. Monetary and macroprudential policies may create externalities for each other as discussed in a later chapter of this report, and one policy may offset the intended effects of the other policy. The optimal structure may be decided by taking relative weights of these concerns and country specific conditions into consideration.\textsuperscript{21}

There are two trends shaping macroprudential institutions after the crisis. European countries are integrating the related institutions while many emerging markets are establishing financial stability committees to ensure coordination. These committees are generally led by fiscal authorities, especially in emerging countries. A financial stability committee exists in an integrated system in the UK, while it exists outside of the central bank in the US. Separation of authorities in financial regulation has not been seen after the crisis.

\textit{Stylized Models of Macroprudential Authority}

An IMF study analyzes the stylized institutional models according to their place/condition in five dimensions and distinguishes seven of the most common models of financial stability institutions.\textsuperscript{22} The dimensions are as follows:

\begin{itemize}
  \item \textit{Degree of institutional integration of central bank and financial regulatory functions:}\n  
  This dimension is important in terms of information available to the central bank and because the extent of the integration affects the mandate granted to the central bank.
\end{itemize}

\textsuperscript{19} Ibid p.35.
\textsuperscript{20} Ibid p.6.
\textsuperscript{21} Ibid p.20.
\textsuperscript{22} See Appendix 1.1. This table is revised in a later study of the IMF Maino, Imam and Ojima, and the revised version is used in the Appendix.
Ownership of macroprudential policy: This dimension shows who is accountable in macroprudential policymaking. The mandate can be delegated to the central bank, an independent committee or multiple agencies.

Role of the treasury: The treasury can have an active or passive role or no role at all in the macroprudential decision making. This dimension shows the degree of the government’s impact on the policies.

Institutional separation of policy decisions from control over policy instruments

Existence of a separate body coordinating across policies to address systemic risk: Coordination committees are generally needed in multi-agency structures. They generally lack accountability since they cannot take binding formal decisions and they are established based on MOUs rather than law.

The models are categorized into three according to the first dimension: Under the first model the central bank is entrusted with the financial regulatory functions, as is the case in Singapore and Ireland. The second, third and fourth models describe scenarios in which central banks have partial integration with financial sector regulation. While the central bank is somewhat integrated with the prudential authority to ensure the soundness of the system (especially the SIFIs); regulation of the wholesale or retail financial markets and securities markets is handled by other institutions, which is a kind of a “twin peaks” model. Lastly, the third category comprises a context in which central banks have no integration with financial regulatory functions, as in Japan, Switzerland and Iceland.

A Brief Evaluation of Strengths and Effectiveness of the US and UK Models

Both the U.K. and U.S. systems fall into the second group in which central banks are partially integrated with financial regulatory functions. As for the ownership of macroprudential policy, in the US the FSOC is independent, while the UK’s FPC is related to the bank. In the US, the Treasury chairs the FSOC, however, in the UK, it passively participates in the FPC meetings as a non-voting member. In both of the structures, policy decisions and control over instruments are separated, however this separation is more limited in the UK. There is no separate body responsible for coordinating across policies in both countries.

In the first group the central banks have full degree of integration and in the third group they have no integration with financial regulatory functions.

Also the Chancellor appoints four “independent” members to the FPC.
Strenghts and weaknesses of the models are evaluated based on effective identification, analysis and monitoring of systemic risk, effective use of macroprudential tools, and effective coordination across policies addressing systemic risk.  

There are a number of strengths and weaknesses of both models which may overlap in many cases or differ in some cases. For both models, flow of information and use of existing expertise to identify risks is facilitated while matching information and expertise is easier in Model 2. Since the committee is independent and the members are appointed from diverse institutions, both models have the advantage of being able to challenge dominant views of one institution. These aspects help provide effective identification and monitoring of systemic risk.

There are some differences between the two models which affect timely and effective use of macroprudential tools. Since there is less separation between policy decisions and control over instruments in Model 2, it has less risk of delayed action against the build-up of systemic risks. Moreover, giving an active role to the treasury may lead to a risk of delayed action due to the political cycles in Model 3. Since the macroprudential authority is clearly assigned responsibility for risk mitigation in Model 2, this model has clear incentives to act in a timely fashion.

As for the coordination issues, while Model 3 has an advantage of better coordination with fiscal policies due to the treasury’s active role, the treasury’s role may lead to challenges when short-term political considerations conflict with appropriate policy actions against systemic risk. Model 3 also lacks harmony with monetary policy compared to Model 2 since there is less overlap in membership of the monetary authority and the committee. A strong role of the treasury may also undermine autonomy of microprudential supervision.

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25 Excerpt from Appendix 1.1. Maino, Imam and Ojima.
26 Ibid p.16.
Institutional design is important for many aspects of a successful macroprudential policy regime. Gathering extensive and granular data is essential for effective policymaking. Giving clear mandates and incentives to the regulatory authority is another prerequisite. Accountability arrangements have direct impacts on the policy authority’s willingness to act. Factors affecting timely reaction to emerging systemic risk include quality of supervision, early diagnosis of the type and source of risk, and coordination mechanisms. Having clear communication rules and a set of principles for discretionary policymaking can ensure high confidence among economic agents. The different models of institutional design may also affect the types of macroprudential tools available to policymakers. Various types of macroprudential tools are discussed in the following chapter of this report.

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**Basel Box**

The Bank for International Settlement is the umbrella organization for all the banks in the world, and the standards of the banking sector are called “Basel standards”. While there is no requirement for regulatory authorities to apply Basel standards for the banks in their jurisdictions, many countries do enforce these standards. In other words, Basel standards can be accepted as the benchmark standards for banks around the world. These standards aim to build financial resiliency within the banking sector.

Basel regulations take their name from the city of Switzerland and are prepared by the Basel Committee on Banking Supervision (BCBS). There are three different Basel standards named Basel I, Basel II and Basel III respectively, established through the work of this committee. After preparing a draft version of Basel standards, the committee presents its recommendations to regulatory authorities for their review. After getting feedback from them, the ultimate changes are made and the Basel standards are finalized.

Basel III, which is the newest standard, includes an international framework for the banking sector and its main objective is to create a more resilient banking system. Basel III has two important targets: microprudential and macroprudential supervision. In other words, Basel III regulations can be accepted as a combination of microprudential and macroprudential policies:

1. The Microprudential level: Basel regulations are designed to increase the resiliency of individual banking institutions.
2. The Macroprudential level: Basel regulations address system-wide risks which might stem from the banking sector and the pro-cyclical amplification of these risks.

Basel III includes detailed regulations and, due to the effects of these standards on the banks and the banking sector, there is a long implementation period that continues until 2019.

The table below details Basel III phase-in requirements:

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Source: BIS, Basel Overview Table.

The effect of the recent global financial crisis can be seen in these Basel rules, which took lessons from the crises and applied these lessons in forming Basel III regulations. The summary of the main regulations which are established in Basel III are presented below:²⁹

- **Minimum Common Equity Capital Ratio** will increase from 3.5% to 4.5% gradually by 2019. This ratio consists of risk-weighted assets, after deductions.
- Basel III creates the **Capital Conservation Buffer**. This ratio will be increased up to 2.5% by 2019. Thus, the amount of total equity held by banks will be increased by 7% by 2019.
- With Basel III, the **Countercyclical Buffer** is developed. The Countercyclical Buffer will enable authorities to adjust this ratio to limit systemic risk. The Countercyclical Buffer’s range will be 0-2.5%. Basel III has taken into consideration the cyclical trends with this tool.
- **Minimum Total Capital** will be standardized at 8% by the beginning of 2016.
- The amounts exceeding the limit for deferred tax assets and mortgage servicing rights will be accepted as partial deductions in the calculation of Common Equity Tier 1 beginning in 2014. The percentage of deductions will be increased 20% every year and all of the mentioned amounts will be deducted from common equity tier 1 by 2019.
- To limit leverage of banks, a **leverage ratio** is determined. The leverage ratio will be calculated by dividing the capital measure by the bank’s total exposure. While

the capital measure consists of common equity tier 1, the exposure measure consists of on-balance sheet and off-balance sheet exposures. The leverage ratio is set at 3%. In other words, the bank’s leverage will be limited to 33 times its common equity tier 1.

- Two new liquidity ratios, the liquidity coverage ratio and net stable funding ratio, are developed with Basel III. While the liquidity coverage ratio focuses on short term liquidity (30 days), the net stable funding ratio focuses on long-term liquidity. Both of the ratios are developed to manage liquidity risk.

The design of Basel III fits both microprudential and macroprudential policies and is necessary to limit opportunities for regulatory arbitrage, which arises when regulatory standards are different across jurisdictions. In other words, banking transactions might move from countries with strict regulations to countries which have more accommodating regulations. If countries fail to conform to Basel III, financial activities in these jurisdictions might be the source of future financial crises. This situation could also negatively affect the countries which do conform to Basel III rules. Therefore, the adoption of Basel III standards is seen as an important objective for macroprudential policy.

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Chapter 2: Macroprudential Policy Tools

History of Macroprudential Policy Implementation in the United States

The concept of macroprudential policy has become more popular since the global financial crisis. Nevertheless, there are many examples of what we now refer to as “macroprudential policy” being used in the United States throughout the 20th century. Some of the macroprudential policies implemented in the United States during this period are as follows:31

- **Underwriting Standards** on loans offered by banks and other financial institutions such as maturity limits and loan-to-value limits.
- **Stock Margin Requirements** for investors when they bought securities, as a percentage of the value of the securities.
- **Selective Credit Controls** on portfolios.
- **Reserve Requirements for Banks** as a way of selectively controlling credit and controlling the money supply.
- **Interest Rate Ceilings** which were first introduced in 1927 by the Federal Reserve Act to limit interest rate rises.
- **Capital Requirements** for banks which were implemented in the 1980s as minimum capital ratios by regulators.
- **Supervisory Guidance** and **Direct Pressure** to preserve the stability of the financial sector.

These policies were implemented by regulatory authorities including the Federal Reserve, the Office of the Comptroller of the Currency (OCC), and the Federal Deposit Insurance Corporation (FDIC).

Basic Overview of the Use of Macroprudential Policy Instruments

There are many overlapping targets between macroprudential policy and other policy areas. As a result, macroprudential policy includes tools used in other policy areas in addition to ones specifically used for macroprudential purposes. After the global financial crisis, academics and policymakers have called the formulation of policy that would deploy these tools for the purpose of securing financial stability “macroprudential policy.”

Macropurdenential tools are categorized in accordance with the two dimensions of systemic risk mentioned in the previous section: the time dimension and the cross-sectoral (or cross-sectional) dimension. The tools in the first group affect the cyclical build-up of systemic risk by reducing risk exposure during the boom-phase and risk aversion during the bust-phase. The tools targeted at the cross-sectoral dimension, on the other hand, address risks which arise as a result of interconnectedness and contagion between financial institutions, especially systemically important ones. The instruments to address systemic risk can be credit-related,32 liquidity-

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32 Some of these include LTV, DTI, foreign currency lending measures or ceilings on credits.
related\textsuperscript{33} or capital-related.\textsuperscript{34} Level of development, type of exchange rate regime, and the nature of shocks may also play a role in the selection of policies in different economies. Historically, while emerging economies have used liquidity measures, advanced economies were more focused on credit related tools until the crisis. Countries with fixed exchange rate regimes tended to use macroprudential tools more frequently due to the limited capacity of monetary policy adjustments to impact credit growth. In the emerging market context, high capital in-flows leading to rapid credit growth may require the use of credit related and liquidity related measures in these economies. Definitions of the various tools are presented in Appendix 1.2.

The policy choices between “single or multiple policies,” “broad based or targeted policies,” “fixed or time varying policies” and “rules (automatized) or discretionary policies” have been researched and debated in the literature. In this regard, an IMF survey explains how the macroprudential tools are applied in 51 countries.\textsuperscript{35}

\textit{Single or multiple policies:} A combination of the tools are often used in concert to address various aspects of systemic risk and increase the likelihood that the tools are effective. According to the IMF survey, only two countries of the 51 surveyed used a single tool in implementing macroprudential policy. Multiple tools can improve policy trade-offs and increase the marginal benefit of each policy.

\textit{Broad based or targeted policies:} Instruments are used to target specific risks and are differentiated for specific risks. For example, LTV caps can be applied for the housing sector and differentiated for different segments and values of credits. The type of shock is important in the choice between broad based or targeted policies. If a particular sector is the source of the risk, a targeted tightening may suffice, while pervasive credit growth requires a broad based policy. Even if policies individually target specific risks, they can be implemented in conjunction with monetary, fiscal, microprudential, or competition policies, especially when the credit cycle coincides with the business cycle and a generalized risk of economic overheating emerges.

\textit{Fixed or time varying policies:} Time varying adjustments of instruments (especially credit-related ones such as LTV or DTI) is a common practice. The nature of countercyclical policies and dynamic provisioning requires that these policies be time varying to mitigate the effects of a possible crisis and credit crunch.

\textit{Rules or discretionary policies:} In practice, macroprudential policies have been discretionary rather than rules-based. According to the above mentioned survey, most countries implemented and calibrated the tools based on discretion. The adjustments can be made on a trial and error basis. Some, including Spain and countries in Latin America, used rules-based policies. Difficulties in measuring systemic risk accurately plays a role in the prevalence of discretionary policy making. It is hard to measure the effectiveness of discretionary policy actions due to the

\textsuperscript{33} Such as limits on net open currency positions/currency mismatch/maturity mismatch, reserve requirements.

\textsuperscript{34} Such as countercyclical capital requirements, dynamic provisioning, restrictions on profit distribution.

difficulty of capturing the counterfactual of what would have happened in the absence of the policy action.\(^{36}\)

In monetary policy, rules-based policies are considered to have advantages over discretionary policies in terms of accountability, transparency, efficacy, and time consistency. Some of the macroprudential policy instruments\(^{37}\) could be deployed in a rules-based way.\(^{58}\) Rules-based policies help to overcome the bias for inaction and provide ex-ante incentives to take action during the cycle. On the other hand, discretion allows for flexibility when there is uncertainty in measuring systemic risk and transmission channels, allowing policymakers to use their best judgment in interpreting data. Unanticipated systemic shocks and idiosyncratic risks affecting individual segments or institutions may require discretionary rules to restore the market’s confidence.\(^{39}\) For this reason, a mix of clearly defined and announced rules and discretionary policies can be a superior option. The degree of the macroprudential authority’s mandate on discretion is controversial.\(^{40}\) The macroprudential authority can override rules when necessary in a constrained discretionary system or apply complementary and discretionary decisions when rules do not seem to address the systemic risk sufficiently. To overcome the shortcomings of not having rules, other mechanisms can be deployed to ensure predictability of the authority’s actions. For example, the Bank of England gives information to the public about how the prudential authority will use the instruments under its mandate\(^{41}\) or the possible course of action while resolving a failed firm.\(^{42}\)


\(^{37}\) Loan loss provisions, Capital requirements/surcharges, LTVs.

\(^{38}\) See Gabriele Galati and Richhild Moessner, “Macroprudential policy – a literature review”, February 2011 p.11)

\(^{39}\) IMF, 2011, p. 31.

\(^{40}\) While IMF studies generally emphasize rules with exceptions, there are other views favoring constrained discretion. (Quagliariello & Libertucci, 2015)

\(^{41}\) Bank of England, 2014

\(^{42}\) Bank of England, 2014
Effectiveness of Macroprudential Policies

Studies Assessing the Effectiveness of Macroprudential Policies

A number of studies have been conducted on the effectiveness of macroprudential policies. These studies can be organized into two groups according to a recent study of the IMF.43

The first group includes cross-country studies which measure the effectiveness of various macroprudential policy instruments on credit growth, asset prices or other macro indicators. The second group of studies measures the effect of one or a few instruments in one economy. All of these studies find macroprudential instruments to be effective to varying degrees. The list of the studies and their main findings can be found in Appendix 1.3.

One of the most recent studies on the effectiveness of macroprudential policies is the IMF’s Working Paper published in March 2015. The study includes the broadest data from 119 countries for the period between 2000 and 2013, which is based on the Global Macroprudential Instruments survey of the IMF’s Monetary and Capital Department during 2013-2014. The effect

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43 IMF, 2011.
of a Macroprudential Policy Index (MPI)\textsuperscript{44} – along with five other independent variables – on “credit growth” is regressed.\textsuperscript{45} The policies are divided between borrower and lender based policies, and the policies’ effects on different country groups are measured as well as their effects on different segments, such as household and corporate credit markets.

Usage of macroprudential policies has increased during the data period. The total number of policies per country has increased from an average of 1 in 2000 to 2.5 in 2013. Emerging and developing economies have used macroprudential policies more frequently than advanced economies. Concentration limits (CONC) are by far the most frequently used policy. Other commonly used policy instruments are Interbank Exposures (INTER) and customized Reserve Ratio measures (RR\_REV). While LTV caps have also been used very frequently, it’s important to note that advanced countries made use of this measure more than emerging countries.

Two regression methods – OLS and GMM - were used to measure effectiveness of the policies. The GMM method, which indicated a higher magnitude of effectiveness, is considered more noteworthy by the authors since it overcomes the endogeneity issues between dependent variable and independent variables, at least to some extent. The results of the GMM regression is in line with much of the research done before: MPI has a significant effect on credit growth and macroprudential policies’ effect in emerging and developing countries is higher than that of advanced countries. This is probably due to the fact that emerging economies have less developed financial systems and relying on macroprudential tools more than advanced economies. The impact is significant in both open and closed economies but is bigger in closed ones due to the higher possibility of “circumvention of the policies” in open economies. Most of the independent variables other than MPI have significant impacts on credit growth.

Other regressions in the study examine classified instruments’ effects on classified credit markets. Both borrower based and financial institution based instruments are found to be significantly effective in the overall sample as well as in emerging and developing markets. The surprising result is neither borrower-based nor financial institutions-based macroprudential policy instruments have a significant effect in advanced economies. (Table-5) While MPI and borrower based policies has significant effects on household credit growth in advanced countries; they don’t have the same effect on corporate credit or housing prices. Financial institutions-based instruments have not had any significant effects in any market in advanced economies. On the other hand, borrower-based policy instruments have had a significant effect on household credit growth. In sum, for advanced countries, housing credit growth could be affected by

\textsuperscript{44} This index consists of 12 policy instruments: General Countercyclical Capital Buffer/Requirement (CTC); Leverage Ratio for banks (LEV); Time-Varying/Dynamic Loan-Loss Provisioning (DP); Loan-to-Value Ratio (LTV); Debt-to-Income Ratio (DTI); Limits on Domestic Currency Loans (CG); Limits on Foreign Currency Loans (FC); Reserve Requirement Ratios (RR); and Levy/Tax on Financial Institutions (TAX); Capital Surcharges on SIFIs (SIFI); Limits on Interbank Exposures (INTER); and Concentration Limits (CONC). In addition to these policies two more instruments are defined: LTV\_CAP (strict LTV caps) and RR\_REV (RR measures which impose specific wedge on foreign currency or are adjusted countercyclically.) The MPI is calculated as a simple sum of the scores on 12 policies.

\textsuperscript{45} The other independent variables of the regression are: \(Y_{i,t-1}\) (Credit growth rate in the previous period), \(\text{GDP}_{i,t-1}\) (GDP growth in the previous year), BankCrisis\_\text{}(a vector capturing the presence of banking crisis during the previous years), Policy\_\text{}(Central Bank policy rate in the previous period), and country fixed effects.
macroprudential policies.\textsuperscript{46} When the impact of individual policies is measured, FC and DTI are found to be significantly effective in advanced economies. LEV’s impact is also effective for both household and corporate growth, however its coefficient is positive. Surprisingly LTV\_CAP has a significant effect on corporate credit growth in advanced economies. None of the instruments “individually” has a significant impact on house price growth in advanced economies. The most effective tool for the advanced countries seems to be FC for household credits and LTV\_CAP for corporate credits according to the regression. The authors conclude that there is a scope for using LTV and DTI in advanced countries.

Another IMF study\textsuperscript{47} examines the effectiveness of ten macroprudential instruments\textsuperscript{48} and concludes that the instruments may be effective if they are used appropriately. The study uses three assessment approaches. First, case studies of a small number of countries are analyzed to see if the objectives are achieved. Second, the researchers looked at the target variables to see their performance after the instruments are implemented. Third, a panel regression is used to analyze various variables compared to a counterfactual scenario in which no macroprudential instrument is implemented.

The panel regression suggests that the instruments may have an impact on four measures of risk. These are: credit growth, systemic liquidity, leverage, and capital flows.\textsuperscript{49} Half of the (5/10) instruments are found to have a significant effect on credit growth.\textsuperscript{50} Six of the ten instruments are found to be significantly effective in affecting systemic liquidity\textsuperscript{51} and leverage.\textsuperscript{52}

The degree of economic development, the size of the financial sector, and the type of exchange rate regime are found not to be associated with effectiveness of the policies. The first two variables are included in the country fixed effects in the first study so there is not a deduction regarding these variables. However the type of exchange rate regime is found to be significantly associated with credit growth in the first study. In that study, it is suggested that controlling overall credit (growth) is more difficult, possibly due to exchange rate volatility exacerbating the effects of a financial cycle in countries with flexible exchange rate regimes. A third study

\textsuperscript{46} The only exception is the impact of Borrower\_U index on corporate credit growth in advanced countries which is significant at the 1\% level. Borrower\_U index is 1 if at least one of LTV\_CAP and DTI is used and 0 otherwise.

\textsuperscript{47} Lim, Columba and Kongsamut 2011

\textsuperscript{48} These instruments are LTV, DTI, Caps on foreign currency lending, Ceiling on credit growth, Limits on net open currency positions/currency mismatch, Limits on maturity mismatch, Reserve requirements, Countercyclical capital requirements, Time-varying dynamic provisioning, Restrictions on profit distribution.

\textsuperscript{49} Credit growth is measured as the logarithm change of claims on private sector from financial institutions. Systemic liquidity is approximated by banks’ credit as a fraction of total deposits to capture non-core funding. Leverage is the ratio of the assets over equity. Capital flows are the ratio of foreign liabilities to non-residents to claims on non-residents.

\textsuperscript{50} These instruments are: Caps on the LTV&DTI, ceilings on credit growth, reserve requirements and time varying dynamic provisioning.

\textsuperscript{51} These instruments are: Caps on the LTV&DTI, ceilings on credit growth, reserve requirements, time varying dynamic provisioning and limits on maturity mismatch.

\textsuperscript{52} These instruments are: Caps on the DTI, ceilings on credit growth, reserve requirements, caps on foreign currency ceiling, countercyclical/time varying capital requirements and time varying dynamic provisioning.
includes two different models producing two different results about macroprudential policy’s effectiveness depending on the exchange rate regime.53

The authors indicate that “country-specific circumstances, such as the quality of supervision, the phase of the credit cycle in which the instruments are implemented, the extent to which circumvention and arbitrage are possible, the ability of the authorities to take coordinated policy actions to limit circumvention and their responsiveness to changed conditions are among factors that determine whether an instrument is effective when applied in a particular country.”54

Although both of the studies mentioned above are open to criticism about data quality, endogeneity, establishing causality, and omission bias, they are the most comprehensive studies so far about the effectiveness of macroprudential instruments and the findings are in line with those of many other studies.

Lessons for Effective Use of Macroprudential Policy Instruments

Macroprudential policies are effective everywhere according to the findings of effectiveness studies. However, there are tradeoffs when choosing the mix of tools. Using a single tool can better address the risks from a single sector or market because it is easier to calibrate, communicate, and assess effectiveness. However, macroprudential instruments can be costly for the financial sector and other agents. Some tools may even have a negative impact on GDP growth, especially when the targeted sector represents a large share of the economy. Side-effects of an instrument can be mitigated with other instruments and elimination of side effects can increase the marginal utility of each tool. On the other hand, use of multiple instruments may be too complicated to accurately predict outcomes. Calibration and communication issues may arise when using multiple instruments. It is important for policymakers implementing macroprudential policy to minimize the side-effects and design a clear set of policies. Figure 1.7 shows some advantages and drawbacks of selected tools.

54 Lim, et al., 2011, p. 23.
## Figure 1.7: Macroprudential Tools Categorized by Transmission Mechanism

<table>
<thead>
<tr>
<th>Policy tool</th>
<th>Advantages</th>
<th>Drawbacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loan-to-value (LTV) cap</td>
<td>Low administrative burden</td>
<td>Ineffective during rapid housing boom</td>
</tr>
<tr>
<td>Debt-to-income (DTI) cap</td>
<td>Ties loan growth to wage growth</td>
<td>High administrative capacity needed for data on income</td>
</tr>
<tr>
<td>Loan-to-deposit caps</td>
<td>Low administrative burden</td>
<td>Distorts bank funding Not applicable to foreign banks</td>
</tr>
<tr>
<td>Reserve requirement</td>
<td>Low administrative burden</td>
<td>Ineffective with low interest rates Burdens central bank</td>
</tr>
<tr>
<td>Levy on noncore bank liabilities</td>
<td>Price-based measure Acts on broad liability aggregates</td>
<td>Needs legislation Cannot narrowly target FX vulnerability</td>
</tr>
<tr>
<td>Levy on FX-denominated bank liabilities</td>
<td>Price-based measure Enhances monetary policy Counters FX risk</td>
<td>Needs legislation Narrow base of levy</td>
</tr>
<tr>
<td>Counter Cyclical capital requirements</td>
<td>Conforms to Basel III</td>
<td>Difficulty in calibration Level playing field issues</td>
</tr>
<tr>
<td>Forward-looking provisioning</td>
<td>Modifies bank incentives</td>
<td>Objections from accounting standard setters</td>
</tr>
<tr>
<td>Leverage cap</td>
<td>Modifies bank incentives</td>
<td>Not price based Open to circumvention Vulnerable to bank FDI</td>
</tr>
</tbody>
</table>


Selection of the appropriate policy instrument depends on the source of the systemic risk. It is better to use credit-related instruments if the source of the systemic risk is asset price bubbles or credit growth. Liquidity related instruments can address liquidity problems and capital related instruments can address excess leverage. If the systemic risk arises from capital flows, all three kinds of measures – especially the liquidity-related ones – may address the problem. Targeting specific activities may increase effectiveness, but it requires more granular data. If the authority lacks sufficient data, a broad based approach may be less risky. Specific targets can be circumvented more easily –especially in open economies; channels for evasion should be anticipated. An important issue that undermines effectiveness is circumvention of the macroprudential policies. Banks, corporations, or individuals may draw on foreign resources when macroprudential instruments are applied and this may reduce the chosen instrument’s
effectiveness. Circumvention is more likely in open economies, and managing capital flows by applying complementary measures can mitigate its effects.\textsuperscript{55}

Chapter 3: Macroprudential Policy: Interactions with Monetary Policy

Monetary and macroprudential policy are fundamentally linked. As Douglas J. Elliot notes, “macroprudential and monetary policy blend together.”\textsuperscript{56} In particular, tools traditionally associated with monetary policy, like adjusting reserve requirements to affect credit conditions, fit all of the criteria for our definition of macroprudential policy. In examining these similarities, Elliot notes that “monetary policy works very largely via interactions with and influences upon financial institutions and markets. So does macroprudential policy. Monetary policy attempts to affect credit conditions, as does macroprudential policy.”\textsuperscript{57} Given the similarities in the transmission mechanisms through which monetary and macroprudential policy achieve their goals, policymakers must develop an understanding of how these policy areas interact, where there may be tension, and where there may be complements between monetary policy and macroprudential tools.

This section of the report provides a brief overview of the monetary policy framework for achieving macroeconomic stability prior to the crisis. This will be followed by an analysis of the evolution of academic and professional thinking on the appropriate role of monetary policy moving forward, emphasizing its relationship with macroprudential policy. Through an analysis of the transmission mechanisms for monetary and macroprudential policy, the section concludes with a summary of the possible complements and conflicts of these two policy areas.

The Science of Monetary Policy before the Crisis

Monetary policy in the United States historically has focused on two goals: price stability and the health of the real economy. These goals have been described as the Federal Reserve’s “dual-mandate” of low inflation and maximum employment. Financial stability existed as an ancillary objective and concerned policymakers only to the extent that it influenced inflationary pressures and the performance of the real economy.\textsuperscript{58} The economic turmoil inflicted by inflation during the 1970s, a period of both fiscal and monetary activism rooted in the idea that unemployment rates could be lowered by allowing slightly higher rates of inflation (the Philips curve trade-off), confirmed for most central bankers that overly expansionary monetary policy would inevitably lead to high inflation rates, with negative repercussions for economic efficiency and growth. Indeed, monetary policy eventually accepted the Friedman-Phelps argument that there was no long-run tradeoff between unemployment and inflation, as the economy gravitated towards a


\textsuperscript{57} Ibid, p.147.

“natural” rate of unemployment so long as economic agents could count on relative price stability.59

Over time, monetary policy frameworks identified a target rate of inflation as a primary mechanism for achieving price stability. This convergence was rooted in research by Milton Friedman and others that established what became known as the “monetarist” tradition. Inflation targeting as a framework for implementing monetary policy had three main benefits: First, it would stabilize medium-term inflation expectations and therefore allow for monetary policy to be used more aggressively to stabilize conditions in the real economy without sacrificing price stability; second, it would eliminate wage-price spirals due to commodity-price shocks like the one experienced in the 1970s; third, it would allow countries to avoid the possibility of a deflationary trap in which expectations for deflation become self-fulfilling.60 The ensuing years of relative financial and economic stability further strengthened most central bankers’ commitment to the flexible inflation targeting monetary framework.

Beginning in the mid-1980s and until the financial crisis, business cycles in advanced economies were much less volatile. This period, referred to as “the Great Moderation”, led policymakers to believe that they had figured out how to use monetary policy most effectively in achieving goals of macroeconomic stability. As Ravi Menon, Managing Director of the Monetary Authority of Singapore, recently noted, “Central Bankers thought they had found the secret sauce of monetary policy. The recipe was simple – an independent central bank, a single target (price stability), and a single instrument (the interest rate)”.61 The consensus monetary policy framework during this period revolved around the following nine principles:62

1. Inflation is always and everywhere a monetary phenomenon.
2. Price stability has important benefits, including lowering the cost of borrowing and enabling the efficient allocation of capital, increasing the level of resources productively employed in the economy.
3. There is no long-run tradeoff between unemployment and inflation, meaning that monetary policy cannot be used to increase the level of employment in the long-run.
4. Expectations play a crucial role in the macroeconomy, increasing the importance of credibility for monetary policy.
5. The Taylor principle – that monetary policy should adjust in response to deviations from the target inflation rate and deviations from the desired level of output – is necessary for price stability.

61 Ravi Menon, “Getting in all the cracks or targeting the cracks? Securing financial stability in the post-crisis era” (Opening remarks by Mr. Ravi Menon, Managing Director of the Monetary Authority of Singapore, at the Asian Monetary Policy Forum (AMPF), Singapore, 24 May 2014.)
6. The time-inconsistency problem – that the optimal plan may vary over time – is relevant to monetary policy, again increasing the importance of credibility for central banks.
7. Central bank independence improves macroeconomic performance; that is, allowing central banks to operate with instrument independence helps insulate them from short-term pressures to deviate from optimal monetary policy.
8. A credible commitment to a nominal anchor promotes price and output stability.
9. Financial frictions play an important role in the business cycle, but monetary policy is ill-equipped to deal with these and should respond primarily to inflation and output gaps.

These widely accepted principles lent an air of scientific authority to central bankers in their conduct of monetary policy, and have largely determined the composition of the flexible inflation targeting model in use among the majority of monetary authorities prior to the crisis. While many of these principles remain intact, the financial crisis has forced central bankers to reconsider their relevancy in setting monetary policy moving forward and brought forward a number of proposals for amending the monetary policy framework.

**Monetary Policy’s Role in Promoting and Sustaining Financial Stability**

Before the financial crisis in 2007-2009, policymakers converged on the idea that monetary policy should operate largely independent of financial stability concerns. In fact, research even suggested that monetary policy that stabilized inflation and output at an optimal level would reduce the probability of financial instability by making asset-price bubbles less likely. Although both academics and policymakers viewed financial stability as a prerequisite to conducting effective monetary policy and recognized the impact of financial instability on both inflation and economic growth, they believed identifying risks to financial stability ex ante was too difficult to be relevant in setting monetary policy. The difficulty of recognizing asset price bubbles and the evidence indicating that monetary policy geared at optimally stabilizing output and inflation reduced risks to financial stability encouraged a monetary policy framework that focused first and foremost on price stability. As a result, a number of central banks adopted explicit or implicit inflation targets as their primary monetary policy aim.

Further strengthening the consensus opinion that monetary policy should not explicitly address financial stability concerns was the widely accepted view that central banks had the tools to dampen the negative economic impact of asset price busts. As Bernanke and Gertler asserted, “By focusing on the inflationary or deflationary pressures generated by asset price movements, a central bank effectively responds to the toxic side effects of asset booms and busts without

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64 Ibid
66 Woodford, 2012.
getting into the business of deciding what is fundamental and what is not.” This view, often referred to as the “Greenspan doctrine” after the former Chairman of the Federal Reserve, Alan Greenspan, led policymakers to consistently demonstrate a willingness to preemptively ease monetary policy when economic growth faltered, and maintain accommodative monetary policy in the context of rising asset prices and leverage as long as inflationary pressures remained subdued. In fact, the traditional goal of price stability, given a well-designed regulatory structure, was seen as largely complementary with the goal of financial stability.

The pre-crisis consensus view outlined above was based on the premise that the cost of intervening with monetary policy to “lean against” potential asset price bubbles was likely to be high, and the cost of “cleaning up” after an asset price bust was likely to be relatively low. The severity of the recent recession combined with the extraordinary measures taken by governments and central banks to counteract recessionary effects has changed this belief, and led to a reevaluation of monetary policy’s appropriate role in maintaining financial stability moving forward. Subsequent research on asset price bubbles has demonstrated that cleaning up after credit-driven bubbles is far more costly than previously thought, and therefore preemptive tightening may be a more effective use of monetary policy in securing macroeconomic stability.

The prolonged period of low interest rates prior to the financial crisis (reflecting the Greenspan doctrine outlined above) helped inflate a bubble in real estate assets that eventually led to a spike in unemployment and a destructive economic recession when housing prices collapsed. As a result, policymakers have questioned whether it is still appropriate to ignore asset bubbles in setting monetary policy in the absence of signs of accelerating inflation.

In recent years, numerous proposals have been made regarding the appropriate adjustments for the monetary policy framework moving forward. These proposals tend to agree that it is no longer acceptable for policymakers to set monetary policy without at least considering its impact on financial stability, but diverge on how much (if at all) monetary policy should be affected. In one camp are those who believe that monetary policy should explicitly include a financial stability component. This would take the form of building financial stability risks into macroeconomic models used in setting monetary policy. In the other camp are those who argue that monetary policy should continue to operate independently of financial stability goals and maintain its traditional focus on price and output stability, and advocate for a broader role for macroprudential policy to target financial stability concerns. Finally, a third group puts forward a blended approach that emphasizes the desirability of maintaining a separation between monetary policy and financial stability concerns, but allows for the use of monetary policy in securing financial stability. Under this framework, macroprudential policy is the “first line of

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67 Ibid, p. 4.
68 The Greenspan doctrine likely played a role in the Federal Reserve’s decision to keep the Federal Funds Rate below 2 percent between December 2001 and December 2004 following the brief and relatively mild recession from March 2001 to November 2001.
defense” for constraining systemic risk, but monetary policy can be used for this purpose when macroprudential tools are insufficient or constrained.

The idea that financial regulation is likely insufficient in containing all sources of systemic risk has gained traction among central banks and monetary authorities. As a result, the view that monetary policy must also play a role in achieving financial stability has become more widely accepted. President of the Federal Reserve Bank of Kansas City, Esther George, has said that “a monetary policy that fails to take into account building systemic or tail risks exposes the economy to potential large setbacks in the future.”71 Similarly, Ravi Menon, a Managing Director at the Monetary Authority of Singapore, has said monetary policy may be necessary for addressing systemic vulnerabilities “when economic agents are determined to take risks” due to abnormally low interest rates.72 In this situation, risk-taking is likely to migrate outside of the regulated sector, limiting the efficacy of macroprudential policy in preventing the continued build-up of risk in the financial system. If central banks are to address systemic risk build-up outside of the regulated parts of the financial system, traditional monetary policy tools may have to be used for this purpose.73

Among those arguing in favor of making financial stability a core component of the monetary policy framework is former Federal Reserve Governor Jeremy Stein. While recognizing the importance of traditional microprudential regulation and the potential for macroprudential policy in safeguarding financial stability, Stein proposed a model for monetary policy that recognizes the costs of an overly accommodative monetary policy stance in the form of increased financial market vulnerability (FMV).74 His argument rests on three assumptions: First, that a main goal of monetary policy is reducing the expected shortfall in employment (i.e. minimize variation from full employment). Second, that easier monetary policy leads to lower risk premiums and therefore increased FMV, and when this is high, the probability of an adverse shock that would push unemployment up increases. And third, that the risks due to heightened FMV cannot be offset at zero cost with nonmonetary tools like financial regulation. Taking these assumptions as unproven but highly probable, Stein suggests using risk premiums in bond markets, including both term premiums (the expected excess return on long-term Treasury bonds relative to short-term bills) and credit premiums (the expected excess return on bonds with credit risk over safe Treasury securities) as an appropriate forward-looking indicator that may help policymakers determine whether monetary policy should react to financial market vulnerability. Research on the relevance of risk premiums for predicting economic activity indicates that rising risk premiums signal poor economic performance in the future, while low risk premiums are not necessarily a good indicator of strong economic performance. These low risk premiums do, however, have a tendency to increase the risk of future financial instability.75

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71 George, 2015. p. 5.
72 Menon, 2014. p. 3.
74 Jeremy Stein, “Incorporating Financial Stability Considerations into a Monetary Policy Framework” (Remarks at the International Research Forum on Monetary Policy, March 21, 2014.)
Similarly, Michael Woodford has proposed incorporating financial stability considerations into the flexible inflation targeting model for monetary policy that was widely accepted among central bankers prior to the crisis. According to Woodford, central banks “should admit that monetary policy may well have consequences for financial stability, rather than pretend that the issue should not be their responsibility because they have no influence over it.”

In this view, because financial stability has strong implications for both price stability and output-gap stabilization, “it is entirely consistent to flexible inflation targeting for a central bank to endeavor to balance financial stability objectives with [its traditional goals.]” Woodford adapts the traditional Taylor Rule, which seeks to minimize variance in the inflation and output gaps by optimally setting short-term interest rates, to include a measure of “marginal crisis risk.” When this marginal crisis risk is unusually elevated, “an ideal policy would tighten monetary conditions to the point that the price level and/or the output gap undershoot the levels that would otherwise have been considered desirable for these variables.” As with Stein’s model, Woodford admits that until further research on the connection of various financial risk factors to variables that are influenced by the central bank’s interest-rate policy (e.g. leverage, credit standards) is completed, it is impossible “to say anything specific about the way or degree to which it is appropriate to ‘lean against’ a credit boom.”

The financial crisis underscored the real economy’s vulnerabilities stemming from financial disruptions. Despite growing recognition of the high costs to “cleaning up” after a bubble bursts, there are some policymakers who still believe monetary policy is most effective when it does not respond to financial stability concerns related to potential asset price bubbles. This view, outlined in a speech by Vitor Costancio, Vice President of the ECB, stems from a recognition of the “disconnect” between the financial and business cycle. For example, while credit markets may be overheating, leading to abnormally high asset prices, business activity may be relatively weak. The two situations would call for opposite reactions from monetary policy, and so to avoid confusion it is best for monetary policy to respond exclusively to real economic activity as measured by output growth, unemployment, and inflation. Further supporting this view is the notion that monetary policy affects all sectors of the economy, and so targeting specific imbalances by adjusting interest rates is undesirable. The upshot of this argument in light of the lessons learned from the financial crisis is that macroprudential policy is essential for maintaining financial stability. Supporters of this view therefore argue for increased use of macroprudential policy to limit systemic risk build-up and secure financial stability. This approach is consistent with the Tinbergen principle, which assigns one goal to each available policy instrument. Implicit in this view is the assumption that it is still too difficult to accurately measure monetary policy’s impact on financial stability to warrant including an

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77 Ibid., p.7.
78 Ibid., p.20.
79 Ibid., p.21.
80 Vitor Costancio, “Financial stability risks, monetary policy and the need for macroprudential policy” (Speech at Warwick Economics Summit, February 13, 2015.)
81 Woodford, 2012, p.5.
explicit measure of financial stability in setting an optimal monetary policy, and so the “separation principle” remains relevant.

The third major school of thought on the future of monetary policy seeks to blend the two approaches outlined above for incorporating financial stability concerns into the monetary policy framework. This approach recognizes that there are likely to be greater costs in using monetary policy than there would be in using macroprudential policy for securing financial stability. Therefore, macroprudential policy tools should be the primary instruments for achieving financial stability, leaving monetary policy to focus on its traditional goals of output and price stability. However, this approach also recognizes that macroprudential tools are untested, and unlikely to be capable of completely addressing all sources of systemic risk. This view is articulated well by Carl E. Walsh in a paper presented at Jackson Hole in 2009:

“Financial frictions, which have generally been absent from the consensus model of monetary policy, affect both the monetary policy transmission process and generate distortions in the real economy. These distortions interact with nominal rigidities...targeted and time varying financial regulations are better instruments than monetary policy for mitigating many of the effects of these frictions. But if regulation fails to do so, central banks cannot ignore financial frictions and financial stability. Dealing with distortions involves operating in the world of the second best, and financial market disturbances may force central banks to make trade-offs among their inflation and output objectives.”

Given the probable limitations of financial regulation, supporters of this view allow for monetary policy to take action when circumstances indicate financial stability is at risk and macroprudential tools are insufficient in addressing the sources of this risk.

An example of this “blended” model is what Frederic Mishkin calls the “risk management approach” to monetary policy. Under this framework, when financial disruptions are evident monetary policy should be adjusted to guard against severe adverse outcomes, but maintain its traditional framework in normal times. Under this view, monetary policy would continue to focus on macroeconomic data until it is apparent that risks of financial disruptions are significant. When these risks arise, monetary policy should act preemptively based on financial indicators like market liquidity and credit spreads, even in the absence of negative macroeconomic data or a clear understanding of which financial indicators are most predictive of future problems in the real economy. Under this model, monetary policy would be timely, decisive, and flexible. Timely action requires that monetary policy adjust even before there is certainty regarding the severity of the financial disruption and the impact of the disruption on the real economy. Decisive action entails moving policy by more than would be appropriate purely

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82 George, 2015, p.2.
84 Ibid. p.28.
based on macroeconomic data when there are significant risks of severe adverse outcomes, essentially using monetary policy as a means of mitigating tail risks. Policy flexibility in this framework allows monetary policy to adjust more quickly to changing financial indicators, representing a departure from the traditional approach to optimal monetary policy, which would involve more gradual changes. In this framework, a strong nominal anchor to inflation expectations is necessary to ensure decisive action does not lead market participants to believe that monetary policy authorities are not sufficiently focused on maintaining price stability.

The three schools of thought described above demonstrate that monetary policy will forever be changed due to the experiences of the financial crisis. These proposed frameworks for monetary policy in the post-crisis world agree on two things: First, while the inflation targeting consensus has endured heavy criticism, it remains a necessary (if insufficient) framework for achieving economic stability in the form of price and output stability; and second, financial stability considerations must play a role in decisions regarding monetary policy. The challenge moving forward for policymakers is how best to incorporate financial stability considerations into this traditional framework for monetary policy. There is growing support for the use of financial stability indicators in models used by central banks for selecting an optimal path for interest rates, but there is little consensus around which indicators are likely to be most useful for this purpose. The belief in the benefits of monetary policy unburdened by the goal of securing financial stability is also still strong, although the recognition of the high costs to “cleaning up” after a financial disruption mean that in order for this separation between monetary policy and financial stability policy to be viable it is necessary for macroprudential tools to be used more aggressively to address sources of systemic risk. The emerging consensus, outlined by Federal Reserve Governor Daniel K. Tarullo, is a “blended” model that recognizes first that “we are all macroprudentialists now” and uses macroprudential policy as “the first line of defense” for containing systemic risk, but leaves open the possibility for monetary policy to be adjusted for the purpose of securing financial stability when macroprudential policy tools are inadequate.

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86 The Federal Reserve’s monetary policy during the crisis reflects this risk-management approach to monetary policy. In September 2007, the Fed dropped its target rate by 50 basis points despite strong economic growth, abandoning gradualism.


The traditional Keynesian understanding of the monetary transmission mechanism is fairly straightforward. By increasing or decreasing the size of the monetary base through adjustments to the short-term interest rate, central banks could change expectations for long-term interest rates and induce increases or decreases in investment, which would accelerate or decelerate real economic activity. This is known as the interest rate channel.\footnote{Peter N. Ireland, “The Monetary Transmission Mechanism”, Federal Reserve Bank of Boston Working Papers No. 06-1. November 2005. p.3.} Thus the role of central bankers was often described as knowing when to remove the “punch bowl” from the party.\footnote{Randall S. Kroszner, “Removing the punch bowl: central bank exit strategies”, BNM-BIS High-Level Seminar: “From exit strategies to a resilient financial system” 10–11 December 2009, Kota Kinabalu, Malaysia.} With the widespread use of the flexible inflation targeting regime outlined above, central banks had

\textbf{The Monetary and Macroprudential Transmission Mechanisms and Financial Stability}
identified the rate of inflation as the key indicator for when it was appropriate to raise interest rates, as above-target inflation rates would indicate that the economy was overheating. Financial stability considerations played only a small role in setting monetary policy.

In asset markets, accommodative monetary policy can increase financial asset prices, either by lowering the risk-free discount rate or by lowering risk premia. Changes to the overnight interest rate shift expectations for the path of future short-term rates and have a direct effect on long-term yields, affecting decisions by firms and households on long-term investments and purchases of consumer durables. Further, research has shown that easing of monetary policy tends to reduce credit risk premiums on corporate bonds. This has the effect of encouraging firms to borrow more, while pushing investors into riskier asset classes in their search for higher yields. Prior to the financial crisis, central banks had presided over a long period of relative macroeconomic stability. This stability, along with a commitment from central bankers to “cleaning up” in the event of financial disruptions, increased incentives for financial market participants to take on more risk. Greenspan explained this relationship between lower output and inflation volatility and increased financial volatility as follows: “accumulating signs of greater economic stability over the decade of the 1990s fostered an increased willingness on the part of business managers and investors to take risks with both positive and negative consequences.” The implication of this dynamic is that central banks, in successfully pursuing goals of short-term macroeconomic stabilization, may have unwittingly created increased financial instability.

The situation described above refers to a monetary transmission mechanism often referred to as “the risk-taking channel.” Raghuram Rajan, Governor of the Reserve Bank of India, has argued that low interest rates can lead to compressed risk premiums because they increase incentives for financial market participants to “reach for yield.” The observed relationship between monetary policy and private leverage choices supports this view. Farhi and Tirole argue that “private borrowers may deliberately increase their interest rate sensitivity following bad news about the future needs for liquidity due to an expectation that central banks will lower interest rates.” When this happens, central banks are forced to intervene by lowering interest rates due to excessive reliance on short-term, runnable wholesale funding in the financial system. Thus, even if a central bank commits not to lower interest rates ex ante, the rational decisions of key private borrowers to the expected policy reaction of a liquidity shortage end up forcing the central banks to do just that.

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92 Ireland, 2005. p. 3.
bank’s hand. The effect of increased risk-taking is higher asset prices, as investors are willing to accept lower returns.

Related to the risk-taking channel is another transmission mechanism for monetary policy, the credit channel. The credit channel operates largely through the banking sector as follows: “interest rate changes affect loan supply through credit market frictions, such as asymmetric information between borrowers and lenders that gives rise to an external finance premium.” 97 When interest rates are low, balance sheets of prospective borrowers appear stronger as the value of long-term assets like government bonds increases. Conversely, a rise in interest rates causes fixed-income assets to lose value, making a company’s balance sheet appear weaker and therefore reducing its borrowing capacity. Similarly, Bernanke and Gertler have argued that the “balance sheet channel” is the most quantitatively important connection between asset prices and the real economy. In their view, “cash flows and the condition of balance sheets are important determinants of agents’ ability to borrow and lend.” 98 If a borrower’s financial position is strong, then it can borrow greater amounts at a cheaper interest rate, and may benefit from the use of higher-valued assets as collateral. Thus, monetary policy directly influences both the supply and demand for credit, as changes in monetary policy can affect asset prices, which impacts the balance sheet strength of households, firms, and financial intermediaries, and changes both their capacity and willingness to borrow or lend.

For shadow banks, monetary policy influences the cost of risk and the degree of leverage available to non-banks in securities lending. By changing the cost of risk through the interest-rate and risk-taking channel, monetary policy increases or decreases demand for shadow bank intermediation. For example, if monetary policy lowers short-term interest rates, companies and others looking for safe assets to store their excess cash will look outside of the regulated banking sector because returns are extremely low in traditional bank products like certificates of deposit. 99 Through its influence on asset values, monetary policy also affects the borrowing capacity of institutions active in the repurchase market, as higher asset values increase the value of collateral, which allows institutions to borrow more.

In the non-financial and household sector, monetary policy operates through the balance sheet channel described above. As monetary policy can affect the value of assets on a firm or household’s balance sheet, it impacts the potential borrower’s net worth. 100 This transmission mechanism, sometimes referred to as the “financial accelerator”, 101 describes the way that an increase in borrower equity amplifies an individual’s propensity to consume (the wealth effect), and simultaneously increases their access to credit. Examples of this channel can be seen in the

97 Adrian and Liang, 2014, p.2.
98 Bernanke and Gertler, 2000, p.8.
100 Bernanke and Gertler, 2000
proliferation of home equity lines of credit prior to the financial crisis, with which homeowners borrowed against the rising value of their homes to finance other spending.\textsuperscript{102}

Macropolicies interact with the financial system similarly to monetary policy. As described in the previous section, the growing awareness of the influence of monetary policy on financial conditions and therefore for financial stability, has led a number of academics and professionals to argue for the use of macropolicies to mitigate vulnerabilities stemming from the stance of monetary policy. However this discussion often fails to address the many ways that the use of macroprudential tools may conflict with monetary policy goals through its impact on financial conditions. In particular, cyclical macropolicy instruments don’t only address vulnerabilities, but also limit the degree of leverage in the financial system, and the availability of credit, which are key transmission mechanisms for monetary policy.\textsuperscript{103}

In asset markets, macroprudential policy aims to mitigate risks from overvalued assets. Macroprudential tools include tightening underwriting standards such as loan-to-value and debt-to-income caps, counter-cyclical capital buffers, higher risk weights or sectoral capital buffers. If asset prices are a result of excessive leverage, macroprudential policy calls for tools aimed at limiting funding through wholesale markets – either secured or unsecured – by imposing minimum haircuts and stricter margin requirements.\textsuperscript{104} As discussed earlier, monetary policy has a strong influence on asset prices through the risk-taking channel. Macroprudential tools affecting credit conditions in asset markets thus have the potential to complement monetary policy by limiting asset price distortions due to the effects of monetary policy on investor risk-appetite.

In the banking sector, macroprudential policy aims at increasing resiliency and limiting the use of excessive leverage. Macroprudential tools would include the Basel III counter-cyclical capital buffer, which is designed to increase bank capital in boom times, and allow banks to deploy this capital cushion in downturns. Countercyclical liquidity requirements would operate in a similar fashion. This would increase the banking sector’s ability to absorb negative shocks. Similarly, increasing underwriting standards and risk-weights for specific sectors can prevent banks from becoming over-exposed to potential credit losses. Stress-testing is a useful tool in highlighting potential impacts of known risks, and can therefore increase the banking sector’s overall resiliency.\textsuperscript{105}

In the shadow banking sector, macroprudential policy aims to restrict opportunities for regulatory arbitrage and limit excessive use of leverage. But macroprudential tools are by definition less effective in affecting financial conditions for shadow banks as this sector is outside of the regulatory authority of the agencies implementing macroprudential supervisory policies. One exception to this is the possibility of instituting minimum haircuts for repurchase agreements and lowering the amount of margin that securities broker-dealers can offer clients.

\textsuperscript{102} Eric S. Belsky and Nela Richardson, "Understanding the Boom and Bust in Nonprime Mortgage Lending", September 2010.
\textsuperscript{103} Adrian and Liang, 2014, p.14.
\textsuperscript{104} Ibid. p. 15.
\textsuperscript{105} Ibid. p. 17.
This would in theory reduce leverage in the shadow banking sector by putting a cap on how much market participants can borrow against the value of securities in their portfolios. This could also lower the risk of contagion by reducing reliance on short-term wholesale funding in the shadow banking sector. However, these tools would only be effective to the extent that shadow banks are relying on regulated financial intermediaries, and such measures could push financial activity further outside of the regulatory sphere. Thus, it’s likely that monetary policy would be more effective in limiting the build-up of risk in the shadow banking sector.

In the non-financial sector, where monetary policy operates through the balance sheet channel, macroprudential policy aims to constrain credit supply through tools such as debt-to-income limits and loan-to-value caps. These measures would likely clog up the balance sheet channel through which monetary policy improves credit conditions and stimulates economic growth. Thus, in a situation where monetary policy is attempting to revive a moribund economy, macroprudential tools aimed at limiting the buildup of financial vulnerabilities could directly conflict with monetary policy’s objectives. However, if accommodative monetary policy aimed at stimulating economic growth is creating asset price distortions (for example, in the housing market), macroprudential policies targeted at specific sectors could actually improve monetary policy’s ability to improve credit conditions for other types of lending (e.g. infrastructure development, small business growth, etc.) that would lead to healthier economic growth.

The analysis above reveals ample overlap between the transmission mechanisms of monetary policy and macroprudential policy. The tables below from Shin (2015), and Adrian and Liang (2014) summarize the ways that monetary policy and macroprudential policy impact financial conditions in the different segments of the financial system.

**Figure 1.9: Transmission Mechanisms of Macroprudential and Monetary Policies**

Comparison of macroprudential policy with monetary policy

Source: Hyun Song Shin, BIS, “Macroprudential Tools, Their Limits, and Their Connection with Monetary Policy” (Remarks at IMF Spring Meeting: “Rethinking macro policy III: progress or confusion?” 15 April 2015).
### Figure 1.10: Monetary Policy’s Impact on different segments of financial system

<table>
<thead>
<tr>
<th>Segment</th>
<th>Financial conditions</th>
<th>Financial stability</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Asset markets</td>
<td>Risk free term structure</td>
<td>Compressed risk premiums</td>
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<tr>
<td></td>
<td>Higher asset prices</td>
<td>• Reach for yield because of nominal targets</td>
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<td></td>
<td>Lower risk premiums</td>
<td>• Supported by leverage from an external</td>
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<td>• Asset premium, asymmetric information</td>
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<td>• Asset managers that prefer yield income or</td>
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<td></td>
<td></td>
<td>• are evaluated based on relative performance</td>
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<td></td>
<td></td>
<td>Low volatility and low risk premiums</td>
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<tr>
<td></td>
<td></td>
<td>• Procyclical risk management practices</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Mismeasurement of risk</td>
</tr>
<tr>
<td>(2) Banking sector</td>
<td>Credit channel</td>
<td>Pro-cyclical leverage of banks and dealers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Procyclical risk management practices and inflated</td>
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<tr>
<td></td>
<td></td>
<td>Risk-shifting channel reduces the quality of credit</td>
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<td></td>
<td></td>
<td>• Low bank capital</td>
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<tr>
<td>(3) Shadow banking</td>
<td>Securitization</td>
<td>Pro-cyclical dealer intermediated leverage</td>
</tr>
<tr>
<td></td>
<td>Liquidity creation</td>
<td>• Procyclical risk management practices and inflated</td>
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<tr>
<td></td>
<td>Maturity transformation by nonbank intermediaries</td>
<td>Excessive maturity transformation</td>
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<tr>
<td></td>
<td></td>
<td>• Short-term funding fragilities</td>
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<tr>
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<td>Regulatory arbitrage</td>
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<tr>
<td>(4) Nonfinancial sector</td>
<td>Borrowing conditions</td>
<td>Deterioration in underwriting standards</td>
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<td>Balance sheet channel</td>
<td>Excess leverage</td>
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<td></td>
<td>Credit growth (credit/GDP)</td>
<td>• Fire sale externalities</td>
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<td></td>
<td></td>
<td>• Negative demand externalities</td>
</tr>
</tbody>
</table>

Source: Adrian and Liang 2014 – Table 2, Monetary Policy Transmission on Financial Conditions and Financial Stability in Different Sectors.
Tensions and Complements of Monetary and Macroprudential Policy

The above discussion demonstrates that monetary policy strongly influences investor and firm behavior, credit conditions, and therefore the vulnerability of the economy to financial shocks. Similarly, macroprudential policy also affects financial conditions, implying a feedback loop for the stance of monetary policy. Monetary policy, by shaping ex-ante risk taking incentives for individual agents, and by affecting ex-post the tightness of borrowing constraints through its pursuit of its primary objective of price and output stability, may contribute to the buildup of systemic risk and possibly trigger financial disruptions. Similarly, macroprudential policies aimed at constraining borrowing and therefore expenditure have an impact on overall output, and
as a result, on inflation. Further, when one policy area is constrained, the demands on the other policy area are amplified. The net result of these interactions is that monetary and macroprudential policy, depending on the situation, may be either complements or, because they have different goals, they may at times conflict with one another. This analysis suggests a need for coordination between the two policy areas, and implies that both policies would be more effective if responsibility for each was under the same organizational umbrella.

Critics of an institutional design that assigns responsibility for both monetary and macroprudential policy to the same organization have argued that doing so would lead to an unnecessary communication challenge and likely lead to greater political constraints on policy actions in both areas. The assumption behind this view is that the two policy areas would have competing goals in certain economic environments. For example, if an economy were recovering from a negative demand shock, monetary policy would seek to ease credit conditions to stimulate borrowing and lending. If, at the same time, macroprudential policy identified growing risks of a housing bubble, its goal of financial stability would require measures that would tighten credit conditions, directly countering two main transmission mechanisms of monetary policy, the credit channel and the balance-sheet channel. In this context, if there is a single authority for both policy areas, investors and other stakeholders may be confused as to monetary policy’s main objective. The resulting loss in credibility would damage the ability of monetary policy to achieve its primary objective of price stability, and increase risks of financial instability and therefore the burden for macroprudential policy. Further, without a clearly communicated policy goal, central banks risk losing their independence. Thus, housing both policy areas under the same organizational umbrella would require measures such as increased transparency and safeguards.

In spite of the challenges outlined above, there is strong support for these two policy areas being highly complementary. The IMF outlines two main ways that macroprudential tools can make monetary policy more effective: first, “well-calibrated and clearly communicated macroprudential policies can contain risks ex-ante, thereby easing the burden on monetary policy”; and second, “macroprudential tools can provide buffers against unexpected shocks, lessening the risk that monetary policy will run into the lower bound on interest rates.” Indeed, recent theoretical literature based on dynamic stochastic general equilibrium models supports the idea that macroprudential policy and monetary policy are highly complementary. These models typically assume that monetary policy sets the risk-free interest rate, while macroprudential policy impacts risk premiums. By targeting specific sectors in which risk premiums are abnormally low, suggesting that distortions may be present, macroprudential policy allows monetary policy to more effectively reach sectors that will improve aggregate economic performance.

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107 See for example, Vitor Costancio, 2015.
Conclusion

Monetary and macroprudential policy are fundamentally interconnected. While these two policy areas may occasionally conflict, they have the capacity to operate as complements. The financial crisis has underscored both the importance of financial stability, and the limitations of traditional microprudential regulatory tools in containing systemic risk. The need for macroprudential policy is clear, but its success is contingent on policymakers understanding how the instruments for implementing macroprudential policy interact with transmission mechanisms of monetary policy. By understanding that these two policy areas do not operate in isolation, and coordinating policy actions, policymakers can increase the effectiveness of both. Monetary policy should take financial stability into account, and determine to what extent systemic financial vulnerabilities can be offset with macroprudential tools. When the risks stemming from financial vulnerabilities cannot be adequately contained with macroprudential tools, monetary policy should adjust in support of macroprudential goals. Similarly, macroprudential policy should be aware of the goals of monetary policy. When financial vulnerabilities are low, macroprudential policy should adjust in support of monetary policy goals. By operating in this way, both monetary policy and macroprudential policy are likely to be more effective, and economic outcomes should be improved.
Part II: The Bank of England

Chapter 1: Structure of the Bank of England

After the recent financial crisis, the United Kingdom (UK) experienced many changes in its policy framework. The Financial Services Act 2012 (FSA) gave new responsibilities to the Bank of England and included the creation of the Financial Policy Committee (FPC) to execute macroprudential regulation of the financial system as a whole and the creation of the Prudential Regulation Authority (PRA) for microprudential supervision.\(^{112}\)

The Bank of England plays a major and unique role in promoting financial and monetary stability in the UK. Two of the new authorities created under the FSA exist within the Bank of England; the Bank itself houses and staffs both the FPC and the PRA. Even though these two authorities are within the Bank, both have separate boards and committees, and both are ultimately responsible for meeting their objectives.

Overview of Changes

One of the most important changes the FSA introduced was the abolition of the Financial Services Authority, which had been responsible for the prudential and conduct regulation of financial firms. Functionally, it was replaced by the PRA, together with the Financial Conduct Authority (FCA), another body created by the Act but operating outside the Bank.\(^{113}\)

As a result of the FSA, the Bank of England also took on responsibility for financial stability. Prior to the Act, the stability of the UK financial system was not an explicit statutory objective of the Bank. To support this objective, the FSA established the FPC. Similar to the MPC, the FPC has a well-defined statutory goal and is assessed on the basis of whether that goal has been achieved. The FPC is responsible for identifying, monitoring and taking action to remove systemic risk to the financial system as a whole.\(^{114}\)

Financial Policy Committee

The FSA establishes that the Bank of England has two statutory objectives: 1) to maintain monetary stability, and 2) to protect and enhance the stability of the financial system of the UK. The FPC in particular is charged with helping the Bank to achieve its financial stability objective. This basic objective of the FPC was set by Parliament, via the FSA; however, the Chancellor of the Exchequer provides a more specific annual remit for FPC. To achieve its objective, FPC must identify, monitor and take action to remove or to reduce systemic risk with a view to protecting and enhancing the resilience of the UK financial system. At the same time, under the FSA, the FPC should not act in such a way “that would in its opinion be likely to have a significant adverse effect on the capacity of the financial sector to contribute to the growth of the UK economy in the medium or long term.”\(^{115}\) Therefore, the FPC should not only help the Bank to achieve its objectives, but also should act in support of the government’s economic

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\(^{112}\) Financial Services Act, 2012.
\(^{113}\) Ibid.
\(^{114}\) Ibid.
\(^{115}\) Ibid.
policy.

At the same time, in the framework of the FSA, the FPC’s objective cannot be defined numerically as compared, for instance, to the MPC’s stated two percent inflation target. Instead, the FPC identifies risks to financial stability that could arise in different ways: for example, from excessive leverage, dangerous exposure to runs, mispricing of risks, or concentrated or poorly understood distribution of risks in the financial system.

Powers

The FPC has two main powers in its arsenal. The first is the power to make recommendations. The FPC can make a recommendation to anybody, including the rest of the Bank, the PRA, the FCA, the MPC, the Financial Reporting Council or other industry representative bodies (see Figure 2.1).

Figure 2.1: Bank of England Structure


However, the recommendation power of the FPC can be divided into two categories: general recommendations and recommendations made on a complain-or-explain basis (see Figure 2.2).
The FPC can make general recommendations to anyone and about any subject that it considers important to its objectives. For example, the FPC can provide recommendations on the provision of liquidity, oversight of payment systems and so forth. That said, the FPC cannot make recommendations on the regulation of a particular financial institution. Additionally, the FPC makes this type of recommendation on a general basis, so there is no legal obligation of the recipients of these recommendations to respond.

The FPC’s power to make recommendations on a comply-or-explain basis covers only the regulators, the PRA and the FCA. These two regulatory bodies must comply with the recommendation as soon as practicable or they must explain in writing and in public the reason why they have not done so. FPC recommendations to the PRA and the FCA may be in regard to all regulated persons or to regulated persons of a specified description, but these recommendations may not be given with regard to a specific regulated person.

The FPC can also make recommendations to the Treasury, including in particular recommendations regarding macroprudential measures over the scope of activities regulated under the Financial Markets and Services Act 2000. The FPC must consult with the Treasury before giving any recommendations.

The second power of the FPC is the power to give directions to the PRA and the FCA in utilizing specific macroprudential tools prescribed by the Treasury and approved by the Parliament. Every time the FPC use its direction powers, the FPC must prepare, publish and maintain a written statement of the general policy that it proposes to follow in relation to the exercise of its powers.

The other power that the FPC uses is raising awareness about systemic risk among financial market participants. The FPC publishes its Financial Stability Report twice a year, identifying threats to the financial system of the UK and explaining the reasoning behind its policy decisions.
There are ten voting members of the FPC:

Five members of the Bank of England:

1. the Governor (who chairs the FPC)
2. the Deputy Governor for Financial Stability
3. the Deputy Governor for Monetary Policy
4. the Deputy Governor for Prudential Regulation
5. the Executive Director of the Bank of England for Financial Stability

Five external members:

6. the Chief Executive Officer of the FCA
7. Four external independent members

The involvement of FCA and PRA members ensures that the knowledge and intelligence of regulators of financial institutions are considered and that their opinions on matters of financial stability are brought into FPC meetings. A representative of the Treasury is also a non-voting member.

External members bring independent expertise to bear in formulating policies and, crucially, bring a diversity of views to the table. The independence of the external members is ensured by the fact that these members do not have long-term connections with the Bank. The Chancellor of the Exchequer appoints these four members for a period of three years. Additionally, the Chancellor may not appoint the same person more than twice. It is clear that by adding five independent members, the intention of the legislators was to bring a balance of viewpoints to the FPC. From a structural point of view, the FPC seems a good balance between independents and insiders. However, due to the structure of the Bank, familiarity with its workflow and the fact that external membership in the FPC is considered more of a part time job, in practice the agenda is almost always pushed by the insiders. Still, this does not mean that external members do not provide valuable input. The independent, external members of the Committee can be considered not only safeguards against “group-think” but also contributors of valuable, contemporary business experience. Internal members approach the financial stability objective from a policymaker’s perspective, while external members can offer a more real-time view of what is really going on in the market.

There are four pre-announced quarterly meetings of the FPC in the Bank of England building. A typical quarterly cycle contains four elements:

- Briefing on financial system developments;

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Focused discussions of key issues germane to UK financial stability and potential areas for macroprudential policy interventions;  
A policy meeting, culminating in decisions about macroprudential policy, for example to make Directions and/or Recommendations; and  
Communication of the policy decision, including via FPC Record and, twice a year, the Financial Stability Report.

**Figure 2.4: FPC Quarterly Cycle**

The FSA establishes that macroprudential decisions on both recommendations and directions should be reached by consensus. If consensus cannot be reached, the decision is reached by a voting process of all those members present at the meeting. In the event of a tie, the person chairing the meeting will cast a second vote; most often, it is the Governor of the Bank who chairs FPC meetings and thus has the tiebreaking vote. After every FPC meeting, there is a statement about decisions made during the meeting published to the public. Later, the full record of the FPC meeting is published as well.

The FPC may decide that the publication of its recommendations would be against the public interest. In these cases, the FPC can delay disclosure and make private recommendations. At a later time, the FPC can then review, change or keep its decision on the disclosure of its recommendations.

**Accountability**

FPC decisions on recommendations and directions are communicated to those responsible for taking action, for example, the PRA or the Treasury. Also, decisions are communicated to industry and to the public in the form of a short statement or within the Financial Stability Report. As previously noted, the FPC must prepare and publish two reports relating to financial stability (Financial Stability Reports) in each calendar year. A Financial Stability Report includes:

- The FPC’s view of the stability of the UK financial system at the time when the report is prepared;
- An assessment of the developments that have influenced the current position;
- An assessment of the strengths and weaknesses of the UK financial system;
- An assessment of risks to the stability of the UK financial system;
- The Committee’s view on the outlook for the stability of the UK financial system;
- The Committee’s view on progress against previous recommendations and directions; and
- A report of any new policy actions taken to reduce and mitigate risks to stability.

There is to be a sub-committee of the Court of Directors of the Bank, “the Oversight Committee,” consisting of the non-executive Directors of the Bank. The function of the Oversight Committee is to review the Bank’s overall performance in relation to its statutory objectives, as well as the FPC’s performance as measured against its objectives.

**Interaction between the Regulators**

The new system created by the FSA is intended to encourage cooperation and coordination across the different policy-making bodies and regulators. Accordingly, there is overlap between the membership of the FPC, the PRA Board and the MPC. In fact, the Governor of the Bank and the Deputy Governor for Financial Stability are both members of all three bodies (See Figure 2.5).

**Figure 2.5: FPC Membership Overlap**

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[a] Members shown in red are not part of the Bank’s Executive Team.
[b] The Executive Director for Markets will also routinely attend FPC meetings.
[c] Non-voting member of the FPC.

This structure is also designed to facilitate joint meetings between the MPC, FPC and PRA Board so as to help support the flow of information across the different bodies. It is meant to communicate an understanding of each body’s approach to achieving its individual objectives and likely reactions to events or decisions made by another body. In addition, as in the case of the FPC’s external members, effective communication across the Bank can act as a safeguard against group-think.

Information flows between the MPC, PRA and FPC are crucial in supporting the objectives of all three bodies. It goes without saying that the stability of the financial system is influenced by macroeconomic conditions, and, therefore, by the formulation of monetary policy. At the same time, microprudential supervisors have an on-the-ground view of developments in credit conditions that, in the aggregate, are crucial to macroprudential regulation. Meanwhile, actions taken by the FPC have a direct impact on the implementation of microprudential regulation and may have a significant effect on the macroeconomic conditions that inform monetary policy.

Further enhancing the flow of information, the FPC is required to explain the reasons behind and effects of each of its decisions. It also must provide an analysis of the costs of each recommendation or direction, with the stipulation that the costs should be proportionate to the anticipated benefit of the policy. As previously noted, these explanations and analyses are published in the FPC’s Financial Stability Reports.

The FPC also must give regard to the MPC’s policy-setting and forecasts. This is another example of the FSA’s focus on the importance of interaction among policymakers; the MPC has a similar requirement to give regard to FPC policy. The FPC may also at any time give recommendations to the MPC about its forward guidance and monetary policy. Even though such a recommendation is not given on comply-or-explain basis and so will not directly alter the course of monetary policy or the forward guidance of the MPC, it could nonetheless initiate a meaningful discussion about the benefits and costs of the monetary policy to the well-being of the whole financial system.

One of the most attractive qualities of the FPC is that it is, as part of the Bank, an independent authority with no direct interest in other aspects of UK politics, which might otherwise muddy its focus on financial stability. In this way, the FPC is typically able to act openly, straightforwardly, and independently. The interaction between the FPC, PRA, MPC and the Treasury is generally accessible and transparent. The FPC publishes its reports or statements after each of its meetings, so the public has near immediate access to the policies, forecasts, and concerns the FPC is currently considering.

As described in the preceding chapter, the Bank of England (BoE) underwent a substantial reorganization in the wake of the 2007-08 financial crisis. With regard to macroprudential policy in the United Kingdom (UK), the most crucial development was the creation of the Financial Policy Committee (FPC). The FPC, per the Financial Services Act 2012 (FSA), is charged with the task of identifying, monitoring, and mitigating systemic risks to the stability of the financial system, thereby supporting the achievement of the Bank’s Financial Stability Objective.

In pursuit of its statutory objectives, the FPC has three categories of macroprudential policy options. The first category is the responsibilities set for Member States by the European Union Capital Requirements Directive for which the FPC has been designated the relevant authority. Currently, these include the power to set the countercyclical capital buffer for UK exposures and the responsibility for developing the framework for a systemic risk buffer to be applied to systemically important institutions.

The second category is the FPC’s powers of direction. Though the FSA outlines the channels by which the Committee might have a power to authoritatively direct the PRA and/or FCA to implement a macroprudential policy, it does not actually confer any such powers. Instead, these powers of direction must be conferred by order of the Treasury, an order which requires approval by resolution of both Houses of Parliament. To date, the FPC, working with the Treasury and, by consultation, the public, has sought and obtained powers of direction over sectoral capital requirements, leverage ratios, and housing market tools.

Finally, the FSA gives the FPC the power to make recommendations to anybody. Additionally, it can make recommendations on a comply-or-explain basis to the regulators, the Prudential Regulation Authority (PRA) and the Financial Conduct Authority (FCA). Over the course of its existence, either in its interim or statutory form, the FPC has made a total of 36 recommendations, most of which have since been implemented.

**CRD IV Responsibilities**

*Countercyclical Capital Buffer*

The European Union Capital Requirements Directive (CRD IV) was adopted by the European Parliament and Council on June 26, 2013. CRD IV was intended to implement the Basel III agreement in the European Union (EU) and included minimum capital requirements, liquidity and leverage requirements, counterparty risk rules, and macroprudential standards, including the countercyclical capital buffer (CCB). Specifically, the Directive required that each Member State designate an authority as responsible for setting the CCB rate for exposures within that state on a quarterly basis. On April 3, 2014 in the UK, the Treasury laid regulations before Parliament transposing the provisions of CRD IV related to the CCB into UK law, naming the

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120 Ibid.
Bank of England as the designated authority, and requiring the FPC to assess and set the CCB rate for UK exposures. Figure 2.6 below is a timeline of the assignment of the FPC’s CRD IV responsibilities, including the CCB and the systemic risk buffer (SRB), described in the section below.

**Figure 2.6: Timeline of FPC’s CRD IV Responsibilities**

As the CCB rate derives from European legislation, implementation in the UK was somewhat different than that of a power of direction as described by the FSA. First, the conferral of the power does not require explicit parliamentary approval, as in the case of a new power of direction. Rather, the European Communities Act of 1972 allows the UK government to implement the final regulations directly. Second, the regulations do not require the FPC to maintain a written policy statement. Nonetheless, the FPC has maintained a policy statement for the CCB and, in spite of the difference in statutory footing, treats the CCB tool more or less as though it were a power of direction.

The CCB tool, broadly, allows the FPC to require banks to increase capital in order to counter perceived threats to financial stability. An increase in the CCB rate would provide more of a cushion to absorb losses as well as incentivize a reduction in exposures. The rate itself, as determined by the FPC, is not an institution-specific rate, but rather a rate meant to be applied to banks’ exposures within the UK. The institution-specific CCB rate “consist[s] of the weighted average of the countercyclical buffer rates that apply in the jurisdictions where the relevant credit exposures of the institution are located.” For example, a bank with 75% of its credit exposures in the UK and 25% in a foreign country would have an institution-specific CCB rate of 0.75% if the FPC set the CCB rate for UK exposures at 1% and the foreign country’s designated authority set its rate at 0%. Within the European Economic Area (EEA), reciprocal recognition of each authority’s rates, up to 2.5%, will be mandatory beginning in 2019. In the case of exposures in countries not in the EEA, the FPC can set a CCB rate higher than that of the domestic authority, or if the domestic authority has not implemented a CCB rate at all.

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125 European Communities Act, 1972. Section 2.
Per the requirements of CRD IV and the implementing UK regulations, the FPC assesses the CCB rate for UK exposures on a quarterly basis. In its policy statement, the FPC describes in some detail the core indicators it reviews in assessing the rate. These indicators are also published and updated regularly on the BoE’s website (see Appendix 2.1 for recent values). Thus far, the CCB rate has remained at 0%. If and when the FPC decides to raise the CCB rate, it can do so to between 0% and 2.5%, except in certain circumstances. Additionally, the rate must be a multiple of 0.25%, and, unless in exceptional circumstances, the date from which the new rate will apply will be 12 months after the date when the buffer rate is published.

Finally, the FPC’s policy on the CCB considers its potential impact on growth. If the CCB rate is raised as the economy is picking up, GDP growth might slow in the short term, as credit contracts and spending is reduced. On this point, the FPC notes that “the best estimates available point towards only a modest impact on economic growth through this channel.” In addition, monetary policy could be used to soften the impact, provided it is effectively calibrated in conjunction with the CCB rate increase.

**Systemic Risk Buffer**

A more recent evolution of the FPC’s role in macroprudential policy is its influence over the systemic risk buffer (SRB). This buffer, like the CCB, has its roots in CRD IV. As of December 2014 it was the last capital buffer prescribed by CRD IV that had not been implemented in the UK. On January 13, 2015, the Treasury laid before Parliament an amendment to the regulations that had originally implemented the CCB and other capital requirements in 2014. This amendment implemented the SRB.

According to CRD IV, the SRB is an additional risk-weighted capital buffer intended to “prevent and mitigate long-term non-cyclical systemic or macroprudential risk.” The Directive allows Member States to define the set of firms that must meet the buffer and how the buffer will be calibrated, although the European Commission, the European Systemic Risk Board, and the European Banking Authority must be notified of the reasoning behind its use. CRD IV also requires that SRBs must be of at least 1% common equity Tier 1 capital and that it be adjusted upward in increments of 0.5%. If an SRB is to be set above 3%, the CRD IV requirements for notification and explanation to European authorities are significantly stricter.

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131 Ibid.
135 Ibid.
138 Ibid.
The UK regulations designate the PRA and FCA as the authorities responsible for applying the SRB to the appropriate institutions. The regulations define these institutions as ring-fenced institutions (which have core deposits of at least £25 billion) and building societies for which the sum of the value of shares issued that are not deferred shares and the value of deposits held in accounts where one or more account holder is a small business is greater than £25 billion.\textsuperscript{139}

The regulations also direct the FPC to establish the overall SRB framework. The FPC will need to set criteria by which to measure an institution’s systemic risk, design a methodology for relating these criteria to a single score, and develop a mapping of those scores to SRB rates. The regulations limit the possible SRB rates to 0%, 1%, 1.5%, 2%, 2.5%, and 3%, in accordance with the limitations of CRD IV. The FPC will have to publish its methodology by May 31, 2016, with the SRBs themselves applicable from January 1, 2019.\textsuperscript{140}

\textbf{Powers of Direction}

\textit{Sectoral Capital Requirements}

Though the FSA describes the FPC’s power to give direction to the PRA and FCA, it does not actually confer any such powers to the FPC. Rather, the power to direct the regulators with respect to a particular macroprudential measure must be specified by an order of the Treasury.\textsuperscript{141} In early 2013, in advance of the establishment of the statutory FPC, the Treasury laid an order before Parliament setting the scope for the Committee’s powers of direction. This order provided the FPC with the authority to increase sectoral capital requirements (SCR) with respect to firms’ exposures to residential property, commercial property, and other financial sector entities. It was approved by Parliament in March 2013 and came into force in parallel with the new regulatory framework set up by the FSA on April 1, 2013.\textsuperscript{142}

The SCR tool is intended to allow the FPC to address risks developing in particular sectors of the economy.\textsuperscript{143} Higher SCRs on exposures to a specific sector would increase banks’ resilience by improving their capacity to absorb losses in that sector. Further, higher capital requirements tied to a particular sector would incentivize banks to reduce riskier exposures in that sector.\textsuperscript{144}

The FPC has relatively wide latitude in its application of the requirements. The SCRs can be applied—either at the individual entity level or consolidated group level—to all banks, building societies, and investment firms regulated by the PRA.\textsuperscript{145} In terms of exposures, they can be applied broadly to any of the three sectors named by the Order, to particular subsectors within those three, to specific types of financial institutions, to specific types of intra-financial system activity, or even by instrument.\textsuperscript{146} The FPC can also choose to set the requirements only on new

\textsuperscript{139} HM Treasury, \textit{Capital Requirements (Capital Buffers and Macroprudential Measures) (Amendment) Regulations}, 2015.
\textsuperscript{140} Ibid.
\textsuperscript{141} Financial Services Act, 1972.
exposures or on existing exposures as well.\textsuperscript{147} Internationally, CRD IV allows Member States to adjust capital requirements for domestically authorized institutions with respect to these sectors, but only up to a certain threshold and with no obligation for reciprocation. Measures that go beyond the threshold are subject to a review by European authorities and may be blocked by the European Commission.\textsuperscript{148}

Although the authority to impose SCRs has existed since the creation of the statutory FPC, the Committee has yet to exercise the power. Nonetheless, it maintains a joint written policy statement on the SCR tool alongside the CCB, as well as a set of core indicators it would use in weighing a decision on any ultimate application of the tool (see Appendix 2.2).

### Leverage Ratios

In November 2013, the Chancellor of the Exchequer sent a letter to the Governor of the Bank of England requesting that the FPC undertake a review of the leverage ratio and, specifically, “whether and when it needs any additional powers of direction…”\textsuperscript{149} The Chancellor further requested that this examination be completed within 12 months, and in October 2014 the FPC published its review, recommending that it be given a power of direction over three leverage ratio requirements: a minimum requirement, a supplementary requirement for systemically important firms, and a countercyclical leverage buffer (CCLB).\textsuperscript{150} Concurrent with the publishing of the report, the Chancellor wrote a letter praising the review and announcing the Treasury’s intention to introduce legislation granting the FPC powers of direction over the leverage ratio.\textsuperscript{151}

The government’s first step in legislating the new powers for the FPC was to issue a consultation on the leverage ratio proposals. The consultation, issued in November 2013, outlined the proposals for the new powers of direction and collected responses to seven questions regarding the powers, how they might be implemented, and what the procedural requirements for the FPC might be.\textsuperscript{152} On February 2, 2015 the government published the results of the consultation on the leverage ratio. The consultation included seven respondents, including the British Banking Authority, HSBC, Santander UK, and multiple building societies. Broadly, the consultation found support for the minimum leverage ratio requirement, mixed support for the supplementary leverage ratio requirement, and a lack of support for the CCLB. In any case, in the consultation the government articulated positions in support of granting each of the three powers,\textsuperscript{153} and the Treasury laid a draft order before Parliament granting the powers on February 4, 2015. Parliamentary approval was granted in March 2015, and the FPC’s power to set leverage ratio

\begin{itemize}
\item \textsuperscript{147} Ibid.
\item \textsuperscript{148} Ibid.
\item \textsuperscript{149} Osborne, George, “FPC Leverage Review,” (letter to the Governor of the Bank of England, November 26, 2013).
\item \textsuperscript{151} Osborne, George, “The FPC’s Review of the Leverage Ratio,” (letter to the Governor of the Bank of England, October 31, 2014).
\item \textsuperscript{152} HM Treasury, Detail of Outcome for FPC’s Leverage Ratio Framework Consultation, 2015.
\item \textsuperscript{153} Ibid.
\end{itemize}
standards came into force on April 6, 2015.\textsuperscript{154} Figure 2.7 below is a full timeline of these developments.

\textbf{Figure 2.7: Timeline of FPC’s Leverage Ratio Powers}

![Timeline of FPC’s Leverage Ratio Powers]

In accordance with the FSA, the FPC is required to maintain a written policy statement with regard to each of its powers of direction.\textsuperscript{155} Though it has yet to publish a finalized statement following parliamentary approval, to assist Parliament’s review of the draft legislation the FPC published a draft policy statement on February 4, 2015. This statement describes the proposed requirements, calibration of the ratios, and international coordination considerations.\textsuperscript{156}

Per the draft policy statement, the minimum leverage ratio requirement is intended to mitigate systemic risk stemming from unsustainable leverage in the financial system, “by guarding against the risk that a firm’s internal risk models or regulatory models fail to assign appropriate risk weights to assets and by limiting unsustainable balance sheet ‘stretch’….”\textsuperscript{157} The requirement will be imposed on UK G-SIBs and other major domestic banks and building societies immediately and will be extended to all banks, building societies, and PRA-regulated investment firms beginning in 2018, pending the PRA’s review of international standards in 2017. Table 2.1 below demonstrates the proposed application and timing of all three tools. Internationally, the FPC’s proposals are consistent with definitions of the leverage ratio\textsuperscript{158} and are expected to be coherent with the international framework, though UK G-SIBs and other major banks and building societies would be subject to the requirement ahead of the international timetable. The FPC intends to set the minimum leverage ratio at 3%, consistent with the level


\textsuperscript{155} \textit{Financial Services Act}, 1972.


\textsuperscript{157} \textit{Ibid}.

\textsuperscript{158} The order granting the FPC these powers defines the leverage ratio as “an institution’s Tier 1 capital divided by its total exposure measure, with this ratio expressed as a percentage.” HM Treasury, \textit{The Bank of England Act 1998 (Macroprudential Measures) (No. 2) Order}, 2015.
currently being considered by the Basel Committee on Banking and Supervision in advance of the introduction of its minimum leverage ratio requirement in 2018.\textsuperscript{159}

**Table 2.1: Proposed Application of Leverage Ratio Tools**

<table>
<thead>
<tr>
<th>Tool</th>
<th>Firms</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Leverage Ratio</td>
<td>G-SIBs and other major domestic UK banks and building societies</td>
<td>Immediately</td>
</tr>
<tr>
<td></td>
<td>All banks, building societies, and PRA-regulated investment firms</td>
<td>From 2018, subject to PRA’s 2017 review</td>
</tr>
<tr>
<td>Supplementary Leverage Ratio Buffer</td>
<td>G-SIBs and domestically systemically important banks, building societies, and PRA-regulated investment firms</td>
<td>In parallel with risk-weighted buffers; phased from 2016 for G-SIBs and 2019 for domestically systemically important banks, building societies, and PRA-regulated investment firms</td>
</tr>
<tr>
<td>Countercyclical Leverage Ratio Buffer</td>
<td>G-SIBs and other major domestic UK banks and building societies</td>
<td>Immediately</td>
</tr>
<tr>
<td></td>
<td>All banks, building societies, and PRA-regulated investment firms</td>
<td>From 2018, subject to PRA’s 2017 review</td>
</tr>
</tbody>
</table>


The second leverage ratio tool, the supplementary leverage ratio buffer, is intended to “reduce systemic risks attributable to the distribution of risk within the financial sector.”\textsuperscript{160} This requirement will be applied to UK G-SIBs and domestically systemically important institutions.\textsuperscript{161} The FPC proposes to set the buffer as a percentage of the SRB, itself described in the section above. Therefore, implementation of the supplementary leverage ratio buffer will occur concurrently with the implementation of the SRB framework, phasing in from 2016 for the G-SIBs and from 2019 for domestically systemically important institutions. The FPC proposes to set this buffer at 35% of the SRB. As the regulations implementing the SRB limit it to the range of 1% to 3%, the supplementary leverage ratio will range from 0.35% to 1.05% of exposures.\textsuperscript{162} Table 2.2 below demonstrates the proposed initial calibration of all three leverage ratio tools.

**Table 2.2: Proposed Calibration of Leverage Ratio Tools**

<table>
<thead>
<tr>
<th>Tool</th>
<th>Calibration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Leverage Ratio</td>
<td>3%</td>
</tr>
<tr>
<td>Supplementary Leverage Ratio Buffer</td>
<td>35% of corresponding risk-weighted buffers</td>
</tr>
<tr>
<td></td>
<td>0.35%-0.875% for current UK G-SIBs</td>
</tr>
<tr>
<td></td>
<td>0.35%-1.05% possible for D-SIBs, as SRB is limited to 1%-3%</td>
</tr>
<tr>
<td>Countercyclical Leverage Ratio Buffer</td>
<td>35% of CCB rate</td>
</tr>
</tbody>
</table>


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\textsuperscript{160} Ibid.

\textsuperscript{161} In 2015, the PRA will develop and consult on its process for the identification of domestically systemically important banks and building societies. Ibid.

\textsuperscript{162} Ibid.
The CCLB, in conjunction with the CCB, is meant to mitigate “systemic risks attributable to periods of unsustainable credit growth.” Banks, building societies, and investment firms regulated by the PRA would all become subject to the CCLB requirement as soon as the minimum leverage ratio requirement is applied (see Table 2.1 for the timetable on each leverage requirement). The FPC’s current policy statement on the leverage ratio tools indicates that the CCLB will be set at 35% of the CCB rate, itself currently set at 0% for UK exposures. At the international level, there is no CCLB framework to match the CCB. The FPC therefore does not expect a similar degree of reciprocation.

**Housing Tools**

In a speech given on June 12, 2014, the Chancellor of the Exchequer announced that he wanted to “make sure that the Bank of England has all the weapons it needs to guard against the risks in the housing market,” and that he planned to give the FPC new powers of direction to that end. The FPC, having discussed the issue at its September 26, 2014 meeting, issued a statement in response on October 2, 2014. The statement recommended that the Treasury give the FPC the power to direct the PRA and FCA to require lenders to place limits on residential mortgage lending with regard to loan to value (LTV) ratios and debt to income (DTI) ratios. This recommendation included both owner-occupied and buy-to-let lending.

As with its proposals on the leverage ratio tools, the government issued a public consultation on the LTV and DTI limits in fall 2014. The results of the consultation, which received 20 responses, were published on February 2, 2015, together with the results of the leverage ratio consultation. Generally, the respondents recognized the benefits of the FPC’s proposed powers of direction in the housing market, though many raised specific concerns over the scope of the LTV and DTI limits. The government’s ultimate position on these issues largely reflected the FPC’s recommendation, though in some cases the scope of the proposed powers was narrowed in recognition of the respondents’ concerns. Notably, this consultation did not include limits on lending in the buy-to-let market and responses dissuaded the government from including the market in legislation. Instead, the government plans to consult separately on this issue in 2015. Following the consultation, the Treasury laid a draft order granting the FPC the proposed powers before Parliament on February 2, 2015. The order was approved on March 25, 2015 and came into force on April 6, 2015. Figure 2.8 below is a full timeline of these developments.

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163 Ibid.
164 Ibid.
165 Osborne, George, “Mansion House 2014: Speech by the Chancellor of the Exchequer,” (speech delivered June 12, 2014).
167 HM Treasury, Detail of Outcome for FPC’s Housing Market Tools Consultation, 2015.
The FPC has not yet published a finalized policy statement on its powers of direction over the housing market. Still, as it did for the leverage ratio proposals, the FPC released a draft policy statement on February 4, 2015 to assist Parliament’s review of the draft legislation.\(^{170}\) The Committee has also published a draft set of core indicators that will be used to calibrate the LTV and DTI limits (see Appendix 2.3).

The LTV tool allows the FPC to set limits on the proportion of new mortgage lending that can take place at high LTV ratios, the ratio of the value of a mortgage to the value of the property, as assessed by the lender.\(^{171}\) Restricting this type of lending is intended to increase the stability of the financial system by reducing lenders’ potential losses should borrowers begin to default on mortgages in an environment where property values have declined. Mortgages extended at high LTV ratios are more likely to result in losses as the borrower deposit protecting the lender is lower.\(^{172}\)

The DTI tool allows the FPC to restrict the proportion of new mortgage lending that can take place at high DTI ratios, the ratio of the borrower’s total outstanding debt to his or her annual income, as verified by the lender.\(^{173}\) Setting a limit on this type of lending is intended to limit household indebtedness, thereby reducing households’ vulnerability to fluctuations in either interest rates or household income. Higher levels of indebtedness may prove destabilizing for the

\(^{173}\) HM Treasury, *The Bank of England Act 1998 (Macroprudential Measures) Order*, 2015; The government’s definition of debt for the DTI tool includes “the borrower’s outstanding debt on first and subsequent charge owner-occupied mortgages, as well as the new mortgage in question; and amounts outstanding on personal loans, overdraft facilities, credit cards and other types of secured and unsecured borrowing, excluding loans from family members and student loans.” With respect to income, the FPC can choose between gross income or income net of tax and national insurance. Bank of England, *The Financial Policy Committee’s Powers over Housing Tools*, 2015.
financial system if households, as a result, are unable to make their mortgage payments or respond by reducing overall consumption.174

Both the LTV and DTI limits will apply to new, owner-occupied mortgages. As a result of the government’s public consultation, business loans secured on residential property and buy-to-let lending are at the moment excluded from the scope of the FPC’s powers of direction.175 The tools, as specified in the order, will apply to all PRA and FCA-authorized firms extending relevant mortgages.176 As the FPC’s draft policy statement notes, this would include any relevant mortgage lending conducted by overseas firms’ UK subsidiaries and branches.177 However, branches of firms in the EEA that conduct lending in the UK would be excluded if the lending is conducted through EEA passporting rights and the foreign authority does not reciprocate the measure. Though the FPC intends to work closely with foreign regulators on all macroprudential policy, there is no formal mechanism that would ensure reciprocation of the housing market tools.178

Recommendations

Since the creation of the interim FPC in 2011, the Committee, in either its interim or statutory form, has issued a total of 36 recommendations. Prior to the establishment of the statutory FPC on April 1, 2013, the interim FPC’s recommendations carried no statutory force. Nonetheless, 25 recommendations were made during this time, nine of which were implemented before the statutory Committee came to be. Following the creation of the statutory FPC, ten of the outstanding sixteen recommendations made by the interim FPC were either restated or superseded by clarifying or modified recommendations and the remaining six were simply reaffirmed. Since that time, eleven additional recommendations have been made by the statutory FPC. As a result, of the FPC’s 36 total recommendations, ten are duplicative in the sense that they were restated or superseded, twenty have been implemented and six remain outstanding or prevailing. A detailed account of these and all other FPC recommendations can be found in Appendix 2.4.

Of the nine recommendations implemented during the tenure of the interim FPC, most focused on data collection and disclosures. For example, the FPC advised the FSA and PRA to work on improving disclosures on UK banks’ exposures, to compile data on exposures of banks not subject to the EBA stress tests, and to encourage reporting of leverage ratios.179 The recommendations also focused on enhancing clarity and consistency in the new regulatory framework. The Committee recommended that the Financial Services Authority, the predecessor

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174 Ibid.
176 Ibid; Similar to its recommendation on LTI limits (see below), the FPC noted that it may apply a de minimis threshold to the LTV and DTI tools; the FPC may exempt firms with a total mortgage portfolio below the threshold. Bank of England, The Financial Policy Committee’s Powers over Housing Tools, 2015.
177 Ibid.
178 Ibid.
of the FCA, communicate to banks that they could use regulatory liquid asset buffers in the event of liquidity stress.\textsuperscript{180} The PRA was also advised to assess capital adequacy using the Basel III definition of equity capital.\textsuperscript{181}

The recommendations implemented under the statutory FPC are somewhat more specific than the first nine to be implemented. For instance, the FPC recommended that the PRA employ a liquidity coverage ratio and that the regulators provide an assessment of vulnerability of borrowers to movements of long-term interest rates, among other measures.\textsuperscript{182}

Currently, there are four recommendations outstanding, all regarding fairly broad issues. The first two, likely to be closed and considered implemented soon, recommend that the Treasury work towards giving the FPC powers of direction over the leverage ratio and housing market tools.\textsuperscript{183} The third recommends that the Treasury, the FCA, and the BoE work with the financial system to improve resilience to cyberattacks. With regard to this recommendation, a framework for testing vulnerabilities called CBEST was launched in May 2014, and the FPC plans to review progress in Q2 2015.\textsuperscript{184} The fourth and final open recommendation is to the BoE itself, specifically the PRA. In 2013 the FPC recommended that the BoE and the PRA develop proposals for regular stress testing. The first of these tests occurred in 2014, and the Bank is working on developing a stress-testing framework going forward.\textsuperscript{185}

In addition to the outstanding recommendations, there are two recommendations considered to be prevailing. First, the FPC advised the PRA and FCA to implement a loan to income (LTI) limit. In accordance with the recommendation, the regulators should ensure that lenders do not extend more than 15\% of total new residential mortgages at LTI ratios above 4.5. This limit applies to all lenders with annual residential mortgage lending over £100 million.\textsuperscript{186} The second and final prevailing recommendation advises lenders to apply interest rate stress tests assessing affordability for borrowers if, over the first five years of the loan, interest rates were 3\% higher. Per a previously implemented recommendation, lenders are required to have regard to this recommendation, a requirement monitored by the FCA.\textsuperscript{187}

**Conclusion**

The FPC, by design of the FSA, is a comparatively powerful macroprudential authority. Indeed, its power to give recommendations to the regulators on a comply-or-explain basis is quite forceful. Even so, this statutory recommendation power did not guarantee any kind of effectiveness. The PRA and FCA are always free to explain away noncompliance, after all. The fact that the FPC’s recommendations have been mostly implemented is partially the result of the strength of the comply-or-explain basis, but also the result of a lack of institutional resistance. In

\textsuperscript{184} Ibid.
\textsuperscript{185} Ibid.
\textsuperscript{186} Ibid.
\textsuperscript{187} Ibid.
fact, multiple recommendations were successfully implemented before they had any statutory force at all. In sum, the success the FPC has seen in this area is probably due to a general willingness to trust the Committee on matters relating to financial stability, the simplicity of and ease of communication within a system comprising two regulatory bodies, and the inclusion of PRA and FCA representatives in the FPC itself.

The FPC’s powers of direction likewise demonstrate the strength of the institution, but it is important to note that these powers were not inherent to the FPC. Instead, they required thoughtful, careful collaboration with the government, at multiple levels, and with the public. In order to obtain a power of direction, the FPC needs the Treasury to draft legislation, the results of a public consultation, and parliamentary approval. That the FPC has been able to acquire its powers of direction, which are quite broad and allow for a great deal of flexibility, as well as the CRD IV responsibilities, speaks to a lack of resistance not only within the institutions of the BoE, but among the BoE, the government, and the public. To be sure, the public and industry in general have not been uniformly supportive of the entirety of the FPC’s proposals and actions, but they have also refrained from derailing any of them either. The Committee’s effectiveness in this area is almost certainly owed to a permissive political climate, as well as the FPC’s commitment to transparency and restraint in the proposed and actual application of its policies.

Ultimately, it is too soon to judge whether the FPC’s macroprudential policies will be considered effective and, by extension, whether the institutional design implemented at the BoE in accordance with the FSA is an example to be followed or avoided. Nonetheless, one can certainly say that the environment in the UK, political and institutional, is very conducive to a strong macroprudential authority, as manifested in the FPC’s success in implementing its recommendations and in accumulating its CRD IV responsibilities and powers of direction.
Part III: Financial Stability Oversight Council

Chapter 1: The Dodd-Frank Act Powers and Responsibilities

The Dodd-Frank Wall Street Reform and Consumer Protection Act Established the Financial Stability Oversight Council and Granted the Council Certain Powers

The FSOC has the power to force the heads of the regulatory bodies to meet, to designate a nonbank financial company as systemically important and subject it to supervision by the Federal Reserve Board of Governors, and to designate a financial market utility and subject it to enhanced supervision. The FSOC can also make recommendations to the Board of Governors of the Federal Reserve System about prudential standards that should be applicable to systemically important financial institutions and can make recommendations to any financial regulatory agency, on a comply-or-explain basis, about applying heightened standards to certain financial activities.

Table 3.1: The FSOC’s Powers of Direction and Recommendation

<table>
<thead>
<tr>
<th>Powers of Direction</th>
<th>Powers of Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can require supervision by the Board of Governors of certain nonbank financial companies</td>
<td>Can recommend to the member agencies supervisory priorities</td>
</tr>
<tr>
<td>Can designate financial market utilities for enhanced regulation</td>
<td>Can recommend to the Board of Governors heightened prudential standards for risk-based capital, leverage, liquidity, contingent capital, resolution plans and credit exposure reports, concentration limits, enhanced public disclosures, and overall risk management for SIFIs</td>
</tr>
<tr>
<td>Can force the heads of the regulatory agencies to meet</td>
<td>Can recommend, on a comply-or-explain basis, new or heightened standards for financial activities or practices that could create risks to financial markets</td>
</tr>
</tbody>
</table>

Title I, Sec. 111: Creation of the FSOC and Power to Convene

This title requires the FSOC to convene at least quarterly and at the call of the chairperson or a majority of the members then serving. Since its inception, the Council has met on average every 30 days and has never gone more than 72 days without a meeting. Federal Reserve Vice Chair Stanley Fischer recently noted the important role the FSOC plays in bringing regulators together to identify emerging threats to financial stability. He also noted that the FSOC is “an important

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188 Treasury, Meeting Minutes.
mechanism through which agencies can cooperate in responding to practices or firms that migrate outside of traditional regulatory perimeters.”

Title I, Sec. 112: Objectives of the Council
The objectives of the FSOC are to identify risks to the financial stability of the United States and to respond to emerging threats to financial stability.

Title I, Sec. 113: Power to Designate Systemically Important Financial Institutions for Enhanced Regulation
The Council, on a non-delegable basis and by a vote of not fewer than 2/3 of the voting members then serving, including an affirmative vote by the Chairperson, may determine that a U.S. nonbank financial company or a foreign nonbank financial company shall be supervised by the Board of Governors and shall be subject to prudential standards, in accordance with this title, if the Council determines that material financial distress at the company, or the nature, scope, size, scale, concentration, interconnectedness, or mix of the activities of the company, could pose a threat to the financial stability of the United States.

The Dodd-Frank Act defines “nonbank financial company” as a domestic or foreign company that is “predominantly engaged in financial activities.” The Act provides that a company is “predominantly engaged” in financial activities if either (i) the annual gross revenues derived by the company and all of its subsidiaries from financial activities, as well as from the ownership or control of insured depository institutions, represent 85 percent or more of the consolidated annual gross revenues of the company; or (ii) the consolidated assets of the company and all of its subsidiaries related to financial activities, as well as related to the ownership or control of insured depository institutions, represent 85 percent or more of the consolidated assets of the company.

The Council is required to consider the following in deciding whether or not to designate an institution: (A) The extent of the leverage of the company; (B) The extent and nature of the off balance-sheet exposures of the company; (C) The extent and nature of the transactions and relationships of the company with other significant nonbank financial companies and significant bank holding companies; (D) The importance of the company as a source of credit for households, businesses, and State and local governments and as a source of liquidity for the U.S. financial system; (E) The importance of the company as a source of credit for low-income, minority, or underserved communities, and the impact that the failure of such company would have on the availability of credit in such communities; (F) The extent to which assets are managed rather than owned by the company, and the extent to which ownership of assets under management is diffuse; (G) The nature, scope, size, scale, concentration, interconnectedness, and mix of the activities of the company; (H) The degree to which the company is already regulated by one or more primary financial regulatory agencies; (I) The amount and nature of the financial assets of the company; (J) The amount and types of the liabilities of the company, including the

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degree of reliance on short-term funding; and (K) Any other risk-related factors that the Council deems appropriate.\footnote{190} 

In 2015, the FSOC amended the process for making a determination. In the supplemental document in which it announced the changes, the FSOC outlined the procedure for determining whether or not an institution qualifies as follows: In the first stage of the process, the Council applies six quantitative thresholds to a broad group of nonbank financial companies to identify a set of companies that merit further evaluation. In Stage 2, the Council conducts a preliminary analysis of the potential for the companies identified in Stage 1 to pose a threat to U.S. financial stability. Based on the analysis conducted during Stage 2, the Council identifies companies that merit further review in Stage 3, which builds on the Stage 2 analysis with additional quantitative and qualitative analyses. The Council may make a proposed determination regarding a company based on the results of the analyses conducted during this three-stage review.

Since its inception, the FSOC has made four designations.

On July 8, 2013, the Council voted to designate American International Group, Inc. In its determination, the FSOC wrote “Because of AIG’s size and interconnectedness, certain characteristics of its liabilities and products, the potential effects of a rapid liquidation of its assets, potential challenges with resolvability, as well as other factors described herein, material financial distress at AIG could cause an impairment of financial intermediation or of financial market functioning that would be sufficiently severe to inflict significant damage on the broader economy.”\footnote{191}

On July 8, 2013, the Council also voted to designate General Electric Capital Corporation, Inc. In its determination, the FSOC wrote “Because GECC is a significant participant in the global economy and financial markets and is interconnected to financial intermediaries through its financing activities and its funding model, as well as other factors described herein, material financial distress at GECC could cause an impairment of financial intermediation or of financial market functioning that would be sufficiently severe to inflict significant damage to the broader economy.”\footnote{192}

On September 19, 2013, the Council voted to designate Prudential Financial, Inc. In its determination, the FSOC wrote “Prudential is a significant participant in financial markets and the U.S. economy and is significantly interconnected to insurance companies and other financial firms through its products and capital markets activities. Because of Prudential’s interconnectedness, size, certain characteristics of its liabilities and products, the potential effects of a rapid liquidation of a significant portion of its assets, potential challenges with resolvability, and other factors described herein, material financial distress at Prudential could lead to an impairment of financial intermediation or of financial market functioning that would be sufficiently severe to inflict significant damage on the broader economy.”

\footnote{190} Federal Register, \textit{Authority to Require Supervision and Regulation of Certain Nonbank Financial Companies}. \footnote{191} Treasury, “\textit{Basis of the Financial Stability Oversight Council’s Final Determination Regarding American International Group, Inc.”} \footnote{192} Treasury, “\textit{Basis of the Financial Stability Oversight Council’s Final Determination Regarding General Electric Capital Corporation, Inc.”}
On December 18, 2014, the Council voted to designate MetLife, Inc. In its determination, the FSOC wrote “Because MetLife, Inc. (MetLife) is a significant participant in the U.S. economy and in financial markets, is interconnected to other financial firms through its insurance products and capital markets activities, and for the other reasons described below, material financial distress at MetLife could lead to an impairment of financial intermediation or of financial market functioning that would be sufficiently severe to inflict significant damage on the broader economy.”

On November 25, 2014, the Federal Reserve proposed a set of rules for General Electric Capital Corporation. According to the Federal Reserve’s assessment “GECC’s activities and risk profile are similar to those of large bank holding companies, and that enhanced prudential standards similar to those that apply to large bank holding companies would be appropriate.”

The proposals for GECC’s regulation included capital and liquidity requirements, stress testing, and changes to the structure of the company’s board.

Capital requirements: “To ensure that GECC continues to maintain sufficient capital and has internal processes for assessing its capital adequacy that appropriately account for the company’s risks, the Board is proposing to require GECC to comply with the Board’s capital plan rule, 12 CFR 225.8, and to submit a capital plan for the capital plan cycle beginning January 1, 2016.”

Stress testing requirement: “The Board is proposing to require GECC to comply with the stress-testing requirements applicable to bank holding companies with $50 billion or more in total consolidated assets under the stress test rule.”

Liquidity requirements: “The Board is proposing to require GECC to manage its liquidity in a manner that is comparable to a bank holding company…the LCR requirements would be tailored to GECC’s activities, balance sheet, and risk profile, and would help ensure that GECC holds sufficient HQLA to meet the expected outflows for such activities over a 30 calendar-day period.”

Changes to the board of directors: “The Board is proposing to require that, beginning July 1, 2015, the board of directors of GECC have the greater of 25 percent or two directors that are independent of GE’s and GECC’s management and GE’s board of directors and that one of these directors serve as the chair of GECC’s risk committee established under Regulation YY. Under the proposed order, GECC would be required to maintain, at a minimum, two directors on its board of directors who are independent of GE’s and GECC’s management and GE’s board of directors. One of these directors would be required to chair GECC’s risk committee established under Regulation YY. In addition, pursuant to Regulation YY, GECC would be required to

194 Federal Register, “Application of Enhanced Prudential Standards and Reporting Requirements to General Electric Capital Corporation”
195 Ibid.
196 Ibid.
197 Ibid.
maintain at least one director with expertise in “identifying, assessing, and managing risk exposures of large, complex financial firms” on its risk committee. This director may be one of the independent directors required by the proposed order.”

In a letter dated February 2, 2015, GECC responded to the Federal Reserve Board’s proposals. In the letter, GECC argues that the Federal Reserve has not tailored its proposals to GECC’s status as a non-bank SIFI sufficiently and that applying the same standards to GECC as it applies to globally systemically important banks is “inappropriate” because GECC is not a globally systemically important bank. GECC also argued that the proposed changes to the structure of its board of directors are “unreasonable” and “unnecessary.”

On April 10, 2015, GE announced that it would “sell most GE capital assets [and] embrace its industrial core.” The Wall Street Journal reported that the move revealed that GE had “concluded the benefits aren’t worth bearing the regulatory burdens and investor discontent” associated with the business.

While the rules that will ultimately apply to non-bank SIFIs are as yet undetermined, it is believed that they will be subject to higher capital and liquidity requirements. The designated institutions have reportedly been raising capital and increasing the amount of liquidity they hold in anticipation of the finalization of rules. GE’s decision to dramatically shrink its capital business suggests companies expect the regulatory requirements imposed on SIFIs to be significant.

**Title I, Sec. 115: Prudential Standards**
The Council may make recommendations to the Board of Governors concerning the establishment and refinement of prudential standards and reporting and disclosure requirements applicable to nonbank financial companies supervised by the Board of Governors and large, interconnected bank holding companies. The recommendations of the Council may include:

(A) risk-based capital requirements;
(B) leverage limits;
(C) liquidity requirements;
(D) resolution plan and credit exposure report requirements;
(E) concentration limits;
(F) a contingent capital requirement;
(G) enhanced public disclosures;
(H) short-term debt limits; and
(I) overall risk management requirements.

**Title I, Sec. 120: More Stringent Regulation: Comply-or-Explain Basis**
The Council may provide for more stringent regulation of a financial activity by issuing recommendations to the primary financial regulatory agencies to apply new or heightened

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198 Ibid.
199 Keith S. Sherin, Letter to Federal Reserve Board.
200 David Lurie, General Electric, “GE to Sell Most GE Capital Assets, Embrace its Industrial Core.”
201 Joann S. Lublin, Dana Mattioli and Ted Mann, April 10, 2015, “GE Seeks Exit from Banking Business.”
standards and safeguards, including standards enumerated in section 115, for a financial activity or practice conducted by bank holding companies or nonbank financial companies under their respective jurisdictions. The Council shall consult with the primary financial regulatory agencies and provide notice to the public and opportunity for comment for any proposed recommendation that the primary financial regulatory agencies apply new or heightened standards and safeguards for a financial activity or practice. The primary financial regulatory agency shall impose the standards recommended by the Council, or similar standards that the Council deems acceptable, or shall explain in writing to the Council, not later than 90 days after the date on which the Council issues the recommendation, why the agency has determined not to follow the recommendation of the Council. The Council shall report to Congress on—(1) any recommendations issued by the Council under this section; (2) the implementation of, or failure to implement, such recommendation on the part of a primary financial regulatory agency.

The FSOC used its authority under this section to make recommendations to the SEC about money market mutual fund reform (explained in further detail below). The FSOC issued a proposed recommendation for comment but has yet to actually make a final recommendation.

**Title I, Sec. 121: Limitations on SIFIs**

If the Board of Governors determines that a bank holding company with total consolidated assets of $50,000,000,000 or more, or a nonbank financial company supervised by the Board of Governors, poses a grave threat to the financial stability of the United States, the Board of Governors, upon an affirmative vote of not fewer than 2/3 of the voting members of the Council then serving, shall—

- (1) limit the ability of the company to merge with, acquire, consolidate with, or otherwise become affiliated with another company;
- (2) restrict the ability of the company to offer a financial product or products;
- (3) require the company to terminate one or more activities;
- (4) impose conditions on the manner in which the company conducts 1 or more activities; or
- (5) if the Board of Governors determines that the actions described in paragraphs (1) through (4) are inadequate to mitigate a threat to the financial stability of the United States in its recommendation, require the company to sell or otherwise transfer assets or off-balance-sheet items to unaffiliated entities.

**Title I, Sec. 153: Creation of OFR**

The Office may, as determined by the Council or by the Director in consultation with the Council, require the submission of periodic and other reports from any financial company for the purpose of assessing the extent to which a financial activity or financial market in which the financial company participates, or the financial company itself, poses a threat to the financial stability of the United States. Every year the OFR must submit an analysis of any threats to the financial stability of the United States.

**Title I, Sec. 165: Prudential Standards**

The Board of Governors shall, on its own or pursuant to recommendations by the Council under section 115, establish prudential standards for nonbank financial companies supervised by the
Board of Governors and bank holding companies with total consolidated assets equal to or greater than $50,000,000,000. The Board of Governors shall establish prudential standards that include:

- Risk-based capital requirements and leverage limits;
- Liquidity requirements;
- Overall risk management requirements;
- Resolution plan and credit exposure report requirements;
- Concentration limits;
- Contingent capital requirement;
- Enhanced public disclosures; and
- Short-term debt limits.

There are currently 38 bank holding companies in the U.S. that are big enough to be subject to these prudential standards.
Title I, Sec. 171: Leverage and Capital Requirements
The appropriate Federal banking agencies shall establish minimum leverage capital requirements and minimum risk-based capital requirements on a consolidated basis for insured depository institutions, depository institution holding companies, and nonbank financial companies supervised by the Board of Governors.

Title I, Sec. 175: International Coordination
The Chairperson of the Council, in consultation with the other members of the Council, shall regularly consult with the financial regulatory entities and other appropriate organizations of foreign governments or international organizations on matters relating to systemic risk to the international financial system.
Title VIII, Sec. 804: Financial Market Utilities

The Council, on a nondelegable basis and by a vote of not fewer than 2/3 of members then serving, including an affirmative vote by the Chairperson of the Council, shall designate those financial market utilities or payment, clearing, or settlement activities that the Council determines are, or are likely to become, systemically important.

Designated FMUs:
- The Clearing House Payments Company LLC on the basis of its role as operator of the Clearing House Interbank Payments System
- CLS Bank International
- Chicago Mercantile Exchange, Inc.
- The Depository Trust Company
- Fixed Income Clearing Corporation
- ICE Clear Credit LLC
- National Securities Clearing Corporation
- The Options Clearing Corporation

Conclusion: Dodd-Frank Act Gives FSOC Significant Responsibilities and Powers

The Dodd-Frank Act, which established the Financial Stability Oversight Council, gave the Council significant power. While the Council must rely on the regulatory agencies to implement many of its recommendations, the Council’s ability to recommend certain changes on a comply-or-explain basis and to designate systemically important financial institutions means it has significant influence over the regulatory agencies.

Chapter 2: Structure of the FSOC

Chaired by the Secretary of the Treasury, the Financial Stability Oversight Council (FSOC) consists of ten voting members and five non-voting members and brings together the expertise of federal financial regulators, state regulators, and an insurance expert appointed by the President.

The voting members are:
- the Secretary of the Treasury, who serves as the Chairperson of the Council;
- the Chairman of the Board of Governors of the Federal Reserve System (Fed);
- the Comptroller of the Currency (OCC);
- the Director of the Bureau of Consumer Financial Protection (CFPB);
- the Chairman of the Securities and Exchange Commission (SEC);
- the Chairperson of the Federal Deposit Insurance Corporation (FDIC);
- the Chairperson of the Commodity Futures Trading Commission (CFTC);
- the Director of the Federal Housing Finance Agency (FHFA);
- the Chairman of the National Credit Union Administration (NCUA); and
- an independent member with insurance expertise who is appointed by the President and confirmed by the Senate for a six-year term.

The nonvoting members, who serve in an advisory capacity, are:
- the Director of the Office of Financial Research;
• the Director of the Federal Insurance Office;
• a state insurance commissioner designated by the state insurance commissioners;
• a state banking supervisor designated by the state banking supervisors; and
• a state securities commissioner (or officer) designated by the state securities commissioners.  

Figure 3.2: Organizational Structure of the FSOC


Unlike in the UK, where new financial regulatory entities – the FPC, the FCA, and the PRA – were created within the existing regulatory structure, the Financial Stability Oversight Council in the United States was created as an entirely new institution on top of the financial regulatory structure that had existed before the Dodd-Frank Act. The FSOC was created this way because the regulatory structure in the United States is fragmented and decentralized. Various financial regulators supervise different financial institutions, as shown in the following table.

Table 3.2: Regulatory Responsibilities

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<thead>
<tr>
<th>Banking Industry Regulators</th>
<th>Securities and Derivatives Regulators</th>
<th>Government Sponsored Enterprises Regulators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Deposit Insurance Corporation (FDIC)</td>
<td>Commodities Futures Trading Commission (CFTC)</td>
<td></td>
</tr>
<tr>
<td>National Credit Union Administration (NCUA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal Reserve System</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Currently, the Office of the Comptroller of the Currency (OCC), the Federal Deposit Insurance Corporation (FDIC), the National Credit Union Administration (NCUA), and the Federal Reserve System regulate the banking industry; the Securities and Exchange Commission (SEC) and the Commodities Futures Trading Commission (CFTC) regulate the securities and derivatives market; the Federal Housing Finance Agency (FHFA) regulates government sponsored enterprises, mainly Fannie Mae, Freddie Mac, and the Federal Home Loan Bank (FHLB) system.

Rather than having the central bank oversee the entire financial market, the U.S. financial regulators conduct regulations based on different dimensions. First and foremost, just as discussed above, regulators in the U.S. conduct regulations based on the type of financial institution. It is common for a depository institution, such as a commercial bank, to be subject to regulations from both the FDIC and the Fed. After the financial crisis, the Dodd-Frank Act authorized regulators to supervise new types of financial institutions and restructured the financial regulatory system in the U.S. It closed the Office of Thrift Supervision and disseminated responsibility for regulating federally chartered thrift institutions to the OCC, savings and loan holding companies to the Fed, and federally insured thrifts that are not members of the Fed to the FDIC. The Fed was given the most additional responsibility. The additional institutions regulated by the Fed after the Dodd-Frank Act include securities holding companies, savings and loan holding companies, and any firms and financial market utilities designated as systemically significant by the FSOC, excluding those financial market utilities that are regulated by the SEC or the CFTC. The next most notable change is the additional responsibilities of the SEC. After the Dodd-Frank Act, the SEC now additionally regulates nationally recognized statistical rating organizations, security-based swap (SBS) dealers, major SBS participants, and SBS execution facilities. The detailed change in the type of regulated institutions before and after the Dodd-Frank Act is shown in the following table.

Table 3.3: Changes in Regulated Institutions since Dodd-Frank

<table>
<thead>
<tr>
<th>Regulator</th>
<th>Institutions Regulated Before Dodd-Frank</th>
<th>Institutions Regulated After Dodd-Frank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Reserve</td>
<td>Bank holding companies, financial holding companies, state banks that are members of the Federal Reserve System, U.S. branches of foreign banks, and foreign branches of U.S. banks.</td>
<td>Bank holding companies and certain subsidiaries, financial holding companies, securities holding companies, savings and loan holding companies, and any firm designated as systemically significant by the FSOC.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>State banks that are members of the Federal Reserve System, U.S. branches of foreign banks, and foreign branches of U.S. banks.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Payment, clearing and settlement systems designated as</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Agency</th>
<th>Systemically Significant \nby the FSOC, unless regulated by the SEC or the CFTC.</th>
<th>Systemically Significant \nby the FSOC, unless regulated by the SEC or the CFTC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Deposit Insurance Corporation (FDIC)</td>
<td>Federally insured depository institutions, including state banks that are not members of the Federal Reserve System.</td>
<td>Federally insured depository institutions, including state banks and thrifts that are not members of the Federal Reserve System.</td>
</tr>
<tr>
<td>Office of Thrift Supervision (OTS)</td>
<td>Federally chartered and insured thrift institutions, savings and loan holding companies</td>
<td>Closed</td>
</tr>
<tr>
<td>National Credit Union Administration (NCUA)</td>
<td>Federally chartered or insured credit unions.</td>
<td>Federally chartered or insured credit unions.</td>
</tr>
<tr>
<td>Securities and Exchange Commission (SEC)</td>
<td>Securities exchanges, brokers, and dealers; mutual funds; investment advisers. Registers corporate securities sold to the public</td>
<td>Securities exchanges, brokers, and dealers; clearing agencies; mutual funds; investment advisers (including hedge funds with assets over $150 million) Nationally recognized statistical rating organizations. Security-based swap (SBS) dealers, major SBS participants, and SBS execution facilities Corporations selling securities to the public must register and make financial disclosures.</td>
</tr>
<tr>
<td>Commodity Futures Trading Commission (CFTC)</td>
<td>Futures exchanges, brokers, pool operators, advisers.</td>
<td>Futures exchanges, brokers, commodity pool operators, and commodity trading advisors. Swap dealers, major swap participants, and swap execution facilities.</td>
</tr>
<tr>
<td>Federal Housing Finance Agency (FHFA)</td>
<td>Fannie Mae, Freddie Mac, and the Federal Home Loan Banks</td>
<td>Fannie Mae, Freddie Mac, and the Federal Home Loan Banks</td>
</tr>
<tr>
<td>Bureau of Consumer Financial Protection (CFPB)</td>
<td>Non-existent</td>
<td>Nonbank mortgage-related firms, private student lenders, payday lenders, and larger “consumer financial entities” to be determined by the Bureau. Consumer businesses of banks with over $10 billion in assets.</td>
</tr>
</tbody>
</table>
The Dodd-Frank Act granted the Fed and the FDIC more powers to tackle emergency and systemic risks. The Fed started regulating financial institutions designated systemically important by the FSOC. The following table shows the powers of the Fed and the FDIC to address emergency and systemic risks before and after the Dodd-Frank Act.

Table 3.4: Powers to Address Emergencies

<table>
<thead>
<tr>
<th>Regulator</th>
<th>Emergency/Systemic Risk Powers and Other Notable Authority Before Dodd-Frank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Reserve</td>
<td>Lender of last resort to member banks (through discount window lending). In “unusual and exigent circumstances” the Fed may lend to any individual, partnership, or corporation. The Fed issues consumer protection regulations under various federal laws, including the Truth-in-Lending Act.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Regulator</th>
<th>Emergency/Systemic Risk Powers and Other Notable Authority After Dodd-Frank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Reserve</td>
<td>Lender of last resort to member banks (through discount window lending)</td>
</tr>
<tr>
<td></td>
<td>In “unusual and exigent circumstances” the Fed may extend credit beyond member banks, to provide liquidity to the financial system, but not to aid failing financial firms. May initiate resolution process to shut down firms that pose a grave threat to financial stability, which requires concurrence of two-thirds of the FSOC. Numerous market-level regulatory authorities, such as checking services, lending markets, and other banking-related activities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Regulator</th>
<th>Emergency/Systemic Risk Powers and Other Notable Authority After Dodd-Frank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Deposit Insurance Corporation (FDIC)</td>
<td>After making a determination of systemic risk, the FDIC may invoke broad authority to use the deposit insurance funds to provide an array of assistance to depository institutions. Administratively initiates resolution of failing depository banks. 206</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Regulator</th>
<th>Emergency/Systemic Risk Powers and Other Notable Authority After Dodd-Frank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Deposit Insurance Corporation (FDIC)</td>
<td>After making a determination of systemic risk, the FDIC may invoke broad authority to use the deposit insurance funds to provide an array of assistance to depository institutions, including debt guarantees. Administratively initiates resolution of failing depository banks.</td>
</tr>
</tbody>
</table>


Excludes insurers, SEC and CFTC registrants, auto dealers, sellers of nonfinancial goods, real estate brokers and agents, and banks with assets less than $10 billion.
The second dimension of financial regulation is based on a particular market. The two most notable examples are the SEC’s oversight of the U.S. securities markets and CFTC’s supervision of the market in futures contracts. The SEC and CFTC generally do not regulate the prices of stocks or futures traded on the exchanges; rather, they regulate the organization and membership of the exchanges, rules for trading, and attempt to prevent fraud, conflicts of interest, or manipulation by market participants.208

The third dimension of financial regulation is based upon a particular financial market. The Consumer Financial Protection Bureau (CFPB) created by the Dodd-Frank Act, for example, implements the S.A.F.E. Mortgage Licensing Act and requires federal registration for all mortgage loan originators. It does so regardless of the type of the financial institutions that originates mortgage loans, including banks and nonbanks.

As a result, the financial regulatory structure in the U.S. is fragmented in the sense that some regulators have authorities over particular financial institutions but not necessarily all participants in the market in which the institution operates. Other regulators oversee a particular market or a financial activity but not necessarily all of the financial institutions. Consequently, the U.S. financial regulatory system, as described by Rose Kushmeider, “entails substantial overlap and duplication in the regulation and supervision of financial institutions,”209 yet with none of the regulators responsible for the financial market as a whole. This is partly due to the fact that financial institutions that are subject to institution-based regulations often conduct financial transactions that are supervised by activity-based regulators. JPMorgan’s loss in 2012 due to aggressive trading activities by its Chief Investment Office in the credit default swaps market raised the question of who JPMorgan’s regulator was. The answer was that JPMorgan is regulated by multiple regulators because JPMorgan conducts various financial transactions in different financial markets. The following figure shows how JPMorgan is regulated on different

207 Ibid.
levels. The OCC conducts prudential regulation on the depository institution level; the Fed supervises JPMorgan as a bank holding company. As a company with shares publicly traded on the New York Stock Exchange it is subject to the regulation of SEC, and its financial transactions in the derivatives market are regulated by the CFTC. Finally, the deposits held by the public at its commercial banking subsidiary are subject to FDIC regulations.

**Figure 3.3: Regulatory Oversight of JPMorgan**

Before the financial crisis, the fragmented financial regulatory structure in the U.S. caused several regulatory weaknesses, and these weaknesses resulted in the “regulatory failure, not low interest rates,”\(^\text{210}\) as Ben Bernanke described, that “was responsible for the housing bubble and subsequent financial crisis of the last decade.” The pre-crisis regulatory structure lacked a coordinating authority to oversee system-wide financial stability and was short of adequate regulation of large and interconnected financial institutions as well as unstable non-bank financial institutions, whose failure or bankruptcy could pose a serious threat to the real economy. The regulatory structure, with each regulator being responsible for distinctive financial institutions, markets, and activities, made it impossible for the U.S. to mirror the Bank of England model, in which the central bank takes responsibility for overseeing system-wide financial stability and identifying systemic risks.

Chapter 3: Schematic Mapping of Key Components of the BoE Institutional Framework and the Responsibilities of FSOC Stakeholders

Bank of England since 2012

In the UK, the majority of financial market regulatory authority is held by one institution – the Bank of England. In 2012, the Financial Services Act restructured the UK system. The Act established the Financial Policy Committee (FPC) within the Bank of England and gave the FPC responsibility for macroprudential regulation across the entire UK financial system. The FPC’s secondary objective is to support the economic policy of the government. The newly established Financial Conduct Authority (FCA) replaced the Financial Services Authority (FSA) and took over the FSA’s responsibilities for overseeing the business conduct of all firms. The Prudential Regulatory Authority (PRA) was created within the Bank of England as the main microprudential regulator to promote the safety and soundness of regulated firms, including banks, insurers, and large investment firms.

FPC vs. FSOC

The FPC is the counterpart of the FSOC in the United Kingdom. The FPC consists of five members from within the Bank of England and five external members as shown below:

Figure 3.4: Structure of the FPC


The five bank members are the Governor of the Bank of England and the four Deputy Governors for monetary policy, financial stability, prudential regulation, as well as financial stability strategy and risk. Three members are also on the Monetary Policy Committee, and three other
members are part of the Prudential Regulatory Authority. The five external members are appointed by the Chancellor and currently include the head of the Financial Conduct Authority and scholars from research institutions and experienced experts from other related sectors. The Committee also includes a non-voting member from HM Treasury. The FPC has an equal number of internal and external members. All external members in the FPC are weighted equally in terms of their voting rights.

The FPC has two types of powers: power of recommendation and power of direction. It recommends policies to supervisory agencies, mainly the PRA and the FCA, on a comply-or-explain basis, which is consistent with the recommendation power of the FSOC. The FPC may be considered more powerful than the FSOC due to its powers of direction. Currently, the powers of direction include the countercyclical capital buffer under Basel III and sectoral capital requirements, as well as housing market tools and leverage ratio requirements. These policies must be complied with and require policy statements regarding how they will be exercised. The FSOC can only make non-binding macroprudential policy recommendations to regulatory agencies except for its SIFI and FMU designations.

**MPC vs. Fed**

The Monetary Policy Committee is made up of nine members – the Governor, the three Deputy Governors for Monetary Policy, Financial Stability and Markets and Banking, the Bank's Chief Economist and four external members appointed directly by the Chancellor. It is responsible for price stability – the target of low inflation of 2 percent annually. The MPC achieves its inflation targets by changing the Bank Rate, the rate of interest that the Bank of England pays on reserve balances held by commercial banks and building societies. In the United States, the Federal Reserve takes on the same responsibility of conducting monetary policy. The Federal Reserve Board sets the discount rate and reserve requirements while the Federal Open Market Committee sets a target for the federal funds rate, with the objective of achieving maximum employment, stable prices, and moderate long-term interest rates. Similar to the Bank Rate that the Bank of England pays on reserve balances held by commercial banks, the Fed started paying interest on banks’ required reserve and excess reserve deposits in October 2008.

The Dodd-Frank Act granted the Fed more responsibility for maintaining the stability of the financial system and containing systemic risk in financial markets. In the UK, however, financial stability is the responsibility of the FPC rather than the MPC.

**FCA vs. CFPB**

The Financial Conduct Authority was created by the Financial Services Act as the business conduct supervisor for approximately 26,000 firms across all industry sectors, including those that are under additional prudential supervision by the Prudential Regulatory Authority (PRA). Additionally, the FCA is the prudential regulator of all firms that are not subject to the prudential regulation of the PRA. These firms include insurance intermediaries, personal investment firms,

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211 Bank of England, “Monetary Policy Committee (MPC)”.
mortgage intermediaries and other firms not considered systemically important.\textsuperscript{213} The FCA operates independently of the United Kingdom government and is not part of the Bank of England.

The FCA has three operational objectives – protecting consumers, enhancing market integrity, and promoting effective competition.\textsuperscript{214} The FCA and the Consumer Financial Protection Bureau (CFPB) have similar consumer protection responsibilities. The FCA implements product intervention rules with a lower risk tolerance than the former FSA. This allows the FCA to temporarily bar or restrict the sale of certain products and services, but these rules cease to be effective within 12 months of the day on which they come into force and may not be renewed. Unlike the CFPB, the FCA does not directly investigate consumer complaints. Consumers have to file their complaints with the Financial Ombudsman Service.

In the U.S. the CFPB is an independent unit located inside and funded by the Federal Reserve.\textsuperscript{215} It works to educate and inform consumers to defend against abusive practices, supervise banks, credit unions, and other financial companies, and gather and analyze data to better understand consumers, financial service providers, and consumer financial markets. In the Dodd-Frank Act, Congress gave the Bureau the responsibility to adopt specific mortgage rules. These mortgage rules were issued in January 2013:

- Title XIV Rules: Ability to Repay/Qualified Mortgages, HOEPA Rule, Loan Originator Rule, ECOA Valuations, TILA HPML Appraisals, Escrows, and TILA and RESPA Servicing.
- TILA-RESPA Integrated Disclosure Rule, which sets the new Loan Estimate and Closing Disclosure requirements – effective August 1, 2015 – that will combine two existing disclosure regimes under TILA and RESPA and make mortgage disclosure easier for consumers to understand and use.
- Remittance Transfer Rule, which provides new protections, including disclosure requirements, and error resolution and cancellation rights, to consumers who send remittance transfers to other consumers or businesses in a foreign country.\textsuperscript{216}

**PRA vs. Microprudential Regulators in the U.S.**

The Prudential Regulation Authority is the microprudential regulator in the UK, and its role is defined in terms of two statutory objectives: to promote the safety and soundness of the firms under its supervision and, specifically for insurers, to contribute to the securing of an appropriate degree of protection for policyholders. The PRA conducts prudential regulation of banks, building societies, credit unions, insurers and major investment firms. Firms subject to prudential regulation by the PRA are also subject to business conduct supervision by the FCA.\textsuperscript{217} The PRA divides the firms subject to its supervision into five categories of “potential impact,” and the frequency and intensity of its supervision is based on the categorization. The scale of a firm’s

\textsuperscript{214} Financial Conduct Authority, “The FCA’s Approach to Advancing Its Objectives”, July 2013.
\textsuperscript{216} Consumer Financial Protection Bureau, “Regulatory Implementation”.
\textsuperscript{217} Bank of England “Prudential Regulation Authority”.
potential impact depends on its size, complexity and interconnectedness with the rest of the financial system. For insurers, it also takes into account the size (including number of policyholders) and type of business undertaken.\textsuperscript{218} Some of its major supervisory activities are:

- **Alternative Investment Fund Managers Directive (AIFMD)** covers the management, administration and marketing of alternative investment funds (AIF), and it aims to (1) enhance supervisory practice among EEA competent authorities to support timely and pre-emptive action to prevent market instability and the build-up of systemic risk in the European financial system; (2) improve investor protection by imposing new depository standards and enhanced transparency through new investor disclosure rules and mandatory reporting to competent authorities; (3) foster efficiency and cross-border competition by deregulating national barriers and creating level playing fields through harmonized rules on an EEA-wide passport for full-scope EEA AIFMs to market and manage AIFs from 22 July 2013.\textsuperscript{219}

- **Capital Instruments**: a firm calculating regulatory capital under GENPRU (General Prudential) must notify the PRA by sending the standard notification to its email address before issuing any capital instrument that it wishes to include as regulatory capital, either alone or at the group level.\textsuperscript{220}

- **Climate Change Adaptation Reporting**: Under the UK Climate Change Act of 2008, the PRA were invited by the Department for Environment, Food and Rural Affairs (Defra) to submit a Climate Change Adaptation Report. The PRA voluntarily accepted Defra’s invitation. The report will be delivered to Defra by July 2015, and will inform the next UK Climate Change Risk Assessment, which is to be laid before Parliament in 2017.\textsuperscript{221}

- **H2 2014 Stress Scenario**: the PRA publishes a macroeconomic scenario for the UK which firms may use as a guide to calibrate their own scenarios for Pillar 2 capital planning stress tests.\textsuperscript{222}

- **Remuneration Code**: The PRA’s Remuneration Code sets out the standards that banks, building societies and designated investment firms have to meet when setting pay and bonus awards for their staff. It aims to ensure that firms’ remuneration practices are consistent with effective risk management.\textsuperscript{223}

- **Stress Testing**: stress testing is an important element in firms’ planning and risk management processes, which helps them identify, analyze and manage risks. Besides the stress testing programs that firms implement themselves to assess their ability to meet capital and liquidity requirements in stressed conditions, the PRA also runs its own stress tests on a periodic basis for a number of firms. It does this regularly for specific high-impact firms and for other firms as the need arises, to assess their ability to meet minimum specified capital levels throughout a stress period. Furthermore, banks, building societies, insurers, and some BIPRU (Banks, Building Societies and Investment Firms) investment firms are also required to undertake “reverse stress tests”, which

\textsuperscript{218} Bank of England, “Supervision”.


\textsuperscript{220} Bank of England, “Supervisory activities - Capital instruments: pre-issuance notification”.

\textsuperscript{221} Bank of England, “Supervisory activities - Climate Change Adaptation Reporting”.


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require a firm to assess scenarios and circumstances that would render its business model unviable, thereby identifying potential business vulnerabilities.  

In the U.S. all voting members of the FSOC conduct firm-level microprudential regulation to maintain solvency of individual firms in order to strengthen consumer confidence in the financial system as a whole. There is no single regulatory agency in the U.S. that resembles the structure and responsibility of the PRA in the UK, but different regulators in the U.S. operate collectively to achieve a similar goal, which is partly due to the fact that the financial system in the U.S. is less bank-centric than it is in the U.K. A detailed list of the type of financial institutions that each of these regulators oversees can be found in Table 3.3.

Chapter 4: Case Studies of FSOC Actions

Case Study: Reform of the Tri-Party Repo Market

U.S. securities firms and dealers use the tri-party repo market to finance a significant portion of their fixed income portfolios. In a tri-party transaction, collateral selection, payment and settlement, and custody and management during the transaction are outsourced to a third-party agent. In the U.S., the two clearing agents are J.P. Morgan Chase and Bank of New York Mellon.

Intraday Credit Extension by Clearing Banks Created Vulnerabilities

In the tri-party repo market, trades are unwound daily. The clearing banks return cash to investors and collateral to dealers. Before reforms were implemented, the clearing banks extended credit to the dealers in an amount equal to the entire amount of collateral the dealer financed in the tri-party repo market until the next day’s trades were settled. The amount of credit the clearing bank extended to dealers was uncapped and the credit was not extinguished until new repos were settled and terms trades were re-collateralized.

The extension of credit by the clearing bank increased the fragility of the market, because the clearing bank might be reluctant to extend credit if it had any concerns about a dealer’s ability to obtain funding in the future. This could lead to self-fulfilling dynamics, in which suspicions about a dealer’s future inability to obtain funding could lead to an immediate reduction in credit extension to the dealer.

If investors are concerned about a particular dealer’s creditworthiness, they may initially decide to shorten the maturity of their lending to that dealer. This will mean that the average term of the dealer’s trades goes down and the dealer funds an increasing portion of its securities on an overnight basis. The investors who continue to lend to the dealer, albeit on shorter terms, will likely also demand higher quality collateral at the same time as the quality of the dealer’s holdings of collateral is deteriorating because the dealer is selling its most liquid assets to raise cash. In these circumstances, the clearing bank may decide not to provide the intraday credit necessary to settle the dealer’s tri-party repo trades, even if the dealer is solvent, because the clearing bank is concerned about the dealer’s ability to continue to obtain funding from cash investors.

Antoine Martin, of the New York Fed, put together the following chart to show that this is indeed what happened to Lehman Brothers. The quality of collateral Lehman was pledging in tri-
party repo shifted from mostly government securities, treasuries and agency debt and MBS, to mostly non-government securities in the weeks leading up to the dealer’s bankruptcy.

**Figure 3.6: Lehman and Tri-Party Repo**

![Lehman Brothers' Tri-Party Repo Book by Collateral Type](image)


**Post-Crisis Reform**

In 2009, the tri-party repo infrastructure reform task force was established to address some of the weaknesses in the tri-party repo market that the financial crisis revealed. The task force was chaired by UBS and composed of clearing banks, dealers, investors, hedge funds, utilities, and industry groups, and was overseen by the New York Fed’s payments risk committee.²²⁵

In 2010, the task force issued recommendations for reducing the need for intraday credit from the clearing banks. Enactment of the plan would have meant “practical elimination” of intraday credit by the middle of 2011.

In 2011, the two clearing banks, J.P. Morgan Chase and Bank of New York Mellon, implemented several of the task force’s recommendations, including automated collateral substitution and moving the start of trade settlement from 8:30 am to 3:30 pm, but suggested the task force’s recommended timeline for “practical elimination” of intraday credit would not be met. In its first annual report, the FSOC highlighted structural vulnerabilities in the tri-party repo market and recommended reforms, including the elimination of intraday credit extension by the clearing banks.

²²⁵ Tri-Party Repo Infrastructure Reform Task Force, Members.
In February 2012, the task force issued its final report and the New York Fed announced it would tighten oversight of participants in the tri-party repo market to ensure the task force’s recommendations were implemented within a reasonable period of time. On February 15, the Financial Times ran a story about the fact that the task force had failed to achieve its objective of “dramatically reducing the dependence of borrowers on intraday credit.”

On February 15, the Financial Times ran a story about the fact that the task force had failed to achieve its objective of “dramatically reducing the dependence of borrowers on intraday credit.”

On July 18, 2012, the FSOC’s annual report again highlighted the tri-party repo market as a market in which further reform was needed and called the pace of reform “unacceptable.” The New York Fed issued an update on the progress of tri-party repo reform on the same day. The following day, July 19, the Financial Times ran a story on the risks posed by the tri-party repo market and on the FSOC’s calls for more government involvement in reform because of the industry’s inability to reform the system quickly enough.

On August 2, 2012, Senator Jack Reed, Chairman of the Senate Banking Subcommittee on Securities, Insurance, and Investment held a hearing entitled “The TriParty Repo Market: Remaining Challenges.” In his opening statement, Senator Reed noted “Because FSOC has sounded an alarm about the tri-party repo market and stated the need to more quickly implement additional reforms, we have convened this morning’s hearing to discuss the report, better understand the changes to this market already in place, and explore what more needs to be done.”

Matthew J. Eichner, Deputy Director, Division of Research and Statistics, Board of Governors of the Federal Reserve System, Karen B. Peetz, Vice Chairman, The Bank of New York Mellon, Steven R. Meier, Executive Vice President, Chief Investment Officer, State Street Global Advisors, and Thomas G. Wipf, Managing Director and Global Head of Bank Resource Management, Morgan Stanley delivered prepared remarks and responded to questions at the hearing. At the hearing, the following exchange took place between Senator Reed and Mr. Eichner:

Chairman Reed: Who is in charge? If the FSOC is calling for greater Government involvement to try to shepherd this private sector initiative, which has been very productive to date, to a timely conclusion, which several of the panelists have said must be done, who is in charge? Who is the person who has got the mission to do this, to get this done? Is it Mr. Dudley or is it Chairman Bernanke or is it Chairman Schapiro? Or is it—who knows? Do you have an answer?

Mr. Eichner: Yes, I think there are two answers. One is sort of all of the above, right? There are authorities that each of those individuals has that bring to bear on specific participants in the market. That having been said, the 2010 Dodd-Frank Act did also create a Financial Stability Oversight Council which does have a clear statutory responsibility to deal with situations where things threaten, as you suggest might be the case here----

228 Financial Stability Oversight Council, “2012 Annual Report”.
230 Senator Jack Reed, Reed Statement on Tri-Party Repo Market Hearing.
231 Hearing before the subcommittee on Securities, Insurance, and Investment of the Committee on Banking, Housing and Urban Affairs, United States Senate, The Tri-Party Repo Market: Remaining Challenges.
Chairman Reed: I appreciate your comments, but I think this is something that, as a result of this hearing, we need a specific answer, because we do not want to be in a situation again where everybody is involved but no one is responsible, if, in fact, the FSOC, as you point out, has called for greater Government involvement.\textsuperscript{232}

The hearing then moved to another topic, but Senator Reed concluded the hearing by saying “I do think we need to get a much more definitive, clarifying sort of notion of who is in charge here from the Federal perspective. That is one of the lessons we have learned over the last couple of years. When everyone is in charge, no one is in charge.”

The clearing banks subsequently enacted reforms which significantly reduced the extension of intraday credit. In November 2012, J.P. Morgan Chase developed the ability to stop providing intraday credit for non-maturing trades. In February 2013, Bank of New York Mellon stopped providing intraday credit for non-government securities. In June 2013, J.P. Morgan Chase stopped providing intraday credit on rolled trades, which are trades that are conducted the next day with the same counterparty, collateral, and value, and in November 2013 Bank of New York Mellon did the same. In March 2014, J.P. Morgan Chase capped the amount of credit it would extend to dealers and met the risk reduction goal for non-general collateral tri-party repo transactions, and, in May, Bank of New York Mellon did the same, achieving the task force’s objective of reducing the extension of intraday credit to dealers to less than 10% of the entire tri-party repo book.

**Figure 3.7: Intraday Credit Extension in Tri-Party Repo**

![Figure 3.7: Intraday Credit Extension in Tri-Party Repo](image)

Source: Federal Reserve Bank of New York

\textsuperscript{232} Hearing before the subcommittee on Securities, Insurance, and Investment of the Committee on Banking, Housing and Urban Affairs, United States Senate, *The Tri-Party Repo Market: Remaining Challenges*. 

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Conclusion: Reform Objectives Ultimately Achieved, Albeit Slowly

A reduction in the amount of intraday credit extended by the clearing banks was ultimately achieved, but the process was quite slow. The private sector task force was ultimately unable to achieve its objectives, and the New York Fed was compelled to step up oversight of the clearing banks to achieve the necessary infrastructure changes to reduce risk. The FSOC’s warnings about the market led to news stories and a Senate hearing, but the timeline for implementation was ultimately much slower than what the task force initially proposed, despite the FSOC’s statement that a slower timeline was “unacceptable.” The difficulty of answering Senator Reed’s questions about who is ultimately responsible for ensuring reform of the system shows some of the weaknesses of the current regulatory system. There is no one group that has both the responsibility for correcting systemic risks and the ability to do so.

Case Study: Reform of Money Market Mutual Funds

The Market

Money market funds are open-end management investment companies that invest in money market instruments and pay dividends that reflect short-term interest rates.233 In 1983, the Securities and Exchange Commission (SEC) granted a special exemption, rule 2a-7, to the Securities Act of 1940 that allows money market funds to maintain a stable net asset value of $1.00 as long as they follow certain limitations on their investments.

As of March 12, 2015, about $2.7 trillion was invested in money market funds. The two figures below show the money market fund breakdown by investment type and investor type, numbers are in billions:

Figure 3.8: Money Market Mutual Funds by Assets

Data source: Investment Company Institute

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233 Securities and Exchange Commission, Money Market Fund Reform.
**Government Backstop Was Needed During the Crisis to Address a Run**

During the financial crisis, the Reserve Primary Fund, a $62 billion money market mutual fund broke the buck because of a 1.2% investment in Lehman Brothers commercial paper. The failure of the Reserve Fund caused an investor panic that drove withdrawals of $300 billion from money market mutual funds. The withdrawals caused short term credit markets to cease functioning. The Treasury responded by temporarily guaranteeing investments in money market mutual funds and the Federal Reserve established several liquidity facilities, which supported both money market mutual funds and the companies that relied on money market instruments to fund their operations. The Treasury guarantee expired in September 2009.

**Initial Reforms Implemented by the SEC**

In January 2010, the SEC mandated reforms to the market. Money market mutual funds were required to shorten maturities and improve credit quality, and, for the first time, liquidity requirements were imposed on money market funds, and there were also new disclosure requirements regarding money market fund portfolios and shadow NAVs.

The changes implemented in 2010 are summarized in the table below from Goldman Sachs asset management:
Table 3.5: Money Market Fund Rule 2a-7 Guidelines, January 27, 2010 Amendments

<table>
<thead>
<tr>
<th>Portfolio Liquidity</th>
<th>Revised SEC Rules</th>
<th>Prior Rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce illiquid bucket to 5% of portfolio assets (illiquid defined as any security that cannot be sold or disposed of within 7 days at carrying value)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Portfolio Maturity</th>
<th>Revised SEC Rules</th>
<th>Prior Rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighted Average Maturity (WAM)</td>
<td>Maximum Weighted WAM of all holdings for money market funds drop to 60 days</td>
<td>Maximum WAM is 50 days</td>
</tr>
<tr>
<td>Weighted Average Life (WAL)</td>
<td>Restrict the WAL of a fund's portfolio to 120 days to limit the ability of the fund to invest in long-term floating rate securities</td>
<td>No such limit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eligible Securities</th>
<th>Revised SEC Rules</th>
<th>Prior Rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Money market funds are restricted to investing up to 3% of portfolio holdings in &quot;second-tier securities&quot; with a change to concentration limits of any single &quot;second tier&quot; issuer from 1% to 0.5% (rather than the current limit of the greater of 1% or $1 million) as well as a maturity limit</td>
<td>Most funds may invest up to 5% of portfolio holdings in &quot;second tier&quot; assets</td>
<td>No such regulation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Periodic Stress Tests</th>
<th>Revised SEC Rules</th>
<th>Prior Rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>On a monthly basis fund managers must examine and report to the board a fund's ability to maintain a stable net asset value (NAV) per share in the event of &quot;shocks&quot; such as interest rate changes, higher redemptions, and changes in credit quality of the portfolio</td>
<td>A fund's &quot;shadow&quot; NAV is reported twice a year, with a 60-day delay</td>
<td>No such regulation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Portfolio Disclosure</th>
<th>Revised SEC Rules</th>
<th>Prior Rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>To prevent losses during runs, a fund's board of directors is authorized to bar investors from redeeming their shares when the net asset value (NAV) falls below $1. If a fund &quot;breaks the bunch&quot; and chooses to liquidate portfolio holdings, the fund will be allowed to process transactions at prices other than $1 in order to avoid process delays. The fund must notify the SEC prior to relying on this rule. Funds will need to develop procedures to identify investors whose redemption requests may pose risks for funds</td>
<td></td>
<td>No such regulation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Run Protection</th>
<th>Revised SEC Rules</th>
<th>Prior Rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Money market fund investments in rated securities continue to be restricted to those securities in the top two rating categories (or unrated securities of comparable quality). Fund's board will annually select to provide credit analysis of eligible securities in a fund's portfolio</td>
<td></td>
<td>No such regulation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rating Agencies</th>
<th>Revised SEC Rules</th>
<th>Prior Rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAV - As of the January meeting, the SEC has not issued a final opinion on a fluctuating not asset value (NAV) as opposed to the current structure which permits stable $1 NAV</td>
<td></td>
<td>No such regulation</td>
</tr>
</tbody>
</table>

Source: Goldman Sachs Asset Management

When the SEC adopted these new rules, it noted that there were still features of money market mutual funds that left them vulnerable to runs and said it expected to propose further reforms to money market fund regulation. In its 2011 and 2012 annual reports, the FSOC recommended further reforms.

In August 2012, Mary Schapiro announced “Three Commissioners, constituting a majority of the Commission, have informed me that they will not support a staff proposal to reform the structure of money market funds.” In her statement, Schapiro wrote that she considered further reform necessary, but that the Commissioners’ refusal to support the staff proposal meant that it could not proceed.

FSOC Chair Timothy Geithner responded to Schapiro’s announcement with the following statement (emphasis added):

Securities and Exchange Commission, Money Market Fund Reform.
The SEC, by virtue of its institutional expertise and statutory authority, is best positioned to implement reforms to address the risks that MMFs present to the economy. However, while we pursue this path, the Council and its members should, in parallel, take active steps in the event the SEC is unwilling to act in a timely and effective manner.

Under Title I of the Dodd-Frank Act, the Council has the authority and the duty to designate any nonbank financial company that could pose a threat to U.S. financial stability. The Council should closely evaluate the MMF industry to identify firms that meet this standard. Designating MMFs or their sponsors or investment advisers would subject those firms to supervision by the Federal Reserve and would give the Federal Reserve broad authority to impose enhanced prudential standards, potentially including the options discussed above. Alternatively, the Council’s authority to designate systemically important payment, clearing, or settlement activities under Title VIII of the Dodd-Frank Act could enable the application of heightened risk-management standards on an industry-wide basis.

Other Council member agencies have the authority to take action to address certain of the risks posed by MMFs and similar cash-management products. For example, the bank regulatory agencies should evaluate their authorities to impose capital surcharges on regulated entities that sponsor MMFs, or restrict financial institutions’ ability to sponsor, borrow from, invest in, and provide credit to MMFs that do not have structural protections. As currently conducted, such activities can pose risks to financial institutions’ safety and soundness in a variety of ways, including the potential for MMFs to curtail funding for financial firms abruptly in times of market stress and the implicit support provided by firms that sponsor MMFs. Additionally, the potentially destabilizing role of MMFs in the tri-party repo market should be carefully assessed as part of the ongoing efforts to improve the safety, soundness, and resiliency of that market.236

In November, 2012, the Council used its authority under Section 120 of Dodd-Frank to propose specific reform recommendations to the SEC. The FSOC sought comments on its recommendations and warned that, once it had reviewed comments, it “may issue a final recommendation to the SEC, which, pursuant to the Dodd-Frank Act, would be required to impose the recommended standards, or similar standards that the Council deems acceptable, or explain in writing to the Council within 90 days why it has determined not to follow the recommendation.”237

The Council proposed three alternatives. Alternative one was to implement floating net asset values for money market mutual funds; alternative two was to allow stable net asset values but impose net asset value buffers and a “minimum balance at risk”; and alternative three was to allow a stable net asset value but to have a net asset value buffer equal to three percent to provide

236 Treasury, Secretary Geithner Sends Letter to FSOC Members on Necessary Money Market Fund Reforms.
explicit loss-absorption capacity that could be combined with other measures to enhance the effectiveness of the buffer and potentially increase the resiliency of MMFs.  

In response, the Investment Company Institute wrote a letter urging the FSOC to drop its proposed recommendations. The Institute claimed that the FSOC did not have the authority to issue a recommendation because it could only make recommendations for “nonbank financial companies” that are “predominantly engaged in financial activities.” The Federal Reserve Board was given responsibility for defining the criteria for meeting this definition and had yet to complete this task. “FSOC has not provided an adequate basis to support a determination that any money market funds would qualify as nonbank financial companies, and thus lacks the authority to issue these recommendations.”

In July 2014, the SEC adopted further reforms to the rules governing money market funds. The new rules require institutional prime money market funds, but not government or retail funds, to have a floating net asset value. The new rules also allow the board of directors of a money market mutual fund to impose liquidity fees if the fund’s liquidity level falls below a regulatory threshold and to suspend redemptions under certain circumstances if they believe that doing so is in the best interest of the fund. The new rules also require more portfolio diversification, impose enhanced stress testing on money market mutual fund portfolios, and require funds to report additional information on liquid assets, net shareholder inflows or outflows, market-based NAVs, and imposition of fees and gates daily on their websites.

The changes, and the types of funds to which they apply, are summarized in this table from Fidelity Investments:

**Table 3.6: 2014 Money Market Mutual Fund Reforms**

<table>
<thead>
<tr>
<th>Fund Type</th>
<th>Net Asset Value (NAV)</th>
<th>Liquidity Fee</th>
<th>Redemption Gate</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Treasury</td>
<td>Stable</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Government</td>
<td>Stable</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Retail Municipal/Tax-Exempt</td>
<td>Stable</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Retail Prime/General Purpose</td>
<td>Stable</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Institutional Municipal/Tax-Exempt</td>
<td>Floating</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Institutional Prime/General Purpose</td>
<td>Floating</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Source: [Fidelity Investments](#)

The new rules mean that, based on current investments in money market mutual funds, about 1/3 of investments in money market funds will be subject to floating net asset values and about 2/3 will be subject to imposition of liquidity fees and redemption gates in certain circumstances.

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238 Financial Stability Oversight Council, [Proposed Recommendations Regarding Money Market Mutual Fund Reform.](#)


240 Securities and Exchange Commission, [Money Market Fund Reform; Amendments to Form PF.](#)
In her statement following release of the new regulations, SEC Commissioner Kara Stein suggested other regulators needed to take steps to reduce risks posed by overreliance on short-term funding. “It is vital that each of our efforts be complemented by other regulators who have jurisdiction over other participants in these markets. For example, the funding disclosures that the Commission should act on could be reinforced by the Federal Reserve Board, which could take more direct measures to regulate the use of short-term credit by financial institutions.” She also noted that fund gates could actually contribute to making runs on money market funds more likely: “As the chance that a gate will be imposed increases, investors will have a strong incentive to rush to redeem ahead of others to avoid the uncertainty of losing access to their capital.”

The FSOC discussed the SEC’s reforms at its meeting on July 31, 2014 and released the following statement:

> While not proceeding at this time to a final Section 120 recommendation, the Council intends to monitor the effectiveness of the SEC’s reforms in addressing risks to financial stability. In particular, the Council believes it will be important to better understand any unintended consequences of liquidity fees and gates, as well as the treatment of retail funds. After these measures have been implemented, the Council will report on the effects of these reforms and their broader implications for financial stability.

**Conclusion: Reforms Implemented For Riskiest Segment of Market**

In October 2010, the President’s Working Group on Financial Markets, a precursor to the FSOC, noted “The run on MMFs in September 2008 was almost exclusively due to redemptions from prime MMFs by institutional investors.” The FSOC’s recommendation for floating net asset values has now been applied to prime institutional funds, which are the funds most vulnerable to runs because institutional investors tend to exhibit less inertia during a panic than retail investors and losses are most likely to materialize in prime funds. However, much of the market remains

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unaffected by the regulatory changes the FSOC recommended. While many have pointed to the SEC’s refusal to implement money market fund reform as an example of the FSOC’s weakness, Geithner’s letter demonstrates that the Council has considerable power to act if it does not believe that a regulator has taken sufficient action to address a risk to financial stability. Despite its protestations, the SEC was ultimately compelled to implement many of the reforms the FSOC recommended.

Case Study: Risks Posed by the Leveraged Loan Market

In its 2011 and 2012 annual reports, the FSOC highlighted the leveraged loan market as a segment of the market in which underwriting standards had deteriorated and which needed supervisory attention. The report noted: “While there was a pull-back in leveraged lending during the crisis, volumes have since increased while underwriting practices have deteriorated.”

In March 2013, three regulators that are represented on the FSOC, the Federal Reserve, FDIC, and OCC, issued guidance designed to reduce risk taking in leveraged loans that was largely consistent with a proposal for guidance that was issued in March 2012. The regulators urged banks to improve their underwriting standards and noted that, in most industries, leverage of more than six times total debt to EBITDA raised concerns about the underwriting standards on a loan.

In November 2014, regulators issued a document responding to frequently asked questions concerning the March 2013 guidance. In this document, the regulators explained the six times debt to EBITDA threshold: “Loans to borrowers that exceed this leverage level may receive additional scrutiny to assess the sustainability of the capital structure and repayment capacity of the borrower.”

According to the Office of Financial Research’s 2014 annual report, the guidance had not had an impact on issuance of leveraged loans as of the end of 2014. The OFR pointed to the increasing portion of leveraged loans in which the amount of leverage exceeded the threshold included in the regulators’ guidance: “Before the guidance was issued, new large corporate loans with leverage higher than six times EBITDA accounted for about 15 percent of total issuance. So far in 2014, new loans with higher leverage have made up one-third of corporate bank loans.” The OFR noted that asset managers were buying an increasing share of leveraged loans and that “a significant amount of this risk continues to migrate to asset management products, such as high yield bond funds, exchange traded funds, hedge funds and other private funds and collateralized loan obligations (CLOs).”

244 Financial Stability Oversight Council, “2012 Annual Report”.
245 Federal Reserve, Interagency Guidance on Leveraged Lending.
246 Derrick D. Cephas, Bank Regulators Tackle Leveraged Lending.
However, since the start of 2015, the percentage of loans that have leverage greater than 6 times EBITDA has fallen to 21 percent, down from 60 percent in the second and third quarters of 2014. Private equity funds have attributed difficulty obtaining this type of lending to the regulatory guidance.\textsuperscript{250}

**Figure 3.10: Decline in Leveraged Buyouts Funded Above Debt Level Considered Risky**

<table>
<thead>
<tr>
<th>Slowdown</th>
<th>Fewer leveraged buyouts are being funded above the debt level regulators generally consider risky.\textsuperscript{6}</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. private-equity buyouts, by dollar volume, are at their lowest level since 2012.</td>
<td></td>
</tr>
<tr>
<td>$60 billion</td>
<td>60%</td>
</tr>
<tr>
<td>Through March 25 of each year</td>
<td></td>
</tr>
<tr>
<td>$17.14 billion</td>
<td>21%</td>
</tr>
<tr>
<td>2010</td>
<td>2011</td>
</tr>
<tr>
<td>0</td>
<td>20</td>
</tr>
</tbody>
</table>

\textsuperscript{6}Percentage of LBOs with leverage greater than six times Ebitda; 2015 data through March 25. Sources: Dealogic (volume); S&P Capital IQ LCD (percentage). THE WALL STREET JOURNAL.

Additionally, in its 2014 annual report, the OFR noted that it was hopeful that the final risk retention rule, which was issued by the Fed, HUD, FDIC, FHFA, OCC and SEC and will require sponsors of asset backed securities, including CLOs, to retain at least five percent of the credit risk of the assets collateralized the issuance,\textsuperscript{251} will reduce issuance of leveraged loans.\textsuperscript{252} The rule was originally included in the Dodd Frank Act, but regulatory agencies were left to determine some specifics concerning how it would be applied. The rule will not be effective for CLOs until December 2016.\textsuperscript{253}

\textsuperscript{250} Gillian Tan, “Buyout Firms Feel Pinch From Lending Crackdown”, The Wall Street Journal.

\textsuperscript{251} Federal Reserve, “Six Federal Agencies Jointly Approve Final Risk Retention Rule”.


\textsuperscript{253} Federal Register, Credit Risk Retention; Rule.
Conclusion: Initial Migration of Activity to Unregulated Sector Highlights Risks of Regulatory Arbitrage

The Office of Financial Research has called the regulatory response to excesses in the leveraged loan market “an important test case” of policies designed to address cyclical excesses. Initially, it seems that regulatory actions designed to reduce these excesses led to a migration of these assets out of banks and into asset management products. Since the start of 2015, however, issuance of loans regulators judged to be particularly risky has fallen. Private equity funds have attributed the decline in the availability to these kinds of loans to the regulatory guidance.254 ABS risk retention rules which apply to CLOs may make extending these types of loans even less appealing to banks going forward,255 but the regulatory guidance seems to have reduced risky lending, albeit with a significant lag considering the first proposed guidance was issued in March 2012.

254 Gillian Tan, “Buyout Firms Feel Pinch from Lending Crackdown”.
255 Tim Cross, US Leveraged Loan Issuance Slides to $529.5B in Rocky 2014.
Works Cited


Belsky Eric S., and Nela Richardson, "*Understanding the Boom and Bust in Nonprime Mortgage Lending*", September 2010.


BIS. Revised Basel III leverage ratio framework and disclosure requirements - consultative document, June 2013.


256 The authors would also like to thank Donald Kohn for offering his insight in an hour-long interview conducted on April 10, 2015 in connection with the preparation of this report.


Menon, Ravi. “Getting in all the cracks or targeting the cracks? Securing financial stability in the post-crisis era” Opening remarks by Mr. Ravi Menon, Managing Director of the Monetary Authority of Singapore, at the Asian Monetary Policy Forum (AMPF), Singapore, 24 May 2014.


Osborne, George, “Mansion House 2014: Speech by the Chancellor of the Exchequer,” (speech delivered June 12, 2014).


Shin, Hyun Song. BIS, “Macrophrudential Tools, Their Limits, and Their Connection with Monetary Policy” (Remarks at IMF Spring Meeting: “Rethinking macro policy III: progress or confusion?” 15 April 2015)


### Appendix

**Appendix 1.1: Institutional Models for Macroprudential Policy**

<table>
<thead>
<tr>
<th>Features of the model/Model</th>
<th>Model I</th>
<th>Model II</th>
<th>Model III</th>
<th>Model IV</th>
<th>Model V</th>
<th>Model VI</th>
<th>Model VII</th>
<th>Model VIII</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Degree of institutional integration of central bank and supervisory agencies</td>
<td>Full (at a central bank)</td>
<td>Partial</td>
<td>Partial</td>
<td>Partial</td>
<td>No (Partial)*</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2. Ownership of macroprudential policy and financial stability mandate</td>
<td>Central bank</td>
<td>Committee “related” to central bank</td>
<td>Independent committee</td>
<td>Central bank</td>
<td>Multiple agencies</td>
<td>Multiple agencies</td>
<td>Multiple agencies</td>
<td>Committee (multinational; regional)</td>
</tr>
<tr>
<td>3. Role of MOF / treasury / government</td>
<td>No (Active)*</td>
<td>Passive</td>
<td>Active</td>
<td>No</td>
<td>Passive</td>
<td>Active</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>4. Separation of policy decisions and control over instruments</td>
<td>No</td>
<td>In some areas</td>
<td>Yes</td>
<td>In some areas</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>5. Existence of separate body coordinating across policies</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Examples of specific model countries/regions</td>
<td>Singapore*</td>
<td>Romania</td>
<td>Brazil</td>
<td>Thailand</td>
<td>Australia</td>
<td>Canada</td>
<td>Iceland</td>
<td>EU (ESRB)</td>
</tr>
<tr>
<td></td>
<td>Czech Republic</td>
<td>United Kingdom</td>
<td>France</td>
<td>Netherlands</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>USA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mongolia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Belgium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Appendix 1.2: Definitions of Macroprudential Tools

<table>
<thead>
<tr>
<th>Category 1. Instruments developed specifically to mitigate systemic risk</th>
<th>Time Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Countercyclical capital buffers:</strong></td>
<td>The requirement can take the form of a ratio or risk weights raised during an upturn as a restraint on credit expansion and reduced during a downturn to provide a cushion so that banks do not reduce assets to meet the capital requirement. A permanent capital buffer, which is built up during an upturn and deleted during a downturn, serves the same purpose. Both can address the cyclical in risk weights under Basel II based on external ratings that are procyclical. Even if this is a powerful tool, CCB is considered blunt, since it doesn't discriminate between the sources of risk, if risk is arising from a specific segment of the credit markets.</td>
</tr>
<tr>
<td><strong>Through-the-cycle valuation of margins or haircuts for repos:</strong></td>
<td>Haircuts/initial margins hedge the risk on the collateral which hedges the default risk. They are an adjustment to the quoted market value of a collateral security to take account of the unexpected loss that the repo buyer (seller) in a repo may face due to the difficulty of selling (buying) a collateral security in response to a default by the repo seller (buyer). A countercyclical add-on to capital charges on secured lending to boost haircuts/initial margins during up-cycles can dampen procyclicality.</td>
</tr>
<tr>
<td><strong>Levy on non-core liabilities:</strong></td>
<td>A tax on non-core liabilities can be laid to limit procyclicality when banks turn to other sources (non-core liabilities) to fund credit growth. This is easier to implement, is less distortive compared to counter-cyclical capital buffers, and is suitable for both advanced and emerging economies. A non-core liabilities tax can be an effective tool for mitigating the risks from sudden reversals of foreign capital flows in emerging economies. The Obama administration has proposed a temporary tax (of 0.15%) on the non-deposit liabilities of leveraged financial institutions in the United States with assets of more than 50 billion dollars. The stated purpose of the financial crisis responsibility levy (commonly known as the “Obama Tax”) is to recoup the cost to public funds of government intervention during the recent financial crisis.</td>
</tr>
<tr>
<td><strong>Countercyclical change in risk weights for exposure to certain sectors:</strong></td>
<td>Risk weights depend on credit assessments or risk scores of sovereigns, non-governmental public sector entities, development banks, other commercial banks, securities firms, corporates and individuals, and vary between 0% and 150%. Incorporating recessionary estimates to the probability of default assumption increases the risk of the assets. Since the capital requirement depends on the calculated risk weighted assets, this is an indirect way of increasing minimum capital requirements.</td>
</tr>
</tbody>
</table>

---


## Cross-Sectoral Dimension

| Systemic capital / liquidity surcharges: | SIFIs are required to retain a percent of their total capital. The surcharge ratio may depend on the size of the financial institution, quality of asset base, geographical diversion or business model. Considering liquidity surcharges is also important because financial institutions often fail because of illiquidity rather than insolvency. The capital surcharges proposed for the GSIBs under the Basel III norms was one of 4 values: 1%, 1.5%, 2% and 2.5%. Banks are categorized depending on their four factors: interconnectedness, substitutability, complexity and cross-jurisdictional activity. In the US, the capital surcharge ranges from 1% to 4.5% – potentially requiring a bank with a 4.5% surcharge to maintain a common equity tier 1 (CET1) ratio of 11.5%. When capital/liquidity surcharges are applied on a time-varying basis, the measure falls under time-dimension category. Other measures such as liquidity coverage ratio and net stable funding ratio are complementary to this rudential liquidity measure.\(^{259}\) |
| Higher capital charges for trades not cleared through CCPs: | Where a CCP’s total prefunded default fund contributions (DF) are not sufficient to cover the CCP’s hypothetical capital requirements (KCCP), and clearing members do not have an obligation to contribute more default funds to offset a shortfall in CCP loss-absorbing resources, such clearing members are still subject to an additional capital charge. The reason is that their exposures to such CCP are, in fact, riskier than would be the case if the CCP had access to adequate resources to cover its hypothetical capital requirements. This reflects the underlying assumption that CCPs, through own resources and member default funds, are expected to have adequate loss-bearing, mutualized, financial resources to make defaults on their exposures highly unlikely. If such loss-bearing resources are inadequate, the members’ exposures are bearing additional risk and require additional capital. |

## Category 2. Recalibrated instruments

### Time dimension

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Caps on Loan-to-Value (LTV):</strong></td>
<td>A cap on the ratio of the amount of the credit to the appraised value of the collateral (e.g. Mortgage Amount/ Value of the Property) can be imposed to prevent credit growth, asset price inflation and procyclicality. Caps on LTV is one of the most common measures (with DTI) used in advanced economies and is suggested to be one of the most effective measures in various effectiveness tests. The cap may differ in different segments (residential/commercial) or according to the value of the property.</td>
</tr>
<tr>
<td><strong>Caps on Debt-To-Income (DTI):</strong></td>
<td>The DTI represents prudential regulation aimed at ensuring banks’ asset quality when used alone. When used in conjunction with the LTV, however, the DTI can help further dampen the cyclicity of collateralized lending by adding another constraint on households’ capacity to borrow. Like in the LTV, adjustments in the DTI can be made in a counter-cyclical manner to address the time dimension of systemic risk.</td>
</tr>
<tr>
<td><strong>Caps on Loan-To-Income (LTI):</strong></td>
<td>The LTV imposes a down payment constraint on households’ capacity to borrow. In theory, the constraint limits the procyclicality of collateralized lending since housing prices and households’ capacity to borrow based on the collateralized value of the house interact in a procyclical manner. Set at an appropriate level, the LTV addresses systemic risk whether or not it is frequently adjusted. However, the adjustment of the LTV makes it a more potent counter-cyclical policy instrument.</td>
</tr>
<tr>
<td><strong>Time-varying limits in currency mismatch or exposure:</strong></td>
<td>Such prudential regulation tools limit banks’ common exposure to foreign currency risks. In addition, the limits may be used to address an externality—sharp exchange rate fluctuations caused by a convergence of purchases/sales of foreign exchange by banks. This externality increases the credit risk of unhedged borrowers with heavy foreign currency debt.</td>
</tr>
<tr>
<td><strong>Time varying limits on loan-to-deposit ratio:</strong></td>
<td>The loan-to-deposit ratio is the ratio of a bank’s total outstanding loans for a period to its total deposit balance over the same period. So a loan-to-deposit ratio of 0.5 (50%) indicates that a bank lends half dollar to customers for every dollar that it brings in as deposits and retains the other half as cash on hand for contingencies. A combination of prudence and regulatory requirements suggests that a loan-to-deposit ratio of around 80-90% would be a good benchmark. This limit may be increased or decreased in accordance with the systemic-risk assessments.</td>
</tr>
</tbody>
</table>

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| Caps and limits on credit or credit growth or leverage: | Time-varying caps can reduce procyclicality. These limits are implemented on credit/credit growth (aggregate or sectoral)/leverage to constrain credit during booms, or loosened to facilitate credit growth during busts. |
| Dynamic provisioning: | Traditional dynamic provisioning is calibrated on historical bank-specific losses, but it can also be used to dampen the cyclicity in the financial system. The provisioning requirement can be raised during an upturn to build a buffer and limit credit expansion and lowered during a downturn to support bank lending. It may be adjusted either according to a fixed formula or at the discretion of the policymaker to affect banks’ lending behavior in a counter-cyclical manner. |
| Stressed VaR to build additional capital buffer against market risk during a boom: | Stressed Value-at-Risk is a measure added to Basel II framework to have a risk measure that captures the effect of a stressed market period on the portfolio.\(^{261}\) The period's effect, after being measured, can be used to build a capital buffer against market risk during a boom. |
| Rescaling risk-weights by incorporating recessionary conditions in the probability of default assumptions: | Risk weights depend on credit assessments or risk scores of sovereigns, non-governmental public sector entities, development banks, other commercial banks, securities firms, corporates and individuals, and vary between 0% and 150%. Incorporating recessionary estimates to the probability of default assumption increases the risk of the assets. Since the capital requirement depends on the calculated risk weighted assets, this is an indirect way of increasing minimum capital requirements. |
| Reserve requirements: | This monetary policy tool may be used to address systemic risk in two senses. First the reserve requirement has a direct impact on credit growth, so it may be used to dampen the credit/asset price cycle—the time dimension of systemic risk; second, the required reserves provide a liquidity cushion that may be used to alleviate a systemic liquidity crunch when the situation warrants. |
| Restrictions on profit distribution: | These restrictions are intended to ensure the capital adequacy of the banks. Profit distribution can be deferred or made conditional on some ratios (such as CAR, CET1 ratios or loan loss provisions) or stress test results. A “capital conservation buffer” can be implemented prior to profit distribution (Argentina, 2012), undercapitalized banks can be banned to pay out dividends or bonuses, banks that had inadequate loan loss provisions could not pay out dividends or bonuses (Serbia) or the banks may require approval from the supervisor before distributing profits (Turkey).\(^{262}\) |


<table>
<thead>
<tr>
<th><strong>Limits on maturity mismatch:</strong></th>
<th>These instruments may be used to address systemic risk since the choice of asset/liability maturity creates an externality - fire sales of assets. In a crisis, the inability of a financial institution to meet its short term obligations due to maturity mismatches may force it to liquidate assets, thus imposing a fire sale cost on the rest of the financial system. The funding shortages of a few institutions could also result in a systemic liquidity crisis due to the contagion effect.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ceilings on credit or credit growth:</strong></td>
<td>A ceiling may be imposed on either total bank lending or credit to a specific sector. The ceiling on aggregate credit or credit growth may be used to dampen the credit/asset price cycle—the time dimension of systemic risk. The ceiling on credit to a specific sector, such as real estate, may be used to contain a specific type of asset price inflation or limit common exposure to a specific risk—the cross-sectional dimension of systemic risk.</td>
</tr>
<tr>
<td><strong>Caps on foreign currency lending:</strong></td>
<td>Loans in foreign currency expose the un-hedged borrower to foreign exchange risks which, in turn, subject the lender to credit risks. The risks can become systemic if the common exposure is large. Caps (or higher risk weights, deposit requirements, etc.) on foreign currency lending may be used to address this foreign-exchange-induced systemic risk.</td>
</tr>
</tbody>
</table>

**Cross-Sectoral Dimension**

<table>
<thead>
<tr>
<th><strong>Powers to break up financial firms on systemic risk concerns:</strong></th>
<th>SIFIs have more potential of harming the economy and exacerbate procyclicality than the smaller banks. Macro-prudential authority may need powers to break-up of large financial institutions to mitigate the high risk they expose to the financial system. Section 121 of the Dodd-Frank Wall Street Reform and Consumer Protection Act. Section 121 gives the Federal Reserve and the Financial Stability Oversight Council the authority to mitigate the “grave threat” that a financial institution poses by limiting the bank’s activities or forcing it to divest assets—in other words, the authority to break up a bank into separate institutions.²⁶³</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Taxation or Capital charge on derivative payables:</strong></td>
<td>Over-the-counter (OTC) derivatives are considered to have high risk since the large banks do not hold collateral against all the positions in their trade book. Regulators can induce them to move to centralized counterparties (CCPs) which is considered to be safer because they are required to have collaterals against all positions.²⁶⁴ A capital charge on OTC derivative payables is suggested in Basel regulations and can do this job. Taxation is another option. OTC derivatives infrastructure is handled by not only national authorities, but also international bodies such as G-20 and International Organization of Securities Commissions (IOSCO).²⁶⁵</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Deposit insurance risk premiums sensitive to systemic risk:</strong></th>
<th>&quot;Demand deposits&quot; are insured in most countries however the premiums have not been priced in a risk-sensitive way and they are pro-cyclical. In many countries deposit insurances were not charged a premium at all. A premium which is sensitive to both systemic risk and the individual bank's risk can play macro and micro-prudential role. Premium per unit may be higher for SIFIs since they expose higher risk on the banks. The premium should be a systemic risk focused tool rather than an actuarially fair insurance premium.266</th>
</tr>
</thead>
</table>
| **Restrictions on permissible activities:** | Examples are:
- “Volcker Rule” (within the Dodd-Frank Act) prohibits insured depository institutions from engaging in proprietary trading.
- The Dodd-Frank Act also assigns new powers to the Federal Reserve to require divestment by firms subject to enhanced prudential standards under the Act of certain assets or businesses if their orderly resolution cannot be assured. |

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For another paper which delves into how deposit insurance premiums can be used for dealing with systemic risk, look at: Acharya, Santos and Yorulmazer, 2010 [http://www.newyorkfed.org/research/epr/10v16n1/1008yoru.pdf](http://www.newyorkfed.org/research/epr/10v16n1/1008yoru.pdf)
## Appendix 1.3: Studies on Effectiveness of Macroprudential Policies

<table>
<thead>
<tr>
<th>Studies on Effectiveness of Macro-prudential Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Cross-country studies</strong></td>
</tr>
<tr>
<td>Cerutti, Claessens and Laeven, 2015</td>
</tr>
<tr>
<td>The study covers data from 119 countries based on an IMF survey over 14 years (2000-2012). It examines the effectiveness of 12 macro-prudential tools. The MPI index which shows the simple sum of implemented macro-prudential instruments is found to be effective in emerging, developing and advanced economies.</td>
</tr>
<tr>
<td>McDonald, 2015</td>
</tr>
<tr>
<td>The study focuses on LTV and DTI instruments and examines the relationship between the phase of the cycle when macro-prudential policy is implemented and effectiveness of the instruments. It looks at 100 policy adjustments across 17 economies and finds that: - Tightening measures have greater effects when credit is expanding quickly and when house prices are high relative to income. - Loosening measures in downturns have respectively smaller effects. - Effectiveness of LTV and DTI depends on how expensive is the housing prices. (more effective when prices are high)</td>
</tr>
<tr>
<td>Lim, Columba and Costa, 2011</td>
</tr>
<tr>
<td>The study finds that LTV, DTI, ceilings on credit growth, RR and dynamic provisioning rules are associated with reductions in procyclicality of credit and leverage.</td>
</tr>
<tr>
<td>IMF, 2013</td>
</tr>
<tr>
<td>The study examines the macro-prudential policies' effects on financial vulnerabilities and the real economy and finds significant association between: - CR and credit growth, housing prices. - RR and credit growth, portfolio inflows (in emerging markets) - LTV and housing prices, total output growth.</td>
</tr>
<tr>
<td>Dell’Ariccia, Igan and Laeven, 2012</td>
</tr>
<tr>
<td>The study finds that:</td>
</tr>
<tr>
<td>- Credit booms tend to be more frequent in fixed exchange regimes and under weak supervision,</td>
</tr>
<tr>
<td>- Macro-prudential policies have proven effective in containing booms and limiting the effects of busts and they are less costly,</td>
</tr>
<tr>
<td>- Fiscal policy is ill-equipped to timely stop a boom due to time lags.</td>
</tr>
<tr>
<td>Claessens, Ghosh and Mihet, 2013</td>
</tr>
<tr>
<td>The study examines the policies' impacts on individual balance sheets of banks in 49 countries over 2000-2010. Finds that: - DTI and LTV caps effectively reduce asset growth in the balance sheets and their leverage, - Limits on credit growth and foreign currency lending effectively reduce asset growth and their leverage as well, - Countercyclical buffers are a little effective through the cycles but they may be counterproductive during downswings as well.</td>
</tr>
</tbody>
</table>
The study examines the effects of macro-prudential policies and capital flow measures in 46 countries (13 in Asia) since 2000 and finds that:
- LTV caps, housing tax measures and foreign currency related measures are particularly effective,
- These policies and measures helped curb housing price growth, equity flows, credit growth and bank leverage.

The study assesses the effectiveness of macro-prudential and capital flow management policies in 12 Asia-Pacific economies and finds that:
- CFM policies in banking sector and bond markets are effective in slowing down both banking inflows and bond market inflows,
- CFM policies have spillover effects: Banking sector CFM is associated with an increase in international debt securities and bond market CFM is associated with an increase in cross-border bank lending.
- Monetary tightening increases effectiveness of macro-prudential policies.

The study suggests that macro-prudential measures are less costly and have more direct impact and higher chance of curbing a boom than fiscal measures.

The study finds that:
- There is a strong relation between house prices and household credit
- Macro-prudential policies can help to monitor household credits
- Role of monetary policy should not be downplayed and a mix of policies should be deployed.

The study uses data from 57 countries spanning 3 decades and finds that:
- DTI, LTV, housing related taxes and limits on exposure significantly affect credit growth in conventional panel regressions,
- These measures -except the DTI- do not significantly affect credit growth when mean group or panel event study methods are used,
- Only housing related taxes impact housing prices significantly.

The study analyzes the impact of countercyclical capital buffers on the supply of credit in Spain between 1999 and 2010. It finds that the buffers contract credit availability (volume and cost) in good times, but expand it in bad times even if it did not suffice to stop the boom.

The study suggests that dynamic provisions have proved useful in Spain during the current financial crisis and they could be an important prudential tool for emerging economies, where banks dominate financial intermediation.
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Summary</th>
</tr>
</thead>
</table>
| Igan and Kang, 2011 | This study finds that  
- DTI and LTV limits are significantly associated with a decline in both housing prices and transaction activity.  
- Tighter limits on LTV curb expectations and discourage potential speculation in housing sector. |
| Wong, Fong and Li, 2011 | The study analyses data from 13 economies and finds that:  
- LTV is effective in reducing systemic risk stemming from the boom-and-bust cycle of property markets.  
- Mortgage Insurance Programs (MIP) can mitigate the higher liquidity constraints of LTV by protecting lenders from credit losses on the portion of loans over maximum LTV thresholds. |
| Camors and Peydro, 2014 | The study investigates the effects of a large and unexpected increase in reserve and liquidity requirements in Uruguay in 2008 and finds that:  
- Credit growth declines on aggregate,  
- However credits go to riskier firms. |
| Aiyar, Calomiris and Wieladek, 2014 | The study uses information over 1998-2007 and finds that  
- Higher capital requirements have strong aggregate effect on regulated banks' lending activities.  
- Unregulated banks (resident foreign branches) increase lending in response to tighter capital requirements on a relevant reference group of regulated banks  
- This means there is a leakage in macro-prudential regulation and it is substantial. |
## Appendix 2.1: Core Indicator Set for the Countercyclical Capital Buffer

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Average, 1987-2006</th>
<th>Average 2006</th>
<th>Minimum since 1987</th>
<th>Maximum since 1987</th>
<th>Previous value (one year ago)</th>
<th>Latest value (as of 20 March 2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bank balance sheet stretch</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1 Capital ratio</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basel II core Tier 1</td>
<td>6.6%</td>
<td>6.3%</td>
<td>6.2%</td>
<td>12.3%</td>
<td>12.3%</td>
<td>n.a.</td>
</tr>
<tr>
<td>Basel III common equity Tier 1</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>10.0%</td>
<td>11.4% (2014)</td>
</tr>
<tr>
<td>2 Leverage ratio</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simple</td>
<td>4.7%</td>
<td>4.1%</td>
<td>2.9%</td>
<td>5.9%</td>
<td>5.6%</td>
<td>5.9% (2014)</td>
</tr>
<tr>
<td>Basel III (2010 proposal)</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>4.2%</td>
<td>n.a</td>
</tr>
<tr>
<td>Basel III (2014 proposal)</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>4.4% (2014)</td>
</tr>
<tr>
<td>3 Average risk weights</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>53.6%</td>
<td>46.4%</td>
<td>34.6%</td>
<td>65.4%</td>
<td>36.1%</td>
<td>37.6% (2014)</td>
</tr>
<tr>
<td>4 Return on assets before tax</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>1.0%</td>
<td>1.1%</td>
<td>0.2%</td>
<td>1.3%</td>
<td>0.3%</td>
<td>0.4% (2014)</td>
</tr>
<tr>
<td>5 Loan-to-deposit ratio</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>114.5%</td>
<td>132.4%</td>
<td>96.0%</td>
<td>133.3%</td>
<td>99.1%</td>
<td>98.0% (2014)</td>
</tr>
<tr>
<td>6 Short-term wholesale funding ratio</td>
<td></td>
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</tr>
<tr>
<td>o/w excluding repo funding</td>
<td>n.a.</td>
<td>24.5%</td>
<td>14.8%</td>
<td>26.8%</td>
<td>17.1%</td>
<td>14.8% (2013)</td>
</tr>
<tr>
<td></td>
<td>n.a.</td>
<td>15.6%</td>
<td>5.8%</td>
<td>16.1%</td>
<td>6.9%</td>
<td>5.8% (2013)</td>
</tr>
<tr>
<td></td>
<td>Overseas exposures indicator: countries to which UK banks have 'large' and 'rapidly growing' total exposures</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>In 2006 Q4: AU, BR, CA, CH, CN, DE, ES, FR, IE, IN, JP, KR, KY, LU, NL, US, ZA</td>
<td></td>
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<tr>
<td></td>
<td>In 2013 Q4: CH, CN, ES, HK, FR, IE, IN, JP, KR, KY, LU, NL, NL, US, ZA</td>
<td></td>
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<tr>
<td></td>
<td>In 2014 Q4: JP, KY, SG, MY, SG, TW</td>
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<tr>
<td>7 CDS premia</td>
<td></td>
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<tr>
<td></td>
<td>12 bps</td>
<td>8 bps</td>
<td>6 bps</td>
<td>298 bps</td>
<td>91 bps</td>
<td>60 bps (20 Mar 2015)</td>
</tr>
<tr>
<td>8 Bank equity measures</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Price-to-book ratio</td>
<td>2.14</td>
<td>1.97</td>
<td>0.52</td>
<td>2.83</td>
<td>0.97</td>
<td>1.03 (20 Mar 2015)</td>
</tr>
<tr>
<td>Market-based leverage ratio</td>
<td>9.7%</td>
<td>7.8%</td>
<td>1.9%</td>
<td>14.9%</td>
<td>5.3%</td>
<td>5.6% (20 Mar 2015)</td>
</tr>
<tr>
<td><strong>Non - bank balance sheet stretch</strong></td>
<td></td>
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<tr>
<td>10 Credit-to-GDP</td>
<td></td>
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</tr>
<tr>
<td>Ratio</td>
<td>124.9%</td>
<td>161.1%</td>
<td>92.4%</td>
<td>181.8%</td>
<td>155.8%</td>
<td>148.7% (2014 Q3)</td>
</tr>
<tr>
<td>Gap</td>
<td>6.3%</td>
<td>5.4%</td>
<td>-27.3%</td>
<td>21.7%</td>
<td>-21.7%</td>
<td>-25.6% (2014 Q3)</td>
</tr>
<tr>
<td>11 Private non-financial sector credit growth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.1%</td>
<td>9.7%</td>
<td>-2.7%</td>
<td>23.0%</td>
<td>0.4%</td>
<td>1.7% (2014 Q3)</td>
</tr>
<tr>
<td>12 Net foreign asset position-to-GDP</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-3.1%</td>
<td>-12.1%</td>
<td>-25.4%</td>
<td>20.4%</td>
<td>-21.0%</td>
<td>-25.4% (2014 Q3)</td>
<td></td>
</tr>
<tr>
<td>13 Gross external debt-to-GDP</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>193.9%</td>
<td>321.8%</td>
<td>123.0%</td>
<td>406.7%</td>
<td>342.3%</td>
<td>327.4% (2014 Q3)</td>
</tr>
<tr>
<td>o/w bank debt-to-GDP</td>
<td>128.2%</td>
<td>202.6%</td>
<td>84.4%</td>
<td>275.6%</td>
<td>189.8%</td>
<td>176.9% (2014 Q3)</td>
</tr>
<tr>
<td>14 Current account balance-to-GDP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1.8%</td>
<td>-2.2%</td>
<td>-6.0%</td>
<td>-6.0%</td>
<td>-6.0%</td>
<td>-6.0% (2014 Q3)</td>
<td></td>
</tr>
<tr>
<td><strong>Conditions and terms in markets</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>15 Long-term real interest rate</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>3.10%</td>
<td>1.27%</td>
<td>-0.86%</td>
<td>5.29%</td>
<td>0.54%</td>
<td>-0.86% (20 Mar 2015)</td>
</tr>
<tr>
<td>16 VIX</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>19.1</td>
<td>12.8</td>
<td>10.6</td>
<td>65.5</td>
<td>14.8</td>
<td>14.6 (20 Mar 2015)</td>
</tr>
<tr>
<td>17 Global corporate bond spreads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>115 bps</td>
<td>87 bps</td>
<td>52 bps</td>
<td>486 bps</td>
<td>119 bps</td>
<td>131 bps (20 Mar 2015)</td>
</tr>
<tr>
<td>18 Spreads on new UK lending</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household</td>
<td>477 bps</td>
<td>350 bps</td>
<td>283 bps</td>
<td>837 bps</td>
<td>700 bps</td>
<td>672 bps (Jan 2015)</td>
</tr>
<tr>
<td>Corporate</td>
<td>107 bps</td>
<td>100 bps</td>
<td>84 bps</td>
<td>417 bps</td>
<td>280 bps</td>
<td>231 bps (Jun 2014)</td>
</tr>
</tbody>
</table>

Source: Bank of England, [FPC Core Indicators](#)
## Appendix 2.2: Core Indicator Set for Sectoral Capital Requirements

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Average, 1987-2006</th>
<th>Average 2006</th>
<th>Minimum since 1987</th>
<th>Maximum since 1987</th>
<th>Previous value (one year ago)</th>
<th>Latest value (as of 20 March 2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bank balance sheet stretch</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Capital ratio</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basel II core Tier 1</td>
<td>6.6%</td>
<td>6.3%</td>
<td>6.2%</td>
<td>12.3%</td>
<td>12.3%</td>
<td>n.a</td>
</tr>
<tr>
<td>Basel III common equity Tier 1</td>
<td>n.a</td>
<td>n.a</td>
<td>n.a</td>
<td>n.a</td>
<td>10.0%</td>
<td>11.4% (2014)</td>
</tr>
<tr>
<td>2 Leverage ratio</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simple</td>
<td>4.7%</td>
<td>4.1%</td>
<td>2.9%</td>
<td>5.9%</td>
<td>5.6%</td>
<td>5.9% (2014)</td>
</tr>
<tr>
<td>Basel III (2010 proposal)</td>
<td>n.a</td>
<td>n.a</td>
<td>n.a</td>
<td>n.a</td>
<td>4.2%</td>
<td>n.a</td>
</tr>
<tr>
<td>Basel III (2014 proposal)</td>
<td>n.a</td>
<td>n.a</td>
<td>n.a</td>
<td>n.a</td>
<td>n.a</td>
<td>4.4%</td>
</tr>
<tr>
<td>3 Average mortgage risk weights</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n.a</td>
<td>n.a</td>
<td>15.6%</td>
<td>22.4%</td>
<td>18.4%</td>
<td>15.6% (2014)</td>
</tr>
<tr>
<td>4 Balance sheet interconnectedness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intra-financial lending growth</td>
<td>10.7%</td>
<td>13.0%</td>
<td>-15.3%</td>
<td>45.5%</td>
<td>-1.7%</td>
<td>-7.0% (2014)</td>
</tr>
<tr>
<td>Intra-financial borrowing growth</td>
<td>14.1%</td>
<td>14.0%</td>
<td>-19.8%</td>
<td>28.9%</td>
<td>-19.8%</td>
<td>-3.0% (2014)</td>
</tr>
<tr>
<td>Derivatives growth (notional)</td>
<td>37.7%</td>
<td>34.2%</td>
<td>-18.9%</td>
<td>52.0%</td>
<td>7.2%</td>
<td>-18.9% (2014)</td>
</tr>
<tr>
<td>Overseas exposures indicator: countries to which UK banks have ‘large’ and ‘rapidly growing’ non-bank private sector exposures</td>
<td>In 2006 Q4: AU, CA, DE, ES, FR, IE, IT, JP, KR, KY, NL, US, ZA</td>
<td>In 2013 Q4: CN, DE, FR, HK, IE, SG</td>
<td>In 2014 Q4: CN, HK, KY, SG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Non - bank balance sheet stretch</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Credit growth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household</td>
<td>10.2%</td>
<td>11.0%</td>
<td>-0.1%</td>
<td>19.9%</td>
<td>1.7%</td>
<td>2.5% (2014 Q3)</td>
</tr>
<tr>
<td>Commercial real estate</td>
<td>15.3%</td>
<td>18.5%</td>
<td>-9.7%</td>
<td>59.8%</td>
<td>-7.3%</td>
<td>-6.7% (2014 Q4)</td>
</tr>
<tr>
<td>7 Household debt to income ratio</td>
<td>107.9%</td>
<td>149.6%</td>
<td>85.3%</td>
<td>158.0%</td>
<td>136.7%</td>
<td>135.4% (2014 Q3)</td>
</tr>
<tr>
<td>8 PNFC debt to profit ratio</td>
<td>240.0%</td>
<td>309.0%</td>
<td>157.9%</td>
<td>407.7%</td>
<td>326.0%</td>
<td>291.2% (2014 Q3)</td>
</tr>
<tr>
<td>9 NBFI debt to GDP ratio (excluding insurance companies and pension funds)</td>
<td>59.3%</td>
<td>126.7%</td>
<td>14.8%</td>
<td>180.1%</td>
<td>163.6%</td>
<td>154.6% (2014 Q3)</td>
</tr>
<tr>
<td><strong>Conditions and terms in markets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Real estate valuations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential price to rent ratio</td>
<td>100.0</td>
<td>151.1</td>
<td>66.9</td>
<td>160.6</td>
<td>126.1</td>
<td>132.5 (2014 Q4)</td>
</tr>
<tr>
<td>Commercial prime market yields</td>
<td>5.4%</td>
<td>4.0%</td>
<td>3.8%</td>
<td>7.3%</td>
<td>4.6%</td>
<td>4.1% (2014 Q4)</td>
</tr>
<tr>
<td>Commercial secondary market yields</td>
<td>8.9%</td>
<td>5.8%</td>
<td>5.4%</td>
<td>10.9%</td>
<td>9.0%</td>
<td>7.6% (2014 Q4)</td>
</tr>
<tr>
<td>11 Real estate lending terms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential mortgage LTV ratio (mean above the median)</td>
<td>90.6%</td>
<td>90.6%</td>
<td>81.6%</td>
<td>90.8%</td>
<td>85.5%</td>
<td>86.2% (2014 Q4)</td>
</tr>
<tr>
<td>Residential mortgage LTI ratio (mean above the median)</td>
<td>3.8</td>
<td>3.8</td>
<td>3.6</td>
<td>4.1</td>
<td>4.0</td>
<td>4.0 (2014 Q4)</td>
</tr>
<tr>
<td>Commercial real estate mortgage LTV (average maximum)</td>
<td>77.6%</td>
<td>78.3%</td>
<td>60.5%</td>
<td>79.5%</td>
<td>61.2%</td>
<td>63.4% (2014 Q2)</td>
</tr>
<tr>
<td>12 Spreads on new UK lending</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential mortgage</td>
<td>81 bps</td>
<td>50 bps</td>
<td>34 bps</td>
<td>361 bps</td>
<td>188 bps</td>
<td>189 bps (Jan 2015)</td>
</tr>
<tr>
<td>Commercial real estate</td>
<td>138 bps</td>
<td>136 bps</td>
<td>119 bps</td>
<td>423 bps</td>
<td>318 bps</td>
<td>263 bps (2014 Q2)</td>
</tr>
</tbody>
</table>

Source: Bank of England, [FPC Core Indicators](#)
## Appendix 2.3: Core Indicator Set for LTV and DTI Limits

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Average 1987-2006</th>
<th>Average 2006</th>
<th>Minimum since 1987</th>
<th>Maximum since 1987</th>
<th>Previous value (oya)</th>
<th>Latest value (as of 20 March 2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lender and household balance sheet stretch</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1  LTI and LTV ratios on new residential mortgages</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owner-occupier mortgage LTV ratio (mean above the median)</td>
<td>90.6%</td>
<td>90.6%</td>
<td>81.6%</td>
<td>90.8%</td>
<td>85.5%</td>
<td>86.2% (2014 Q4)</td>
</tr>
<tr>
<td>Owner-occupier mortgage LTI ratio (mean above the median)</td>
<td>3.8</td>
<td>3.8</td>
<td>3.6</td>
<td>4.1</td>
<td>4.0</td>
<td>4.0 (2014 Q4)</td>
</tr>
<tr>
<td>Buy-to-let mortgage LTV ratio (mean)</td>
<td>n.a.</td>
<td>n.a.</td>
<td>70.9%</td>
<td>78.6%</td>
<td>71.7%</td>
<td>71.5% (2014 Q4)</td>
</tr>
<tr>
<td>2  Household credit growth</td>
<td>10.2%</td>
<td>11.0%</td>
<td>-0.1%</td>
<td>19.9%</td>
<td>1.7%</td>
<td>2.5% (2014 Q3)</td>
</tr>
<tr>
<td>3  Household debt to income ratio</td>
<td>107.9%</td>
<td>149.6%</td>
<td>85.3%</td>
<td>158.0%</td>
<td>136.7%</td>
<td>135.4% (2014 Q3)</td>
</tr>
<tr>
<td>of which: mortgages</td>
<td>77.0%</td>
<td>109.5%</td>
<td>56.8%</td>
<td>118.8%</td>
<td>105.9%</td>
<td>104.2% (2014 Q3)</td>
</tr>
<tr>
<td>of which: owner occupier mortgages</td>
<td>86.1%</td>
<td>100.4%</td>
<td>72.8%</td>
<td>105.4%</td>
<td>91.7%</td>
<td>89.5% (2014 Q3)</td>
</tr>
<tr>
<td><strong>Conditions and terms in markets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4  Mortgage approvals</td>
<td>97,939</td>
<td>118,980</td>
<td>26,667</td>
<td>135,573</td>
<td>75,559</td>
<td>60,786 (Jan 2015)</td>
</tr>
<tr>
<td>5  Housing Transactions</td>
<td>128,945</td>
<td>139,013</td>
<td>51,630</td>
<td>220,925</td>
<td>103,670</td>
<td>97,320 (Jan 2015)</td>
</tr>
<tr>
<td>Advances to home movers</td>
<td>48,985</td>
<td>59,342</td>
<td>14,300</td>
<td>93,500</td>
<td>27,000</td>
<td>22,400 (Jan 2015)</td>
</tr>
<tr>
<td>% interest only</td>
<td>45.4%</td>
<td>31.0%</td>
<td>2.7%</td>
<td>81.3%</td>
<td>6.3%</td>
<td>2.7% (Jan 2015)</td>
</tr>
<tr>
<td>Advances to first time buyers</td>
<td>39,179</td>
<td>33,567</td>
<td>8,500</td>
<td>55,800</td>
<td>22,100</td>
<td>19,000 (Jan 2015)</td>
</tr>
<tr>
<td>% interest only</td>
<td>41.2%</td>
<td>24.0%</td>
<td>0.3%</td>
<td>86.5%</td>
<td>0.9%</td>
<td>0.5% (Jan 2015)</td>
</tr>
<tr>
<td>Advances to buy-to-let purchasers</td>
<td>9,903</td>
<td>12,931</td>
<td>3,603</td>
<td>16,230</td>
<td>8,050</td>
<td>7,600 (Jan 2015)</td>
</tr>
<tr>
<td>% interest only</td>
<td>n.a.</td>
<td>n.a.</td>
<td>50.0%</td>
<td>66.7%</td>
<td>63.7%</td>
<td>66.7% (2014 Q4)</td>
</tr>
<tr>
<td>6  House price growth</td>
<td>1.8%</td>
<td>2.2%</td>
<td>-5.6%</td>
<td>7.0%</td>
<td>2.8%</td>
<td>1.6% (Feb 2015)</td>
</tr>
<tr>
<td>7  House price to household disposable income ratio</td>
<td>3.1</td>
<td>4.6</td>
<td>2.3</td>
<td>4.8</td>
<td>3.8</td>
<td>4.1 (2014 Q3)</td>
</tr>
<tr>
<td>8  Rental yield</td>
<td>5.8%</td>
<td>5.1%</td>
<td>4.8%</td>
<td>7.6%</td>
<td>5.1%</td>
<td>5.2% (2014 Q4)</td>
</tr>
<tr>
<td>9  Spreads on new residential mortgage lending</td>
<td>81 bps</td>
<td>50 bps</td>
<td>34 bps</td>
<td>361 bps</td>
<td>188 bps</td>
<td>189 bps (Jan 2015)</td>
</tr>
<tr>
<td>Difference between the spread on high and low LTV</td>
<td>18 bps</td>
<td>25 bps</td>
<td>1 bps</td>
<td>293 bps</td>
<td>196 bps</td>
<td>173 bps (Jan 2015)</td>
</tr>
<tr>
<td>residential mortgage lending</td>
<td>n.a.</td>
<td>n.a.</td>
<td>62 bps</td>
<td>399 bps</td>
<td>329 bps</td>
<td>309 bps (2014 Q4)</td>
</tr>
</tbody>
</table>

Source: Bank of England, [FPC Core Indicators](#)
## Appendix 2.4: Recommendations of the FPC

<table>
<thead>
<tr>
<th>Identifier</th>
<th>Recommendation</th>
<th>Target</th>
<th>Status</th>
<th>Closure or Current Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/Q2/1</td>
<td>Advised FSA to ensure that improved disclosure of exposures by UK banks becomes permanent part of reporting framework</td>
<td>FSA</td>
<td>Implemented</td>
<td>UK banks’ 2011 interim and annual reports included enhanced disclosures. New recommendation issued for Pillar 3 disclosures</td>
</tr>
<tr>
<td>11/Q2/2</td>
<td>Advised FSA to compile data on exposures of banks not subject to EBA stress tests &amp; publish aggregate estimate if significant</td>
<td>FSA</td>
<td>Implemented</td>
<td>Largest banks and building societies not subject to EBA stress test published exposures to EEA countries. FSA collated and published aggregate exposures for the remainder. Confirmed limited direct exposure to Greece, Ireland, Italy, Portugal and Spain</td>
</tr>
<tr>
<td>11/Q2/3</td>
<td>Advised FSA to extend review of forbearance &amp; provisioning practices across household &amp; corporate sector exposures on a global basis</td>
<td>FSA</td>
<td>Implemented</td>
<td>This review was completed. FSA found that understatement of provisions in respect of forborne loans unlikely to be systemically important</td>
</tr>
<tr>
<td>11/Q2/4</td>
<td>Advised FSA to monitor risks associated with opaque funding structures (e.g., collateral swaps)</td>
<td>FSA</td>
<td>Implemented</td>
<td>FSA reviewed this and is continuing to identify and mitigate risks in this area</td>
</tr>
<tr>
<td>11/Q2/5</td>
<td>Advised UK banks to use periods of strong earnings to build capital</td>
<td>UK Banks</td>
<td>Implemented</td>
<td>Earnings were not strong after this recommendation. Superseded by 11/Q3/1</td>
</tr>
<tr>
<td>11/Q2/6</td>
<td>Advised FSA to ensure as part of supervisory dialogue that proportion of earnings retained is consistent with 11/Q2/5</td>
<td>FSA</td>
<td>Superseded</td>
<td>Superseded by 11/Q4/1 &amp; 11/Q4/2</td>
</tr>
<tr>
<td>11/Q3/1</td>
<td>Advised banks to take any opportunity to strengthen levels of capital &amp; liquidity to increase capacity to absorb shocks without constraining lending</td>
<td>UK Banks</td>
<td>Superseded</td>
<td>Superseded by 11/Q4/1 &amp; 11/Q4/2</td>
</tr>
<tr>
<td>11/Q3/2</td>
<td>Advised FSA to encourage banks to manage balance sheets in a way that doesn't exacerbate market or economic fragility</td>
<td>FSA</td>
<td>Superseded</td>
<td>Superseded by 11/Q4/1 &amp; 11/Q4/2</td>
</tr>
<tr>
<td>11/Q3/3</td>
<td>Urged Treasury to ensure European legislation did not impede ability of FPC to use MP policy in the interest of financial stability in UK</td>
<td>HMT</td>
<td>Implemented</td>
<td>European Parliament approved Capital Requirements Directive and Regulation. FPC felt it provided sufficient discretion to use its powers and will issue further recommendations if needed</td>
</tr>
<tr>
<td>11/Q3/4</td>
<td>FPC's contingency planning should be comprehensive and include arrangements for recapitalization and restructuring of bank liabilities in circumstances in which their survival is threatened</td>
<td>HMT</td>
<td>Implemented</td>
<td>This was initially made privately. Substantial progress made on arrangements for bank resolution. Banking Reform Act 2013 includes bail-in powers, and risks from the euro area have reduced</td>
</tr>
<tr>
<td>11/Q4/1</td>
<td>Recommended that, if earnings are insufficient to build capital, banks should limit distribution &amp; consider raising external capital</td>
<td>UK Banks</td>
<td>Superseded</td>
<td>Steps taken to build capital through limiting distributions and through disposals, but weak profitability reduced scope for internal sources. Superseded by 12/Q2/1</td>
</tr>
<tr>
<td>11/Q4/2</td>
<td>Advised FSA to encourage banks to improve balance sheet resilience without exacerbating fragility or reducing lending</td>
<td>FSA</td>
<td>Superseded</td>
<td>Banks appeared on track to meet plans to bolster resilience, per Q1 2012 results. Superseded by 12/Q2/2 &amp; 12/Q2/3</td>
</tr>
<tr>
<td>11/Q4/3</td>
<td>Recommended that FSA encourage banks to disclose leverage ratios, as defined in Basel III, as part of regular reporting</td>
<td>UK Banks</td>
<td>Implemented</td>
<td>Largest banks published this in their 2012 annual reports. Some variations and inconsistencies the PRA is looking into. FPC notes that it is important that this reporting be ongoing</td>
</tr>
<tr>
<td>12/Q2/1</td>
<td>Recommended that FSA work with banks to ensure a sufficient cushion of loss-absorbing capital. Banks should continue to restrain dividends and compensation to build equity through RE</td>
<td>FSA</td>
<td>Superseded</td>
<td>Tier 1 capital ratio rose, but not much for major banks. FPC brought together recommendations on increasing resilience into one new recommendation. Superseded by 12/Q4/1</td>
</tr>
<tr>
<td>12/Q2/2</td>
<td>Recommended that FSA encourage banks to improve balance sheet resilience without exacerbating fragility or reducing lending</td>
<td>FSA</td>
<td>Superseded</td>
<td>Banks made some progress, but FPC felt banks could bolster confidence by adopting a more conservative approach to valuation and risk-weighting of assets. Superseded by 12/Q4/1</td>
</tr>
<tr>
<td>12/Q2/3</td>
<td>Recommended that banks assess, manage &amp; mitigate risks to balance sheets stemming from euro area crises</td>
<td>UK Banks</td>
<td>Implemented</td>
<td>Banks have increased capital resources. From the recommendation to Nov, 2013, exposures to euro-area periphery countries fell by £11B and have since been stable</td>
</tr>
<tr>
<td>12/Q2/4</td>
<td>Recommended that FSA make clear to banks that they may use regulatory liquid asset buffers in event of liquidity stress and consider adjustments to microprudential liquidity guidance</td>
<td>FSA</td>
<td>Implemented</td>
<td>FSA communicated this to banks. Liquid asset holdings fell at this time; the FPC felt it too early to judge the impact of this response on its objectives</td>
</tr>
<tr>
<td>12/Q2/5</td>
<td>Recommended that banks work with FSA &amp; BBA to ensure consistency &amp; compatibility of Pillar 3 disclosures (reconciliation of accounting &amp; regulatory measures)</td>
<td>UK Banks, FSA &amp; BBA</td>
<td>Restated</td>
<td>PRA has been working with BBA to improve this, especially on capital adequacy, but further improvements needed. Restated as 13/Q2/3 to be addressed to the PRA</td>
</tr>
<tr>
<td>Date</td>
<td>Recommendation</td>
<td>Implementing Authority</td>
<td>Status</td>
<td>Notes</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------</td>
<td>----------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>12/Q4/1</td>
<td>Recommended that FSA ensure capital position reflects prudence in asset valuations, conduct cost estimates and risk-weight calculations</td>
<td>FSA</td>
<td>Superseded</td>
<td>Superseded by 13/Q1/1-4</td>
</tr>
<tr>
<td>13/Q1/1</td>
<td>PRA should assess current capital adequacy using the Basel III definition of equity capital but after deducting currently-stated capital to reflect assessment of expected future losses and realistic assessment of future costs of conduct redress and adjusting for a more prudent calculation of risk weights</td>
<td>PRA</td>
<td>Implemented</td>
<td>The PRA Board has employed this framework for assessing capital adequacy</td>
</tr>
<tr>
<td>13/Q1/2</td>
<td>PRA should ensure that by end of 2013 major banks hold capital of 7% of RWAs</td>
<td>PRA</td>
<td>Implemented</td>
<td>PRA worked with firms to address this. By 2014 all major banks had met 7% or had plans with PRA to meet it</td>
</tr>
<tr>
<td>13/Q1/3</td>
<td>PRA should consider applying higher capital requirements to major UK banks with concentrated exposure to vulnerable assets</td>
<td>PRA</td>
<td>Implemented</td>
<td>PRA required 2 firms to increase Tier 1 leverage ratio to 3% after adjustments for prospective credit and conduct losses. FPC felt the PRA had met this recommendation</td>
</tr>
<tr>
<td>13/Q1/4</td>
<td>PRA should ensure that major banks meet requirements of 13/Q1/2 &amp; 13/Q1/3 by issuing new capital or restructuring balance sheets in a way that doesn't hinder lending</td>
<td>PRA</td>
<td>Implemented</td>
<td>Major banks have improved capital ratios by reducing RWAs and increasing capital. Reductions in RWAs achieved through selling non-core assets and scaling back investment banking</td>
</tr>
<tr>
<td>13/Q1/5</td>
<td>PRA should ensure major banks have credible plans to meet higher targets for capital and leverage ratio in effect in 2019 after Basel III implementation</td>
<td>PRA</td>
<td>Superseded</td>
<td>Major banks are asked to adhere to 7% CET1 capital ratio and 3% Tier 1 leverage ratio. Transition path should be less onerous. Future credibility will be addressed in stress-testing framework</td>
</tr>
<tr>
<td>13/Q1/6</td>
<td>Bank and PRA should develop proposals for regular stress testing of the UK banking system to assess capital adequacy. Framework should be able to accommodate any FPC judgments on emerging threats to stability</td>
<td>Bank, incl. PRA</td>
<td>Action Under Way</td>
<td>2014 stress test complete. FPC will review this recommendation in 2015 based on lessons learned in 2014 tests</td>
</tr>
<tr>
<td>13/Q2/1</td>
<td>FCA &amp; PRA should provide assessment of vulnerability of borrowers and financial institutions to sharp upward movements in long-term interest rates and credit spreads</td>
<td>FCA &amp; Bank, incl. PRA</td>
<td>Implemented</td>
<td>Analysis suggested banking sector would be resilient to increase in interest rates, but noted uncertainty around amplification effects through the wider financial system</td>
</tr>
<tr>
<td>13/Q2/2</td>
<td>PRA should employ LCR. Minimum LCR should be 80% until 2015 and rise to 100% by 2018. PRA should consider idiosyncratic liquidity risks not captured by LCR</td>
<td>PRA</td>
<td>Implemented</td>
<td>PRA amended its liquidity framework in line with this recommendation</td>
</tr>
<tr>
<td>13/Q2/3</td>
<td>PRA should work with banking industry to ensure consistency and comparability of Pillar 3 disclosures, including reconciliation of accounting &amp; regulatory measures of capital</td>
<td>PRA</td>
<td>Implemented</td>
<td>PRA worked with BBA to improve this. Major banks provided such a reconciliation in 2012 reports and enhanced those disclosures in 2013 reports. FPC will revisit following Basel revision of Pillar 3 framework</td>
</tr>
<tr>
<td>13/Q2/4</td>
<td>PRA should ensure major banks comply with October 2012 recommendations of Enhanced Disclosure Task Force</td>
<td>PRA</td>
<td>Implemented</td>
<td>Major banks complied with EDTF recommendations, with few exceptions</td>
</tr>
<tr>
<td>13/Q2/5</td>
<td>PRA should assess feasibility of major banks calculating regulatory capital ratios under end-point Basel III using standardized approach to credit risk</td>
<td>PRA</td>
<td>Implemented</td>
<td>FPC concluded it was minded to recommend firms report and disclose ratios using standardized approach to credit risk, but would wait to review progress in Basel on standardized approach in 2015</td>
</tr>
<tr>
<td>13/Q2/6</td>
<td>Agencies should work with the UK core financial system &amp; infrastructure to build a program to improve and test resilience to cyber attack</td>
<td>HMT, FCA &amp; Bank, incl. PRA</td>
<td>Action Under Way</td>
<td>All core firms submitted self-assessments reviewed by regulators. No critical shortcomings, but supervisors working on remediating some areas needing improvement. Vulnerability testing framework (CBEST) launched in May 2014. FPC judges that more firms need to conduct CBEST tests and will review this again in Q2 2015</td>
</tr>
<tr>
<td>13/Q4/1</td>
<td>FCA should require mortgage lenders to have regard to future FPC recommendations on appropriate interest rate stress tests</td>
<td>FCA</td>
<td>Implemented</td>
<td>FCA amended mortgage rules to require lenders to have regard to FPC recommendations when assessing affordability. FCA will monitor compliance</td>
</tr>
<tr>
<td>14/Q2/1</td>
<td>Mortgage lenders should apply interest rate stress tests that assess whether borrowers could still afford their mortgages if, over the first 5 years, bank rate were to be 3% higher than at origination</td>
<td>Lenders</td>
<td>Implemented</td>
<td>Lenders are required to have regard to this recommendation due to FCA rule, created as a result of 13/Q4/1. 3% remains in force and FPC will keep it under review. FCA will monitor that lenders have regard to this recommendation</td>
</tr>
<tr>
<td>14/Q2/2</td>
<td>PRA &amp; FCA should ensure mortgage lenders do not extend more than 15% total new residential mortgages at loan to income ratios greater than 4.5. Applies to all lenders extending residential mortgage lending over £100M/year</td>
<td>PRA, FCA</td>
<td>Implemented</td>
<td>PRA and FCA published respective approaches to implementation. Limit remains in force, and FPC will continue to consider it</td>
</tr>
<tr>
<td>14/Q3/1</td>
<td>Recommended that HMT enable FPC to direct PRA &amp; FPC to require lenders to place limits on mortgage lending, both owner-occupied and buy-to-let, by reference to loan to value ratios and debt to income ratios</td>
<td>HMT</td>
<td>Action Under Way</td>
<td>HMT laid before Parliament a draft order on this power, having conducted a public consultation on the matter. Approved in March 2015. FPC has issued a draft Policy Statement. A separate consultation for buy-to-let will take place in 2015</td>
</tr>
<tr>
<td>14/Q3/2</td>
<td>Recommended that HMT enable FPC to direct PRA to set leverage ratio requirements &amp; buffers, including a minimum leverage ratio requirement, a supplementary leverage ratio buffer &amp; a countercyclical leverage ratio buffer</td>
<td>HMT</td>
<td>Action Under Way</td>
<td>HMT laid before Parliament a draft order on this power, having conducted a public consultation on the matter. Approved in March 2015. FPC has issued a draft Policy Statement</td>
</tr>
</tbody>
</table>