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Is Macro Prudential Regulation Possible?

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ABSTRACT

The 20th century consensus regarding the role of a central bank – to maintain price stability was upset by the global financial crisis of 2007-2009. Central banks changed their mode of behavior and new regulatory structures were introduced around the world. In this essay, I examine one of the principle new approaches to regulation – regulating macro prudential risk. I explain what it means and assess the approaches that have been suggested.

As the 20th century drew to a close, a global consensus emerged regarding the role of a central bank (Wachtel, 2011, 2012). A central bank should be independent of political influence and should use its policy tools, primarily through the short term interest rate, in order to attain an inflation target. Other concerns such as employment or growth were secondary at best. The consensus regarding financial sector regulation (which was often conducted by the central bank) emphasized risk based capital adequacy rules and eschewed any specific restrictions on the activities or the scope of financial institutions. For the most part, there was no recognition of any connection between macroeconomic monetary policy and financial sector regulation. But, the financial crisis of 2008 showed that consensus is a dangerous thing. It leads to complacency and we know that policy makers relying on the 20th century consensus were ill prepared to deal with the challenges of a 21st century crisis.

The realization that the consensus view was falling apart started early in the crisis period, in the summer of 2007. Central banks returned to their 19th century roots and rediscovered their lending function. In the span of a few months the

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world's major central banks – the Fed, the ECB and the Bank of England – initiated enormous lending programs to provide sufficient liquidity to the financial system and to preserve financial stability. However, the additional liquidity was not sufficient to absorb the negative shock from declining asset prices. A string of failures of financial institutions in late 2008 (most notably, the Lehman failure in September) necessitated large bank bailouts. In the US, the Federal Reserve pushed at the limits of its legal authority to introduce new and unprecedented lending programs which tripled the size of its balance sheet. Additional funds were provided by Congress in the fall of 2008 through the TARP legislation which was hastily conceived and used by the Treasury to fund controversial bailouts. It was immediately apparent that changes in the regulatory framework were needed.[1]

An important element of the pre-crisis consensus was the independence of central banks. Policy making is prone to a time inconsistency problem which stems from the short horizons of elected officials who value near term success and reelection. As a result, monetary policy is prone to opt for short term growth even if inflation is likely to follow (after the next election). Central bankers with independence and long terms were viewed as the best way to avoid the time inconsistency problem. However, it presumes that central banks only have macroeconomic policy responsibilities which are independent of concerns about financial regulation and stability.

The crisis demonstrated the extent to which macroeconomic monetary policy, fiscal decision making and financial institution stability are all tightly wound together and are also impossible to remove from the political sphere. In the aftermath of the crisis, countries around the world began to review and revise structures for policy making in order to avoid a repeat of the crisis. Already our conception of the role of central banks and the relationship of macro and stability policies has changed dramatically.

There is a certain historical irony to these developments. The Federal Reserve Act of 1913 – and the 19th century conception of central banking generally – emphasized stability. A lender of last resort and provider of liquidity brought stability to interest rates and eliminated bank panics. It is only in the post World War II era that the macroeconomic role of central banks developed.[2] Only in 1978, did Congress give the Fed the dual mandate to "promote full employment….and reasonable price stability." At the same time concern for financial stability faded in the US as deposit insurance and depression era bank regulation seemed effective.

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[1] The US General Accountability Office (GAO) published "A Framework for Crafting and Assessing Proposals to Modernize the Outdated U.S. Financial Regulatory System" in the midst of the crisis, on Jan. 8, 2009 http://www.gao.gov/products/GAO-09-216

[2] The very notion of macroeconomic policy making and macro goals would not have entered existed in the prewar era.

By the late 20th century, the Greenspan Fed eschewed any concern about financial stability even as deregulation and innovation made the financial sector more competitive, more complex and more highly leveraged. There was a debate in the 1990s over the role, if any, of central banks in mitigating asset price bubbles. Both Greenspan and Bernanke maintained that there was no role; monetary policy should stay focused on inflation in output prices only. Greenspan told Congress in 1999 that policy should 'mitigate the fallout [of a burst bubble] when it occurs' which famously led to the notion that the role of a central bank is to mop up after a bubble bursts.[3]

At the turn of the 21st century, the Federal Reserve was the most important economic policy maker in the US. Without explicitly adopting an inflation target, it viewed, along with most other central banks, price stability as its major responsibility. Thus, the financial crisis that started in 2007 caught policy makers by surprise. So much so that it is remarkable that the Bernanke Fed and the Paulson-Geithner leadership in the Treasury were able to respond as quickly and innovatively as they did. The dramatic events of the crisis changed the role of central banks and made clear regulatory reforms were needed.[4]

In the U.S. extensive debate resulted in the passage of the Dodd-Frank legislation in July 2010 which extended regulation in four new directions.[5] First, it recognizes the interconnectedness of financial institutions and markets that makes the whole system prone to crisis. The legislation introduces a new concept – SIFIs, systemically important financial institutions – that are not just banks but all institutions that cause a crisis and thus warrant over sight. Second, it turns the clock back and acknowledges that certain instruments or activities need to be regulated or restricted. Third, it introduces the idea of macro prudential risk management as a new element of policy making. And, fourth, it tries to prevent bailouts of financial institutions, a reflection of the populist American reaction to the crisis responses.

The Dodd-Frank legislation is often criticized as an 800 page law without much clarity of design. It did result in improved regulation of institutions and markets with new rules pertaining to bank trading activities, the credit rating agencies, OTC derivatives, consumer protection, large nonbank financial institutions, additional regulation for SIFIs and more. In many instances the legislation left detailed rulemaking to existing or new regulatory bodies, often with imprecise instructions. The rule making process is still underway, three years after passage of the law. Thus, it is still too soon to evaluate the success of the act.

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[3] Testimony to the House Committee on Banking and Financial Services, July 22, 2009.

[4] For discussions of the crisis and its aftermath, see the symposia in the *Journal of Economic Perspectives* (2009, 2011).

[5] For a discussion of Dodd-Frank see Acharya et. al. (2011).

The legislation introduces the concept of macro prudential regulation explicitly through a newly established Federal Stability Oversight Council. The term macro-prudential does not appear in the law but there are innumerable references to prudential standards, enhanced supervision and regulatory standards required in the post-crisis 21st century financial environment.

My purpose here is to examine this brand new element of regulatory policy. First, we will examine what might be meant by macro prudential regulation and then discuss whether it might or might not work.

In a perceptive essay on lessons from the crisis, Stanley Fischer (2011), respected economist and Governor of the Bank of Israel, placed the need for macroprudential supervision number three on his list. However, he concluded the discussion with the remark that "there is not yet an accepted definition." Similarly, a G20 report on macroprudential regulation calls it a "nascent field."

The term first emerged in Andrew Crockett's 2000 speech: "Marrying the Micro and Macro prudential dimensions of financial stability". [6] Crockett defines macroprudential regulation as "limiting the costs to the economy from financial distress" as opposed to a micro regulatory focus on reducing the likelihood of default of an individual institution. He notes that macroprudential risk is endogenous; crises arise from collective behavior. Supervision traditionally emphasizes exogenous shocks to individual institutions, an emphasis which stems from its historical mission of consumer protection. Almost a decade before the crisis Crockett presciently stated the importance of "strengthening of the macro prudential orientation in supervisory and regulatory arrangements."

Macroprudential regulation has two distinct aspects:

a) The regulation of specific financial institutions or markets because of their systemic influence or importance
b) The conduct of macroeconomic policy to curb systemic risks

After the Great Depression of the 1930s the US established many specific tools to regulate the activities of financial institutions. However, much of this was reversed in the deregulatory era that started in the 1980s. Among the restrictions that disappeared were some limitations on asset holding, interest rate restrictions, lending concentration limits, types of underwriting. Pressure to allow banks to compete with non-banks had the effect of removing safeguards which had successfully reduced total risk in the system for half a century.

Starting in 1988, the Basle agreements on bank regulation emphasized the overall soundness of institutions as measured by capital adequacy. The Basle

[6] Clemens (2010) traces the term 'macroprudential' back to unpublished BIS documents in the 1970s. However, its common use is much more recent.

approach relates risk to leverage and asset quality without acknowledging systemic linkages that can make the financial system crisis prone.

The crisis showed that the activities of individual institutions can contribute to systemic (i.e. macroprudential) risks. Thus, macroprudential regulation of the first type ((a) above) is called for. Specifically, maturity mismatches, liquidity – as they relate to funding risks and counterparty relationships can all make individual institution issues into systemic problems. Further, there is an increased concern for the monitoring of the financial infrastructure (markets, clearing, payments systems), so that it keeps working when under pressure. Finally, there is an understanding that SIFIs need to have additional buffers to absorb counterparty risks.

The importance of the macroprudential perspective can be illustrated with a simple example[7] that shows that the appropriate level of capital is much higher when we take a macro prudential perspective rather than a traditional micro prudential perspective.

Consider a bank with $100 of assets and capital asset ratio of 6%. Further, the volatility of its asset value is such that there is a 99.5% probability that the value of assets will not decline by more than 6%. If the micro bank regulator sets a threshold of 0.5% as the acceptable probability of bank failure, then this bank is adequately capitalized. The probability of failure is no more than the acceptable threshold of 0.5%. This is an example of micro bank regulation because no implications beyond the walls of our bank need to be explored.

But we can quickly see that the single bank, micro perspective invites trouble. Imagine that the value of our banks assets decline by 4% which leaves the bank undercapitalized; its capital asset ratio is just 2.1% (=2/96). The regulators tell the bank to increase its capital which it can do by either issuing more equity or reducing its assets. The likelihood is that it will choose the latter because the cost of capital for a distressed bank is high. From a micro regulatory perspective there is no problem. If our bank reduces its lending, customers will find substitute sources elsewhere in the financial system.

However, when losses in asset values are widespread, we find that many banks will be simultaneously trying to reduce their assets which leads to 'fire sales' or further declines in asset prices. System wide efforts to shed assets can quickly lead to further asset price declines and spreading insolvency.

The capital ratio of 6% was adequate for the micro regulator whose mandate is to protect consumers and make sure that the deposit insurance fund is protected. The macro regulator has a different objective: to maintain credit creation in the

[7] The example is from Hanson, Kashyap and Stein (2011).

economy during a downturn. Thus, the appropriate prudential policy is also a macroeconomic policy.

The macro prudential regulator would like our bank to have sufficient capital so that it can absorb a recession shock without recapitalizing. It should require the bank to build a capital buffer in good times in excess of the regulatory minimum (of 6% in our example). That is, it should be required to retain earnings and constrain expansion in an upturn so that it maintains a capital asset ratio of 12% which would enable it to absorb a recession shock of a 4% decline in asset values without fire sales or other efforts to deleverage that can cause a contagious bank crisis.

In short, the macro prudential perspective implies that banks should maintain much higher levels of capital. Current standards around the world are based on micro prudential thinking. Banks, particularly large interconnected institutions, should be maintaining capital ratios of 12-15% or more in good times. Only in Switzerland have bank regulators acknowledged this perspective and introduced sharply higher capital requirements. In the US and elsewhere banks have so far successfully lobbied against any such proposals, claiming that it would reduce the availability of credit.

There are any number of specific policy suggestions for ways to increase the quantity and quality of bank capital. These include limits on non-equity capital, the issuance of contingent capital securities, triggers for the dollar value of capital and extending capital requirements when similar exposures exist within the shadow banking system. Basle III does introduce higher capital ratios, higher quality capital and capital buffers but many of these rules will not be fully applied for at least several years.

The US has taken a different approach. First, Dodd Frank gives the FSOC and the Fed the authority to impose higher capital ratios on SIFIs but this seems unlikely to be applied. Moreover, the macroprudential approach implies that capital buffers should be held by all banks, not just large institutions deemed to be systemically important in their own right. The US has also made use of stress tests for large banks to assess capital adequacy from a macro prudential perspective, originally in 2009 and most recently in March 2013. The recent tests reviewed the capital plans of the 18 largest bank holding companies that account for 70% of bank assets.[8] Generally, these reviews can result in a specific call to raise a specified amount of capital, the suspension of dividend payments to allow capital to accumulate or approval of dividend or other capital payout plans. The public stress tests in both the US and Europe have increased transparency and in several instances banks have been required to strengthen their capital base.

[8] See the Comprehensive Capital Analysis and Review (CCAR), March 14, 2013, http://www.federalreserve.gov/newsevents/press/bcreg/20130314a.htm

In summary, the first aspect of macroprudential policy is bringing the macro perspective into the micro prudential regulation of individual financial institutions. As we have seen, in the simplest terms, the macro prudential perspective demands more stringent capital requirements than the traditional micro perspective.[9] The second aspect of macroprudential policy involves bringing a financial stability perspective into the determination of macroeconomic monetary policy. This implies that macro policy should respond to credit expansions and asset price booms that increase systemic risk in addition to aggregate growth and inflation. How to build this perspective into macro policy decisions has yet to be explored in any meaningful way. In fact, there is not yet a consensus that macroeconomic policy should have such a broad mandate, taking it well beyond the inflation targeting consensus of the late 20th century.

The use of macroeconomic monetary policy to reduce the risk of crisis has a short history. Mention was made earlier of the discussion during the 1990s of asset price bubbles. The systemic risk implications of bubbles were largely under estimated and Greenspan's view that the role of the central bank was to mop up after the bubble burst predominated. Nevertheless banking and currency crisis in many emerging market countries in 1997-98 did lead to interest in another form of macro prudential risk management, the use of macro prudential risk indicators. There was a flurry of research interest on indicators (see IMF, 2000) but these studies concentrated on the vulnerabilities of open emerging market economies with external debts and foreign exchange exposures.

An October 2011 Report to the G20 (a joint report from the Financial Stability Board, IMF and BIS) suggests three approaches for identifying and responding to macroeconomic systemic risk:

1. Develop aggregate indicators for macro risks (e.g. credit aggregates, measures of leverage in key sectors, market conditions, interest rate risk spreads).
2. Micro regulations to limit systemic risks such as limits on maturity mismatches, non-core funding, or FX exposures.
3. Structural regulations such as extra capital for SIFIs, resolution requirements for failed institutions (e.g. 'living wills') and additional disclosure.

The first item addresses our current topic, how macro policy should reflect prudential concerns while the next two relate to the regulation of systemic risks originating in the activities of individual institutions.

Along these lines, the European Central Bank recently introduced a macroprudential research network to explore the issues.[10] There is abundant

[9] We have only scratched the surface in discussing policies. Implementation is complex because specific constraints will often induce innovation or regulatory arbitrage that enables the financial sector to alter its business model and avoid extra regulation in a way that leaves macro prudential risks unchanged.

[10] http://www.ecb.int/home/html/researcher_mars.en.html

historical analysis of macro indicators as predictors of crisis but there is very little experience in making use of them for policy purposes. Although there are many indicators that might provide crisis warning signals, it is not clear how they can be interpreted or how a regulatory authority or a central bank should respond to them. More micro oriented regulations, aimed at specific institutions and their activities, may be easier to implement

The Dodd Frank legislation in the US does much to create regulatory structures and responsibilities for bringing the above principles forward. More of it involves bringing the macro prudential perspective into micro or institution regulation than into macro monetary policy. Although, the potential is there for significant change, we do not have sufficient experience to evaluate the impact of the legislation. For example, will America's large bank holding companies (e.g. Goldman, Citi, Bank America/Merrill, etc.) face a more stringent regulatory environment or will their armies of lobbyists blunt the effects of the legislation?[11] On the macroeconomic policy side, the effect of the new perspective is also uncertain.

To begin, look at the possibilities for a new prudential regulatory world laid out in Dodd Frank:

1. Establishes the Financial Stability Oversight Council (FSOC) and its Office for Financial Research (OFR) as an interagency coordinator, with a staff that can collect and analyze information; it can make recommendations to the relevant regulators although it does not exercise direct controls.
2. Identifies SIFIs which are subject to enhanced capital and also utilities, payment, clearing and settlement activities – that are systemically important
3. Provides for an orderly liquidation authority – receivership powers – given to the FDIC for SIFIs (including non-banks)
4. Introduces prudential standards for large (assets over $50 billion) bank holding companies and other institutions s designated for Federal Reserve supervision. Extra capital and liquidity requirements can be imposed on these firms which are also subject to public stress tests and other requirements designed to enable orderly liquidation.
5. However, it also limits Federal Reserve lending powers in emergency to a 'broad based program' in effort to avoid any future bailouts of individual institutions.

Significant questions about the effectiveness of the legislation remain. First, will adequate new capital buffers be introduced? Second, does the SIFI designation create an additional regulatory burden that constrains these institutions or does it mean that they are too big to fail (TBTF) and implicitly guaranteed by the government? Third, will risky activities move to smaller institutions or to newly

[11] In Europe as well there is push back from the banks. On January 7, the Basle committee greatly relaxed its proposed liquidity coverage rules (the new buffer against market and funding freezes) in response to pressure from the banks

created corners of the shadow banking system? Fourth, will policy makers be able to use information about macroeconomic risks in determining monetary policy.

The last concern is reflected in a January 10, 2013 speech by Esther George, President of the Federal Reserve Bank of Kansas City:

> "We must not ignore the possibility that the low-interest rate policy may be creating incentives that lead to future financial imbalances. Prices of assets such as bonds, agricultural land, and high-yield and leveraged loans are at historically high levels. A sharp correction in asset prices could be destabilizing…
>
> Of course, identifying financial imbalances, asset bubbles or looming crises is inherently difficult, as policymakers were painfully reminded during the financial crisis in 2008. Public transcripts of the FOMC's discussions from as early as 2006 show participants were clearly focused on issues in the housing market and yet did not fully appreciate the risk to the economy from the financial sector's exposure to risky mortgages."

Earlier Janet Yellen (2010), vice chair of the Board of Governors of the Federal Reserve, noted the tools of macroprudential may be identified but the standards to set and the responses to take are to be determined. Yellen (p. 3) added that "Monetary policy cannot be a primary instrument for systemic risk management." That is, an earlier monetary tightening in the mid-2000s may have mitigated the rise in systemic problems but it would have been only one of several necessary responses.

It is clear that the micro and macro policies are intertwined. Further the broad 21st century mandate of regulators and central banks does not come without dangers. The discretion and complexity of policy making exposes the financial regulators to political influence and criticism. The days of the ivory-towered independent central bank are gone. Moreover, the emergency responses to crisis like those in 2008-9, quickly cross the line into political judgments regarding fiscal expenditures. Goodfriend (2011) warns that central bank bailouts are politically contentious fiscal decisions that could destroy central bank independence. The Fed has not stepped over that line in the past and Dodd Frank provides for shared responsibility with other regulators and political entities through the FSOC. Striking the balance between independent policy makers and political realities will be a challenge.[12]

The success of Dodd Frank will depend on its implementation and how it fares when tested by circumstance. On the micro (individual institution) level the questions that loom are whether the SIFI designation and its extra regulatory burden will have any effect. On the macro side one can only conjecture whether FSOC can identify new sources of risk effectively. The notion attributed to Alan Greenspan that the role of a central bank is to mop up, by providing liquidity, when a financial bubble bursts is in retreat but exactly how central banks will respond differently is unknown.

[12] Meltzer (2011) maintains that the Fed has always been subject to political influence. The independent policy maker is a caricature invented by advocates of mechanical policy rules.

Is there an answer to the question posed by our title? Although, the need for macro prudential regulation is broadly accepted, it is not obvious that the mechanisms introduced in the US or elsewhere will be adequate. The fact is macro prudential regulation is inherently more difficult than the regulation designed to protect specific institutions from insolvency. It is a moving target. At best – policy will constrain risky behavior within existing institutions; restrict it from emerging elsewhere by constraining activity; and be better able to detect new sources of systemic risk. As a result, the probability of a systemic panic or wide scale run as we experienced in 2008 will be reduced. Regulation that truly constrains risk taking reduces the probability of panics and runs with systemic consequences but never to zero.

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