

Regulatory Responses to the Financial Sector Crisis

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Synopsis

This paper provides uses a simple accounting framework to provide a basis for interpreting the plethora of regulatory responses to the Global Financial Crisis. The various types of responses are outlined and criteria suggested by which their merits might be assessed. Drawing on a large number of official reports and inquiries, current and potential areas of regulatory reform are identified and analysed. It is argued that the problems of increased size, market concentration and interdependencies in the financial sector mean that *caveat emptor* is not a viable policy option in relation to large financial institutions. Consequently, a major policy challenge lies in finding a regulatory structure which generates financial stability, adequate competition and value adding financial innovation.

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Introduction

The Global Financial Crisis (GFC) which began in 2007 prompts a number of important questions for study. What were the causal or contributing factors? What were the propagating mechanisms by which it spread throughout the world financial system? How has it affected the real economy? What are the appropriate macroeconomic responses to deal with those real effects? In what ways, and how well, did financial authorities respond to the financial dislocation? What are the implications for the future of financial regulation?

This paper focuses on the last two of those questions, although the answers clearly depend upon what are perceived to be the answers to (at least) the first two questions about causes and propagation. It provides a framework within which the vast, worldwide, array of regulatory responses can be categorized and compared, and provides a concise overview and analysis of the many ongoing regulatory developments. The perspective is a global one, drawing on many official and unofficial reports¹, focusing on common features of regulatory responses rather than details of those in any particular country. Thus section 1 provides a (very brief) overview of generally accepted causes and propagation mechanisms. One important factor identified from this overview is the deficiencies in reliable information about financial sector activity, strength, and riskiness, and section 2 thus discusses some of the problems which are apparent and provides a basis for subsequent discussion. Section 3 uses a simple accounting framework to examine the range of responses available to, and used by financial authorities around the globe. Section 4 considers how future financial regulation is being influenced by the recent experience, drawing (in part) upon a range of recent reports by both official and unofficial bodies. Section 5 provides some conclusions.

1. The financial crisis – causes and propagation²

The crisis can (at risk of oversimplification) be attributed to four major factors.³ The first is the growth of financial products and practices which involved high leverage

¹ Because many of the topics covered are discussed in most of the reports listed in section 4 and referenced in the bibliography, specific references are not included in the text for space reasons.

² Parts of this section are adapted from Kevin Davis, (“After the Storm” *Business Spectator*, 29/11/2008. <http://www.businessspectator.com.au/bs.nsf/Article/After-the-deluge-LS2YH?OpenDocument&src=srch>).

³ Brunnermeier (2009) provides a more detailed overview of causes, propagation, and a time-line of the financial crisis up to the start of 2009.

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, and clearly illustrates a root cause in the form of inadequate governance, accountability and remuneration practices within financial institutions. 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”. The growth in international liquidity was aided by global current account imbalances and the willingness of surplus countries to invest in financial assets being created in deficit countries.

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. Deficiencies in financial regulation contributed to this as banks adopted funding mechanisms and took on asset and contingent liability positions which exposed both themselves and (through the interdependencies created) the financial system to significant risks. Finally, there was an absence of public information about the level and distribution of risk in the financial system.⁴ Inability to assess the risk positions of potential counterparties meant that a crisis induced response for many institutions was simply to cease extending credit (or recall existing loans) – a classic adverse-selection-induced credit rationing outcome. The growth of the “originate to distribute” model of securitization and its extension into more complex structured products sold to investors (and other banks) in international markets meant that problems in particular national credit markets were quickly transmitted internationally throughout the banking sector as well as affecting non-bank investors in structured products and having depressing effects upon the real economy.

⁴ 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.

2. Financial Engineering and Financial Institution Accounting

There has been much debate about the appropriateness of applying mark to market and market to model accounting techniques to balance sheets and income statements of financial institutions. Such approaches may provide a better estimate of the liquidation value of the organization than approaches based on private valuations of assets for which markets are disrupted. However where institutions do not plan to, and do not have to sell such assets, and if the private information of the asset holder justifies the valuation they ascribe to the asset, market value accounting may lead to misstatement of the going concern value of the organization. This can reduce stakeholder confidence, and induce circumstances in which forced asset sales mean that the liquidation value becomes relevant. Turner (2010) takes this line of argument further, suggesting that there may be multiple unstable equilibria for the economy dependent upon the nature of information flows (as reflected in accounting requirements).

This problem of interdependency between accounting treatment and actual value arises because of the liquidity creation function of financial institutions, whereby assets held (some possibly tradeable in secondary markets) are of a longer maturity than claims on the institution. Investors may react to lower reported mark to market prices by withdrawing funds, necessitating asset sales at current (low) market prices and aggravating the position. This problem is exacerbated when the assets involved are hard to value (such as was the case in the GFC with CDOs) and markets are unable to function properly and provide reliable prices.

A more general problem is the unsuitability of standard accounting techniques for dealing with sophisticated financial instruments and techniques. In particular, much of the business of modern financial institutions involves the creation of contingent claims, as well as a range of activities which involve linking together of items on both sides of the balance sheet. Traditional accounting has difficulty dealing with these complex arrangements.

Interest rate swaps are one example. Current international accounting practice records these in the balance sheet as a fair value (mark to market) figure. But, in the notes to the accounts it will be found that the notional principal value of swap transactions is much (maybe forty times) larger. The difference is easily explained by reference to the accounting treatment of an interest rate swap with a notional principal of \$100. At inception, the fair value is \$0, and if the bank is the fixed rate payer

(floating rate receiver) and interest rates increase, the fair value might increase to (say) \$1, which is the amount reported. But another perception on this transaction is that it was equivalent to issuing a \$100 fixed rate note to the other party (whose fair value has declined to \$99 when interest rates increased) and purchasing a \$100 floating rate note from that same party. Perhaps it may be preferable to report the equivalent underlying amounts (of a \$99 liability and a \$100 asset) rather than the net \$1 fair value?

The answer to this question depends upon the purpose of the accounts. In terms of providing a true and fair view of the value of the entity, both are equally as good (or bad!) so that the logic for the choice needs to be found elsewhere. One answer might be in terms of the information they provide to the user on the risk associated with the institution. In this regard the two alternatives provide different perspectives on the risks associated with leverage. In particular, use of the net fair value approach may better reflect the credit risk aspects of the transaction (net loss if the counterparty defaults), while a “gross” approach which records both replicating legs of the transaction, may better reflect its market (interest rate) risk.

There is also potentially differential treatment accorded to assets which are essentially functionally equivalent. For example, assets sold under repurchase agreements (repos) generate essentially the same financial position as selling a forward rate agreement (FRA). The former requires repurchase at a fixed price and thus loses money if interest rates increase and the asset price has fallen. The latter gives a payoff which is inversely related to the difference between the contractual FRA rate and the future interest rate, such that it loses money if interest rates increase. For repos, the securities sold are still recorded as an asset and a counterparty liability (the amount to be paid on repurchase) also recorded, whereas the FRA is recorded at fair value. Alternatively, US investment banks have accounted for securities financed by repo transactions by a liability entry “Securities sold under agreements to repurchase” matched by an asset entry of “cash” (King, 2008).

There is, perhaps, no easy resolution of the difficulties posed by modern financial engineering for accounting systems. But that underscores two major problems faced by financial regulators and regulatory approaches such as Basel 2. First, the lynchpin of the Basel 2 prudential regulation approach is capital, which is essentially a balance sheet residual and whose measurement thus crucially depends upon the validity of measurement of other assets, liabilities and contingent claims.

Second, the ability of outsiders (or even senior management) to accurately interpret the accounts and verify the valuations involved is extremely dubious. Regulatory approaches which rely heavily on disclosure, transparency and market discipline face significant challenges. Accounting information may be of limited value, although disclosure about policies and practices may assist outsiders to better assess risk management by the organization – although there is little evidence on that score available.

3. Financial Policy Responses to the Crisis

To understand policy responses to the financial crisis, it is helpful to commence with a hypothetical “T-account” (balance sheet) of an individual financial institution, albeit recognising the problems with financial institution accounting which have been discussed. Table 1 presents such a “T-account” in which the assets of the institution are divided into three categories based on realizable value relative to historical cost. “Untarnished” assets (A_1) comprises loans and securities about which there have been no substantive declines in, and no substantive concerns about, “true” value. While some may be marketable others, such as loans, may not be realizable until maturity. “Potentially tarnished” assets (A_2) are those for which immediately realizable value is substantially less than “true” value, although the institution anticipates holding them sufficiently long to realize the “true” value. This includes marketable securities where forced sale will involve significant losses due to market disruption, and loans which if called early (or facilities not rolled over), will involve some default losses. “Tarnished” assets (A_3) are those where the true value is significantly below historical cost, and where current market values (if available) may provide little guidance to “true” values due to pervasive information deficiencies.

On the liability side of the T-account are identified deposits (D), wholesale debt market borrowings (B), Subordinated debt, preference shares and hybrid securities (P) which may count as regulatory capital, and shareholders equity (E). The quantum of recorded shareholder equity (E) is derived as a residual from the difference between the recorded value of assets and other liabilities (ie $E = A_1 + A_2 + A_3 - D - B - P$), and thus depends crucially on the accounting treatment of those items.

Assets		Liabilities	
Untarnished	A ₁	Deposits	D
Potentially tarnished	A ₂	Wholesale funding	B
Tarnished (impaired, “toxic”)	A ₃	Preference shares	P
		Shareholder equity	E

TABLE 1: “T-account” of a hypothetical financial institution

Source: Author

The problems, at the individual financial institution level, induced by the financial crisis can be viewed within this simple framework as involving: (a) situations where shareholder equity has become negative ($E < 0$) or it is perceived that more reliable recording of asset values (or declines in asset prices in a volatile environment) would lead to that outcome; and (b) concerns that outflows of liabilities (depositor withdrawals, inability to roll-over wholesale funding) in excess of marketable assets in the A₁ category would force liquidation of assets in the A₂ (or A₃) category creating losses and leading to negative shareholders equity.

More generally, regulators have faced system-wide issues, including the “freezing” of financial markets (including for the assets and liabilities in Table 1) in which financial institutions participate, spill-over effects (contagion), and equity market collapses. As well as direct effects on financial institution “T-accounts” (with loss-making equity investments falling into the A₃ category), equity market collapses have increased the cost of equity capital, and at the individual financial institution level can induce uncertainty among other liability holders (who interpret equity price movements as signals of the institution’s risk of failure) about the true value of their investments, with potential consequences of liability outflows.

Faced with this situation, what alternative actions are available to financial authorities, and what has been done? Table 2 provides a list of possible actions, which can be categorized within the “T-account” structure outlined above. Around the globe, virtually all of these approaches have been tried, with financial authorities in some countries using many of them in a “belts and braces” response. Most of these focus primarily on offsetting the immediate effects of the crisis rather than addressing the underlying causal factors which are seen to be requiring of longer-term, more considered, actions.

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 (items xii, xiii, xiv in Table 2). Requiring financial institutions to raise more equity capital is another response (item xi). Government guarantees of minimum values for particular asset portfolios of troubled institutions, or purchase of “toxic” assets to construct a “good bank – bad bank” structure (items iv, v, vi) also fit into this category, as (arguably) do government assistance to troubled borrowers from banks and provision of credit guarantees for new loans made by banks (items vii and viii).

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 (items i,ii,iii). 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 (item x).

A third response has been the “bail out” of systemically important non-bank financial institutions such as investment banks and insurance companies in the US, and commercial banks worldwide, through arranged mergers (item xviii) or via government provision of equity, guarantees etc. The interdependencies within the financial system have been reflected in the role of investment banks 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 (item xxii) 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 temporary bans on short selling of (some or all) equities on national stock exchanges, driven by concerns about destabilizing speculation (item xxi). Allowing institutions, such as unlisted unit trusts/mutual funds or banks (the freezing of deposits in Icelandic bank branches in the UK in October 2008 is one example) to freeze redemptions (item xv) also fits into this category.

Undoubtedly, there are also instances of forbearance (item xx), while modifications to accounting techniques (xv) have also been permitted.

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. There have also been concerns raised about whether the policies which have been used to assist financial institutions and markets have adequately mitigated the real sector effects of the GFC. In particular, while various policy actions have restored financial market liquidity and enabled financial institutions to restore their balance sheet and capital positions, this “deleveraging” has been at the expense of credit availability to the real sector.

(i)	Provide/expand official facilities (repos, discount window, lender of last resort) for institutions to borrow against the security of assets in the A_2 category, thereby avoiding forced sales at depressed prices – enabling A_2 assets to be exchanged for A_1 cash assets to meet possible declines in (outflows of) D.
(ii)	Official purchases of assets in the A_1 or A_2 categories at “non-fire-sale” prices – enabling purchase of A_1 cash assets to meet possible declines in (outflows of) D.
(iii)	Introduce securities lending arrangements enabling institutions to lend A_2 assets in exchange for A_1 assets which can be sold to meet temporary liquidity needs such as declines in D
(iv)	Purchases of A_3 assets at “fair” prices to be subsequently managed by some official entity, removing toxic assets and creating a “good” bank - exchanging A_1 assets for A_3 with no change in E.
(v)	Subsidise/partner with private sector purchasers of A_3 assets to remove toxic assets and create a “good” bank – exchanging A_1 assets for A_3 , with increase in E due to subsidy involved
(vi)	Provide asset value insurance over A_3 assets, protecting the institution against the effects of extreme reductions in their realizable value – underwriting value of A_3
(vii)	Provide assistance to borrowers/issuers of securities (sub-prime mortgagees, car producers) in the A_3 category - increasing the fair/market value of those A_3 assets.
(viii)	Provide credit guarantees on new commercial loans made by financial institutions (although this is primarily focused on expanding economic activity) – underwriting value of some of A_2 , A_3
(ix)	Encourage development of exchange traded markets for securities and derivatives to improve valuation and reduce counterparty risk (although this does little to resolve problems associated with existing positions in heterogeneous, non-standard, securities and derivatives) – reducing risk of declines in value of A_2 etc.
(x)	Use monetary policy to lower interest rates and increase the market value of fixed rate securities (and net wealth increases for those institutions with positive duration gap – assets of longer duration than liabilities) – increasing value of A_1 and A_2 and thus E
(xi)	Require shareholders to contribute more equity capital – increasing E (and A_1)
(xii)	Provide Government funding by way of preference share capital or hybrid securities – increasing P (and A_1)
(xiii)	Provide Government funding by way of equity capital (partial or full nationalization) – reducing risk of outflows of D or B which now become liabilities of the government.
(xiv)	Guarantee deposits up to some level, and possibly other debt securities newly and/or previously issued by the institution (for a fee) – removing risk of outflows of D (or B).
(xv)	Allow institutions to adopt accounting techniques which disguise the possible decline in equity value -allowing publication of higher values of A and thus E than market prices imply
(xvi)	Freeze, for some period, redemptions by depositors and other liability holders (“bank holidays”) – preventing outflows of D (or B)
(xvii)	Impose “haircuts” on depositors/creditors (partial, possibly reversible subject to institution solvency, conversion of claim to an equity stake) – converting some of D to E
(xviii)	Arrange a merger with a stronger institution (which ideally places a high value on the franchise acquired), by paying some compensation for the negative NPV nature of the transaction so that equity of the merged institution is positive ($E > 0$)
(xix)	Impose restrictions on short-selling to prevent negative equity price movements weakening confidence in the institution and inducing outflows of deposits (D)
(xx)	Operate a policy of forbearance, in the hope that the institution will recover and an increase in the value of A_2 and A_3 assets will restore $E > 0$
(xxi)	Allow failure of the institution – such that holders of D, B and P incur losses due to asset value shortfall

TABLE 2: Financial Crisis – Regulatory Responses*Source:* Author

In choosing amongst this portfolio of possible policy actions, a number of criteria can be suggested as relevant in assessing their merits. First, and perhaps foremost, is the effectiveness of the action in resolving the underlying problem(s). In this regard, determining whether the fundamental issue is one of default risk or of liquidity disruption is important, and there have been divergent views on this (Eisenbeis, 2009). Second, because most of these actions involve potential wealth transfers (between taxpayers and stakeholders of the financial institutions, with the direction depending on the prices involved in the transactions), an analysis of the desirability and fairness of those transfers is required.⁵ Third, some actions may be politically more palatable or feasible than others (perhaps because their cost to the taxpayer may be less obvious – such as is the case with government guarantees of bank borrowings where governments receive income from guarantee fees but incur a contingent liability). Fourth, what conditions (implicit fees in addition to explicit fees) should be imposed on institutions receiving assistance from these actions. (Examples include undertakings to lend, developing beneficial work-out arrangements for particular borrowers such as sub-prime mortgagees, restrictions on dividend policy, restrictions on executive remuneration, voting rights).

Fifth, there is a degree of substitutability between many of these actions, such that implementing some may make others redundant. For example, in theory at least, government provided insurance of bank asset portfolio values should make guarantees of bank liabilities redundant, and are an alternative to purchasing “toxic” assets to establish a “bad bank” (bridge bank, asset management company) structure separate from the residual “good bank”. Sixth, it is important to understand the likely impact of these actions on the competitive position (both short term, and potentially lasting) of various financial institutions. Seventh, consideration should be given to relative ease of exit from the positions established by these actions when the crisis situation has diminished.

With policy responses in the GFC having been made “on the run” there is much analysis and evaluation required against such criteria to ensure better future crisis response policies.

What immediate lessons can be drawn from these crisis responses and their effects about perceived failings in extant regulation? Some important examples include:

⁵ The European Central Bank has provided guidance on pricing of guarantees, recapitalizations, and asset support schemes (ECB, 2008a, 2008b, 2009).

- (1) Central Bank liquidity support schemes need to be carefully designed such that potential users do not run the risk of being viewed as having high default risk, and thus are unwilling users.
- (2) Financial regulators require explicit legislative powers which enable rapid resolution of failing financial institutions.
- (3) Deposit Insurance with low levels of coverage will not prevent systemic crises.
- (4) Government threats of caveat emptor for creditors of large systemically important financial institutions are not credible.
- (5) Prudential regulation has not adequately incorporated liquidity risk considerations.
- (6) International collaboration requires further enhancement for both the regulation of multinational financial institutions and their resolution when in difficulty.

It is to be expected that lessons such as these would be reflected in thinking about future changes to regulation.

4. Financial Regulation Post-Crisis

There have been a range of official and unofficial reports produced since the emergence of the GFC setting out principles and suggestions for possible reform of financial regulation. These include the de Larosière Report (European Commission, 2009), the Turner Report (FSA, 2009), the Volcker Report (G30, 2009) and the UK Walker Review into bank corporate governance (Walker 2009). The G20 response includes the February 2009 declarations of G20 Prime Ministers (G20, 2009a) and September 2009 declarations of their Finance Ministers and Central Bank Governors (G20, 2009b) prior to the Pittsburg Summit. Multinational agency reports include the Financial Stability Forum report (FSF, 2009), the report of the IOSCO Task Force into Unregulated Markets and Products – referred to as TFUMP – (IOSCO, 2009) an IMF Staff report (IMF, 2009), while the Basel Committee on Banking Supervision at the BIS has announced a number of actual and intended changes to the Basel II Accord (Basel Committee, 2009). Influential private sector reports include those by the International Institute of Finance (IIF, 2008) and the Geneva Report by a group of prominent economists (Geneva, 2009). Numerous other individuals and organizations have also produced recommendations and suggestions. Among other official reviews

is the USA Government's Financial Crisis Inquiry Commission⁶ which is due to report in December 2010. Drawing on those reports and analysis of perceived failures in the extant system, a number of changes in the financial sector and in policy approaches have commenced and others can be anticipated.⁷

Notably, while most of these reports envisage increased (or improved) government regulation and supervision, consistent with media speculation about a crisis-induced shift in conventional wisdom along the government versus markets spectrum, there is little evidence of a rethinking of the basic approach to regulation. The Geneva Report is the only one of those listed above to explicitly address the rationale for regulation, and does not deviate from the traditional capitalist "market failure" perspective – identifying inadequate competition, imperfect information, and externalities as the rationales for government intervention – rather than suggesting a role in the financial sector for government per se. And while a number of Governments have acquired significant ownership stakes in financial firms as a result of the crisis, there is little evidence of a desire for this to be a long-lasting state of affairs.

The GFC has however elicited substantial questioning about the validity of the Efficient Markets Hypothesis (EMH) and its role in underpinning financial regulation. See, for example Turner (2009) and (in an Australian context) D'Aloisio (2009). Some of this discussion is somewhat misdirected. The EMH, as popularized by Fama (1970) simply asserts that asset prices will reflect available information, such that returns are not predictable and risk-free profitable arbitrage opportunities are not possible. While there are many studies challenging that notion (testing for return predictability and incorporating information costs and asymmetries), the EMH does not imply that unregulated competitive financial markets will lead to "correct" asset prices, nor that they are stable. Particularly where there are information deficiencies and spillovers (externalities) competitive financial markets may not deliver the "efficient resource allocation" outcome of the economic textbooks or may exhibit instability. In this regard, the GFC has focused attention on the potential for

⁶ <http://www.fcic.gov/about/>

⁷ Demigurre-Kunt and Servén (2009) caution against abandoning some of the "sacred cows" of financial regulation, noting that "[t]he challenge of financial sector policies is to align private incentives with public interest without taxing or subsidizing private risk-taking".

appropriate regulation to improve the functioning and stability of financial markets. But an argument that governments and regulators should take action to “prick” asset price bubbles or intervene to bring asset prices closer to “fundamental” values is still subject to the EMH criticism that information superior to that available to market participants is required.

Crisis Response Planning

As the “on-the-run” development of policy responses to the unfolding of the crisis illustrates, financial regulators and governments around the globe were caught largely unprepared for dealing with a financial crisis. While there had been substantial attention paid to prudential regulation over the past decade, and production of regular financial stability reports by Central Banks had become commonplace, plans for dealing with a crisis were less well established. Information deficiencies, absence of authoritative early warning systems, inadequate legal crisis response powers for regulators, coordination difficulties between regulatory bodies both within national boundaries and internationally, are factors contributing to this problem. With growing acceptance of the view that financial institutions and markets are inherently unstable due to their role of liquidity creation (reflecting theoretical insights such as in Diamond and Dybvig, 1983; Allen and Gale, 2007; Brunnermeier and Pedersen, 2009), and evidence that financial crises are relatively common (Reinhart and Rogoff, 2008), the importance of crisis planning is increasingly accepted. As well as leading to enhanced roles for international bodies such as the IMF and the Financial Stability Board⁸ in identifying and advising on risks, cross border agreement on how national regulators will deal with troubled multinational financial institutions in a time of crisis is required.

Monetary and Macro-Prudential Policy

There is substantial discussion over whether Central Banks should 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, the need for new instruments of policy beyond short-term interest rate targets is widely recognised.

⁸ Previously known as the Financial Stability Forum, it was renamed in April 2009 with an mandate to achieve enhanced international cooperation in promoting financial stability, and requirements upon its expanded membership to, *inter alia*, adhere to generally accepted international financial standards

“Macro-prudential” policy, in which attention is paid to the aggregate implications of financial firm risk taking for financial stability rather than the traditional (micro) prudential approach focusing on the solvency of individual institutions, is a new focus of attention. Variable capital requirements for prudentially regulated institutions, reflecting economic and financial conditions, are one likely policy tool. Other policy instruments, such as variable maximum loan to valuation ratios for mortgage loans and controls on margining requirements and “haircuts” for collateralized lending, have also been suggested.

Accounting and Valuation

Macro-prudential policy 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 have been subject to scrutiny. Issues under attention include the appropriateness of mark-to-market requirements for “not-for-sale” assets, creation of “valuation reserves” for hard-to-value assets, and dynamic loan-loss provisioning.

Depositor Protection

Deposit insurance arrangements are subject to review following the crisis- induced introduction of blanket guarantees and/or increases in deposit insurance coverage levels. The crisis experience has illustrated the ineffectiveness of deposit insurance set at low levels of coverage in preventing “runs”. The crisis response has also undermined the argument that Governments will not provide implicit insurance for all depositors. Finding ways to remove perceptions of implicit guarantees (or offsetting their moral hazard and competitive balance implications) is a major task. One suggested response to the specific problem of implicit subsidies provided to institutions which are perceived to be “too big to fail” has been to impose higher required capital ratios – potentially justifiable on the grounds of social costs and externalities imposed by failure of such institutions.

Restricting Bank Activities

The desirability of a “safety haven” for unsophisticated investors is generally accepted (and reflected in deposit insurance schemes involving caps on the amount insured). But recent events have reinforced the perception of “too big/too important to fail” considerations extending perceived protection to a vastly expanded range of financial products and institutions. Paradoxically, investment banking activities are being increasingly linked with traditional banking⁹, 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.

It has become increasingly common for commentators to make a distinction between the “utility” business of banking (providing basic savings, loan and transactions services) and other trading-related activities (the “casino” business of investment banking). The risks of the latter may be harder to identify and threaten the stability of the “utility business”, although many commentators have noted that there is no evidence that it was principal trading, rather than excessive leverage, poor investments, and poor liquidity management - all well known potential problems in commercial banking – which created investment bank problems during the GFC.

There is the possibility of prudential regulation being structured to provide incentives for some form of structural separation of these activities and some have argued for regulation to establish a class of “narrow banks” – limited to simple lending, deposit taking and payments services. While it may be argued that these reactions would inhibit financial sector efficiency, the evidence for the existence of significant economies of scale or scope in large financial institutions, sufficient to offset the distortions arising from implicit guarantees, is weak. But whether it is feasible to draw a distinct line between simple banking practices and speculative practices is doubtful – given that the business of banking ultimately hinges upon risk-taking.

Governance

⁹ In the USA for example, Merrill Lynch was acquired by Bank of America in the wake of the Lehmann failure in September 2008, while Goldman Sachs and Morgan Stanley converted to bank holding companies

Governance failings in financial institutions, particularly involving oversight and appropriate control of risk management and remuneration policies, have been widely seen as a key contributor to the crisis. As Walker (2009, p.6) notes “the fact that different banks operating in the same geography, in the same financial and market environment and under the same regulatory arrangements generated such massively different outcomes can only be fully explained in terms of differences in the way they were run.” While improved governance is generally seen as critical, there is limited guidance available on what role supervisors and regulators can play in achieving this, other than monitoring quality of appointments, board structures, and processes. However, as Clarke and Klettner (2009) note, improvements in governance arrangements relating to risk management, remuneration and disclosure, are critical in avoiding a crisis induced response of “excessive” regulation.

Remuneration Policies

Many commentators have argued that a root cause of the financial crisis was unsuitable remuneration policies which gave adverse incentives for excessive risk taking and/or inadequate due diligence. Since the outcomes of many financial decisions take lengthy periods to be realised, the use of remuneration structures which reward short term performance (and are inadequately adjusted for risk and asymmetric in treatment of profits and losses), are clearly inappropriate. But Clarke and Klettner’s hope that improved governance arrangements will prevent “excessive” regulation looks to be forlorn. Public outrage over the size of bonuses paid in 2009 and 2010 to executives from banks which had recently received government support has prompted proposals for special taxes on bank bonuses in several countries.¹⁰ Regulatory control of remuneration structures is impossible, but in the longer term, linking regulatory imposts (such as capital requirements) to remuneration structure design features may be a way of inhibiting use of unsuitable structures.

Capital Requirements and Basel II

¹⁰In the December 2009 UK Pre-Budget announcement, Chancellor Darling announced the introduction of a 50 per cent payroll tax rate for the coming fiscal year on bank bonuses above GBP 25,000 (<http://www.hmrc.gov.uk/pbr2009/bank-payroll-18-12.htm>). In the USA, Representative Doggett introduced a bill to tax bonuses paid by TARP-assisted banks above \$50,000 at 50 per cent (http://doggett.house.gov/index.php?option=com_content&task=view&id=145)

The recently introduced Basel II capital accord is already undergoing 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. Value at Risk techniques which explicitly underpin capital requirements for market risk have been shown to have significant weaknesses due to instability of asset return correlation structures.

There is growing support for use of some “simple” non-risk weighted capital requirement as an adjunct to the Basel II requirements, aimed at imposing an additional constraint on excessive risk-taking by banks which might concentrate in activities with unduly low risk weights. There have also been a number of proposals for the introduction of a “contingent capital” requirement, whereby banks would be required to have on issue some amount of hybrid securities which convert automatically into equity when regulatory capital requirements are breached (or other conditions met).¹¹ As well as supplementing capital at the time it is needed, it could be expected that holders of such securities would be active in monitoring bank performance, and the prices of such securities providing useful market signals.

Liquidity Management and Requirements

Shortcomings in liquidity risk management have been fundamental to the evolution of the crisis, because of the use of funding structures and asset holdings based on assumptions that capital markets could be readily accessed without significant price disruptions. Falls in the market price of assets financed by collateralized borrowings can lead to margin calls requiring liquidation of other assets or sales into a declining market. Unwillingness of investors to roll over short term paper which is funding longer term assets, also creates significant liquidity problems. More generally,

¹¹ Lloyds Bank made an issue of Contingent Convertible Notes (“CoCos”) in late 2009 which have this characteristic. http://www.lloydsbankinggroup.com/media/pdfs/investors/2010/Non-US_EOM.pdf

liquidity management via adequate holdings of realizable liquid assets has long been replaced by primary reliance on “liability management” involving borrowings in short term wholesale (interbank) markets to meet liquidity needs. The crisis exposed risks associated with this style of liquidity management due to freezing-up of those markets (Brunnermeier, 2009).

Greater attention is already being paid to liquidity risk within the Basel II framework, with plans for the introduction of liquidity coverage ratio and net stable funding ratio requirements (Basel, 2009), and the possibility that minimum capital requirements may be adjusted for individual institutions which depart significantly from acceptable “norms” of liquidity risk management.

System Liquidity Management and Support Arrangements

The expanded range of private sector securities accepted as collateral in repos by Central Banks has increased the liquidity of such assets. The use of securities lending by Central Banks (whereby government securities are lent to the private sector in exchange for private sector securities) is also another innovation likely to continue. Term lending and longer dated repos have also been used. The terms and conditions applying to accounts at Central Banks is also an issue warranting attention, with the interest rate paid on credit balances relative to target cash rates a potential policy instrument not generally used to date.

Scope of Regulation

To what extent the “shadow banking sector” will be subject to regulation is controversial. But it is 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.¹² Balancing the requirements between protecting commercially valuable private information and generating socially valuable aggregate information is challenging – but enforced information disclosure to regulatory authorities by systemically important institutions is almost certain. Such institutions are also likely to face prudential oversight. Similarly there is likely to be

¹²Proposals for a Directive relating to alternative investment managers (such as hedge funds and private equity) in the EU were announced in 2009 (http://ec.europa.eu/internal_market/investment/alternative_investments_en.htm). In the USA, the *Private Fund Investment Advisers Registration Act 2009* was passed by the House of Representatives, but, at the time of writing, was still under consideration by the Senate.

greater regulation of financial products and services, including of investment advice, reflecting the losses faced by (often) unsophisticated investors in complex products.

The Allocation of Regulatory Responsibilities

Coordination failures between regulatory agencies within countries, and different levels of effectiveness, have been a characteristic of the crisis. There is a wide variety of regulatory structures internationally with various responsibilities allocated between various permutations of Central Banks, Prudential Regulators, Market Regulators, and Deposit Insurers. While there is no unique optimal regulatory structure apparent, the need for close coordination when products, institutions, and risks span differential regulatory domains suggests that there will be considerable attention paid to this topic in coming years.

International Collaboration

High on the agenda of regulatory initiatives is the need to improve arrangements for international collaboration and cooperation.^{13,14} National regulators are faced with the problem of dealing with multinational banks. Colleges of Supervisors for large multinational institutions will be further developed. Improved arrangements for resolution of internationally operating institutions are required as are agreements on international sharing of deposit insurance liabilities when such institutions fail. A likelihood that host countries will want to play a greater role in supervising the activities of multinational institutions in their country, and ensure that such institutions are adequately capitalized locally, is likely to lead to greater use of international subsidiaries rather than branches.

Over the Counter Markets

Greater public information is generally 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. Reporting requirements

¹³ The European Union released proposals for new supervisory authorities for financial services in the EU as well as for a European Systemic Risk Board (ERSB) in late 2009.

http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ecofin/111668.pdf

¹⁴ It is noteworthy that of 91 topics addressed in the *G20 Finance Ministers Progress Report* of September 5, 2009, 34 related to the governance and resourcing of International Financial Institutions and International Cooperation.

http://www.g20.org/Documents/20090905_G20_progress_update_London_Fin_Mins_final.pdf

for OTC trades can rectify that, but organized exchanges may experience growth, if efforts to encourage greater standardization of products are successful in offsetting the tendency for financial innovation to tailor-make new product variants for customers. Also on the agenda is the development of Central Clearing Counterparty systems for derivative products, particularly Credit Default Swaps. The objective here is to replace a maze of bi-lateral contracts among financial institutions by net positions with a central party which should reduce spill-overs and market disruption if a significant market participant fails.,

A further rationale for the growth of organized exchanges arises from the inherent faults in the business models of a variety of unlisted investment vehicles. Unlisted managed funds, particularly property and mortgage trusts, claim to offer investors liquidity, via redemption facilities, but hold illiquid assets which can lead to a need to freeze redemptions when substantial outflows occur. Similarly, investors in finance company debentures and a range of other investments rely on the issuer/manager determination of exit prices prior to maturity. Not only do investors face the risk of unfavourable pricing in those circumstances, but there is no mechanism for aggregation and expression of public information about the value of the underlying assets – as occurs (albeit imperfectly) when securities are traded on an organized exchange.

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 has been 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 (eg a stamp duty) on asset transactions which penalizes, and thus inhibits, short term trading, but has little effect on long term position taking. Even if judged to have net benefits, its

implementation would require comprehensive international agreement to be successful – a prospect which seems unlikely.¹⁵

5. Conclusion

As well as the specific topics considered in the previous section, increased attention is being paid 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.¹⁶ 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 areas such as retirement financing).

But probably the major dilemma lies in the increased concentration, which has resulted from the GFC fall-out, 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, the political reality is that Governments are simply not able to adopt a *caveat emptor* posture and

¹⁵ HM Treasury (2009, Chapter 4) provides an analysis of the Tobin tax, which has been mooted by the British Prime Minister, Gordon Brown,

¹⁶ 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.

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. Financial regulation undoubtedly is a major determinant of the shape and structure of the financial system. 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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