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Abel M. Mateus*

ABSTRACT

Although important reforms have been undertaken in the United States and the European Union in the aftermath of the Great Financial Crisis of 2007-2009, major areas still need to be addressed. The Vickers Commission proposes a set of measures to solve the problem of too big to fail in the United Kingdom.

The proposal centers around the idea of ring fencing commercial banks and defining capital requirements separately for this compound. This paper discusses the pros and cons of the Vickers Commission proposal, comparing it with the Volcker rule, and problems of implementation. Complementary policies yet to be studied are also proposed.

* New University of Lisbon and University College London. This paper is based on a presentation at a seminar on Banking Regulatory Reform and the Vickers Report, at the Jevons Institute for Competition Law and Economics at University College of London, June 8, 2011.

It has now been about four years since the eruption of the Financial Crisis of 2007. Major reforms of the banking system have been achieved in the United States with the enactment of the Dodd-Frank Act in 2010[1], and several legislative initiatives in the European Union are to be completed by the end of 2012. Much has been achieved, but there are still areas that need further refinement and operationalization. Other areas have not yet been addressed at all. Although times of great disasters are times for major fixings of the system, we need to be aware that our present errors and omissions will seed the next financial crisis.

There are huge costs with financial crisis. The Basel Committee on Banking Supervision puts the median of the discounted cumulative costs of those crises at 63 percent of Gross Domestic Product ("GDP").[2] Andrew Haldane, Executive Director for Financial Stability at the Bank of England, estimates the costs of the 2007-2009 crises at a minimum of 90 percent of 2009 world GDP, and puts the average estimate at 220 percent of world GDP.[3]

The Independent Commission on Banking was set up in June 2010 and headed by Sir John Vickers. The main object of this paper is to comment on the Interim Report issued by the Commission in April 2011 (hereinafter "Report").[4] The Independent Commission on Banking is entrusted to formulate policy recommendations with a view to: (i) reducing systemic risk in the banking sector; (ii) mitigating moral hazard; (iii) reducing both the likelihood and impact of firm failure; and (iv) promoting competition in both retail and investment banking. In particular, the Commission is entrusted in making recommendations covering: "(a) [s]tructural measures to reform the banking system and promote stability and competition, including the complex issue of separating retail and investment banking functions; and (b) [r]elated non-structural measures to promote stability and competition in banking for the benefit of consumers and businesses."[5] The Terms of Reference explicitly state that the Commission, when making recommendations, should take into consideration the competitiveness of the UK financial and professional services sector.

The Report restates as its objective proposing reforms: (a) to reduce the probability of failure of systemically important banks by improving their resilience; and (b) to reduce the impact of failure of systemically important banks, both by providing for the orderly resolution of any institutions that fail, and by reducing levels of risk in the financial system as a whole, without disproportionately affecting the financial system's ability to provide critical financial services.[6]

There is a large consensus among the publications produced by academics and several institutions on the reforms required to strengthen financial regulation, especially in the United States and the European Union, after the 2007-2009 financial crisis. But few economists agree that those proposals have been fully translated into legislation. Although the reforms addressed in the Report are restricted to the areas indicated above, there are some reforms so interconnected that they need to be discussed in a compact. We will also use the opportunity to address some major areas related to the mission of the Basel Committee that need further work.

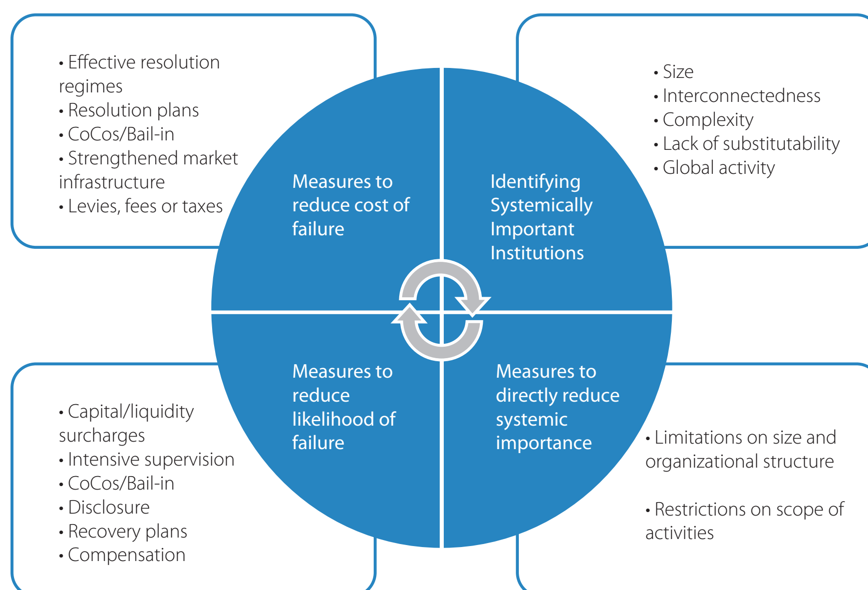
Section II confronts the problem of identifying systemic risky institutions, the basis for any discussion about this type of risk. We would not expect the Report to address a largely theoretical issue related to methodologies, but we think that without a theory to clearly identify systemic institutions, it is difficult to provide a policy addressed at them. We also discuss proposals for revising the regulation of capital and other own funds that is the most widely-known proposal for solving this risk. In contrast, both the Dodd-Frank Act and the Report make some "structural reform" proposals for solving the problem of too-big-to-fail. The proposal of the Report is discussed in Section III, along with the problems of implementation and the Volcker Rule of the Dodd-Frank Act. The Report concentrates on depository institutions.

This focus can be justified on the basis of the minimum required for bailout, both in terms of liquidity and in terms of the importance of the banks funding for the economy. However, most of the economists blame the so-called "shadow banking" not only for the source of the 2007-2009 crisis, but also for the propagation of the crisis to the overall financial system. In Section IV we discuss to what extent these institutions could undermine the banking sector, including the depository institutions, and require government intervention for preserving the stability of the financial system. In Section V we also raise the issue of governance in general, both of regulatory institutions and the regulated firms, an issue that has been completely ignored by the Report and most of the current reforms under way, and yet is at the core of the functioning of the financial system. Section VI refers to some competition issues covered by the Report, and Section VII concludes our discussion on banking regulatory reform.

II. SYSTEMIC RISK AND CURRENT RESPONSE TO REGULATION AFTER THE CRISIS: A HUGE MORAL-HAZARD PROBLEM

The large bailout programs undertaken by the U.S. and European governments in the aftermath of the 2007 crisis, either through recapitalization of banks, nationalization, blank deposit or credit guarantees in the order of trillions of dollars, have created a huge moral hazard problem for the future of banking.[7] Recent financial history has clearly established that if a large or systemically important institution is in trouble the government will come to her rescue. Taxpayers have footed the bill, leaving very little cost for shareholders, investors and bondholders to bear. Thus, we have four important problems to solve to lower the enormous moral hazard created by bailouts: (i) identifying systemic institutions, (ii) reducing structurally systemic risk by putting limits on size or building ring-fences, (iii) putting in place regimes and incentives so those institutions do not take inordinate risk, and (iv) putting in place resolution mechanisms that have a more equal burden sharing between taxpayer-shareholder-investor. To approach these four problems, the following diagram illustrates the broad tasks that need to be undertaken in any meaningful banking reform.

Dealing with the Risks Posed by Systemically Important Financial Institutions Beyond Basel III



The basis for any discussion of systemic risk is the characterization of what is an institution that is systemically risky (or too-big-to-fail).[9] There has been a substantial amount of theoretical work done in this field in the aftermath of the crisis. Most of the regulators that have been working with these concepts have used "stress tests" to evaluate systemic risk, although it is not clear to outsiders how the assumptions or scenarios given to banks for those tests are derived.

Most of the large banks, using Basel II, rely heavily on Internal Ratings-Based (IRB) risk models based on Value at Risk (VaR) calculations, considering only the bank or the banking group. The current regulatory regimes are still based in pro-cyclical capital requirements, haircuts and ratings. They focus on the asset side of the balance sheets of banks without taking into consideration the liability side and mismatches between liabilities and assets, with large implicit subsidies to short-term funding. Finally, as we will see below, the current regime has largely ignored the shadow banking system. As a result, the response by banks to current regulation is: "take positions that drag others down when you are in trouble (i.e. maximize bailout probability), become big, interconnected and/or hold similar positions."

Any analysis of systemic risk focuses on the contribution of externalities. The analysis should internalize externalities, and in terms of policy, build a fire protection wall. This requires that the analysis be translated into precise and rigorous capital requirements Only recently have there been rigorous theoretical characterizations of systemic risk. One of the major contributions is by Tobias Adrian and Markus Brunnermeier and their concept of CoVaR,[10] which is the covariance between Value at Risk of each institution vis-à-vis all the other institutions. CoVaR captures the institutions that are so large and interconnected that they can cause a negative spillover effect on the system. It also captures a subset of similar institutions that acting together can cause that negative spillover ("systemic as part of a herd").

Darrell Duffie proposes an alternative with his "10-by-10-by-10 Rule," which analyzes the results of stress tests among financial institutions.[11] A regulator would collect and analyze information concerning the exposures of N significant entities to M defined stress tests. For each stress, an entity would report its gain or loss, in total, and with respect to its contractual positions with each of the K entities for which the exposure, for that scenario, is among the K greatest in magnitude relative to all counterparties. Systemic counterparties would then be identified, stress by stress.

In addition to measuring the conditional CoVaRs, we have to eliminate the pro-cyclicality of the present ratios and build up a cushion to prevent a crisis in the future. Adrian and Brunnermeier propose to eliminate the pro-cyclicality by estimating the impact of state variables like the slope of the yield curve, the aggregate credit spread and the implied equity market volatility on tail risk. Then these time-varying CoVaRs are related to specific measures of each institution like maturity mismatch, leverage, market-to-book, size and market beta. The regression coefficients indicate how one should weigh the different firm characteristics in determining a systemic capital surcharge or Pigouvian tax.

The regulator can then establish a capital surcharge based on (forward) systemic risk contribution. It clearly changes ex-ante incentives to conduct activities that generate systemic risk. In addition, it increases the capital buffer of systemically important financial institutions, thus protecting the financial system against the risk spillovers and externalities from systemic institutions. This proposed methodology may sound complicated, but the authors have illustrated its application to major banking institutions in the United States and generated reasonable results. It shows a more complex web of interconnections than just a simple division between depository banks and the rest of the system, which is a warning sign for proposals based on the fault line proposed by the Report.

The rules proposed by the Basel Committee for Basel III have always aimed to establish minimum levels for solvability ratios, but those minimum levels are uniform. The present round of negotiations by Basel establishes a buffer capital of up to 2 percent for systemically important institutions. However, these proposed methodologies indicate that those ratios should not be uniform, but should be computed for each institution by the regulator. The same argument can be used against the proposal of the Report for what seems again a uniform solvability ratio by a depository institution.

Yet most of the studies eschew a phenomenon that deserves closer scrutiny: the fallacy of the composition. These situations may be more critical at the time of requiring an institution to improve its capital ratios. What is micro-prudent may not be macro-prudent. For example, suppose the regulator requires fire sales for resolving the problems of some large banks. It makes perfect sense at the level of the institution, but in the aggregate it will depress prices of the assets and deteriorate the balance sheets of even more banks. Other policies like ordering troubled institutions to stop giving more credit or take additional assets may force others to fire-sell or cause a credit crunch, again deteriorating the macro situation. The only policy where there is no clear conflict is when a bank is required to raise more equity.

It is quite clear that large banks that are individually systemic should be subject to both micro- and macro-regulation. However, the CoVaRs indicate that other sets of institutions also need to be regulated, even if they do not require both micro- and macro-regulation. Institutions that are systemic as part of a herd, such as leveraged hedge funds, should be subject to macro-prudential regulation but do not need micro-regulation. On the other hand, non-systemic but large institutions, like pension funds, need to be subject to micro-prudential regulation but not to macro-regulation.

Still related to the solvability ratios are two other problems. The first problem is that several rules established by Basel need an urgent revision.

Public securities continue to have a zero weight for Organisation for Economic Co-operation and Development ("OECD") countries when we have witnessed several of those states falling into unsustainable debt paths. In general, Basel has to grapple with a major conflict of interest by banks. Ratios computed based on VaRs and internal models, without proper regulatory supervision, constitute self-regulation and self-assessment of risk that has already led to major financial crisis. The problem of the ratings used in the calculation of solvability ratios has not yet been solved. Self-assessment is not an option, as some proposals have advanced, and rating agencies are still plagued by the problem of conflict of interest derived from the rule that the issuer pays.

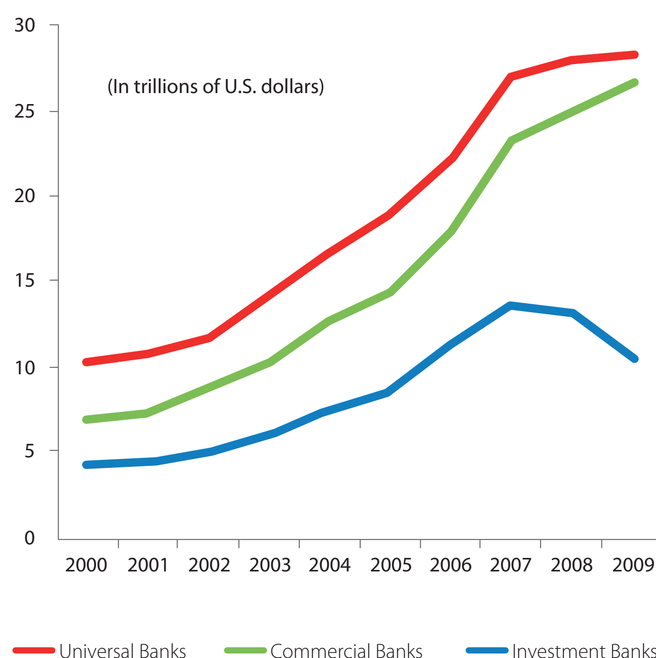
The second problem is crucial for macro-regulation. In the past, a number of asset bubbles have accumulated in the stock market. To prevent the build-up beyond a certain level of such bubbles it does not make sense to increase the capital requirements for banks. Moreover, increasing the interest rate by the central bank can precipitate a recession.[12] A solution that has not yet been implemented is to use another policy instrument that could influence the stock market more directly, namely margin requirements by all institutions trading in stocks, an instrument only rarely used in the past.[13]

II. THE TOO-BIG-TO-FAIL PROBLEM: THE VICKERS REPORT AND CONFLICTS OF INTEREST BETWEEN DEPOSITORY VERSUS INVESTMENT INSTITUTIONS

Despite the added risks they pose to financial stability, large financial institutions have important competitive advantages compared to systemically less important institutions. Large institutions possess the funding advantage of implicit or explicit government backing. Given their size and importance to their domestic economies, these institutions may enjoy strong political ties and hence may be in a position to influence policy via regulatory capture. In fact, logit analysis shows that the higher the probability of a rescue, the higher the share of the bank's assets to GDP and the higher the interconnectedness (and if it is a retail-oriented bank).

The relevance of these arguments has only increased over the past decade, as the institutions that could be considered as potentially systemic doubled their market share (see Figure 2).

Figure 2[6]: Growth in Assets (Sample of 84 Banks)



The main recommendation of the Report relates to the problem of the too-big-to-fail. It starts by focusing the analysis on depository banks or commercial banks. But are these the institutions on which to concentrate and restrict the analysis for financial stability? There are certainly very good arguments for answering in the affirmative. Deposit insurance is restricted to these institutions. Public insurance creates moral hazard problems. Bank runs are usually concentrated on depository institutions. Access to central banks is usually restricted to these institutions in order to provide funding as a lender of last resort, and they themselves have been a major provider of liquidity to the rest of the financial system. However, shadow banking cannot be ignored when dealing with financial stability today (see infra Section IV).

The Report starts to study two structural measures that are alternatives to solving the too-big-to-fail problem: break up banking groups in a depository bank and the rest of the bank, or build a ring-fence among them. These measures intend to solve three problems: (a) high impact of failure, (b) increased risk of system failure, and (c) increased risk taking.

The United Kingdom clearly opts for ring-fencing retail banking businesses from wholesale/investment banking activities through firewalls in a banking group. The Report makes a persuasive case for this solution by presenting a detailed cost-benefit analysis of each alternative. A retail ring-fence would allow for the continuation of universal banking, a form assumed by a large number of banks in Europe and the United Kingdom, with its attendant efficiency benefits of making the system more capable of absorbing shocks and reducing the perceived government guarantees. The operations to be ring-fenced are the provision of deposit-taking, payment and lending services to households and small and medium enterprises ("SMEs"). For the U.K. major banks it represents grossly 30 to 40 percent of their balance sheets. The ring-fencing serves the purposes of assigning a specific solvability ratio to the retail operations of the banking group and facilitating resolution in case of crisis.

In the United States the question of too-big-to-fail has been dealt with in several ways that diverge from the U.K. approach.

The Report considers the steps taken by the United States and assesses their feasibility in the United Kingdom. First, the United States abolished the Glass-Steagall Act of 1933[15] to separate commercial from investment banking.[16] The high costs and London's possible loss of competitiveness militate against such a measure in the United Kingdom, according to the Report. Second, the Volcker Rule contained in the Dodd-Frank Act restricts (with exceptions) banks' proprietary trading and investment in, or sponsorship of, hedge and private equity funds. The Report argues that these activities are small within the U.K. large banks and that it is difficult to separate proprietary trading from client-based trade. Furthermore, these activities in the ring-fence would be outside of the protected retail operations. Third, the Swap Pushout Rule in the Dodd-Frank Act requires certain entities relying on federal assistance and with significant swap business to move such activity to separately-capitalized nonbank affiliates.

But, as the Report recognizes, there are still important issues to be further clarified regarding (i) the implementation of the borderline between commercial and other activities, (ii) how to create stand-alone entities, and (iii) how to avoid cross-funding and funds transfer.

To protect a bank holding company seeking riskier assets to compensate for higher capital requirements,

it is necessary to have rules on what bets a retail subsidiary can make.

Such rules prevent it from ultimately behaving like an investment bank in retail clothing. The example of Lehman Brothers' failure shows a major increase in overall systemic risk that started in an investment bank and then spread to retail banking.

The Report recognizes the need to study some problems of implementation of the ring-fencing. We think that there are important technicalities and legal definitions. First, there is a need to define carefully the bail-in mechanisms—in particular, contingent capital—and the mechanisms to reinforce capital should clearly subordinate the claims of other senior unsecured creditors to those of depositors. Second, the 10 percent Core Tier I ratio requirement for retail banks by the Report should only be a benchmark. Relying on the theory expressed in Section II, supra, there is a need to use forward CoVaRs to establish the required amount by a regulator. Third, provided universal banks maintain minimum capital ratios and loss-absorbing debt for their U.K. retail operations, capital could be switched from the U.K. retail subsidiaries to other banking activities, which raises other concerns. Fourth, the current lack of a robust cross-border resolution mechanism, even within the European Union, is problematic. Fifth, assuming all the reforms are implemented,

there nevertheless continues to be a need for complementary micro-regulatory measures.

We know that at the origin of the recent financial crisis there were certain practices in the mortgage lending market.

Two important measures that should be enacted are prudential ratios in mortgage lending—like limiting loan-to-value ratio (70 to 80 percent), especially when a real estate bubble is on the making—and a reform in the governance of real estate valuations. Valuations need to be done by independent appraisers, avoiding the conflict of interest with the lending institutions. Other micro-regulatory reforms are proposed below regarding securitization.

IV. THE RISE OF SHADOW BANKING: TOO-SPARSE REFORM

Since the 1970s, there has been a major shift in the source of transaction media away from demand deposits toward money market mutual funds ("MMMFs"). MMMFs reached a peak of $3.8 trillion in 2008. Money market funds are registered investment companies that are regulated by the Securities and Exchange Commission (SEC) in accordance with Rule 2a-7 adopted pursuant to the Investment Company Act of 1940. [17]

Securitization also experienced a tremendous expansion. Securitization is the process by which traditionally illiquid loans are sold into capital markets. They are sold as large portfolios of loans to special purpose vehicles ("SPVs"), legal entities that issue rated securities in the capital markets. Total non-agency asset-backed security issuance reached $1.65 trillion on the eve of 2007.

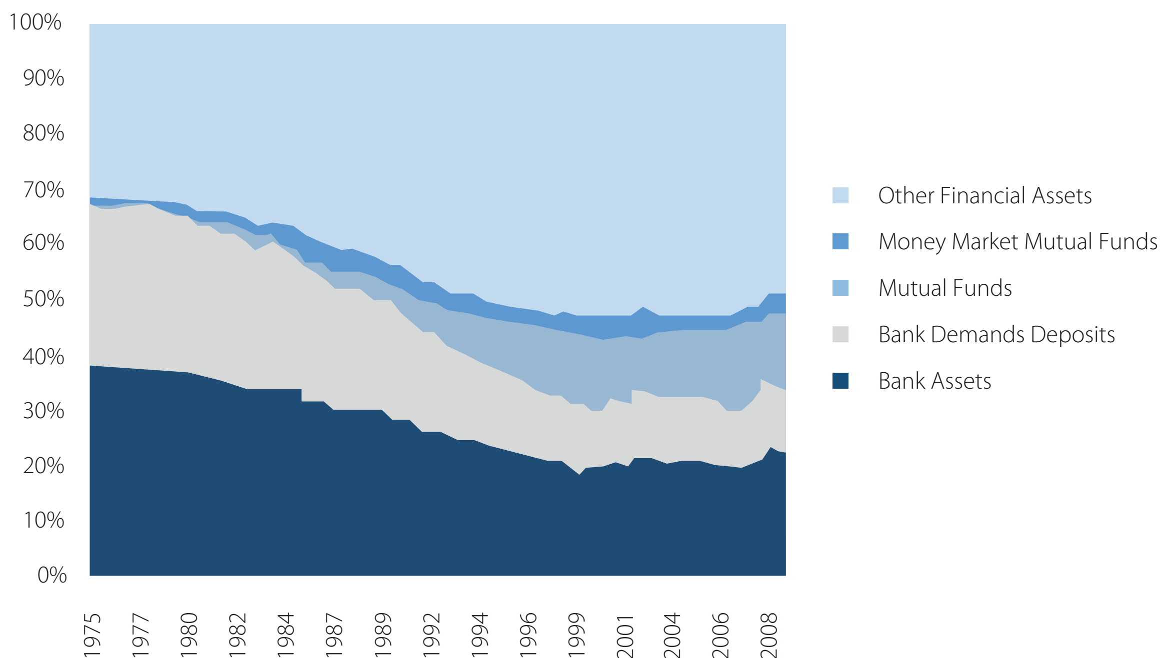
Large use of repurchase agreements ("repos"), as money under management by institutional investors (pension funds, mutual funds, states and municipalities, and nonfinancial firms) also expanded. Today they handle as many assets as banks: the repo market is about $5 trillion in the United States and $5 trillion in Europe.

Figure 3 shows the dramatic fall in the share of banks and the rise of shadow banking.

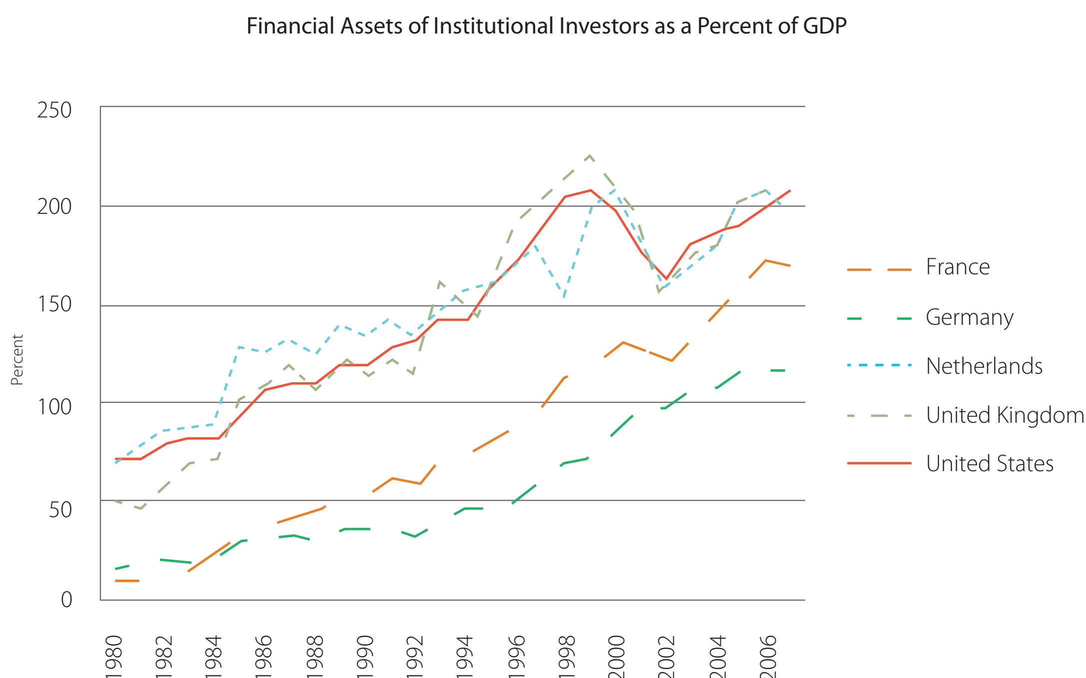
While banks had a share of 70 percent of total financial assets in the mid-1970s, it has dropped today to about 40 percent,

with a large part of this share being taken by mutual funds and other financial assets.

Figure 3: Money Market Mutual Funds, Mutual Funds, Demand Deposits, and Total Bank Assets as Percentages of Total Financial Assets



And, as the figure below reveals, this rise has occurred in all large developed countries.[18]



In the financial crisis of 2007-2009, problems arose in investment (shadow) banking and spread to retail banking. Investment banks transformed themselves into bank holding companies in order to have access to Federal Reserve funding and deposit insurance. The lender-of-last-resort role played by central banks saved depository banks around the world. These are simple facts usually forgotten.

A full analysis of the problems of shadow banking, including derivatives, is beyond the scope of the Report. We are going to mention just two issues more closely related with retail banking: the problem of money market funds (that are in fact quasi-banks), and securitization that has been widely used by banks to pass-on risk and acquire further liquidity.

The Group of Thirty ("G30") puts forth interesting proposals for the regulation of MMMFs.[19] G30 recommends the partition of MMMFs into two categories:

Type 1	**Type 2**
"Narrow Savings Banks" with a stable net asset values	Conservative investment funds with floating net asset values and no guaranteed return

Under this system, Type 1 funds are clearly within the safety net of explicit insurance and should be regulated as banks, while Type 2 funds should be clearly advertised as non-insured funds. G30 also proposes chartering narrow funding banks as vehicles to control and monitor securitization, combined with regulatory oversight of acceptable collateral and minimum haircuts for repos.

Regulation of securitization is certainly a major topic for reducing risk creation and subsequent spread. Securitization of mortgages lay at the center of the 2007-2009 crises, but securitization is now moving into SMEs, consumer credit, and additional areas. One of the problems of securitization oversight was the originator-to-distribution model. It is now recognized that the originator needs to retain a larger share of the risk (mainly equity risk) to avoid lax monitoring of debtors; the 5 percent imposed by the Dodd-Frank Act is insufficient. Moreover, slicing of packages should not dilute the incentive to monitor and enforce lending. Regulation of covered bonds, a new trend in securitization, is also inadequate, and forms yet another reminder that regulation usually lags behind market innovation. It is our opinion that covered bonds have a low weight (20 percent) accounting for the risk of the underwriter. Lastly, the problem of ratings of these packages has not yet been solved, see supra Section II.

V. A BASIC MISSING FRAMEWORK: GOVERNANCE REFORM

One of the most neglected areas in the reforms being discussed globally regards the governance of both the regulators and the regulated. No number of detailed new rules will succeed if the incentives on both sides are not properly aligned with the public interest of a stable and efficient financial system. To begin, regulators and supervision authorities need clear objectives and accountability to some democratic institution,

regulators and supervision authorities need clear objectives and accountability to some democratic institution

whether it is to the Executive or Parliament. If the bodies are remiss in their responsibilities, they should face serious consequences. Another major issue is to enact protections against regulatory capture. The firewalls erected between the different areas of regulatory bodies, and the activities conducted within them, need to be better defined. So do the firewalls between regulators and the government. Similarly, conflicts of interest that arise in the nominations for the regulators need to be avoided.

Regulatory bodies also need to identify and shape the incentives of their staff to maximize efficiency and productivity. A final problem is that of the thorny dilemma between transparency and confidentiality, in order to prevent false rumours or panic, those situations that hinder orderly resolutions of an institution. Publishing reports on failed institutions ex post, as audits, is only a partial solution, for such reports do not fully address consequences and responsibilities. More contentious is the publication of reports on troubled institutions in order to exert market discipline.

Turning now to governance of financial institutions, one of the most important issues is establishing rules for board nomination as controls on competence. There have been few recommendations on incentive mechanisms for board members. Bank executive pay remains substantially linked to an inappropriate metric of return on equity, which encourages executives to increase leverage.

Management has not been held fully responsible in more than a few cases of bailed-out institutions.

Beyond mechanisms within the financial institution, prompt court action should always be required in cases of fraud, which has not been the case in several European countries. Most of the recommendations in the area of governance of regulated firms address staff compensation, which, despite the Basel rules on micro-supervision, should be left largely to the institution.[20]

V. SOME COMPETITION ISSUES

The Report concludes that any limitation on the market shares of financial institutions is a blunt instrument, and that competition authorities are well-equipped to understand that it relates to abuses of dominance and mergers. We are much less confident.

Market shares may be blunt instruments, but they establish bright lines that are easy to implement.

The Dodd-Frank Act finally has it right after a hundred years of antitrust law in the United States. A simple limit of 10 percent market share in the European Union overall market should be established by European legislation, even if there is not yet any institution threatened by that restriction, which is not the case in the United States.

Methodologies for assessing bank mergers and intensity of competition are well-developed by the various E.U. competition authorities, but they seldom intervene and there have been instances where they have been overruled–most notably, by the U.K. Office of Fair Trading ("OFT") for the Lloyds TSB-HBOS merger.

The Report recognizes that banking markets are complex and subject to switching costs in current accounts for households and SMEs. The Report also recognizes that the OFT has done an excellent work in identifying those costs and taken some measures to improve competition.

We merely note that consumer protection is not enough: lowering barriers to switch may entail additional regulation, like imposing mandated reductions in those costs.

VI. CONCLUSIONS

We have surveyed in a previous paper the major reforms needed in the aftermath of the 2007-2009 financial crisis.[21]

Among the reforms required at the macro-level, the main ones are: (i) a systemic risk regulator with "teeth" that can control and reduce the systemic risk and the associated moral hazard, in particular the problem of too-big-to-fail, (ii) rationalization and coordination among regulators that are especially geared toward major financial institutions, to conduct consolidated analysis and regulatory measures, (iii) new instruments of the central bank to fight speculative bubbles, (iv) systems to resolve and maintain financial stability, including liquidity provision, and (v) regulation of over-the-counter derivative exchange markets.

The reforms required at the micro-level are mainly: (vi) strengthening the capital requirements of banks, correcting its cyclicality and its prudential role, with mark-to-market accounting systems, (vii) correcting the incentive problem of rating agencies, (viii) preventing problems of predatory lending and non-transparency of consumer products, (ix) establishing a speedy and effective resolution system for troubled institutions, (x) reducing the problem of originating and distributing in the process of securitization, and (xi) correcting the remuneration system in financial systems that gives an incentive to accumulate large risks.

The Report mainly addresses points (i), (iv) and (vi), explicitly leaving the other areas of reform to other national and international working groups, such as the Financial Stability Forum and the European Union Institutions. We are less optimistic in this appraisal.

Despite the limitations we refer to, the Report is excellent; its main proposals are well-grounded and can hardly been improved. Our suggestions address some of the points left open in the Report, in terms of implementation, and complementary policies and measures that need further analysis, either by the Independent Commission on Banking or other institutions.

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1 Dodd–Frank Wall Street Reform and Consumer Protection Act, Pub.L. 111-203, 124 Stat. 1376 (2010) (to be codified in scattered sections of the U.S. Code).

2 Bank for International Settlements, Basel Committee on Banking Supervision, *An Assessment of the Long-Term Economic Impact of the New Regulatory Framework* (August 2010), *available at* http://www.bis.org/publ/bcbs173.pdf.

3 Andrew Haldane, Executive Director for Financial Stability at the Bank of England, *The $100 Billion Question, Speech Before the Institute of Regulation & Risk, North Asia* (March 30, 2010), *available at* http://www.bankofengland.co.uk/publications/news/2010/036.htm.

4 Independent Commission on Banking, *Interim Report* (Apr. 2011), *available at* http://bankingcommission.independent.gov.uk/.

5 Press Release, Her Majesty's Treasury, Sir John Vickers to Chair the Independent Commission on Banking (June 16, 2010), *available at* http://www.hm-treasury.gov.uk/press_11_10.htm.

6 Interim Report, *supra* note 4, at 26.

7 Despite the large amounts committed for bailouts, the final fiscal cost is estimated at only a fraction of those amounts. Haldane, *supra* note 3, estimates the wealth transfer from the government to the banks as a result of the banking crisis in the United States at around $100 billion, less than 1 percent of GDP, and in the United Kingdom at £20 billion, slightly above 1 percent of GDP.

8 İnci Ötker-Robe et al., *The Too-Important-to-Fail Conundrum: Too Important to Ignore and Difficult to Solve* (IMF Staff Discussion Notes No. 11/12), available at http://www.imf.org/external/pubs/cat/longres.aspx?sk=24873.0.

9 Or similarly "too-big-to-bail" in the sense that it would cost a large amount of money to taxpayers.

10 Tobias Adrian & Markus K. Brunnermeier, *CoVaR* (Federal Reserve Bank of New York Research Paper Series - Staff Report, August 27, 2009), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1269446. According to the authors, the prefix "Co" refers to conditional, co-movement, contagion and contributing.

11 Darrell Duffie, *Systemic Risk Exposures: A 10-by-10-by-10 Approach* (National Bureau of Economic Research Working Paper No. 17281, Aug. 2011), available at www.nber.org/papers/w17281.pdf.

12 Besides, there might not be product market inflation.

13 Recall that margin requirements were used by the Chicago Mercantile Exchange in the wake of Black Monday, October 1987, when the margins were increased from 4 to 12 percent for S&P 500 futures. They were also used for the Long Term Capital Management (LTCM) crisis.

14 İnci Ötker-Robe et al., *supra* note 5.

15 Banking Act of 1933, Pub.L. 73-66, 48 Stat. 162 (1933).

16 Gramm–Leach–Bliley Act, Pub.L. 106-102, 113 Stat. 1338 (1989) (codified as amended in scattered sections of 12 and 15 U.S.C.).

17 The Investment Company Act of 1940, Pub.L. 76-768, 15 U.S.C. § 80a-1 to 80a-52 (1940).

18 İnci Ötker-Robe et al., *supra* note 5.

19 Working Group on Financial Stability, *Financial Reform: A Framework for Financial Stability* (Group of Thirty, Special Report, Jan. 15, 2009), *available at* http://www.group30.org/rpt_03.shtml.

20 Consultative Document, Basel Committee on Banking Supervision, International Framework for Liquidity Risk Measurement, Standards and Monitoring (Dec. 2009).

21 Abel M. Mateus, *After the Crisis: Reforming Financial Regulation* (Nov. 12, 2009), (unpublished manuscript, *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1504895).