



Enhancing Risk Management and Governance in the Region's Banking System to Implement Basel II and to Meet Contemporary Risks and Challenges Arising from the Global Banking System

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## **Lessons from the Sub-Prime Crisis**

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### Origins of the crisis

The crisis can (at risk of oversimplification) be attributed to four major factors.

The first is the growth of financial products and practices which involved high leverage and were sustainable only under conditions of increasing asset prices and investor confidence. Sub prime mortgage lending in the US is the obvious example which triggered the crisis, but the problem was more pervasive due to the second factor of uncontrolled (and not well recognized) liquidity creation. Financial engineering has prompted the growth of liquidity creation techniques based around collateralized lending (such as repos, securities lending, margin lending), where active securities markets for the collateral meant that lenders did not themselves feel exposed to significant liquidity or counterparty risk. Although asset price inflation was high Central Banks, focused on consumer price inflation targets and real sector activity, did not respond by attempting to restrict liquidity and “pricking the bubble”.

A third factor was the growth of the, largely unregulated, “shadow banking” sector, involving investment banks, hedge funds, SIVs, conduits etc., and the construction of complex financial instruments and techniques which saw risk spread throughout the global financial sector and significant interdependencies created. Finally, there was an absence of public information about the level and distribution of risk in the financial system. Inability to assess the risk positions of potential counterparties meant that a crisis induced response for many institutions was simply to cease extending credit.

Indeed, one analyst (Gorton, 2008) links the onset of the sub prime crisis to the introduction of the ABX indices in 2006 which provided the first aggregate, market based, estimates of sub prime linked securities values.<sup>1</sup> While concerns about US house prices and sub prime mortgage defaults were also emerging, the indices enabled market participants to express, and trade on, views about the implications for CDOs, whose values were ultimately linked to US house prices via intricate relationships involving complex securitizations of sub prime mortgages.

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<sup>1</sup> Gary Gorton, “The Subprime Panic” *NBER Working Paper* 14398, October 2008, <http://www.nber.org/papers/w14398>.

### Features of the Crisis

The evolution of the crisis has identified a number of important features of financial system behaviour which need to be borne in mind in policy responses and in designing future regulation.

First, consumers of financial products such as mortgage borrowers or investors generally do not have financial sophistication and knowledge which is adequate to assess the risk and return (or cost) of financially complex products.

Second, incentive and governance structures within financial institutions have been inadequate to prevent sales of unsuitable financial products.

Third, outsourcing of due diligence and risk assessment, including reliance on statistical models of risk assessment which use only “hard” information rather than “soft” information (such as loan officer opinion and assessment), has increased risk.

Fourth, even large, reputable, financial institutions will seek to avoid constraints imposed by regulations, as evident in the creation of SIVs and conduits using 364 day liquidity facilities to avoid capital requirements.

Fifth, risk management systems of banks have proven inadequate, reflecting problems with measuring risk, control systems, reporting arrangements and governance.

Sixth, liquidity creation by non-prudentially regulated institutions, involving massive growth in collateralized lending techniques, was not well recognized or controlled by monetary authorities.

Seventh, systemically important financial institutions exist outside the ambit of prudentially regulated institutions, and include investment banks and insurance companies who are important counterparties in risk transfer and in provision of liquidity.

Eighth, limited deposit insurance arrangements are inadequate for maintaining depositor confidence and dealing with systemic crises.

Ninth, opaqueness of financial institutions and inadequate information about details of complex financial products can quickly cause interbank and asset markets to “freeze”, creating significant problems for both funding and asset liquidity.

Tenth, official liquidity support facilities need to be carefully structured so that market participants are not put off using them by the potential stigma of being perceived by the market as being weak, at risk, institutions.

Eleventh, risk based capital adequacy requirements appear to be insufficiently robust to financial innovation, prompting increased attention in the role of simple leverage ratios as a regulatory option.

Twelfth, globalization of finance has made the regulatory problem of dealing with multinational financial institutions extremely complex. Supervisory cooperation needs to be reinforced by improved alignment of national insolvency and resolution arrangements.

Thirteenth, the dramatic growth of the less-regulated non-bank sector (“shadow” banking sector) has meant that the macro-economic problems arising from a “flight to quality” to the banking sector and disruptions to proper functioning of the non-bank financial sector are particularly severe.

### Regulatory Responses

Crisis induced responses by Governments have focused primarily on offsetting the immediate effects of the crisis rather than addressing the underlying causal factors.

First, there have been actions to shore up public confidence in national banking sectors, involving broad extensions of deposit insurance, guarantees, and government equity injections into, or full or partial nationalizations, of banks.

Second, there have been actions to unfreeze and/or restore liquidity to asset markets and financial institutions, via widening of acceptable collateral in Central Bank repurchase agreements, and Government purchases of particular types of assets (including mortgage backed securities). Central Banks have also increased aggregate liquidity through their open market operations to cater for the fear induced increase in demand for liquidity and to lower official interest rates to offset adverse effects on the real economy arising from higher credit spreads on private sector lending.

A third response has been the “bail out” of systemically important non-bank financial institutions such as investment banks in the US. The interdependencies within the financial system have been reflected in their roles as prime brokers for hedge funds, significant counterparties in derivatives transactions, and providers of credit through collateralized lending techniques. Ultimately, the disruption to asset markets from disorderly failure was deemed (with the aid of hindsight from the Lehman example) to be unacceptable.

A fourth response has been the introduction of new, temporary, regulations on financial markets and institutions. Particularly notable here has been the introduction of bans on short selling of (some or all) equities on national stock exchanges, driven by concerns about destabilizing speculation.

These responses (and the crisis itself) have had significant short term, and potentially lasting, impacts on the competitive position of various financial institutions. Non-bank investment vehicles (finance companies, managed funds etc) have suffered outflows, partly due to nervous investors being attracted to Government guaranteed deposits, but also reflecting the desire to avoid further losses on risky investments in such a bear market environment. Hedge funds (and others) using trading strategies based on taking short positions have found their business models undermined by bans on short selling.

### *Future Regulatory Responses*

Looking ahead, a number of changes in the financial sector and in policy approaches can be anticipated.

It is likely that Central Banks will be tasked with focusing also on asset price inflation as a policy goal, rather than the previous, failed, approach of attempting to ensure a “soft landing” from the bursting of speculative bubbles. Also, to have greater effects on financial markets, new instruments of policy will be needed. “Macro-prudential” policy can be anticipated, in which capital requirements of prudentially regulated institutions are varied depending on economic and financial conditions. This may also include changes to allowable provisioning for losses, involving building up of loss reserves in good times and consequent smoothing of reported profits. Combined with concerns about the impact of mark to market (or model) accounting requirements on financial institutions in this period of market disruption, recently agreed international accounting standards will be subject to scrutiny.

Deposit insurance arrangements and the scope of prudential regulation will be subject to review.

A “safety haven” for unsophisticated investors is required, but recent events have reinforced the perception of “too big/too important to fail”, extending perceived protection to a vastly expanded range of financial products and institutions. Paradoxically, investment banking activities are being increasingly linked with traditional banking, worsening this problem. While holding company structures can notionally separate different types of activities, the potential for allowing failure of one part of the structure (such as the investment banking arm) while maintaining confidence in the rest (including commercial banking) seems limited.

There may be a case for increasing the capital requirements of systemically important financial institutions which rely on capital markets funding, compared to simpler deposit financed institutions. However, this risks reducing efficiency, prompting the search for mechanisms which involve automatic increases in bank capital in times of stress. (Several commentators have suggested such things as banks issuing “catastrophe-type” bonds which pay a higher yield but which convert automatically into bank equity if certain trigger points are met).

The recently introduced Basel II capital accord will also need further review. Although some of the regulatory failings exposed by the sub prime crisis can be

traced to inadequacies in the original Basel accord (such as allowing banks to provide 364 day liquidity facilities to their SIVs and conduits without capital requirement implications), there are many new banking practices not well covered by the accord. Indeed, the foundations of the new accord have been severely shaken. Bank internal risk models have not performed well – raising questions about the merits of relying on them for determination of capital requirements as done in the advanced approach of Basel II. Similarly, the credibility of ratings agencies has suffered, also raising questions about the fundamental role of ratings in determining capital requirements under the standardized approach of Basel II.

Whether the “shadow banking sector” is likely to be subject to regulation is an unknown. But it is almost certain that it will be subject to greater reporting requirements to ensure that in future policy makers and market participants will have better information on which to base decisions. Balancing the requirements between protecting commercially valuable private information and generating socially valuable aggregate information is challenging.

Greater information is also available when financial claims are traded in organized exchanges rather than over-the counter markets involving bilateral trades where only the participants are aware of prices and quantities. Incentives or legislation to increase the use of organized exchanges can be anticipated.

At the same time, organized exchanges appear to be subject to excessive short term trading and potentially destabilizing speculation, reflecting the dramatically reduced trading costs due to modern technology. While it is desirable for valuable private information about economic fundamentals to be incorporated into asset prices by the actions of traders, modern asset markets have, arguably, become much like casinos. Much trading appears to be based on perceptions of likely short term changes in market psychology or mood or on profit opportunities arising from liquidity needs forcing other participants to unwind current positions (such as short selling based on perceptions that price points leading to margin calls will be reached).

Reflecting these concerns, there may be renewed interest in some variant of the “Tobin Tax”, a proposal by Nobel prize-winning economist James Tobin originally

suggested for application to foreign exchange markets. The proposal (often described as “throwing sand in the wheels”) envisages some small tax rate on asset transactions which penalizes, and thus inhibits, short term trading, but has little effect on long term position taking.

Increased attention is also likely to be given to the inherent agency problems in the financial sector. The sub prime crisis reflects, at least in part, the lack of accountability and wrong incentives for mortgage originators and securitisers who were not exposed to the risk associated with mortgages and structured products created and on-sold.<sup>2</sup> Many investors were sold products with unsuitable risk characteristics by financial product sellers and financial advisers with remuneration structures linked to sales volume, which generated conflicts of interest.

Focusing solely on the sellers of financial products, however, only addresses part of the problem. There is a fundamental disjuncture between the sophistication of financial products created and the competence of both investors and borrowers to fully understand the risk and return (or cost) characteristics. And the lack of financial sophistication applies at both retail and wholesale level! Finding mechanisms for inducing (or preventing) the financially unsophisticated from allowing greed to outweigh common sense is indeed challenging. Compulsion, prohibitions, specification of default options, taxes and subsidies, are tactics which warrant attention (and some of which have been used in dealing with retirement financing).

Going forward, the financial system is bound to be a more subdued place for at least a few years. The excesses of financial engineering will not return for a while, although relatively simple financial innovations, such as basic securitization techniques, should eventually recover. But even here, there is the potential for improvements on the basic model such as use of the “covered bond” approach common in Europe, where the securities issued remain a liability of the bank originating the mortgages. And quickly winding down the role of governments in purchasing mortgage backed securities (at

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<sup>2</sup> While it has transpired that many financial institutions retained some exposures to the financial products they created, complexity of those institutions and resulting agency, governance and communications problems suggest that it is not clear that senior decision makers were aware of the full extent of that risk bearing.

prices that cannot be assessed as appropriate for the risk involved, given the current absence of a private market) is an important agenda item.

But probably the major dilemma lies in the likelihood of increased concentration and inter-linkages in the financial sector. Major banking groups dominate not just banking, but also funds management, financial advising and planning, and securities businesses. Most of the other participants in the financial sector are dependent upon them for at least some services crucial to their business. Payments services, prime brokerage, and stand by liquidity facilities are some examples.

In these circumstances, as has so recently been demonstrated, Governments are simply not able to adopt a *caveat emptor* posture and allow such institutions to fail. And permitting a relatively small number of such institutions to dominate the entire financial sector brings with it the problems of concentration of power, inadequate competition, and excessive profits.

There is no hard evidence that a concentrated banking sector is more conducive to financial stability. And there is no good evidence as to whether a concentrated banking sector leads to adequate or inadequate competition in financial services. Finding the appropriate regulatory structure and framework for the financial sector which generates financial stability, adequate competition, and promotes value adding financial innovation is the challenge that lies ahead.

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# Lessons from the sub-prime crisis

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## Outline

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- Origins of the Crisis
- Features of the Crisis
- Regulatory Responses
- Future Regulatory Responses



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## Origins of the Crisis

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- Financial engineering and financial products
- Liquidity creation and leverage
- “Shadow banking” & risk sharing and spreading
- Inadequate public information

## Features of the Crisis

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- Consumer sophistication
- Incentive structures
- Outsourcing due diligence
- Regulatory avoidance
- Inadequate risk management systems
- Liquidity creation

## Features of the Crisis

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- “Shadow banking sector” importance
- Deposit insurance inadequacy
- “Freezing” of funding and asset liquidity
- Liquidity support facility arrangements
- Inadequacy of risk based capital
- Globalization issues
- “Flight to quality” issues

## Regulatory Responses

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- Protection of national banking systems
- Liquidity Creation/restoration
- Bail Outs
- Temporary regulations

## Future Regulatory Issues

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- Central Bank targets
- Macro-prudential policy
- Mark-to-market accounting
- Deposit Insurance
- “Too big/important to fail”
- Automatic recapitalization stabilizers

## Future Regulatory Issues

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- Basel II
- Domain of Prudential Regulation
- Reporting and Information Requirements
- Promoting organized exchanges
- Transactions taxes and volatility

## Future Regulatory Issues

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- Governance and agency problems
- Financial consumer protection
- Securitization structures
- Financial sector concentration