



Regulatory Reform Post the Global Financial Crisis: An Overview

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List of Acronyms

<i>Institutions</i>		<i>Markets, Products, Events</i>	
ADB	Asian Development Bank	AIFMD	Alternative Investment Fund Manager Directive
BIS	Bank for International Settlements	CCCP	Central Clearing Counterparties
BCBS	Basel Committee on Banking Supervision	CDO	Collateralized Debt Obligation
CGFS	Committee on the Global Financial System	CDS	Credit Default Swap
CPSS	Committee on Payments and Settlement Systems	CRA	Credit Ratings Agency
ECB	European Central Bank	EL	Expected Loss
ESRB	European Systemic Risk Board	FSAP	Financial Sector Assessment Program
ESFS	European System of Financial Supervisors	GFC	Global Financial Crisis
FASB	Financial Accounting Standards Board	G-SIFI	Globally Systemically Important Financial Institution
FATF	Financial Action Task Force	IMM	Internal Models Method
FCIC	Financial Crisis Inquiry Commission	LCR	Liquidity Coverage Ratio
FDIC	Federal Deposit Insurance Corporation	LGD	Loss Given Default
FSB	Financial Stability Board	NRSRO	Nationally Recognized Statistical Rating Organization
FSOC	Financial Stability Oversight Council	NSFR	Net Stable Funding Ratio
GHOS	Group of Governors and Heads of Supervision	OTC	Over the Counter
G20	Group of Twenty	PD	Probability of Default
IADI	International Association of Deposit Insurers	RMBS	Residential Mortgage Backed Securities
IAIS	International Association of Insurance Supervisors	ROSC	Reports on the Observance of Standards and Codes
IASB	International Accounting Standards Board	SIFI	Systemically Important Financial Institution
IFAC	International Federation of Accountants	SIV	Structured Investment Vehicle
IIF	International Institute of Finance	SRO	Self Regulatory Organization
IMF	International Monetary Fund	TARP	Troubled Assets Relief Program
IOSCO	International Organization of Securities Commissions	TBTF	Too Big To Fail
IFRS	International Financial Reporting Standards		
JF	Joint Forum		
OECD	Organization for Economic Cooperation and Development		
SEC	Securities Exchange Commission		
SSG	Senior Supervisors Group		
TFUMP	Task Force (of IOSCO) on Unlisted Markets and Products		
WB	World Bank		

1. Introduction

The Global Financial Crisis (GFC) was the greatest shock to the world financial system since the Great Depression eight decades earlier, and although it created problems globally, the main effects were felt in the financial markets of the USA and Europe. It has resulted in a plethora of studies examining its causes, and while there is general agreement on a list of contributing factors, there is less agreement on which of these were most important and the consequent implications for desirable or needed regulatory changes.

The global nature of the crisis has seen an attempt at harmonized global regulatory responses overseen by the G20 and prompting some changes to the structure and responsibilities of international agencies to achieve that outcome. There is a wide and sweeping range of regulatory responses in progress or under consideration, making the task of assessing the likely consequences and merits of individual measures that much more difficult. There are also questions as to whether (given differences of opinion on underlying problems) all proposed regulatory changes are well-founded, and whether regulatory changes across the broader financial sector will prove to be mutually consistent.

Also open to question is the suitability of regulatory changes emanating out of problems in advanced Northern Hemisphere financial sectors to emerging market (and other) financial sectors where the same scale of problems did not occur. In some ways, that is paradoxical. The regulatory responses being driven internationally, and applied individually, by nations with highly developed financial systems involve a movement away from minimalist regulation and reliance on “light touch supervision” and market discipline, towards a more interventionist approach which many emerging markets tended to favor. Examples can be seen in a willingness to consider capital controls as part of macro-prudential policy and new requirements for minimum holdings of liquid assets by banks.

A dilemma for policy makers in designing an optimal regulatory structure lies in the deficiencies of theory and empirical evidence relating to the stability and operations of financial markets. Pre-GFC the dominant paradigm was clearly one based on the

optimality of free markets, checked by minimal regulation aimed at countering inefficiencies due to externalities and imperfect information. Post-GFC, there is a sense that regulation needs to be founded on a different (but not yet well developed) paradigm regarding the compatibility of unregulated operations of financial markets with financial stability. Both empirical evidence relating to the world-wide historical frequency and consequences of financial crises (eg Reinhart and Rogoff (2009)), and theoretical models demonstrating potential instabilities of financial firms and markets are relevant in this regard. Current regulatory responses are, arguably, picking and choosing from both paradigms.

This paper attempts to provide an overview of the regulatory responses underway internationally following the GFC. It is, naturally given the scope, breadth and continuity of those responses, less than complete, but aims to provide readers with a broad perspective of developments across the entire financial sector. Key themes are:

- The blurring of banking, insurance and capital market boundaries due to financial innovation creates complications for the design of appropriate regulatory arrangements
- The increasing internationalization of financial markets and institutions implies benefits from harmonization of regulation, but creates risks for national economies and financial sectors which may imply a need for specific national regulatory requirements.
- There is significant uncertainty over the appropriate theoretical paradigm to use in identifying the appropriate need for, and style of regulation.
- Principles and approaches to consumer protection in financial markets has had relatively limited attention at the national level, relative to other issues.
- Incentive arrangements within national regulatory agencies and the appropriate structuring and allocation of responsibilities has received less attention than issues to do with regulatory requirements and governance/ activities of financial institutions.

- The breadth of regulatory changes being considered creates substantial problems in assessing the likely consequences of any individual change.

2. *Regulatory weaknesses identified by the GFC*

The GFC has prompted action and analysis at both international and national levels, although some of the “crisis response” actions (such as “bail-outs” and guarantees) have arguably weakened the foundations of the prior regulatory paradigm, and much of the subsequent regulatory agenda arguably reflects a need to be seen to be tackling perceived weaknesses rather than implementation of a well researched optimal regulatory solution.

“We are committed to take action at the national and international level to raise standards, and ensure that our national authorities implement global standards developed to date, consistently, in a way that ensures a level playing field, a race to the top and avoids fragmentation of markets, protectionism and regulatory arbitrage. In particular, we will implement fully the new bank capital and liquidity standards and address too-big-to-fail problems.” (G20 Seoul Summit Declaration, 2010).

http://www.g20.org/Documents2010/11/seoulsummit_declaration.pdf

There appears to be general agreement on the major contributing factors to the GFC – although explanations as to how and why they arose and relative importance are varied.¹ Those factors can be summarized as²:

- (1) High leverage which was sustainable only under conditions of increasing asset prices and investor confidence.
- (2) Inadequate governance, accountability and remuneration practices within financial institutions.
- (3) Uncontrolled (and not well recognized) liquidity creation due in part to global current account imbalances and the willingness of surplus countries to invest in financial assets being created in deficit countries.

¹ Brunnermeier *et al.* (2009) provides a more detailed overview of causes, propagation, and a time-line of the financial crisis up to the start of 2009. The Basel Committee (2010a) para 4 identifies excessive leverage, inadequate level and quality of capital, inadequate liquidity buffers, and interconnectedness as key failings of the banking sector contributing to the severity of the GFC.

² The majority report of the US Financial Crisis Inquiry Commission FCIC (2011) lists: failures of regulation; leverage of risky borrowings and lack of transparency; inadequate government crisis response; failure of accountability and ethics; lowered lending standards; lack of regulation of OTC derivatives; ratings agency failures. The dissenting statement argues for ten (overlapping) causes with prominence given to global capital imbalances and an international credit bubble.

(4) Growth of the, largely unregulated, ‘shadow banking’ sector and the construction of complex financial instruments and techniques which saw risk spread throughout the global financial sector and significant interdependencies created.

(5) A lack of public information about the level and distribution of risk in the financial system.

Some commentators attribute the emergence of these factors, at least partially, to systemic failures in the governance and accountability of financial regulation. Levine (2010) for example provides four instances of where financial regulators were aware of emerging problems, had the power to act, but did not do so. The (primarily US) instances he reviews are: “official” encouragement of activities and role of Credit Ratings Agencies; risks posed by Credit Default Swap growth; lack of transparency in OTC derivatives markets; inadequate oversight of investment banks. This “regulatory failure” perspective has implications for the structuring, incentives, accountability and transparency of regulatory agencies. More generally, there is general acceptance (reflected in the Seoul declaration quote earlier) that regulatory standards need to be tightened.

Others, while also recognizing regulatory failings, point to the ideological dominance of the “free markets paradigm”, which emphasized the efficiency and self correcting nature of markets, placed a high burden of proof on those proposing regulation, rejected the ability of regulators to identify and deflate asset price bubbles, and assumed that financial managers would be well informed and competent risk managers. Financial deregulation had been premised on this paradigm, and the view that there has been a “failure of the market paradigm” requires agreement on a new paradigm to underpin the appropriate redesign of financial regulation.

At the national level, conflicting perspectives exist, as illustrated by the Report of the US Financial Crisis Inquiry Commission (FCIC (2011)). While the majority report essentially recites the causes of the crisis listed above and focuses on regulatory failings in the US system, the dissenting report argues that similar experiences in other countries imply that this focus is too narrow, and leads to unwarranted recommendations for increased regulation. In the UK, the Independent Commission on Banking chaired by Sir

John Vickers has released its issues paper, (Vickers (2010)), but has yet to report. Among its topics is the question of whether there should be structural reforms such as the separation of retail and investment banking. Vickers (2011) notes the importance of externalities arising from bank risk taking particularly where, now, implicit state guarantees exist for SIFIs, and senior debt-holders were shielded from loss by the taxpayer.

3. Achieving a Multinational, Multisectoral, Reform Process

One feature of the global response to the GFC has been the increased attempts at coordination of regulatory arrangements through international agencies, although individual nations have all had their own specific regulatory responses, reflecting individual experiences.

3.1. The Structure of Responsibilities of International Agencies

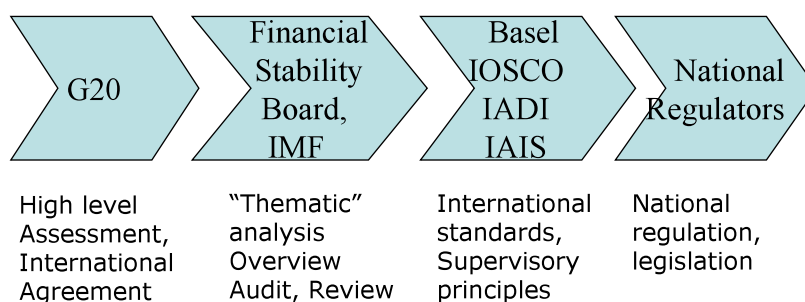
Although the G20 was established in 1999, it has taken an enhanced role in shaping international financial regulatory arrangements following the onset of the GFC. Annual meetings were held and communiqués issued on an annual basis between 1999 and November 2008, but 2009 and 2010 have seen substantially greater frequency of meetings, issuing of communiqués, declarations, and progress reports on agreed actions. There has also been an increased formalization of arrangements involving multinational agencies and standard setters. One feature of this has been the creation³ of the Financial Stability Board in 2009 charged with responsibilities relating to coordination of work of international standard setters and national financial authorities, monitoring of country compliance with international standards, and addressing developments in financial stability. Currently (February 2011) only 21 countries are members of the FSB, including only 11 of 21 APEC nations.

The Figure below gives a schematic overview of the current approach to international harmonization and coordination of financial regulation. As well as undertaking peer reviews of financial regulation in individual countries to complement the IMF FSAP's (Financial Stability Assessment Program), the FSB undertakes analysis of topics which

³ The FSB is the successor to the Financial Stability Forum (FSF) established in 1999.

are relevant across financial subsectors – each of which has its own international standard setters. Those include the Basel Committee (banking), IOSCO (securities markets), IADI (deposit insurance), and IAIS (insurance), as well as the International Accounting Standards Board (IASB) and the US Financial Accounting Standards Board (FASB). Also relevant are private institutions such as the International Institute of Finance with over 400 members of major financial institutions, which produces reports on improved practices for financial institutions, such as (IIF (2009)).

The Global Regulation Process



3.2. *International Standards*

The International Standard setters produce reports setting out both “Principles” for activities of regulators and financial firms, and qualitative and quantitative “Standards”. The “Principles” are generally non-controversial, and provide an opportunity for self or external assessment by individual countries or financial institutions. Whether national legislators and regulators will conform with standards not seen as appropriate for their circumstances is another question. Undoubtedly, market pressure plays an important role in achieving this, as do reviews of compliance by the FSB and the IMF/World Bank (via FSAPs).

There have been a wide range of standards and principles produced by international agencies. The FSB has identified 12 key ones, which are listed in Appendix 2.

3.3. *National Responses*

Individual nations have not waited for agreement on and implementation of harmonized international standards, but have acted in various ways to reregulate their financial sectors. In some cases, this has been necessary to wind back crisis responses to the GFC, but also because public opinion has given impetus to political action to address issues seen as contributing to the crisis. There have been a range of measures introduced regarding financial sector remuneration, levies (taxes) on large banks, restructuring of regulatory responsibilities, licensing of non-prudentially regulated institutions, and changes to deposit insurance schemes. Undoubtedly, national supervisors have used the flexibility available to them to also impose higher regulatory requirements upon particular financial institutions.

3.4. *SIFIs and G-SIFIs*

One feature of the GFC was the recognition of the crucial role played by Systemically Important Financial Institutions (SIFIs) and particularly global institutions (G-SIFIs), both in promulgation and transmission of instability. The G20 Seoul Declaration noted that such institutions

“should have higher loss absorbency capacity to reflect the greater risk that the failure of these firms poses to the global financial system; more intensive supervisory oversight; robust core financial market infrastructure to reduce contagion risk from individual failures; and other supplementary prudential and other requirements as determined by the national authorities which may include, in some circumstances, liquidity surcharges, tighter large exposure restrictions, levies and structural measures. In the context of loss absorbency, we encourage further progress on the feasibility of contingent capital and other instruments.” (para 30, p7)

Also noted was the importance of resolution mechanisms. These were all matters addressed by the Financial Stability Board (2010d) which provides an overview of studies being undertaken by international agencies to develop specific regulatory approaches. In most cases, the completion date for those studies is 2011 or 2012, suggesting that substantial developments in SIFI regulation are still some time away.

An important knowledge gap has been the identification of which institutions are SIFIs – in the context of their interrelationship with other institutions and the financial system generally. Several approaches are developing to fill this gap. One is use of network analysis to investigate which institutions are important “nodes” in financial markets and whose failures would thus have substantial spillovers (Haldane (2009)). Another approach is the development of risk measures which take account of interdependencies between institutions – such as CoVar, in which value at risk of the financial system or individual financial institutions is calculated conditional upon the risk level of other institutions (Adrian and Brunnermeier (2010)).

One dilemma in dealing with SIFIs is that they may lie outside the prudentially regulated sector – such as with hedge funds, raising the question of responsibility for, and the appropriate approach to, their regulation. In June 2009, IOSCO (2009b) presented principles for the oversight of hedge funds, including mandatory registration of funds or fund advisers, various requirements regarding operational arrangements including of service providers to the funds, and including “prudential regulation” (such as minimum capital requirements). In the US, the Dodd-Frank Act provided for a registration requirement for large hedge funds and in January 2011 the SEC announced proposed registration and information provision requirements for hedge funds with assets in excess of \$150 million. On November 11, 2010, the European Parliament passed the Alternative Investment Fund Managers Directive (AIFMD), providing for “marketing passports” for offerings throughout the EU by both EU and foreign hedge funds. The AIFMD has a number of requirements for fund managers including financial conditions (compliance with capital requirements), operational practices (remuneration policies, valuation procedures etc), reporting and disclosure conditions and potential for leverage restrictions.

4. Identifying Regulatory Reforms

At both international and national levels substantial effort has been expended in identifying regulatory weaknesses exposed by the GFC and proposing regulatory changes

to overcome these. Whether national responses, implemented to meet political and public demands, will prove to be compatible with developments at the international level is one issue awaiting resolution. And whether, with the weakened intellectual hold of the “free markets paradigm” (at least as it applies to financial markets) there is solid theory to guide us toward “optimal” regulatory solutions is another question awaiting resolution.⁴

4.1. G20 Action List

The Financial Stability Board (2010c) provides an overview of the scope and scale of activities in financial reform at the international (and national) levels since the GFC. These include:

- Strengthening bank capital and liquidity requirements and raising standards for risk management (Basel III)
- Addressing risks posed by SIFIs and improving resolution regimes (including strengthening deposit insurance and core financial infrastructure)
- Improving OTC derivatives markets
- Strengthening accounting standards
- Strengthening adherence to international supervisory and regulatory standards
- Reforming compensation practices to support financial stability
- Developing macroprudential frameworks and tools
- Expanding and refining the regulatory perimeter

4.2. Reviews and Reports

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. Appendix 1 provides a list. Drawing on those reports and analysis of perceived failures in the extant system, a number of changes in national approaches to financial regulation have commenced and others can be anticipated. Influential private

⁴Demirgüç-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”.

sector reports include those by the International Institute of Finance IIF (2008), the Geneva Report by a group of prominent economists (Brunnermeier *et al.* (2009)), and a series of reports from the Squam Lake Working Group on Financial Regulation (eg Squam Lake Group (2010)). Numerous other individuals and organizations have also produced recommendations and suggestions.

Notably, while increased (or improved) government regulation and supervision is a feature of most recommendations, there is less attention to the theoretical underpinnings of regulation. The Geneva Report does address the rationale for regulation, but 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.

There is considerable overlap between recommendations of the G20, international agencies, and national and private reports. At the risk of generalization, however, it might be said that the latter pay relatively more attention to issues such as: accounting; structuring of regulatory agency responsibilities, disclosure, scope of regulation, risk management practices, and supervision processes.

4.3. *Theoretical Underpinnings*⁵

Several commentators have argued that financial deregulation was based on the *Efficient Markets Hypothesis (EMH)*, and that the GFC showed this conceptual basis to be seriously flawed.⁶ That argument confuses two concepts. The EMH simply asserts that financial prices reflect available information, not that prices are right nor that the information is correct. While it is difficult to reconcile the magnitude of price movements in the GFC with that theory (ie that it all reflected “news”) rather than some systemic malfunctioning, that theory had little to do with the conventional wisdom regarding financial deregulation. Rather, the approach to financial regulation was built upon the longstanding hypothesis that competitive markets will generally, through the price signals

⁵ This section is taken from Davis (2010)

⁶ See, for example Chapter 1.4 of Financial Services Authority (2009).

generated, lead to optimality of resource allocation. (Of course the EMH is relevant here in that the price signals reflect available information). But unfettered markets may not be optimal if there are the classic imperfections of externalities (spillovers), imperfect information, market power etc. In these circumstances, regulation may be justified.

From this perspective, the GFC may be viewed as having highlighted that the imperfections were more significant, or of different types, than previously envisaged – suggesting a need for “more of the same” regulation. But an alternative perspective is to ask “Why would you start there”? Financial markets are characterized by (indeed have their rationale in) information deficiencies, incomplete markets, liquidity creation, potential for “non-rational” behaviour, and network interrelationships. There is much new and ongoing research examining what these characteristics mean for the operations of financial markets. For example, it has long been theoretically established that banks are subject to risk of “runs”, and more recent work derives similar results for financial markets whereby prices can depart significantly from “fundamentals”.⁷ Such models focusing on liquidity creation tend to generate multiple equilibria, “runs” and market instability, in contrast to the standard model of competitive markets. And “limits to arbitrage” due to wealth constraints mean that financial firms (such as hedge funds) who generally provide valuable liquidity services to financial markets may at times be unable to take and hold positions which would generate profits due to prices departing from “fundamental” values.⁸

These models, which emphasize interactions between financial market participants lead fairly naturally into viewing the financial system as a network, and applying tools of network analysis to identify important nodes and connections which will determine how shocks are transmitted and moderated or amplified in the financial system.⁹ In the modern financial system “runs” on banks or markets can involve liquidity crises induced by wholesale (rather than retail) investors making margin calls for increased collateral against short-term borrowings, not rolling over short term funding, and not being willing to invest in new security issues. Such actions lead to forced asset sales, which can further

⁷ See for example Allen and Gale (2007).

⁸ This literature is surveyed in Gromb and Vayanosy (2010)

⁹ See for example Haldane (2009)

depress asset prices creating losses for the bank involved, and in turn prompt further margin calls generating a vicious cycle.

5. *Institutional Governance and Structure*

Across the entire financial sector, concerns have been raised about the management, governance arrangements, and organizational structures of financial institutions.

5.1. *Governance*

“If there is one lesson from the current crisis— a lesson consistent with the Asian financial crisis—it is that corporate governance matters. The central irony of the governance failures in this crisis is that many took place in some of the most sophisticated banks operating in some of the most developed governance environments in the world.”(Ard and Berg (2010)).

It is surely also ironic that failures of governance of risk management are one of four main deficiencies identified (others are remuneration, board professionalism and governance) given the vast sums spent by major banks in recent years in this area for Basel II Internal Models Accreditation. Also interesting are the responses to the Senior Supervisors Group (2009) November 2008 survey of twenty of the largest global financial firms, asking them to self assess their practices to industry standards proposed by industry and supervisory reports during that year, which saw most giving self-assessments of substantial compliance!

It can be argued that higher standards of corporate governance are applicable for financial institutions compared to other businesses, and that greater focus needs to be upon governance arrangements protecting non-shareholder stakeholders. This reflects the typically greater usage of non-equity financing, the nature of the promises made by such institutions to customers providing funds, the pervasiveness of asymmetric information (and consequent issues for the ability of customers to assess the strength of promises made, or value of contingent contracts entered into), market power vis a vis customers, perceptions of implicit government support of institutions, and incentives for excessive risk taking which may arise as a result of those features. Prudential regulation of financial institutions typically incorporates expectations of, and requirements for, higher governance standards, but the GFC experience has been interpreted by many as indicative of failings in this area. Others, however, have argued that boards took *ex ante* risks

which, by exploiting underpricing of risk, were in the best interests of shareholders (if not society) and that *ex post* poor outcomes were thus not governance failures. A consequence of this view is that the focus of financial institution governance needs to be broader to reflect the welfare of all stakeholders and/or that incentives to take such risks need to be removed.

There has been a focus upon improving governance by international standard setters. In the case of insurance, the IAIS and OECD (2009) noted a need for improvements in board expertise and professionalism, remuneration arrangements and incentive structures, improved governance of control functions, and greater due diligence in investments and risk management rather than reliance on third party assessments. A specific feature of insurance governance and risk management arrangements is the role of the actuary – requirements for which differ across jurisdictions. Also important is the relative priority accorded to policy-holders versus owners by boards or required by regulation.

In the case of banking, the Basel Committee (2010c) increases the number of principles for good bank corporate governance to 14 (from 8 previously in its corresponding 2006 Document, (Basel Committee (2006b)). Three new principles relate to risk management responsibilities, structures and processes, one to Board responsibility for its own processes and practices, and two focusing on Board responsibilities and arrangements within group structures and where special purpose vehicles or operations in particular overseas jurisdictions create particular risks. There is no mention of a Board responsibility for the “living wills” requirement that some supervisors are in favour of.

The number of entries under the role of supervisors has fallen from 6 to 5, although “tougher language” is involved (such as supervisors acting rather than advising when governance shortcomings are perceived), and with a greater emphasis on coordination across jurisdictions. The missing item is the earlier principle that “[s]upervisors should consider corporate governance as one element of depositor protection”.

The OECD (2010) has suggested that “fit and proper” requirements could also be extended to relate to technical and professional competence relevant to the financial institution’s activities.

In the case of securities markets, IOSCO (2010c) notes as a principle that national regulators should set appropriate standards for corporate governance by managers of collective investments, but does not provide further guidance.

5.2. *Remuneration*

Excessive, poorly structured remuneration in financial institutions has been seen by many as an important ingredient in the development of the GFC, and has attracted significant popular and political attention.

The FSB has produced *Principles for Sound Compensation Practices* (Financial Stability Forum (2009b)) and has undertaken a thematic review of compensation, (Financial Stability Board (2010e)). This review focused on whether compensation arrangements in major financial institutions were consistent with the principles of alignment of compensation with sound risk management and not rewarding or encouraging excessive risk taking.

Several Governments have imposed caps on remuneration as part of State support arrangements. In the US, The Dodd-Franks Bill provided shareholders with a “say-on-pay” vote, and US institutions who were TARP recipients were subject to remuneration constraints. In the UK special taxes were levied on bank bonuses in the aftermath of the GFC, while the EU Capital Requirements Directive (CRD 3) of July 2010 imposed constraints on remuneration. The Basel Committee has included bonuses as part of the distributions which would be limited if the countercyclical capital buffer reaches its 2.5 per cent minimum.

A major issue relates to the organizational structure of financial institutions and the optimality of different remuneration structures in different financial sector activities. Depending on the nature of activities, skills required, and agency issues involved, different levels and mixes of fixed and incentive pay are appropriate. However undertaking a range of activities within one institution can create problems for group wide remuneration and run the risk of cross-contamination of risk-taking cultures.

5.3. *Organisational structures, incentives, conflicts and risks*

As noted by the Senior Supervisors Group (2009) “A key lesson of the crisis, drawn by both firms and supervisors, was that complex corporate structures hindered effective contingency funding”. This has led some at the OECD, (Blundell-Wignall *et al.* (2009), to argue that non-operating holding company (NOHC) structures should be required for financial conglomerates.

More generally, Vickers (2011) notes that the issue of structural reform of SIFIs, possibly involving structural separation of activities (either by requirement or by incentives) is an important issue for the British Inquiry and that it may have implications for capital requirements for different activities. He also notes that it has implications for the structure and operation of resolution schemes.

Notably, crisis responses, particularly in the US, involved the creation of larger universal banks by the forced mergers of major investment banks with commercial banks. While there seems little momentum in that country for structural separation, proposals such as the Volcker rule (aimed at prohibiting proprietary trading) can, by inducing spin-off of such activities, have similar effects.

Lumpkin (2010) provides a review of risks which arise in financial group structures and concludes that there is no unique organizational structure which meets all objectives of policy.

5.4. Risk Management Practices and Techniques

The failure of risk management systems in supposedly the most sophisticated financial institutions globally has raised a number of issues. Given the vast sums spent on risk management by international banks in complying with Basel 2, this is particularly worrying, and raises the question of whether technical modeling was inherently faulty or whether failures existed in the overall governance and management of risk management practices and processes. The Joint Forum (2010a) has focused upon issues in risk aggregation for complex firms, arguing that current modeling approaches of many firms have deficiencies (although noting that there was no evidence that these contributed to failures during the GFC). It notes the growing (but limited) use by some financial institutions of more sophisticated techniques than Value at Risk (VAR), including measures which focus more on “tail” behaviour and outcomes as well as stress-testing

and scenario analysis, and recommends need for greater attention to this area. There are also potential (and actual) gaps between the mathematical risk modeling activities and firm-wide understanding and application in risk management. The question arises of whether risk measurement models which may be useful for assessing relative risk and pricing of products at a point in time are equally useful for determining aggregate capital for ensuring solvency over time.

Different approaches to aggregation of risk can be found in regulatory approaches to different types of institutions. In banking, the Basel Accord tends to involve simple addition of risks, although some allowance for diversification is contained in the internal models approaches. In insurance, there appears to be greater recognition of the effects of diversification in determining capital standards – although, unlike in banking, there is no commonly accepted international approach to determination of capital and solvency standards. Where complex financial institutions span both activities, the determination of group capital requirements becomes complex.

6. Information, Valuation and Disclosure

Across the entire financial sector, the provision of reliable information on the value of financial instruments and performance is important for the efficient workings of financial markets and for market discipline and regulation.

6.1. Accounting Reforms: Valuation and Provisioning

Accounting is a fundamental component of the regulatory regime. Calculation of capital, for example, depends on reported asset values. There are, at least four areas in which accounting issues have contributed to problems in the financial sector.

One issue has been the measurement of fair value, and role of Market Value Accounting. Bank accounts, for example, treat assets differently depending upon whether assets are: (a) in the trading book (and thus recorded at fair value with gains and losses being recognized in profit and loss); (b) Available for Sale (and thus marked to market and affecting the balance sheet, but not profit and loss until sale); (c) recorded at amortised historical cost (such as loans). Whether “fair value” can be determined from market (or model) prices when markets are disrupted is a significant issue, and requiring use of

market values for assets for which holders may have superior private information about fundamental value if held to maturity, runs the risk of forcing fire sales and inducing solvency problems.

A second issue is the ability of accounting methods to deal with complex financial transactions, which could lead to “derecognition” in the accounts such as repurchase agreements and securitizations (in which residual risks remain). For example, under IFRS, a repurchase agreement is treated as a financing transaction (rather than as a sale and forward contract to purchase). It is well known that Lehmann Brothers used the latter (alternative) accounting technique for many repurchase transactions as a way of reducing the firm’s apparent leverage.

A third issue relates to netting or offsetting of financial instruments such as derivative contracts in financial accounts, with different approaches giving rise to different measures of the size of the institution.

The fourth issue relates to impairment of financial assets. There has been considerable disquiet about the approach adopted by accounting standard setters to provisioning for potential losses on loans. Under IAS 39, provisioning was required to be done on an “incurred loss” basis which meant that following a period of relatively benign economic conditions, provisions were relatively low. Bank regulators have a preference for provisioning to be done on a forward-looking “expected loss” basis, although precise methods for doing so in a manner consistent with loan approval and price setting are not necessarily straightforward. The BCBS is supporting changes to the accounting standards, providing guidance to national supervisors regarding use of EL provisioning, and adjusting capital requirements to encourage stronger provisioning.

On January 31, 2011, IASB and FASB released a consultation document (IFRS Foundation (2011)) proposing a common approach towards provisioning for impairment involving a more forward looking (expected) loss approach rather than the previous incurred loss approaches.

6.2. *Credit Ratings Agencies*

Many investors implicitly delegated assessment of financial institution health and asset valuation to other specialist entities who use accounting and other information to form “expert” judgements. Those entities include auditors and Credit Ratings Agencies (CRAs) and both groups have been subject to substantial criticism. CRA’s, in particular, have been seen as failing due to conflicts of interest arising from their business revenue models (involving issuers of securities paying to be rated, and receiving implicit guidance on security characteristics needed to achieve specific ratings). The poor predictive ability of ratings has also been a cause for concern.

IOSCO (2003) outlined four major principles for CRA’s aimed at achieving: quality and integrity of the ratings process; independence and avoidance of conflicts of interest; transparency and timeliness of ratings disclosure; protection of confidential information. This was supplemented with a 2004 document on *Code of Conduct Fundamentals for Credit Rating Agencies* which was updated in 2008 (IOSCO (2008)) following the failings associated with ratings agencies during the GFC.

It can be asked whether a focus upon CRA conduct and principles is appropriately addressing the key causes of market failure in the ratings industry. Limitations on entry to the industry (such as created by the US NRSRO requirements), regulatory or legal incentives to agents for investors to rely on credit ratings (such as prudent investor requirements) and inclusion of ratings within prudential capital requirements are all potentially relevant factors. Recognition that regulatory requirements for use of ratings may warrant regulatory oversight of ratings agencies was noted in the April 2, 2009 G20 Declaration.

The alternative approach of removing mandated or induced reliance upon CRA output underpins the 2010 report of the FSB (Financial Stability Board (2010b)). Its Principle 1 argues for reducing reliance on CRA ratings in standards, laws and regulations, and development of alternative standards of creditworthiness. Principle 2 is that regulation should be designed to reduce market reliance on CRA ratings, and private sector risk management practices should avoid mechanistic reliance on CRA ratings and involve appropriate internal expertise for credit assessment. These principles are also reflected in those relating to Central Bank operations and prudential supervision, and in

recommendations regarding removing linkages between CRA rating changes and collateral requirements, and in information disclosures by issuers of securities.

It must be asked whether these recommendations focus excessively on removing a role for CRAs which in principle can have an important role to play as a delegated monitor, and aggregator of information. However to perform this role appropriately, incentive structures within CRAs need to be appropriately designed.

6.3. Disclosure

Disclosure requirements have been a key ingredient of the pre-GFC approach to financial regulation involving an attempt to strike an appropriate balance between regulation and market discipline. In securities markets, much regulatory effort has focused upon disclosure by way of prospectus requirements and timely disclosures of information by companies with securities trading on national stock exchanges. But in regard to oversight of trading, attitudes towards disclosure have been mixed, reflecting the fact that disclosure of private information through non-anonymous trading reduces its value. Regulators face inherent conflicts between mandated disclosure in organized exchange trading and potential for trading to move off-exchange into “dark pools”. IOSCO (2010b) addresses the issues arising from dark pools noting potential for adverse impact on the price discovery process, information and liquidity searches; and market integrity. Suggested regulatory principles focus upon promoting pre- and post- trade transparency, ensuring priority to transparent orders, and ensuring that there is adequate reporting and information for regulators and market participants.

Basel II, had market discipline as its third pillar with substantial reliance upon disclosure to achieving that. However, disclosure is not the same as market discipline. Investor understanding is required if disclosures are to potentially influence action, and that will in turn be dependent upon incentives. For example, government safety-nets may reduce costs of uninformed investing, thus reducing incentives to either gather information or acquire the skills to interpret it.

There were clearly substantial failings in disclosure leading up to the GFC. Banks did not fully disclose their off-balance sheet exposures to SIVs and conduits. Investment

banks underreported leverage through inappropriate accounting for transactions such as repurchase agreements.

The Basel II accord required greater disclosure by banks in the form of Basel II risk disclosures, and disclosure requirements were enhanced in July 2009 by including information about securitization, use of SIVs, and liquidity commitments. While substantial data is provided in some countries by banks using the internal models approach, the information value of this data is unclear, while data provided by banks using the standard approach is quite limited. The effectiveness (and compliance with) this requirement is yet to be properly assessed. In June 2010 the FSB commenced a thematic review of disclosure, focusing on the extent to which recommendations of Financial Stability Forum (2008) regarding disclosure have been implemented.

7. (Micro) prudential regulation and stakeholder protection

There have been substantive developments in the area of prudential regulation initially focused on enhanced capital requirements and liquidity requirements. However, the timelines for introduction of these changes is extremely drawn out, reflecting a view that more rapid change could not be easily accommodated by banking sectors recovering from the GFC.

7.1. Bank Capital Requirements

The Basel Committee announced enhanced capital requirements for banks as part of what is now known as Basel III on September 12th 2010 (Basel Committee (2010e)) with subsequent changes announced in December 2010 (Basel Committee (2010a)).¹⁰ The timetable is relatively protracted, with little occurring before the start of 2013 and a completion date of 2018. There is also ongoing work including reviewing the suitability of the distinction between the trading and banking book in calculating capital requirements, and the merits of value-at-risk (VAR) as a metric for assessing risk and required capital (Wellink (2011)).

Basel III involves significant changes to capital requirements, outlined in the Table below.

¹⁰ Coincidentally this was two years (less three days) after the Lehmann bankruptcy plunged the global financial system into crisis,

Basel III Capital requirements

Minimum Capital Requirement	8 % of Risk Weighted Assets (RWA) -unchanged
Capital Conservation Buffer	Additional common equity requirement of at least 2.5 % of RWA with constraints on distributions (dividends, bonuses) if overall capital ratio falls below 10.5 % of RWA
Minimum Tier 1 Requirement	6% of RWA (up from 4%)
Common Equity Requirement	Common Equity of at least 4.5 % of RWA (plus conservation buffer) - new
Quality of Capital	Limits on acceptable hybrids for Tier 1 (subordination, discretionary, non-cumulative payments, no maturity), greater required deductions (of things like deferred tax assets, equity investments, goodwill etc) in calculating common equity. Tier 3 capital instruments eliminated
Leverage Ratio	Minimum non-risk weighted ratio of common equity to exposures of, initially, 3% (new)
Risk Weights	Increased weights for some activities such as securitization and trading (announced Dec 2009), based on stressed VAR test (for 12 months of stress)

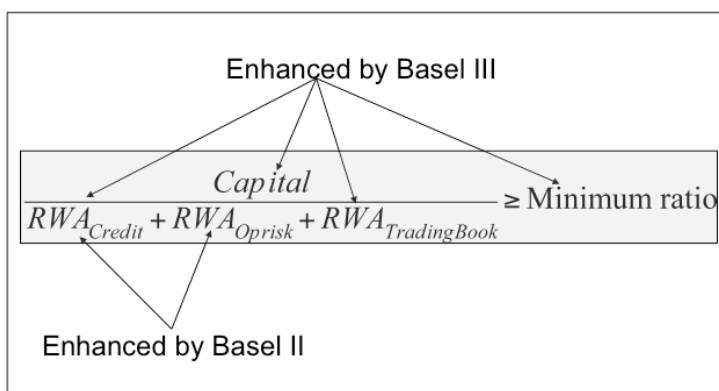
An important feature of the Basel III changes is improving the quality of regulatory capital, reducing the role for liabilities other than common equity. One lesson from the GFC was that the capital requirement distinction between “going-concern” capital and “gone-concern” capital (incorporating certain debt/hybrid instruments) was less relevant when Governments and regulators were unwilling to allow failure and losses to be imposed upon holders of those instruments.

The introduction of a leverage ratio is seemingly at variance with the prior emphasis on risk weighting and incorporation of off-balance sheet activities into capital requirement measures. It is rationalized on the grounds of limiting bank leverage and as a backstop to deal with problems of model risk and measurement error in risk-weighted approaches. Cross-country compatibility requires comparable calculation including adjusting for

differences in accounting standards, particularly because the denominator is a measure of *exposures* rather than *assets* calculated using a mix of accounting rules and Basel approaches.

Changes to risk weighting arrangements across both the Standardized and IMM (internal models method) are substantial and complex, and raise the question of whether greater focus on calibration of risk requirements will achieve desired outcomes.

The figure below summarizes the enhancements to risk weighted capital requirements made by Basel II and Basel III.



Source: Klaus Duellmann

These changes are likely to increase the cost of bank funding and intermediation due to equity capital being a more expensive form of financing. While, in principle this should be offset by depositors and other providers of funds reducing their required return on funds to reflect lower risk, deposit insurance and perceptions of “too big to fail” for systemically important institutions mean that such marginal changes in bank leverage are unlikely to have significant effects on required returns of other fund providers. Rectifying the distorting, existing, subsidy to bank shareholders (and management) from perceived or actual government protection is an important part of financial reform. Higher capital ratios etc. do that to some extent, but the extent to which they level the playing field between banks and other financial institutions in performing various economic functions is an open question.

7.2. Liquidity Regulation

Modern bank liquidity management has increasingly placed greater emphasis on liability management based on access to short-term capital markets funding to meet cash outflows, relative to holdings of liquid assets. And for liquid asset management, greater focus has been on holdings of marketable private sector securities, which it was assumed could be sold into deep and liquid markets to raise cash, rather than central bank deposits (cash) and government securities. The risks with these strategies, which became readily apparent in the GFC are that markets for private sector assets may collapse and capital market funding freeze.

Indeed, for the investment banks, which relied on rolling over collateralized short term funding, such as by repos, to finance holdings of longer term private sector securities, both these “jaws” of a liquidity squeeze bit seriously. And for banks operating off-balance-sheet activities via Structured Investment Vehicles (SIVs) and conduits, holding medium-long term assets such as Collateralised Debt Obligations (CDOs) and other asset backed paper funded by rolling over short-term commercial paper, similar liquidity squeezes led them to provide liquidity, causing stress to their own balance sheets.

The Basel liquidity proposals (Basel Committee (2010b)) involve two key requirements. The first is that, essentially, banks will have to hold more liquid assets eligible for use in repo transactions with the Central Bank. The amount required is based on how much might be needed for a bank to cope with a short term stress scenario over a month leading to deposit outflows, ratings downgrade, reduced access to wholesale markets and increased collateral demands upon it. This is referred to as the liquidity coverage ratio (LCR). Since eligible assets are those acceptable by Central Banks in repo transactions (potentially including some private sector securities such as RMBS) this may have implications for securities markets through affecting relative demand for, and ultimately supply of, particular assets.

The second requirement proposed by the Basel Committee involves a net stable funding ratio (NSFR). The standard will require banks to have some minimum proportion of long term stable funding over a one year horizon, based on an assessment of the liquidity of its assets and its contingent liabilities. This has potentially significant implications for the

composition of bank funding and is affected by the structure of deposit insurance schemes given differential assessment of the stability of insured and uninsured deposits.

7.3. *Deposit Insurance*

The GFC led to 48 countries (few from Asia and Latin America) adopting enhanced depositor protection arrangements ranging from blanket guarantees to temporary increases in protection levels (IADI and IMF (2010)). Unwinding of those measures has been, in many cases, somewhat slower than originally anticipated, and one lasting feature is some tendency towards higher levels of depositor protection. While it is generally thought that the measures taken contributed towards financial stability, such reactions (in conjunction with other measures supporting banks) have arguably contributed to increased moral hazard, as depositors may have become less inclined to treat insurance caps as binding. While prudential regulation, risk-based capital requirements, and credible exposure to loss of wholesale creditors to banks, can partially offset any declines in depositor monitoring, deposit insurance can distort competition in retail finance markets.

While the credibility of insurance caps may be questionable, establishing an appropriate size of cap and fee arrangements for such insurance remain important public policy issues. The experience of the GFC has confirmed that co-insurance arrangements (protection of less than 100 per cent of deposits up to the insurance cap) are ineffective in preventing runs, and led to a general view that the appropriate size of the cap is larger than previously thought. IADI (2009) outlines considerations relevant to determining the cap, and suggests that coverage of around 80 per cent of depositors and 20-40 per cent of deposits has merit. It is also noted that determining the cap as some specified proportion of GDP per capita can ignore relevant cross country differences, and that caps applied vary from ratios of around 1.5 for Europe to 3 or more in the Americas.

Also important in the design features of a deposit insurance scheme is the treatment of cross-country issues. If foreign depositors at overseas branches of domestic banks are covered, international expansion of banks can pose problems for the domestic insurance fund. Similarly, domestic operations of foreign banks operating as either branches or subsidiaries create additional issues for scope of coverage.

Regardless of a scheme's design features, a critical issue is the resolution powers and methods for dealing with a failing bank. Whether a deposit insurer should be able to use funds to facilitate an "open resolution" (eg by transfer to another bank) is an important consideration. The European Commission (2010), for example, in reviewing deposit guarantee arrangements has suggested that this should be possible provided the cost is less than that involved in reimbursing depositors in a wind-up situation. There are additional complexities when dealing with institutions operating internationally, and particularly when systemically important institutions are involved. Cross border insolvency cooperation arrangements are thus crucial, while "living wills" for large complex institutions have been proposed for consideration as part of the Basel III reforms. (Recommendation 6 of Basel Committee (2010f) is for financial institutions to have contingency plans including rapid wind-down). In the US, the FDIC in May 2010 released planned rules requiring particular depository institutions to develop contingent plans for separation from their parent groups and resolution in the event of failure of the depository institution or the parent.

Another relevant issue relates to priority of claimants in the event of bank insolvency. In some countries (Australia, USA) depositors have strict preference over senior debt holders. Vickers (2011) suggests that giving priority to insured retail deposits might be a useful first step in restoring risk to other creditors, but insufficient on its own. That is particularly so if institutions are bailed out without creditors experiencing loss, although the priority given to insured depositors and the deposit insurance scheme is relevant in determining the potential cost of the scheme.

7.4. Insurance

The IAIS (2008) endorsed five principles for Group-wide supervision of Insurance companies in 2008, affirming that capital adequacy, fit and proper requirements, and risk management and internal controls should be assessed on a group-wide basis, and that supervisors should have skills and authority to supervise on a group-wide basis and be able to cooperate internationally. It has a suite of standards and guidance papers which cover basic conditions for effective functioning of the insurance sector, regulatory requirements including financial, governance and market conduct requirements, reporting

and disclosure requirements, and principles for supervisory activities. In contrast to the Basel Committee, there does not appear to have been felt the need for urgent review of quantitative capital requirements, perhaps reflecting the absence of a generally accepted approach to specific determination of capital requirements at the national level (see Appendix II, IAIS (2009)).

7.5. Funds Management

Many investors suffered losses during the GFC through investments made by fund managers acting as their agents both at the retail level through collective investment schemes and at the wholesale level through mandates given or investments in wholesale funds. An important issue in this regard is the due diligence undertaken by fund managers in their asset choice. IOSCO (2009a) provides guidance principles for due diligence for investments in structured products, and notes that the regulatory approach to due diligence requirements varies substantially across jurisdictions. But one general issue is the extent to which legal requirements for fund managers and trustees impose “prudential investor” requirements, which can be met by reliance on third party assessments of investment risk – such as by credit ratings agencies (CRAs).

7.6. Consumer Protection

Approaches to consumer protection in financial markets vary markedly around the globe. Indeed, it is noticeable that the list of “core” international standards produced by the FSB (see Appendix 2) does not include consumer protection amongst the topics. Given the role of “unconscionable” lending in US subprime markets, and the losses incurred by retail investors worldwide through direct or indirect investments in complex financial products during the GFC, this is a stark omission. While IOSCO (2010c) includes investor protection among the objectives of securities regulation, the regulatory principles outlined are primarily focused upon operations of markets and issuers of securities. With the growing importance of financial planning and advising as an industry, and the increasing complexity of the financial choices facing consumers, this area would seem to be one in need of increased attention.

7.7. Resolution Arrangements and Contingent Capital

One of the fundamental difficulties encountered in the GFC was the problem of international harmonization of resolution arrangements for failed financial institutions. That is also an important issue for regulation of domestic entities, and among the recommendations of Basel Committee (2010f) is the requirement for regulators to have appropriate resolution powers. Given the potential disruption caused by failure, the existence of special resolution arrangements for banks is critical.

The IIF (2010) notes that resolution arrangements need to ensure appropriate loss sharing, avoid moral hazard and use of taxpayer money, work effectively in the international context, and provide authorities with powers for early intervention. Among those powers are the ability to replace management, to enforce restructuring, and to enable ongoing operations of crucial systemic services provided by the firm. The Basel Committee (2010f) also recommends that if group structures are too complex to permit orderly resolution, regulators should consider requiring or inducing (through such things as capital requirements) simplifying changes in organizational structures.

In principle, avoidance of insolvency by contribution of additional equity by existing or new shareholders is desirable – but generally thwarted by the problem that much of the benefit of new equity injections may be to the benefit of creditors rather than equity holders. Historically, this was overcome in a number of countries by requirements for bank shareholders to have unlimited or double liability. Given the infeasibility of such a requirement in a world where shareholders are diffuse and ever-changing, other mechanisms for forced injections of equity in times of stress are appealing. Currently the focus is upon *contingent capital*, involving issuance by banks of hybrid debt securities which automatically convert into equity upon certain triggers (capital shortage, systemic crisis) being hit. Whether such a requirement will be implemented (or contingent capital issuance induced by capital requirements etc), and how it would interact with capital adequacy requirements remains to be seen.

8. Capital/Securities Markets

An important feature of the GFC was the role of non-prudentially regulated institutions such as investment banks and the interaction between capital markets and the banking sector. With the growth of securities markets and derivative markets, including

development and trading of credit-linked products, the blurring of boundaries between banking and capital markets poses significant challenges for securities market regulation.

IOSCO (2010c) outlines 38 principles for supervision of securities markets, noting that the objectives of market supervision are: protection of investors; ensuring fair, efficient and transparent markets; and reducing systemic risk. These principles cover: regulatory agency powers and operations; role of self regulatory organizations (SROs); enforcement; regulatory cooperation; issuers; information agencies; collective investment schemes; market intermediaries; and secondary markets. Implicit in the principles are the perceived importance of disclosure, capital adequacy, and oversight as components of regulation, reflecting the three pillars of the Basel Accord. However, capital adequacy requirements have generally played a less significant role than in the case of prudentially regulated institutions – except perhaps where insolvency of market operators or financial institutions would lead to significant market disruption.

Specific issues which have been addressed include: “dark pools” where off-market trading may have implications for transparency, liquidity, and market integrity (IOSCO (2010a)); oversight of credit ratings agencies, securitization arrangements. In October 2010, IOSCO established a Task Force on OTC Derivatives Regulation focusing initially on trading arrangements (relevant to proposals for CCCPs), reporting requirements and data aggregation issues (for assessing scale and risks of markets), and international regulatory standards.

8.1. Licensing and Reporting

The lack of aggregate information about the distribution and level of risk in the financial system and potential spillover effects, has brought calls for regulators to be able to obtain more information from significant unregulated financial institutions. Most specifically, it has been recommended by the G20 that hedge funds should be subject to licensing and reporting requirements. IOSCO (2009b) provides six principles for hedge fund¹¹ oversight, including: mandatory registration; regulatory requirements regarding various aspects of operations; registration/regulation of prime brokers and banks providing

¹¹ IOSCO (2009b) defines hedge funds as investment schemes which *inter alia* generally: do not have leverage restrictions; have significant performance fees; allow periodic redemption by investors; engage in speculative derivative trading. It also notes that different legal structures are used internationally.

funding and services to hedge funds; provision of relevant systemic risk information by hedge funds; regulatory encouragement of good industry practices; regulatory cooperation.

Some jurisdictions have already implemented registration requirements for hedge funds (and other significant financial institutions). It is also worth noting that Basel III capital requirements can significantly impact upon hedge funds, if different counterparty risk weights are applied.

8.2. Market Practices (Short-selling, Margin Requirements and Haircuts)

With much attention having been given to securities market practices, including short selling (leading to a number of countries imposing temporary bans on the practice), IOSCO (2009c) reported on regulation of short selling in June 2009. While accepting that short-selling has a valuable role to play generally, concerns were noted about possible destabilizing practices in unsettled market conditions. The Technical Committee recommended that “appropriate controls” were warranted (such as effective discipline of settlement arrangements) as was a timely reporting regime and an effective compliance and enforcement system. It recognized that certain transactions and techniques involving short selling (eg hedging of derivatives positions, market making and arbitrage) were desirable for efficient market functioning and development and that regulations should make appropriate exceptions for such transactions. Its proposals constituted principles which should apply if short-selling is permitted, and did not involve any push for jurisdictions currently prohibiting short selling to permit it.

Also relevant in the promulgation of the GFC was the role of margin and collateral requirements for financial institutions using collateralized funding. As asset prices fell, borrowers were required to post additional collateral, often causing them to sell assets into a declining market and putting further downward pressure on asset prices – and inducing further margin calls etc in a vicious cycle. For some private investors delayed “close out” of levered positions due to failure to apply margin requirements compounded losses. CGFS (2010) notes the role of the growth in structured products and their use in secured lending in contributing to increased leverage and of margining and collateral practices in contributing to pro-cyclicality. While practices and significance of asset

collateralization in lending and OTC derivatives transactions vary across nations, changes in securities financing terms are an issue of growing importance for systemic stability. The recommendations of CGFS (2010) involve measures designed to reduce major shifts in collateral requirements by more frequent, improved, valuation of positions and risks, aimed at preventing undesirable build up of excessive risks. Their suggestions also involve consideration of capital requirements etc for secured financing for brokers and dealers and promotion of use of CCCPs.

8.3. *Securitization*

The major role of securitization failures in the GFC has cast particular attention upon this part of the capital markets and its regulation. Basel III includes changes designed to limit scope for regulatory arbitrage encouraging securitization. Retention of some exposure by originators has also been proposed by G20, the IMF and IOSCO (TFUMP) to improve alignment of incentives. Accounting issues are also relevant with FASB proposing changes which imply that performance of securitizations will, to some degree, be reflected in consolidated financial statements.

IOSCO (2010e) notes that lessons learnt from the GFC include: wrong incentives in the value chain; inadequate risk management practices of investors; inadequate regulation and oversight, and argue that improved disclosure and transparency are required, as are improved risk management practices, elimination of arbitrage incentives in capital regulation and alignment of incentives in remuneration arrangements. The perimeter of regulation should also be expanded to include key entities in the process such as CRAs.

Implicit in the IOSCO approach is the view that securitization can be value adding, and that an appropriate regulatory structure can be devised to reduce the risks which surfaced in the GFC. Given that most of the securitization problems were concentrated in one market (US) –although securitization markets froze everywhere – this seems feasible, and increased interest in use of “covered bond” securitization is one aspect of this.

Specific proposals for regulatory reform relating to securitization can be found in IOSCO (2009e). They include requiring “skin in the game” (retention of long-term exposures), enhanced disclosure, independence of service providers (such as CRAs), reviewing

investor suitability requirements, and considering whether the scope of regulation needs to be broadened.

8.4. Credit Derivatives and Structured Finance Products

The growth of credit derivatives such as credit default swaps (CDS) prior to the GFC was dramatic, and these products enabled further construction of credit linked structured products such as synthetic CDOs. While, in principle, such derivatives enable diversification and hedging of risks, and improved price discovery from prices deriving from trading of such instruments, there has been substantial unease about their role in the promulgation of the crisis. The FCIC (2011) attributes some part of the blame for the GFC to the unregulated growth of OTC derivatives, and singles out CDS as fueling the securitization boom (argued to be by providing a vehicle for investors to hedge risk of risky MBS!), enabling construction of synthetic CDOs, and inadequate regulation of credit protection writers (such as AIG). It is also worth noting the conflicts of interest which have been exposed through investment banks being engaged in both structuring credit linked instruments for clients wishing to lay-off (or speculate on) default risk and also marketing such products to investors.

One issue associated with many structured finance products (such as synthetic CDOs) is that of “post-trade transparency”. In the GFC, markets “froze” partly due to an inability of participants to accurately assess the appropriate price for products for which risk was hard to assess. This reflected the bilateral nature of transactions and lack of reporting of trade prices (even for initial transactions), and created problems for the valuation of positions. Indeed, 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. IOSCO (2009d) suggests various issues about product and market structures which regulators should consider in seeking to improve transparency but, recognizing the diversity of financial instruments involved, does not provide recommendations on the best way to achieve this.

Notably, the main issues raised by The Joint Forum (2005) in its 2005 pre GFC study of credit risk transfer (do the transactions accomplish a clean transfer of risk, do participants understand the risks involved, are undue concentrations of risk developing, financial

stability implications) remain crucial. The TFUMP Report IOSCO (2009e) notes that counterparty risk, lack of transparency and operation risk are crucial issues in CDS markets, implying a need for better information on counterparty risk, price and trade data, and enhanced ability of regulators to address market abuse and misconduct. It argues that ongoing industry initiatives are unlikely to be sufficient for achieving a “fair, orderly and efficient CDS market”, and recommends *inter alia* regulatory promotion of CCCPs, increased standardization of contracts, greater disclosure, and that jurisdictions should assess whether they require increased scope of regulation to achieve these outcomes.

9. Systemic Stability and Macroprudential Regulation

One feature of the GFC was the recognition of the role of “vicious cycles” of credit contraction and market disruption arising from collateralized borrowing (such as via repos) in conjunction with mark to market accounting practices and margining requirements. This augmented other systemic problems arising from asset price run-ups, excessive leverage, and interdependencies between financial institutions, and these factors have led to an escalating focus upon macro-prudential regulation. – broadly defined as measures aimed at reducing the likelihood and costs of systemic crises.

9.1. Macro-Prudential Regulation

Regulatory responses to implement macro-prudential regulation involve both a “time-series” and “cross-section” perspective. The time-series perspective involves capital requirements in the form of the countercyclical capital buffer, and limitations on distributions if the capital conservation buffer is breached, potential changes to provisioning requirements, and also increased Central Bank focus upon asset prices in its settings of policy instruments. Remuneration arrangements, aimed at ensuring longer term horizons for financial decision-makers are also relevant. So also are margin requirements and haircuts in securities lending arrangements and collateralized lending (such as repos) which CGFS (2010) study and suggest could be adjusted to reduce procyclicality and systemic risk. This involves regulations which cover both banks and other participants such as broker-dealers, custodians, and hedge funds engaged in these markets.

The cross-section perspective involves influencing the structure of the financial sector to reduce systemic spillovers, including such things as CCCPs, activity restrictions (Volcker Rule), specific taxes or imposts (capital surcharges) on TBTF or systemically important institutions. Contingent capital and “bail-in” debt also are relevant in this regard. Important also is the problem of understanding the cross-sectional linkages in the financial sector, prompting substantial research on “network” features and identification of financial firms acting as important “nodes”.

The countercyclical capital buffer measure raises important issues for international coordination, because it is inherently determined at a national level, yet applicable to international banks operating in that jurisdiction. Such banks could find that there are varying (and variable) capital requirements applying to their operations in different countries.

Other practical issues arise regarding usage of the counter-cyclical capital buffer, including regulatory willingness to reduce capital requirements as the financial cycle moves into a downturn. Announcements that there is to be an increase in the capital buffer can also be expected to have effects on bank equity markets by changing expectations about potential new equity issues. There is also the risk that banks may respond to such a change by shifting asset portfolios toward lower risk weighted assets, such as housing, which may worsen asset price bubbles which the change is supposed to offset.

More generally Galati and Moessner (2011) note that there is little agreement on appropriate tools for macroprudential policy, but that many tools of fiscal and monetary policy are relevant, as may be various forms of capital controls as measures to limit the build up of system-wide currency mismatches. Another potential tool is the application of variable maximum loan-to-valuation ratios to financial institutions. Notably both these measures suggest some willingness to move back towards “direct controls” rather than reliance on “incentives” such as risk weighted capital requirements.

9.2. Central Clearing Counterparties (CCCPs)

The interconnectedness of financial institutions arising from over the counter (OTC) derivatives trading and opaqueness of ultimate counterparty credit exposures, has led to

measures aimed at promoting greater use of organized exchanges and/or CCCPs. Under such arrangements, a “hub and spoke” arrangement of counterparty exposures arises with the Clearing House as the hub, and able to “net out” exposures and, hopefully, manage counterparty credit risk by appropriate margin requirements. This is in contrast to the complex morass of bilateral exposures which otherwise arises.

Promotion of CCCPs is being undertaken by CPSS and IOSCO, and the BCBS is adjusting counterparty capital requirements to encourage use by banks. These changes include lower capital requirements for counterparty exposures to CCCPs meeting certain compliance standards, and enhanced requirements for bilateral exposures.

While mandating or providing incentives for the use of CCCPs appears to be widely accepted as beneficial amongst regulatory agencies, the overall merit of such changes is yet to be well established. Culp (2010) provides a comprehensive overview of derivative market arrangements and developments including the past development of “OTC cleared derivatives” for a number of products. An important consideration in regulatory design is that the principal participants in OTC derivative markets are large financial institutions (SIFI’s) many of whom are subject to regulatory oversight, raising the question of the merits of specific product regulation. More importantly, he notes the following components of a cost-benefit calculus:

- Removal of the need for counterparty credit evaluation and monitoring resulting from use of a CCCP may be of little benefit to large institutions who will still need to undertake this due to involvement in a wide range of other transactions with typical counterparties.
- With complex derivatives, agreement on pricing, margining and collateral requirements may be difficult to reach.
- While aggregation of (some) exposures may facilitate market monitoring and involve delegation of risk monitoring to the CCCP, participants may have greater expertise
- Whether netting efficiencies exist (across multiple entities and asset classes) is unclear

- Use of a CCCP may require excessive standardization of derivatives
- CCCP's may become too important to fail (and while historical experience of CCCP's is successful, mandated expansion of activities into new areas may make history a poor guide).
- SIFI's may elect to operate derivative activities in jurisdictions which do not mandate CCCPs

9.3. *Too Big Too Fail, SIFIs*

While the concept of TBTF has been recognized for some time as an influence upon regulatory behavior, the GFC has broadened the focus and importance attached to systemically important financial institutions (SIFIs). While TBTF related primarily to political unwillingness to allow large banks to fail, and thus involving implicit deposit insurance to uninsured deposits, there was always recognition that financial system stability was also involved. The approach to SIFIs and G-SIFIs is focused more on financial system stability, and proposed measures effectively recognize that SIFIs and G-SIFIs impose externalities through the consequences of failure. Potential measures to offset or prevent such externalities include: preventing institutions from becoming SIFIs, imposing “taxes” upon SIFIs to reflect this externality, requiring higher prudential standards to reduce the risk of failure, and improving failure resolution processes to reduce the systemic costs of failure.

In its recent review of SIFIs the FSB, (Financial Stability Board (2010d)) recommended that all jurisdictions adopt a regulatory framework which involves: resolution arrangements to avoid destabilization and risks to taxpayers; higher loss absorption capacity of SIFIs; stronger regulatory oversight; improved core financial market infrastructure to reduce contagion risk; and that home jurisdictions of G-SIFIs ensure appropriate multilateral arrangements involving supervisory colleges, cross-border crisis management groups and review by the proposed Peer Review Council.

Vickers (2011) raises the possibility of separate capitalization of retail and investment banking activities of universal banks, arguing that while diversification may otherwise reduce the failure of a universal bank, risk due to investment banking activities may

increase the risk of retail banking failure (as part of the universal bank). One way in which this might be achieved is via requiring retail and investment banking (and other activities) to be carried out as subsidiaries of non-operating holding company (NOHC) structures, as suggested by Blundell-Wignall *et al.* (2009) at the OECD.

10. Supervisory Process and Practices

With at least some part of the blame for the GFC is attributable to failings in regulatory and supervisory processes, there have been substantive efforts directed at improvement in this area. These involve both multinational arrangements as well as examination of whether there are gaps arising from the specialized focus on particular institutions and markets of individual national regulators. The Joint Forum (2010b) notes a tendency towards convergence of “core principles” of regulation in different sectors, but while recognizing the rationale for differences identifies a number of apparent inconsistencies between standard setters. These include: treatment of supervision of financial groups; differences in capital frameworks (with only banking having a common international approach); conceptual and technical differences in prudential regulations; differential treatment of business conduct and consumer/investor protection.

10.1. Multinational arrangements and cooperation

There are, at least, three areas to which effort has been directed. One concerns the need for cross border cooperation and information sharing in the regulation of multinational financial institutions. As well as coping with G-SIFIs, cross border activities of financial institutions have implications for failure resolution arrangements and deposit insurance schemes. Because of complications in allocating home-host responsibilities, it seems likely that there will be increased preference among regulators for foreign entrants to operate as separately capitalized subsidiaries rather than branches.

A second area is in attempting to encourage adherence to international standards. The Financial Stability Board (2010a) suggests that this will be tackled by: members of the FSB leading by example (including adherence to requirements for FSAP and ROSCs); peer review processes; development of a toolbox of measures to assess compliance; capacity building exercises.

A third area is in cross border cooperation in crisis management. The Financial Stability Forum (2009a) outlines principles for preparing for financial crises (involving information, techniques, cooperation, requirements on financial institutions) and in managing crises via coordinated solutions.

10.1.1. Banking

The Basel Committee Core Principles (Basel Committee (2006a)) provide the framework for banking supervision, and involves licensing, supervisory reporting, consolidated supervision, and home-host relationships. International supervisory cooperation has been an important part of its activities since the 1975 publication of the “Concordat”, and numerous guidance and principles documents have followed.¹² One key element relates to the coordinated supervision of large multinational banks involving the establishment of “supervisory colleges” which Basel Committee (2010d) notes are not meant to be decision making bodies, but rather vehicles for information sharing, promoting coordination, and facilitating improved supervision at both the home and host level.

Also particularly important has been the appropriate division of responsibilities between home and host regulators for branches and subsidiaries of multinational banks. While there appears to be no espoused preference at the Basel Committee level for whether a bank’s international operations should be conducted via a branch or subsidiary, complications posed by branches for effective resolution arrangements, deposit insurance schemes, macro-prudential regulation etc., suggest that the requirement for operations to be by way of separately capitalized subsidiaries, observed in some economies, may become more common.

10.1.2. Securities Markets

The IOSCO Objectives and Principles (IOSCO (2010c)) stress enforcement of securities regulation and information sharing. Regarding international regulatory cooperation, IOSCO (2010d) notes that securities markets and participating financial institutions have become increasingly global, including the operations of market intermediaries, securities markets and exchanges, clearing and settlement systems, and collective investment

¹² Basel Committee (2010d) contains a list.

schemes (including hedge funds). Correspondingly, the activities and scope of information providers (CRAs, auditors, analysts) are global, raising issues for national regulatory policies. During the GFC, lack of information available to national regulators, and different national responses to the crisis highlighted the difficulties that globalization has caused. IOSCO (2010d) provides a set of principles for cross border cooperation, but also notes the complications caused by the differences in national legislative regimes within which regulators work. These include, differences in approach to enforcement, constraints on information sharing, and cooperation may also be impeded by resources available to the regulator.

10.1.3. Insurance

The IAIS Core Principles (IAIS (2003)) stress supervisory cooperation and information sharing, licensing, suitability of persons, and group wide supervision.

In July 2010, the IAIS commenced work on developing a common framework for supervision of Internationally Active Insurance Groups, referred to as *ComFrame*, and involves consideration of business structure and activities from a risk management perspective, regulatory quantitative and qualitative requirements and supervisory cooperation. It is designed to be specific, but not rules-based, adaptable to experience, and lead to better consistency of supervision across both home and host jurisdictions. Issues to be addressed include: definitions of insurance groups and implications where they are part of conglomerates operating across other sectors; techniques for assessing risk and risk management arising from business activities; establishing quantitative and qualitative regulatory requirements; arrangements for supervisory cooperation and collaboration; identifying and resolving jurisdictional matters.

This approach builds on the IAIS Principles for Group-wide supervision IAIS (2008).

10.2. Supervisory Incentives

A major problem in financial supervision is in the resourcing and incentives of supervisors. Indeed, various strands of literature are described as “private interest” theories of regulation or “regulatory capture”. While the “core principles” of international standard setters such as the Basel Committee do refer to supervisory resourcing,

transparency, governance, knowledge requirements, etc., regulatory incentives receive little attention. Blundell-Wignall and Atkinson (2010) note the problems faced in applying Pillar 2 of the Basel Accord, due to the forward-looking knowledge requirements and difficulties in keeping up with market developments, and refer to the regulatory failings during the GFC as illustrative of these pervasive issues.

10.3. Supervisory Structure

One complication facing all nations is the appropriate structure of supervisory arrangements. Financial sectors involve a range of financial products and services created to provide particular economic functions and which are provided by a wide range of financial institutions and markets. In principle, “functional” regulation, ensuring consistent treatment of products and firms performing the same economic function, has appeal, but is difficult to implement in practice. Consequently, financial regulation typically focuses on types of institutions or types of products – with prudential regulation generally more focused on institutions and securities markets regulation more product focused. Ensuring consistency and avoiding regulatory “gaps” in a world of financial innovation is difficult, particularly given the substantial cast of actors in the regulatory family which can include central Banks, prudential regulators, insurance regulators, securities market regulators, deposit insurers, and consumer protection agencies.

Different jurisdictions have adopted varying allocations of responsibilities among regulatory institutions, including integrated (prudential and securities) regulators and “twin-peaks” approaches. Others have multiple specialized regulators, raising questions about coordination – an issue of increased importance given the emphasis being placed upon macro-prudential regulation, whose natural home appears to be the Central Bank but which can involve adjusting regulatory requirements which are under the responsibility of prudential or securities regulators.

While the GFC showed up deficiencies in some regulatory structures (and has led to changes in institutional arrangements and responsibilities in some cases) there is no clear answer to the optimal regulatory structure. But the need for ensuring regulatory cooperation has led to the creation of institutions such as the Financial Stability Oversight

Council (FSOC) in the US and the European Systemic Risk Board (ESRB) to ensure system-wide oversight arrangements.

10.4. International Assessments: FSB Reviews, FSAPs and ROSCs

The IMF and World Bank introduced the FSAP (Financial Sector Assessment Program) and ROSC (Report on Observance of Standards and Codes) in 1999 following the Asian Financial Crisis. They involve reviews by teams from those bodies (and other official institutions and standard setters) of the financial systems of participating countries. The ultimate objectives are those of enhancing resilience to financial crises and fostering economic growth through financial sector strength and development.

Confidential reports to country authorities (and to the IMF and World Bank) identifying areas of weaknesses and possible responses, together with technical assistance (or other support) provide a vehicle for achieving those objectives. As well as a confidential report to country authorities, reports which may be made public at the discretion of the country concerned take two forms. The IMF produces a Financial System Stability Assessment (FSSA), plus associated technical/specific issue reports, focusing primarily on short term system stability, macro prudential issues and observance of standards and codes (this latter contained in a Report on Observance of Standards and Codes (ROSC)). The World Bank produces a Financial Sector Assessment (FSA) which focuses more on capacity building and medium term structural issues for those (non-industrialised) countries covered by its mandate. IMF and The World Bank (2009) provided an overview of experience in the first decade of the program, and advised that future FSAPs would need to consider issues of financial stability and macro-prudential policy in a global context in more detail.

Since then, the FSB has commenced undertaking peer reviews of countries which examine how they have responded to FSAP recommendations. The FSB has also commenced a number of “thematic” reviews on topics of risk disclosures and mortgage underwriting practices, and produced a review on compensation.

11. Conclusion

There has been substantial activity in reviewing and reforming financial regulation since the GFC. But, arguably, much of the activity, while in the right direction, lacks a compass provided by rigorous theory of how financial markets operate. But given the ongoing evolution of financial markets, it is perhaps not surprising that theory lags behind practice and, hopefully, provides *ex post* rationalization of policy changes made on the basis of intuition and experience. Nevertheless, there are justifiable concerns that the breadth and scope of regulatory change being implemented or considered, makes assessment of the likely consequences problematic. In general, the elongated time-lines for implementation of new regulations may reduce these concerns, but also provide scope for private lobbying to impede changes which may be socially warranted.

Ultimately, the point of financial reform is to develop a financial system which better performs key economic functions such as: ex ante information generation and capital allocation; monitoring and corporate governance; facilitation of trading, diversification and management of risk; mobilization and production of savings; ease of exchange of goods and services. Implicit in achieving those outcomes is the objective of avoidance of financial crises.

Measuring how well regulatory change contributes to financial sector performance towards those key economic functions is problematic. The simplest form of assessment is by way of a scoring an economy's progress against a "checklist" of the components of the "good/best practice" standards and codes. At a somewhat tougher level, there is assessment by informed observers as to whether the "quality" of the financial system, measured in terms of some key indicators (eg. governance standards) has improved. At a third level of analysis, it is possible to examine changes in quantitative measures (capital ratios, market liquidity, etc.) thought to be compatible with financial sector improvement. A fourth type of analysis would involve developing (and assessing progress against) indicators which might serve as intermediate targets of policy (such as speed of insolvency resolution, stock market participation). A final level of analysis involves empirical research to assess whether the core functions of the financial system are being performed more efficiently as a result of regulatory changes. As a general assessment,

there is much more attention paid to the simpler forms of assessment (which, not being “evidence-based”, are problematic) than to the more detailed (and more complicated) approaches which are needed to properly assess policy development.

While much has been done in terms of initiating regulatory change, there is much still in progress. For example, in its November 2010, Seoul Summit Declaration, the G20 identified a number of areas requiring further work. These were: macro-prudential frameworks (including dealing with volatile capital flows); regulatory issues for emerging market and developing economies; shadow banking; commodity derivative markets; market integrity and efficiency; and consumer finance protection. These are all areas of particular interest for APEC economies, and will provide a rich agenda for evaluative studies of policy effectiveness over the coming years.

APPENDIX 1: National and International Reviews and Reports

European Commission (2009) “de La Rosiere Report on European Financial Regulation and Supervision “ February 2009

FSA (2009) “The Turner Review: A regulatory response to the global banking crisis” Financial Services Authority, UK, March,
http://www.fsa.gov.uk/pubs/other/turner_review.pdf

FCIC (2011). Financial Crisis Inquiry Commission Report, Financial Crisis Inquiry Commission.

Geneva Report (2009) "The Fundamental Principles of Financial Regulation." by Brunnermeier, M., A. Crockett, C. Goodhart, A. D. Persaud, and H. Shin. In *Geneva Reports on the World Economy* Geneva: ICMB International Center for Monetary and Banking Studies (2009)

G30 (2009) *Financial Reform A Framework for Financial Stability* Group of Thirty January <http://www.group30.org/pubs/reformreport.pdf> .

HM Treasury (2009) *Risk, reward and responsibility: the financial sector and society*, December, http://www.hm-treasury.gov.uk/d/fin_finsectorandsociety.pdf

IIF(2008) *Principles of Conduct and Best Practice Recommendations Financial Services Industry Response to the Market Turmoil of 2007-2008*, International Institute of Finance, <http://www.iif.com/regulatory/article+145.php>

Walker David (2009) *A review of corporate governance in UK banks and other financial industry entities Final recommendations* November http://www.hm-treasury.gov.uk/d/walker_review_261109.pdf

APPENDIX 2: International Standards

Area	Standard	Issuing Body
<i>Macroeconomic Policy and Data Transparency</i>		
Monetary and financial policy transparency	Code of Good Practices on Transparency in Monetary and Financial Policies	IMF
Fiscal policy transparency	Code of Good Practices on Fiscal Transparency	IMF
Data dissemination	Special Data Dissemination Standard / General Data Dissemination System	IMF
<i>Institutional and Market Infrastructure</i>		
Insolvency	Insolvency and Creditor Rights ²	World Bank
Corporate governance	Principles of Governance	OECD
Accounting	International Accounting Standards (IAS) ³	IASB ⁴
Auditing	International Standards on Auditing (ISA)	IFAC
Payment and settlement	Core Principles for Systemically Important Payment Systems	CPSS
	Recommendations for Securities Settlement Systems	CPSS/IOSCO
Market integrity	The Forty Recommendations of the Financial Action Task Force / 9 Special Recommendations Against Terrorist Financing	FATF
<i>Financial Regulation and Supervision</i>		
Banking supervision	Core Principles for Effective Banking Supervision	BCBS
Securities regulation	Objectives and Principles of Securities Regulation	IOSCO
Insurance supervision	Insurance Core Principles	IAIS

Source: http://www.financialstabilityboard.org/cos/key_standards.htm

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