RETHINKING SECURITIES REGULATION AFTER THE CRISIS: AN ECONOMICS PERSPECTIVE

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I. INTRODUCTION AND SUMMARY

The Global Financial Crisis swept through financial markets in 2007 – 2009, leading to severe losses of wealth and confidence and previously unexpected market failures. It caused a Great Recession and a drastic decline in world trade and threatened an economic downturn akin to the 1930's Great Depression.

Facing that threat, policymakers and regulators intervened on an unprecedented scale to ward off such an outcome. While repercussions of the crisis persist, policymakers and regulators are now considering how to ensure such a threat does not arise again.

With the benefit of hindsight, it is clear that the established ways of thinking about economic policy, prudential policy and securities regulatory policy in part did cause the crisis and have to be rethought. To now rebuild without rethinking would expose the financial system in future to a repeat of the crisis just past.

This paper seeks to contribute to the rethinking of securities regulation, taking a three step approach.

1. It reviews what we thought we knew. The conventional wisdom had a pro-market deregulatory mindset.

2. It identifies what we learned from the crisis, highlighting where we were wrong and what we now know. There is a lot of new learning to be done and the simplicities of the past have to be left behind.

3. It makes a very preliminary first pass at what this implies for the future in terms of a new conceptual framework for securities regulators. We are definitely only near the start, and not the end, of this journey.

For simplicity, "securities regulation" is taken to refer not just to the regulation of equities, bonds and collective investments, but also to the regulation of derivatives and other financial products. In some countries, the securities regulator also regulates credit.

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[1] This paper has been prepared in response to an informal invitation to some economists working for securities regulators in advanced and developing countries to contribute to IOSCO deliberations. Alex Erskine is Chief Economist, Australian Securities & Investments Commission. The views expressed are the personal views of the author and, while they have benefited from insights and comments from colleagues, especially from Steven Bardy, Senior Executive International Strategy, and from some economists working for securities regulators in advanced and developing countries, the views are not necessarily shared by the Australian Securities & Investments Commission.

The paper's structure follows on from – and to some extent responds to – the staff position note "Rethinking Macroeconomic Policy" by IMF Chief Economist Olivier Blanchard and two co-authors (Blanchard *et al* 2010). This paper seeks to complement its root-and-branch rethinking.

The paper sets out a preliminary view. Reticence in many ways has been the natural order. Before the crisis economic policymaking and prudential supervision were widely seen to be more important for economic and financial outcomes than was securities regulation. The GFC (or is it merely GFC 1?) confirmed that prejudice. The blame for the financial instability and the main remedial actions both focused on misguided economic policy and weaknesses amongst prudentially regulated financial intermediaries and supervision. The international discourse on reducing systemic risks has tended to focus exclusively on banks as 'systemically important institutions' (e.g. IMF 2010), but is far from settled.

In addition, in the three years since the first clear signs of crisis, many immediate lessons have already been identified. Detailed work to revise securities regulation is under way in every country and across the world under the auspices of IOSCO and the G20. There has been progress on transparency, counterparty risk, hedge funds, securitisation, over-the-counter (OTC) derivatives, standards for credit ratings agencies, unregulated entities, products and markets and accounting issues and more.

This review seeks to build on the learning and the responses made so far. The progress thus far has been made with the pre-crisis market-based deregulatory mindset still top of mind, very much as the minimum changes required to make the old approach work more safely.

However, there is also a bigger picture. The main conclusion so far drawn by the G20 leaders is that the arms of policy – macroeconomic, prudential and regulatory – were inadequately and inconsistently directed towards financial stability and containment of systemic risk. Changes to the whole approach to policy and regulation will be required if what proved to be unacceptably large systemic risks are to be avoided in future. The debates over fundamental reforms to economic policy and macroprudential and prudential supervision are in flux and will clearly strongly influence the post-crisis approach to be adopted for securities regulation. It is time to open our minds for potentially substantial changes in the approach to securities regulation.

The results are presented in table 1 under five headings:

1. The goal of financial stability and assignment of regulatory instruments to objectives;
2. The conceptual framework and operational assumptions for securities regulation;
3. The regulatory approach, regulatory architecture and coordination;
4. Housing and its relation to finance and household wealth; and
5. Research by securities regulators.

Table 1. The learning, the lessons and the implications

What we thought we knew	What we learned in the crisis	What this implies for the future
1. The Goal of Financial Stability and Assignment of Regulatory Instruments to Objectives		
1.1 A reliance on monetary policy and a pro-market deregulatory approach had led to the 'Great Moderation' in fluctuations of growth and inflation, and the resulting financial stability was seen as proof that pre-crisis approach was on the right course 1.2 Securities regulation should focus on market integrity and market efficiency through disclosure and fairness regulation, but should play no additional macroeconomic or prudential role, as these were the responsibilities of the central bank and the prudential supervisor	1.3 The apparent success of policy and regulation in the 'Great Moderation' was an illusion. Financial instability resulted from poorly implemented macroeconomic, prudential and regulatory policies and excessive build-up of risk 1.4 Conventional macroeconomic policy and prudential supervision failed and emergency measures showed a bigger and more integrated toolkit, including regulatory initiatives, can be effective	1.5 First we must define financial stability. But we also need to assess whether financial stability is a goal that is achievable at a reasonable cost 1.6 Some regulatory policy tools should be used for macroeconomic policy purposes, and there should be concerted research to determine which instruments to allocate to which targets, between monetary, fiscal, and financial regulatory policies
2. The Conceptual Framework and Operational Assumptions for Securities Regulation		
2.1 A pro-market deregulatory mindset was shared amongst regulators, as information asymmetry and conflict of interest problems could be assumed would be adequately resolved by disclosure and fairness regulation, and risk appropriately assessed and allocated 2.2 Those responsible for corporate governance and market gatekeepers could be relied on to minimise risks and uphold standards 2.3 Innovation in products and markets was to be welcomed, to complete the risk spectrum and facilitate risk transfer 2.4 A bigger finance sector and bigger financial intermediaries were thought beneficial for economic growth and welfare	2.5 Many of the firmly-held views that formed the pro-market deregulatory mindset were found to be overstatements, if not actually contradicted, in the crisis 2.6 Disclosure and fairness regulation proved inadequate to discipline risk taking, prevent conflicts of interest and other agency conflicts being exploited or inform investors, and risk was not adequately recognised or appropriately allocated 2.7 Equity markets did not fail, because investors understood they could experience capital losses 2.8 Markets that did fail tended to be debt securities and derivatives markets where trust in the counterparties that stand behind the transactions broke down or, where a moral hazard existed, that risk of losses had been underestimated 2.9 The key international financial centres, the hubs, suffered the greatest failures and close interconnections quickly transmitted	2.10 Over-reliance on markets to self-stabilise is to be avoided and it is time for a wider view that takes account of systemic risks to financial stability 2.11 Raising regulatory standards for risky instruments may push them into less regulated jurisdictions 2.12 Shadow banking activities (i.e. those that really are the equivalent of banking) should be regulated the same as banking 2.13 Agency costs, principal-agent problems and the foibles of human behaviour matter and regulators should consider using the insights of agency theory and behavioural theories 2.14 The best markets are exchange traded markets as they are simpler and more transparent 2.15 More organised clearing venues are preferred to bilateral over the counter (OTC) trading

	the failures around the world	between counterparties 2.16 The diseconomies of extreme scale in finance and systemic dangers in high concentrations of risk, especially in international financial centres and in very large financial institutions, call for regulation of systemic risks
3. The Regulatory Approach, Regulatory Architecture and Coordination		
3.1 Despite a shared mindset, local suitability determined the regulatory approach and regulatory architecture and the arrangements for coordination. "100 very different flowers bloomed." 3.2 For some, the approach was rules-based, for others principles-based and some were lighter-touch than others 3.3 Some had all policy and regulatory powers centralised, others pursued a highly fragmented model. Some had monetary policy and financial stability responsibilities in the central bank and prudential and securities regulation in a universal regulator, and others spit the prudential and securities regulation functions between 'twin peaks' or more. Some had structures in place to ensure coordination, and others did not	3.4 The "black letter law" versions of rules-based approaches seemed in the crisis to be more prone to incomplete regulatory coverage of innovations than did principles-based approaches 3.5 Regulation of market conduct is a daily activity, very different in practice to prudential and systemic risk monitoring. Where these functions were combined, there was a tendency for market conduct regulatory activities to distract from prudential supervision and the pursuit of financial stability 3.6 No one regulatory approach or institutional architecture proved fail-safe, but the countries that fared least badly (Australia and Canada) had securities regulators that cooperated and coordinated closely with the prudential regulator, the central bank and the finance ministry	3.7 To cope with innovation in future, a principles-based regulatory approach is likely to prove superior to a hard/'black letter law' form of a rules-based approach 3.8 A 'twin peaks' regulatory architecture that places the responsibility for market conduct regulation in an agency separate from prudential regulation and assessments of financial stability is the most conducive to maintaining financial stability 3.9 To avoid gaps and promote accountability, it is better to have one market conduct regulator and one prudential regulator than several in a country 3.10 Whatever the regulatory approach and architecture adopted, a practical framework that encourages cooperation, coordination and sharing between the agencies (both sectorally and across borders) is essential
4. Housing and its Relation to Finance and Household Wealth		
4.1 Securities regulators should focus only on what lies within their legal boundaries, and so not consider housing and its financing, the dominant contributors to the balance sheets of households and retail investors and the major collateral for credit intermediation and securitisation	4.2 Home buyers, lenders, securitisers and guarantors and investors took on excessive risk, leading to price bubbles, reflecting failures of policy coordination, market architecture, gatekeepers and market discipline	4.3 A more concerted regulatory focus on housing markets is needed, with coordinated action to bring the benefits of successful securities markets to this most important component of household balance sheets
5. Research within Securities Regulators		
5.1 The 'faith in markets' mindset required little research into business models in securities	5.2 The crisis showed a considerable information deficit and lack of understanding of the	5.4 Globally and nationally, securities regulators need to build up capability in financial risk

markets, the interrelations between markets, credit and the macroeconomy, and little sharing on risk assessments by research staff of finance ministries, central banks, prudential regulators and securities regulators	economics of securities markets and the interconnections with the broader finance sector and the economy 5.3 With little international research capability (including at IOSCO), there was a lack of international regulatory benchmarks and external 'peer-reviewed' risk assessments	analysis and economic research, to be able to identify and assess risks to financial stability, to engage with other agencies in consideration of pre-emptive regulatory policy measures, and to advise on implementation of countercyclical and macroprudential regulatory measures 5.5 Competition may help ensure that risk assessments are not overlooked in the next boom

The main conclusion of this paper is that the conceptual framework that underpins securities regulation has to take into account two key factors. The first is what we have seen and learned from the crisis. The second is what agency, network and behavioural theories can bring to our understanding of markets, participants and the effectiveness of regulation.

An immediate observation at this stage of the international discourse is that the extent of the changes to the approach to securities regulation depends on the success of the efforts to contain the systemic risk to financial stability posed by prudentially regulated institutions, especially banks.

- If the threat to financial stability from risks in banking is resolved by artificially transferring risky banking activities into the securities space then securities regulation itself will have to focus more on assessing and restricting risks to systemic stability.
- This is also the likely need if risks in banking (including the problems of 'too-big-to-fail' or 'too-interconnected-to-fail' and yet also 'too-costly-to-save') are left unchecked, as they were before the crisis. Those unchecked risks had driven most of the innovations and risk-taking that brought the global financial system to near-disaster.
- If however, as we can hope, systemic risks in banking are appropriately addressed while keeping banking risk largely inside the prudentially regulated banking sector, securities regulation should be able to focus more on market conduct and consumer protection and less on financial stability *per se*.

Even in that best case there will be plenty to achieve, especially in aligning financial services agents' incentives with investor interests, in taking into account a greater understanding of how finance and human behaviour interacts and in understanding and monitoring the tracking of financial risks. There are a wide range of topics to be researched.

Push-back against rethinking the conceptual framework must be expected. In the light of the post-crisis bounce in markets and economic prospects, some will argue that "if it ain't broke, don't fix it". This is not a real option: the near-Great-Depression experience, the high costs from what were seen as 'normal' times and the flaws exposed in the pre-crisis regulatory mindset all argue for a rethinking of the conceptual framework for securities regulation. The main challenges we face are to set a realistic definition for financial stability and to find ways to achieve it at reasonable cost.

II. WHAT WE THOUGHT WE KNEW

1. *The Goal of Financial Stability and Assignment of Regulatory Instruments to Objectives*

    1.1 A reliance on monetary policy and a pro-market deregulatory approach had led to the 'Great Moderation' in fluctuations of growth and inflation, and the resulting financial stability was seen as proof that pre-crisis approach was on the right course

    1.2 Securities regulation should focus on market integrity and market efficiency through disclosure and fairness regulation, but should play no additional macroeconomic or prudential role, as these were the responsibilities of the central bank and the prudential supervisor

2. *The Conceptual Framework and Operational Assumptions for Securities Regulation*

    2.1 A pro-market deregulatory mindset was shared amongst regulators, as information asymmetry and conflict of interest problems could be assumed would be adequately resolved by disclosure and fairness regulation, and risk appropriately assessed and allocated

    2.2 Those responsible for corporate governance and market gatekeepers could be relied on to minimise risks and uphold standards

    2.3 Innovation in products and markets was to be welcomed, to complete the risk spectrum and facilitate risk transfer

    2.4 A bigger finance sector and bigger financial intermediaries were thought beneficial for economic growth and welfare

3. *The Regulatory Approach, Regulatory Architecture and Coordination*

    3.1 Despite a shared mindset, local suitability determined the regulatory approach and regulatory architecture and the arrangements for coordination. "100 very different flowers bloomed."

    3.2 For some, the approach was rules-based, for others principles-based and some were lighter-touch than others

    3.3 Some had all policy and regulatory powers centralised, others pursued a highly fragmented model. Some had monetary policy and financial stability responsibilities in the central bank and prudential and securities regulation in a universal regulator, and others spit the prudential and securities regulation functions between 'twin peaks' or more. Some had structures in place to ensure coordination, and others did not

4. *Housing and its Relation to Finance and Household Wealth*

    4.1 Securities regulators should focus only on what lies within their legal boundaries, and so not consider housing and its financing, the dominant contributors to the balance sheets of households and retail investors and the major collateral for credit intermediation and securitisation

5. *Research within Securities Regulators*

5.1 The ‘faith in markets’ mindset required little research into business models in securities markets, the interrelations between markets, credit and the macroeconomy, and little sharing on risk assessments by research staff of finance ministries, central banks, prudential regulators and securities regulators

A summary of the pre-crisis conceptual framework for securities regulation

Before the crisis, a deregulatory market-based mindset had taken hold. We can all be wise in hindsight about our own individual thinking, but it is fair to say that mindset had become the conventional wisdom: increasingly shared and advocated by governments, policy makers, regulators, academics, financiers and the general public. It formed a key part of a compelling political and policy narrative over several decades that saw personal responsibility, deregulation and a philosophy based on free markets inextricably entwined and risks previously managed by governments increasingly transferred to individuals.

In particular, "[t]here was a dominant conventional wisdom that markets were always rational and self-equilibrating, that market completion by itself could ensure economic efficiency and stability, and that financial innovation and increased trading activity were therefore axiomatically beneficial" (Turner 2010).

It was not just a 'fusion of interests and ideologies' in one country, some form of 'Wall St/Treasury' complex (Bhagwati 1998). The objectives expounded in Australia by the committee inquiring into the Financial System (Wallis 1997) show the reach, the depth and the persistence of the commitment to the deregulatory pro-market approach:

> “In making its [1981] recommendations, the Campbell Committee was motivated by a firm belief that less intrusive regulation and greater competition would lead to greater efficiency in the financial system. In turn, economy wide benefits from greater competition and efficiency would be realised through enhanced financial system competitiveness. Most importantly, consumers would benefit from improved choice and quality in financial services.
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> A principal aim of the [Wallis] Inquiry is to achieve a more competitive and efficient financial system. … In designing regulatory arrangements, it is important to ensure minimum distortion of the vital roles of markets themselves in providing competitive, efficient and innovative means of meeting customer’s needs.”

The market-based conceptual framework spread through the regulatory world over several decades, forming the basis of the IOSCO Objectives and Principles of Securities Regulation (IOSCO 2003). These objectives and principles largely adopted the evolving US approach, with its emphasis on retail investors and equity trading and self-regulatory organisations, and spread it to other countries (Jordan 2009).

This had a practical and pervasive impact. The deregulatory pro-market mindset was widely seen as contributing to the development of the ‘Great Moderation’, the period of low inflation and prosperity that had been attributed in large part to ‘good policy and good regulation’ (Bernanke 2004).

Pro-market policies were seen to be contributing to rising economic growth and living standards as the era of post-World War II 'financial repression' was left behind. In addition,

the long decline in inflation after its 1970s breakout allowed monetary policy to have a stimulative (and therefore populist) bias, with asset price rises unchecked and monetary policy eased when they fell. The counterpoints, including the crises in various markets through the last few decades (the October 1987 crash, the Turkey and Mexico financial crises 1994, the Asian financial crisis 1997, the Long Term Capital Management and Russian crises 1998 and the 'tech wreck' 2000-2003), were seen as individual problems to be addressed locally rather than as representing a systemic problem.

Part of the appeal was the interlocking and self-reinforcing 'beauty' of the market-based conceptual framework. Similar beauty in economics and in 'efficient markets theories' were also seen (Krugman 2009), appearing as 'a complete set of answers resting on a unified intellectual system and methodology' (Turner 2010). There was strong intellectual backing for this pro-market and deregulatory mindset, sharpened by the 'efficient markets theories' that had developed primarily in US universities. These included leadership in developing portfolio theory (Markowitz 1952), an understanding of corporate finance (Modigliani and Miller 1958), the Capital Asset Pricing Model (CAPM) from 1961 on (e.g. Treynor and Sharpe), the insights of the efficient market hypothesis (Fama 1965, though many see this as following Bachelier 1900), and breakthroughs in option pricing (Black and Scholes 1972), amongst others.

These academic breakthroughs spawned real business and financial applications, including the growth and development of institutional funds management, securitisation, derivatives and other risk management instruments and techniques. These helped fuel the increasing size and leverage of the largest financial intermediaries.

The theoretical insights had a strong foundation in mainstream economics, which itself had a pro-market deregulatory flavour as the practical difficulties of managing economies without private enterprise and flexible markets became ever more evident. By assumption, all available and relevant information would be incorporated in market prices; all interest rates and asset prices would be linked through arbitrage; long term interest rates would derive from proper weighted averages of risk-adjusted future short term interest rates, and asset prices would derive from fundamentals, reflecting the risk-adjusted present discounted value of expected payments on the asset.

Two examples highlight the progress that appeared to have been made as recently as 2006:

- The then President of the Federal Reserve Bank of New York assessed that "risk management has improved significantly and the major theories have made substantial progress towards more sophisticated measurement and control of the concentration of specific risks" (Geithner 2006).

- The IMF Global Financial Stability Review in April of that year told a confident story of a self-equilibrating system. "There is a growing recognition that the dispersion of credit risks to a broader and more diverse group of investors… has helped make the banking and wider financial system more resilient. The improved reliance may be seen in fewer bank failures and more consistent credit provision" (IMF 2006, as referred to by Turner 2010).

Key components of the conceptual framework

Taken together, several components of the prevailing conceptual framework underlying securities regulation can be identified (for additional background see Turner 2009a, 2009b and 2010). Here six are listed:

A. *Markets are generally self-stabilising*

B. *Disclosure overcomes information asymmetries and resolves conflicts of interest*

C. *Well designed and administered corporate governance imposes effective discipline on risk taking*

D. *Market gatekeepers uphold proper standards*

E. *Interconnections between markets and innovations in finance generally add to welfare*

F. *The behaviour of actors in the market is in effect 'rational'*

Writing with the great advantage of 20/20 hindsight, it is clear that assumptions formed much of the foundations that underlay these regulatory beliefs. Nevertheless at the time the mindset did clearly dominate, based around faith that market participants would be rational and prices quickly reflect all information. Within academic policy-making and regulatory circles, the operations of the financial sector were very much an unpacked 'black box'.

A. Markets are generally self-stabilising

Regulators thought they could rely on markets to be self-stabilising within a reasonable timeframe and at a low net cost in terms of resource misallocation. As a result they intervened rarely and only if justified by demonstrated market failures. The regulators' job was to stay out of the way of market developments, imposing as few barriers to their development as possible. Regulators also put a heavy reliance on market discipline to constrain harmful risk taking.

B. Disclosure overcomes information asymmetries and resolves conflicts of interest

Regulators thought disclosure sufficiently overcomes information asymmetries and clarifies conflicts of interest between investors and issuers and financial services agents. As a result no further protections are required except actions against insider trading, market manipulation and front running, in order to protect market integrity. The persistence – or existence – of misaligned incentives and agency conflicts were often downplayed or overlooked: disclosure of an incentive was assumed to ensure it would be sufficiently understood by the disadvantaged party to allow rational decision-making.

C. Well designed and administered corporate governance imposes effective discipline on risk taking

Relying on disclosure of material information as the cornerstone of the market-based process, regulators made it the prime responsibility of corporate governance in both financial service providers and non-financial corporations. From a regulatory perspective, full information disclosure was assumed to address the information asymmetry investors suffer

relative to issuers and company insiders. In addition, the realisation that the disclosed information is now outside could be presumed to energise corporate boards and their management to manage the risks faced by the corporation and steer clear of failure.

D. Market gatekeepers uphold proper standards

Regulators understood that information asymmetries disadvantage investors relative to issuers. To help investors overcome or ameliorate those information asymmetries, many financial services agents find roles as gatekeepers. Many service providers had emerged as market gatekeepers, including credit ratings agencies, accountants, auditors and valuers. Under the prevailing pro-market mindset, successful gatekeepers could be assumed to seek to uphold their gatekeeping standards in order to maintain their hard-won reputations. As a result the standards set by market gatekeepers can be relied on by regulators and by investors. Self-regulatory organisations played a similar role and received similar trust.

E. Interconnections between markets and innovations in finance generally add to welfare

Though it was always hard to prove, regulators came to rely on strengthened interconnections between markets and innovations in finance generally adding to welfare. Underlying this reliance was an assumption that markets are liquid and will be open when required, providing a continuing stream of marginal price adjustments as supply and demand change. Completeness of markets and the size of markets became measures of success. Financial innovation thus was assumed to be beneficial. Regulators focused on individual agents and markets but rarely considered implications for financial stability and macroeconomic consequences. Securitised credit was seen as improving allocative efficiency and financial stability and its macroeconomic implications were ignored.

F. The behaviour of actors in the market is in effect 'rational'

With some obvious scepticism, regulators had little alternative but to see market prices as the best (or least bad) indicator of rationally evaluated economic value. As a result the best thing a regulator could do was to get out of the way. Accidents would happen and prices adjust sharply, but regulators could assume that these adjustments would not be of systemic consequence. Those institutions that were systemically important were subject to prudential regulation as well as disclosure and market conduct regulation: the others merely had to disclose and not behave unfairly. Securities regulators could allow their regulated entities to fail, as there would be no systemic consequences. Whereas in the airline industry regulation is aimed intensively at avoiding individual crashes, securities regulators were resigned that individual crashes would occur, but they were assumed to have no systemic consequence.

Relationship with macroeconomic policy and differences in approach and architecture

This belief-set meshed well with the global evolution of macroeconomic policy. In the decades prior to the crisis "[f]inancial regulation targeted the soundness of individual institutions and aimed at correcting market failures stemming from asymmetric information, limited liability, and other imperfections such as implicit or explicit government guarantees" (Blanchard 2010)." By contrast macroeconomic policy increasingly was implemented through a single instrument, the short-term interest rate, aimed at achieving a target of very low inflation.

The wider use of financial regulation for macroeconomic purposes was generally not in vogue, except in developing countries. “In advanced economies, its systemic and macroeconomic implications were largely ignored. This was less true in some emerging markets, where prudential rules such as limits on currency exposures (and sometimes an outright prohibition against lending to residents in foreign currency) were designed with macro stability in mind” (Blanchard 2010).

Nevertheless there were some countries that did use financial regulation as a tool of broader macroeconomic policy. Although overall “[l]ittle thought was given to using regulatory ratios, such as capital ratios, or loan-to-value ratios, as cyclical policy tools”, the IMF staff study commended Spain and Colombia, which introduced rules that de facto link provisioning to credit growth, as notable exceptions. Attention also should be drawn to the active changes in housing loan-to-value ratios and land supply policies in Hong Kong, which were used to counter the often pro-cyclical macroeconomic impact of the interest rate settings imported into Hong Kong by that territory's currency board system from the US.

Despite a widely-shared underlying market-based philosophy, the actual regulatory approach, regulatory architecture and structures for coordination in a country depended critically on its legal and economic evolution and political circumstances.

- Approaches ranged from one extreme (rules-based ‘black letter law’) to the other (principles-based ‘lite touch’), with many variants.
- Some radically reformed the regulatory architecture – for instance integrated into a universal financial regulator (the UK FSA model) or into a ‘twin peaks’ model that separates the prudential supervisor and the market conduct and fairness regulator (the models adopted in the Netherlands and Australia).
- Others chose combinations that involved a securities regulator but retained banking supervision in the central bank (the model in several emerging markets).
- Still others tried to operate effectively an existing fragmented regulatory model (the US and Canadian approach), often divided on institutional or functional lines (Hornbeck 2009).
- Some had structures in place to ensure coordination between the central bank, the government and the various regulatory agencies, while others did not or had let coordination arrangements wither.

As governments had “let a hundred flowers bloom” in terms of regulatory approach, architecture and coordination, the pre-crisis period provides a crude experiment to see which is better for financial stability.

Other matters: Housing and research

In the market-based mindset, there was little incentive for securities regulators to look beyond their legal mandates to the housing and housing finance sector. The finance was largely produced by the prudentially regulated sector and the price of housing, if not 'right', then at least was market determined. The agents involved in housing sales were some other regulator’s responsibility. Bid-ask spreads have been wide, widened often by stamp duties

on transactions; little has been done to reduce information asymmetries disadvantaging buyers or to enable households to hedge their house price risks. Housing however played an increasing role in finance, providing the major collateral for credit intermediation and securitisation and forming the major assets and liabilities on household balance sheets. Robert Shiller has been one of the few academics that have expounded the virtues of extending some of the innovations in finance to housing, with proposals for housing price derivatives to allow households to hedge their risks (Shiller 2003).

In terms of research, the ‘black box’ that financial sector filled in models of the economy and the assumptions of rational actors and plentiful disclosures of information was not an encouragement. Nevertheless, many securities regulators had built up economics research teams to support the regulatory work that was shaped by the pro-market deregulatory mindset. In hindsight the research into business models in securities markets, the interrelations between markets, credit and the macroeconomy all fell short of what was required, and there was little sharing on risk assessments by research staff of finance ministries, central banks, prudential regulators and securities regulators.

III. WHAT WE LEARNED FROM THE CRISIS

1. *The Goal of Financial Stability and Assignment of Regulatory Instruments to Objectives*

    1.3 The apparent success of policy and regulation in the 'Great Moderation' was an illusion. Financial instability resulted from poorly implemented macroeconomic, prudential and regulatory policies and excessive build-up of risk

    1.4 Conventional macroeconomic policy and prudential supervision failed and emergency measures showed a bigger and more integrated toolkit, including regulatory initiatives, can be effective

2. *The Conceptual Framework and Operational Assumptions for Securities Regulation*

    2.5 Many of the firmly-held views that formed the pro-market deregulatory mindset were found to be overstatements, if not actually contradicted, in the crisis

    2.6 Disclosure and fairness regulation proved inadequate to discipline risk taking, prevent conflicts of interest and other agency conflicts being exploited or inform investors, and risk was not adequately recognised or appropriately allocated

    2.7 Equity markets did not fail, because investors understood they could experience capital losses

    2.8 Markets that did fail tended to be debt securities and derivatives markets where trust in the counterparties that stand behind the transactions broke down or, where a moral hazard existed, that risk of losses had been underestimated

    2.9 The key international financial centres, the hubs, suffered the greatest failures and close interconnections quickly transmitted the failures around the world

3. *The Regulatory Approach, Regulatory Architecture and Coordination*

    3.4 The 'black letter law' versions of rules-based approaches seemed in the crisis to be more prone to incomplete regulatory coverage of innovations than did principles-based approaches

    3.5 Regulation of market conduct is a daily activity, very different in practice to prudential and systemic risk monitoring. Where these functions were combined, there was a tendency for market conduct regulatory activities to distract from prudential supervision and the pursuit of financial stability

    3.6 No one regulatory approach or institutional architecture proved fail-safe, but the countries that fared least badly (Australia and Canada) had securities regulators that cooperated and coordinated closely with the prudential regulator, the central bank and the finance ministry

4. *Housing and its Relation to Finance and Household Wealth*

    4.2 Home buyers, lenders, securitisers and guarantors and investors took on excessive risk, leading to price bubbles, reflecting failures of policy coordination, market architecture, gatekeepers and market discipline

5. Research within Securities Regulators

> *5.2 The crisis showed a considerable information deficit and lack of understanding of the economics of securities markets and the interconnections with the broader finance sector and the economy*
>
> *5.3 With little international research capability (including at IOSCO), there was a lack of international regulatory benchmarks and external 'peer-reviewed' risk assessments*

Errors in the prevailing conceptual framework

The crisis has reminded us all that "the enemy of the conventional wisdom is not ideas but the march of events" (Galbraith, 1977). The rhetoric over the markets' ability to return to fundamental value quickly, without destructive destabilisation or requiring government intervention, exceeded the reality.

The crisis exposed previously strongly held beliefs as unrealistic – and very expensive – assumptions. For long periods markets do work, segmented by specialised investors but generally well linked by arbitrage. But in the bust, investors scrambled for liquidity, selling unrelated markets and taking prices down to firesale levels well below fundamentals. Equally, in the boom, some prices had reached similarly unsustainable levels driven by speculation. As the IMF staff observe, this "surely puts into question the 'benign neglect' view that it is better to pick up the pieces after a bust than to try to prevent the build-up of sometimes difficult-to-detect bubbles".

Ex-Chairman of the Federal Reserve Board of Governors Alan Greenspan expressed the disappointment experienced by the regulatory community at the failure of market discipline to control risk, which was at the heart of the conceptual framework underpinning economic policy and financial regulation, when he appeared at the House Committee on Oversight and Government Reform on 23 October 2008.

He said "[t]hose of us who have looked to the self-interest of lending institutions to protect shareholders' equity, myself included, are in a state of shocked disbelief." He explained that "[t]his modern risk-management paradigm held sway for decades" but "[t]he whole intellectual edifice, however, collapsed in the summer of last year" (Greenspan 2008).

If the components of the pre-crisis mindset identified in Chapter II as directly affecting the conceptual framework underlying securities regulation are addressed one-by-one, we find that the crisis exposed the foundations for the regulatory approach as laid in quicksand. Most of the beliefs were found to be overstated, if not repudiated, in the crisis:

A. *Markets are generally self-stabilising* ... in normal times, but the risks that had built up within the financial system were too great and, once one market failed, so did others. These problems particularly affected debt securities and their derivatives, where investors generally expect to avoid capital loss. Debt investors transformed into versions of Mark Twain, belatedly worrying about the return **of** capital, rather than the return **on** capital. Equity market participants, by contrast, always seem to understand the risk of capital loss.

B. *Disclosure overcomes information asymmetries and resolves conflicts of interest* ... only if investors are 'homo economicus' and if financial services agents are 'angels'. But normal humans cannot understand every disclosure and behave according to individual biases, and agents tend to pursue their own self-interest rather than the interests of others, such as investors.

C. *Well designed and administered corporate governance imposes effective discipline on risk taking* ... in normal times, but by the end of a long build-up of risk-taking, the pressure of incentives and self-interest on those involved in the governance of corporate and financial institutions can overwhelm normal processes.

D. *Market gatekeepers uphold proper standards ...* until self-interest from incentives outweighs the value of the gatekeepers' reputation and complexity and work pressures make it easier and more rewarding to allow standards to drop.

E. *Interconnections between markets and innovations in finance generally add to welfare* ... at least in the early stages of moving from 'financial repression', but the frenetic activity associated with the emergence of London and new York as the two dominant international financial hubs and the spate of ever more complex and leveraged innovations undermined risk management and prevented the resolution of problems once markets began to fail.

F. *The behaviour of actors in the market is in effect rational* ... in normal times up to a point, even though many actors (both retail and professional/wholesale investors) operate with biases that are not easily described as rational. But at the end of a long boom, market prices can be very far from fundamental values and risks taken can be far in excess of any rational thought process. Quite surprisingly (at least in the light of the prevailing mindset), professional and/or sophisticated investors seemed to make as many or more mistakes as did retail investors.

These learnings are directly relevant lessons for securities regulators as we piece together new foundations for the conceptual framework underpinning the approach to regulation. Since the crisis, as Lord Turner observed a year ago, we have learned in addition that:

1. Market prices are sometimes irrational

In the crisis, the market made a catastrophic error in underpricing risk, especially in credit.

It now seems that markets are 'imperfectly efficient': for long periods reasonably (semi-strong) efficient but occasionally very inefficient. Many wholesale/professional investors base their strategies on momentum, rather than fundamentals, and so drive prices away from fundamentals. It is worth considering how regulations might discourage momentum trading and encourage buying and selling by 'Friedmanite' 'stabilising speculators', i.e., more 'Warren Buffetts' (Smithers 2009).

If, as it seems, markets are at least 'semi-strong efficient' for long periods, and thus hard to forecast, most investors, including both retail and institutional investors, are foolish to engage in active management to try to beat the market. In aggregate, they will not beat the market but instead will earn on average the market return less fess. They would be better off minimising fees and reducing complexity, investing only in what they understand.

2. Securitised credit did not distribute risk or promote financial stability

The 'originate and distribute' model of securitisation did not achieve the expected reductions in banking system risks and in the total cost of credit intermediation. Credit risk was not passed through to end investors, so did not reduce the need for expensive bank capital. And contrary to what had been presumed, investors, issuers, originators and associated gatekeepers such as valuers and credit ratings agencies did not uphold their standards. They faced almost insurmountable informational problems with securitised and structured products. An investor in an ABS CDO needed to read about 30,000 pages to completely understand what she was actually investing in, but for an investor in a CDO of ABS CDO (a CDO squared), the number of pages increased to approximately one billion (Haldane 2009). "Though it had aimed to dampen institutional risk, innovation in financial instruments served to amplify further network fragility."

3. Quantitative measures of risk were wrong

A key problem was that the data fed into the models were atypical, from an era of stability. The prosperity and lack of volatility in the period of the 'Great Moderation' created significant underestimation of risks. In addition the models tended to underestimate the probability of "long-tail" events (Taleb 2001 and 2007). Contradicting the pre-crisis enthusiasm, the commonly-used risk models were worse than unrealistic: they were "weapons of economic mass destruction" (Eichengreen 2009).

4. Market discipline failed to constrain risk taking

Basel II and the framework for disclosure and market conduct regulation presumed that banks and other agents and intermediaries would act in ways that promoted confidence in their customers, as if agency costs and conflicts of interest did not exist. Pre-crisis, reputation was assumed to be a sufficient driver to induce good conduct. This turned out not to be so. On the other hand, some argue that market discipline did work, but too late to avert disaster (Stephanou 2010), suggesting more can be done on the microprudential side of regulation to promote clearer market signals of bank riskiness and to encourage their use in supervisory processes.

5. Not all innovations were used sensibly

Misaligned incentives drove investment bankers and other finance professionals to create innovative and complex instruments for which they could be rewarded in the short term without due regard to the underlying users of the instruments. Collateralised debt obligations (CDOs), CDO squareds, credit default swaps (CDS), the originate-and-distribute model and credit ratings all fell foul of complexity and agency costs. One of the most readable accounts of the long build-up of complexity and what proved to be excessive risk-taking ahead of the crisis is in "The Big Short" (Lewis 2010). The use of these innovations by professional and/or sophisticated investors left a lot to be desired.

6. Regulators must understand finance, especially easy credit and networks

The prevailing mindset treated the financial process as a 'black box', seamlessly and without friction producing sufficient finance to meet fundamental demand. The crisis showed a

considerable information deficit and lack of understanding of the economics of securities markets and the interconnections with the broader finance sector and the economy.

Among the things the crisis showed that we did not understand well were:

- *how banking and capital market developments are inseparable and fluctuations in financial conditions have a far-reaching impact on the workings of the real economy* (Adrian and Shin 2010). We need to understand more about finance in practice, as opposed to in the simplified models that informed the deregulatory mindset.

- *the economics of credit cycles, as explored in the 1960s to 1990s by US economist and banker Hyman Minsky* (e.g. Minsky 1986). He had traced through how financial system dynamics can (and at times inexorably will) progress from stability to instability as borrowing turns from hedge finance to speculative finance and then to Ponzi finance. We observe in passing that it is not only market participants that are seduced by the prosperity of a boom - so are regulators. The long-time Chief Economist at the Bank for International Settlements recently reminded us that both private sector and public sector behaviour contributed to the inherent procyclicality of the economic and financial system (White 2010).

- *asset price bubbles, especially in housing*. Home buyers, lenders, securitisers and guarantors and investors took on excessive risk, leading to price bubbles, reflecting failures of policy coordination, market architecture, gatekeepers and market discipline.

- *the size of the finance sector and the impact of interconnections between financial sectors in different countries* (Haldane 2009).

    - The increasing size of the financial sector relative to the rest of the economy has increased the size of negative externalities flowing from financial failures and instability. In addition, the international dimension is increasingly important (Kubelec and Sá 2009). Financial links have become larger and more frequent and countries have become more open. Global finance comprises a relatively small number of financial hubs (two dominate – London and New York) with multiple spokes, susceptible to a loss of confidence in the key financial hubs and with rapid international transmission of disturbances. In a study of the factors driving the co-movement between US returns and stock returns in 83 countries, the main transmission channel was found to be financial, not trade-related, and in the first stage of the crisis countries with more vulnerable banking and corporate sectors exhibited higher co-movement with the epicentre (Didier *et al* 2010).

    - Some have questioned the optimum extent of the finance sector in relation to the economy and the utility of further expansion, or even some shrinkage (Haldane). However, there are no real guidelines on when "enough is enough". On one hand, the faster growth of finance than the underlying economy had been recognised as a characteristic of market economies since World War II. On the other hand, some of the largest institutions have become both "too big to fail" and "too costly to save". In researching a fuller understanding of the potential for and the limits of such growth, perhaps we

should revisit the works of Raymond Goldsmith (Goldsmith 1969 and 1985). His financial interrelations ratio may help set the conceptual bounds for the size and usefulness of the financial sector in comparison to flows in the economy or the underlying assets.

- *network resilience* (Haldane 2010). Deregulation swept away the barriers that existed within the financial network. As a result, Glass-Steagall and similar restrictions or prohibitions on activities are back on the international policy agenda, as regulators ask if network structure can be altered to improve network robustness.

- *the 'shadow banking system'*. A 'shadow banking system' had grown out of the securitisation of assets and the integration of banking with capital market developments. Although intended as a way to disperse credit risk to those who were better able to absorb losses, instead securitisation served to increase the fragility of the financial system as a whole by allowing banks and other intermediaries to leverage up by buying each other's securities (Adrian and Shin 2010).

    - 'Shadow banking' is "those instruments, structures, firms and markets which, alone or in combination, replicate the core features of commercial banks: liquidity services, maturity mismatch and leverage" (Tucker 2010). It appears that true 'shadow banking' activities should be regulated in the same way as banks are regulated, by the same regulator. As Tucker suggests, Constant-Net-Asset-Value money funds should not exist in their current form as they are prone to a 'bank' run: they should either become regulated banks or become Variable-NAV funds that do not offer instant liquidity. The economic substance matters, not the legal form.

    - Not all disintermediation is 'shadow banking', however. "The corporate bond markets do not amount to a shadow bank" (Tucker 2010). With a corporate bond, the issuer is the borrower and the investor is the lender but generally this activity does not involve liquidity services, maturity mismatch and leverage.

- *the procyclicality of much regulation*. Regulation too often is pro-cyclical. Prudential and securities regulation interacted to amplify effects that transformed the decrease in U.S. housing prices into a major world economic crisis. "The limited perimeter of regulation gave incentives for banks to create off-balance-sheet entities to avoid some prudential rules and increase leverage. Regulatory arbitrage allowed financial institutions such as AIG to play by different rules from other financial intermediaries. Once the crisis started, rules aimed at guaranteeing the soundness of individual institutions worked against the stability of the system. Mark-to-market rules, when coupled with constant regulatory capital ratios, forced financial institutions to take dramatic measures to reduce their balance sheets, exacerbating fire sales and deleveraging" (Blanchard 2010).

- *the behaviour of financial market participants and financial services agents*. While those in financial markets may not have always behaved 'rationally' in the 'homo economicus' sense of the word, agents in the financial services sector appear only too driven by self-interest and incentives. Principal-agent problems provide

substantial opportunity for mischief that conventional financial theory often ignores. Without a fiduciary duty to serve the interests of clients, agents such as banks or financial advisers can be expected to pursue their own ends, earning rewards on inappropriate sales of risky and complex instruments. This insight leads to two streams of thought:

- The previous reliance on disclosure was misplaced. Post-crisis, it seems that effective and efficient disclosure and transparency are necessary, so improvements are desirable, but are most unlikely to be sufficient. In particular, deregulation that requires disclosure of principal-agent conflicts and the fees charged does not appear to have adequately protected the interests of investors (either retail or wholesale/professional);

- Regulating how conflicts of interest are being managed is difficult, and often degenerates into regulatory capture. Removal of the conflict of interest is often the more certain and less costly approach in the long run. Thus we understand the intense discussion in banking about a reintroduction of rules that would split investment banking from commercial banking or would limit derivatives trading by banks.

- In the securities and investments space, it is therefore worth considering whether the conflicts of interest between bankers and contributors to funds management schemes are so great that legislation to prevent investment and commercial bankers from owning funds management businesses is appropriate (Zingales 2009). Other conflicts might also be ameliorated by regulatory reform. For instance a new US federal agency has been proposed to develop standardized financial products coupled with corresponding disclosure principles (Fisch 2010), a proposal that may be being acted on. Sellers of retail products would be required to conform their products to these standards or to explain material differences, in order to enhance market discipline while making retail funds less complicated and more understandable for individual investors. Others wonder if professional and sophisticated investors should be treated differently to retail investors.

These are substantial challenges to the regulatory mindset that prevailed before the crisis. More generally, it is worth reflecting that insights from agency theory and behavioural theories have proved useful in explaining what went wrong, and should therefore be more readily used in considering regulation in future.

The regulatory approach, regulatory architecture and coordination

Though there has been no conclusive debate, it does seem [at least to this observer] that the "black letter law" versions of rules-based approaches seemed in the crisis to be more prone to incomplete regulatory coverage of innovations than did principles-based approaches.

In addition, when selecting a regulatory architecture for a country, it is important to bear in mind the timeframe for the focus of regulation. Regulation of market conduct is a daily activity, very different in practice to prudential and systemic risk monitoring. Prudential and systemic risk monitoring has a much longer-term focus and turn-around time. Where the

functions were combined, there was an inevitable tendency for market conduct regulatory activities to distract from prudential supervision and the pursuit of financial stability.

It is time for some thorough research into which regulatory architecture and approach performed best. At this early stage it would appear that though no one regulatory approach or institutional architecture proved fail-safe, the countries that fared least badly (Australia and Canada) seem to have had securities regulators that cooperated and coordinated closely with the prudential regulator, the central bank and the finance ministry.

The greatest challenge to the pre-crisis narrative: Achieving financial stability

Perhaps the most significant challenge facing all regulators and policy-makers is that the narrative – the big-picture confidence-building paradigm that had sustained trust in financial markets in the pre-crisis period – has been severely battered by the crisis. The market did not deliver on its promise of sustained economic growth and welfare. The 'Great Moderation' is now seen as an illusion (Blanchard 2010, Eichengreen 2009). Widely-held expectations of regulatory behaviour have been dashed. Now no one knows how regulators will behave when next the markets go down.

In banking, for more than a century, central banks had been expected to rescue the illiquid but not the insolvent (Bagehot 1873), a constructive ambiguity that underpinned the role and actions of central banks. But in this crisis the insolvent as well as the illiquid were rescued to avoid further calamity. As a result, governments' implicit guarantees of "too-big-to-fail" financial institutions and markets have been called, never-quantified off-balance-sheet contingent liabilities and private sector debt excesses have been crystalised into on-balance-sheet public liabilities and the expected market-driven consequences of poor risk-taking have not been allowed to occur.

In the securities space, many previously unthinkable or unimagined developments occurred. Major markets failed, central banks became market-makers of last resort and many regulators intervened to at least temporarily ban short selling of many equities.

Globally policy-makers, regulators and academics are now exploring elements of a sustainable paradigm on which to build a convincing new overarching narrative. Even at this early stage, it is clear that the new narrative will have financial stability and the containment of systemic risk at its centre.

The next chapter focuses on achieving financial stability and suggests areas for research and other lessons.

IV. WHAT THIS IMPLIES FOR THE FUTURE

1. *The Goal of Financial Stability and Assignment of Regulatory Instruments to Objectives*

   1.5 First we must define financial stability. But we also need to assess whether financial stability is a goal that is achievable at a reasonable cost

   1.6 Some regulatory policy tools should be used for macroeconomic policy purposes, and there should be concerted research to determine which instruments to allocate to which targets, between monetary, fiscal, and financial regulatory policies

2. *The Conceptual Framework and Operational Assumptions for Securities Regulation*

   2.10 Over-reliance on markets to self-stabilise is to be avoided and it is time for a wider view that takes account of systemic risks to financial stability

   2.11 Raising regulatory standards for risky instruments may push them into less regulated jurisdictions

   2.12 Shadow banking activities (i.e. those that really are the equivalent of banking) should be regulated the same as banking

   2.13 Agency costs, principal-agent problems and the foibles of human behaviour matter and regulators should consider using the insights of agency theory and behavioural theories

   2.14 The best markets are exchange traded markets as they are simpler and more transparent

   2.15 More organised clearing venues are preferred to bilateral over the counter (OTC) trading between counterparties

   2.16 The diseconomies of extreme scale in finance and systemic dangers in high concentrations of risk, especially in international financial centres and in very large financial institutions, call for regulation of systemic risks

3. *The Regulatory Approach, Regulatory Architecture and Coordination*

   3.7 To cope with innovation in future, a principles-based regulatory approach is likely to prove superior to a hard/'black letter law' form of a rules-based approach

   3.8 A 'twin peaks' regulatory architecture that places the responsibility for market conduct regulation in an agency separate from prudential regulation and assessments of financial stability is the most conducive to maintaining financial stability

   3.9 To avoid gaps and promote accountability, it is better to have one market conduct regulator and one prudential regulator than several in a country

   3.10 Whatever the regulatory approach and architecture adopted, a practical framework that encourages cooperation, coordination and sharing between the agencies (both sectorally and across borders) is essential

4. Housing and its Relation to Finance and Household Wealth

> *4.3 A more concerted regulatory focus on housing markets is needed, with coordinated action to bring the benefits of successful securities markets to this most important component of household balance sheets*

5. Research within Securities Regulators

> *5.4 Globally and nationally, securities regulators need to build up capability in financial risk analysis and economic research, to be able to identify and assess risks to financial stability, to engage with other agencies in consideration of pre-emptive regulatory policy measures, and to advise on implementation of countercyclical and macroprudential regulatory measures*
>
> *5.5 Competition may help ensure that risk assessments are not overlooked in the next boom*

Defining financial stability

The commitment of G20 leaders to financial stability and the containment of systemic risk sets a goal ranking at least equally to the promotion of economic growth or the achievement of market efficiency. Already, financial stability has moved from being merely a task for central banks (as seen by Čihák 2006) to be an explicit objective of central banks or – now under consideration – of a separate systemic risk regulator (IMF 2010). IOSCO has developed and is refining its own position on systemic risk.

The first task should be to think through what is meant by 'financial stability'. Financial stability can be defined narrowly or broadly (Čihák 2006).

- A narrow definition sees financial stability as the antithesis of financial crises (system-wide episodes in which the financial system fails to function and the institutional underpinnings of a monetary economy are disrupted).
- A broader definition would be avoidance of financial fragility (in which the system is exposed to plausible risks and is judged likely to cope despite volatility if subject to shocks).
- The broadest definition would be where the efficiency of financial intermediation is not likely to be subject to significant adverse shocks.

It seems that the broader the definition of financial stability the less the maintenance of stability can be the sole responsibility of the central bank. In a broad definition, the responsibility must be shared more widely with securities and other regulators.

To securities regulators in practice, financial stability should not be 'no failures' but 'no failures that threaten a systemic collapse'. There still must be failures: indeed there must be fewer regulatory rescues if market discipline is to play its proper role. It should not be 'no volatility' but 'no volatility that threatens a systemic collapse'. The events of the 6th of May 2010, when US equity markets displayed substantial intra-day price movements, will no doubt receive careful thought. It should not be 'no loss of confidence' but 'no loss of confidence that threatens a run on the financial system'.

Determining the tools to use to achieve financial stability

The second task should be to determine the tools available for achieving financial stability. Fundamental thinking has begun in the prudential and macroprudential regulation space (Haldane 2010), with detailed considerations being explored for managing systemic risk (IMF 2010).

The crisis made clear that that traditional macroeconomic policy tools did not produce the desired stability and will in future not be sufficient to achieve the desired stability. Two additional conceptual tools are being considered: countercyclical policies and macroprudential policies. They are being explored by the IMF (see IMF 2010) and also by the Basel Committee and in other forums

Because the conventional tools of monetary policy failed to prevent the conditions that bred financial instability, regulatory policy tools should be deployed for macroeconomic policy purposes, including for countercyclical and macroprudential purposes (Blanchard 2010).

The potential is to extend the range of effective policy instruments from reliance on changes in the short-term interest rate to encompass regulatory tools, such as capital asset and liquidity and leverage ratios applied to banks and other credit institutions or extended to managed investment funds that do use significant leverage (e.g. hedge funds) and even to the loan-to-value ratios permitted for mortgages on residential property and to margin loans for share portfolios.

There are several issues to consider:

- It will not be the first time regulatory tools have been used. They were frequently used during the post-World War II period of ‘financial repression’ when markets (and especially exchange rates) were less flexible, but rarely in a manner well-coordinated with other macroeconomc policies, and the outcomes at that time tended not to be effective.

- Today's greater flexibility in markets (and especially in exchange rates) may have shifted the balance towards a more effective outcome if regulatory policies are used. One certain prerequisite for effective use is greater coordination between agencies responsible for different policy tools, to get the timing and the extent of the regulatory policy shift right.

- Whether there should be a 'rule' or some regulatory 'discretion' in the use of the tools is contentious. The ‘rules versus discretion’ debate in central banking was won by the advocates of discretion, initially against demands for a stable monetary supply rule (Friedman 1960) and then against the call for a mechanical "Taylor rule" for setting interest rates (Taylor 1993). [Of course, the test is to use that policy discretion sensibly (Taylor 2009).]

Securities regulators and economists generally agree that commercial banking and the credit intermediation function are so special that prudential regulation is necessary for commercial banks and like service providers. There are three compelling reasons:

- information asymmetries involved in banking between depositors and banks are so acute that prudential supervision is needed to create trust;

- the economy is so dependent on the daily liquidity and maturity transformation provided by banks that the flow of banking services needs not be interrupted; and
- the incentives in banking are so hard to align with the public interest that some intrusive prudential regulatory restraint is required.

The problem is that wrapping commercial banks in prudential regulation in turn confers an implicit government guarantee in the minds of the community and the banks. The implicit guarantees create moral hazards for both banks and their customers. As a result they may take on exposures without properly considering the risks.

Debate is proceeding on how to defuse the incentive problems that arise from such moral hazards, as yet to little avail. There seems little consensus on what mix of increases in capital, liquidity and leverage ratios, imposition of restrictions, prohibitions and taxation and facilitation of resolution and failure will be the likely ultimate preferred approach to apply to banking. And there is less consensus over what 'insurance premium' – in terms of slower economic growth and more restricted or more expensive availability of finance – is worth paying to secure adequate financial stability. What is ultimately decided will be critical for what lies ahead for securities regulators.

Revising the conceptual framework: Can financial stability be achieved at reasonable cost?

All the lessons driven by experiences in the crisis need to be carried forward into the brave new world of regulation in which financial stability is to play a greater role. Naturally, the baby should not be thrown out with the bathwater. Many of the elements of the pre-crisis consensus on securities regulation still hold. The laws of economics have not been repealed. A lower cost of capital is still a vital goal. Information asymmetry, principal-agent problems, misaligned incentives, complexity and uncertainty persist as fundamental problems.

After such a crisis, the weaknesses in the previous conceptual framework are clear. But determining a new set of foundations for regulation is more difficult. It is clear that regulatory and community reliance on markets to be self-stabilising at reasonable cost had been misplaced. A more risk-averse view, alert to financial instability, is overdue.

However, the pursuit and maintenance of financial stability is a very difficult and elusive goal. The key problem is that, while collectively market participants and regulators may want financial stability, a 'free-rider' problem is likely to prevent its achievement. For any individual, greater financial stability implies a reduction in risk, which will signal to the individual that it is safe to take on more debt and more risk. The aggregated actions of individuals will reflect an increase in risk and the prospect of greater instability.

It may well be that financial stability has to be interpreted as a very broad goal. If not, prudential and securities regulators may be forced into an ever-tightening spiral of restrictions that drastically impede economic activity. The cost – in terms of lack of innovation and unmet needs for finance and risk management capacity – may be judged unreasonable.

Instead, the way ahead for securities regulators should be to help create a financial environment that actively constrains systemic risk. It has to be an environment in which all

actors in financial markets (be they issuers, investors or agents) can make more rational informed decisions. But this will involved doing more than what securities regulators have done before, only doing it better. It will require regulatory actions that take into account what has been learned from behavioural economics and agency theory. Regulation must take into account behavioural biases and help align the interests of financial services agents with consumers' interests. Investors can only be expected to take rational decisions if they have available substantial financial education as well as the benefits of continuous, clear and accurate disclosure and, even then, that may not be sufficient. They may also be helped by "nudging" (Thaler and Sunstein, 2008), at some risk to the securities regulator for 'picking winners'.

There also are sharp lessons from the fact that the crisis started in the world's two main financial centres and quickly spread to the rest of the world. The diseconomies of extreme scale in finance and systemic dangers in high concentrations of risk, especially in international financial centres and in very large financial institutions, call for a very considered approach to the regulation of systemic risks.

The preferred approach, architecture and coordination of regulation

To cope with innovation in future, a principles-based regulatory approach is likely to prove superior to a hard/'black letter law' form of a rules-based approach.

The appropriate regulatory architecture also needs considering.

- There is a groundswell of support in favour of appointing a systemic risk regulator and moving prudential regulation back into the central bank The April 2010 IMF Global Financial Stability Report makes a case that dividing the responsibility for financial stability among a number of regulators would tend to increase the (inappropriate) exercise of regulatory forbearance (IMF 2010). The IMF staff paper had earlier suggested recombining financial regulation into the central bank, as that is where the expertise in making economic and financial stability assessments lies. The UK has recently announced it is taking steps in that direction (Osborne 2010) [whereas responsibility in the US for systemic risk is moving to a Financial Services Oversight Council].

- This needs thorough research: centralising all financial sector regulation into one agency (and especially into the central bank) would offend the Tinbergen principle, that each independent objective needs a separate and independent instrument. Taking financial regulation back into the central bank would create a 'senior-super-regulator' with several competing goals, which would end in confusion and compromise.

- One alternative is to make the separate agencies more independent and accountable. Separation is one practical way to ensure that the daily work-load of the market conduct regulator can avoid distracting the longer-term focus required of the prudential supervisor and the systemic risk regulator.

- If there is no separate systemic risk regulator, a 'twin peaks' regulatory architecture that places the responsibility for market conduct regulation in an agency separate from prudential regulation and assessments of financial stability is the most

conducive to maintaining financial stability. To avoid gaps and promote accountability, it is better to have one market conduct regulator and one prudential regulator than several in a country.

Whether or not there is a separate systemic risk regulator established, there is much to be said in favour of creating a framework for cooperation and sharing between the agencies (the finance ministry, the central bank, the prudential supervisor and the securities regulator, as well as any appointed systemic risk regulator). This is the intent of reforms in the US and elsewhere. The approach seems to build on the posture of advisers to the expert panel recommending regulatory architecture reform in Canada in 2009. “Canada should not let itself be trapped in a false choice between a 'single regulator' model and a 'twin peaks' model. What is most important is that Canada’s regulators have clear lines of authority, share information freely and continuously, and coordinate regulatory actions” (Pan 2009).

Home truths for securities regulation

Many securities regulation truths have come to the fore as a result of the crisis. Three such truths were enunciated by the IMF’s Laura Kodres in February (Kodres 2010):

- *The best markets are exchange traded markets as they are simpler and more transparent*
- *More organised clearing venues are preferred to bilateral over the counter trading*
- *Raising regulatory standards for risky instruments may push them to less regulated jurisdictions*

While it is easy to endorse these views, questions arise on what to do if products cannot be made simple enough to trade on exchanges or to be cleared by an organised venue. Judgement is necessary to avoid creating barriers that frustrate economically efficient transactions. And the risk of spill-over must always be considered.

Many take the Kodres view that after the crisis banks will return to their more traditional intermediation function but tighter regulation of banks and higher capital requirements will limit the risks that they can take. As a result, the non-banking sector will likely have a greater competitive advantage, both in supplying credit and providing investors with non-bank services, and will thus grow, engaging in regulatory arbitrage. Thus, regulators will need to set the regulatory perimeter to monitor and – if necessary – limit the risks in the non-bank sector.

Many also agree with her that improved market infrastructure, including more exchange trading of previously over-the-counter instruments and robust netting and clearing systems, reinforced to protect investors from counterparty risks, and greater simplicity and transparency to make risks clearer and the financial system safer is appropriate.

The risk of regulatory arbitrage and spill-overs need to be recognised guarded against. However, tighter regulation of banks will not necessarily lead to a spill-over to non-bank activities. Some non-bank activities are complementary to – rather than substitutes for – bank activities, and will be cut back (rather than expand) if banks are less active. The net effect of the tighter bank regulation that is in train will have to be monitored.

In addition it may be that macroprudential instruments can be developed that restrain excess in the intermediation done by ‘shadow banks’ by influencing banks’ supply of credit to them (Tucker 2010). There is much to be said for regulating 'shadow banks' as banks if it provides an alternative home for liquid savings, offering *de facto* deposit and monetary services.

Housing: A market that could gain from increased oversight by securities regulators

The housing market played a key part in the financial and economic boom and bust. It seems set to continue to pose an acute challenge in the recovery period, with concerns over price bubbles and excessive borrowing and speculation in some economies and the consequences of previous excesses still washing through other economies. The housing market represents a problem for securities regulators, as well as for policy makers and other regulators.

Housing appears too important to be regulated on its current typically severely fragmented basis. At present, problems of supply rigidities, tax imposts and subsidies, prudential and other societal pressures favouring borrowing for housing and inherent information asymmetries, high search costs and high transaction costs are typically under the oversight of several agencies, and are not coordinated, leading to the potential for market dislocations. Often no instruments for hedging housing price risk are available.

A better housing market would involve a transparent on-exchange securities market overseen by market conduct regulators, made more efficient by actions to reduce search and transaction costs and centralised data, informed by continuous disclosure and facilitated by risk management and hedging instruments.

Consideration should be given to applying the principles of market conduct and disclosure regulation across all assets (non-financial as well as financial) and liabilities in the household balance sheet, including housing assets and liabilities.

There is a risk that adding more responsibilities to securities regulators can dilute focus on existing responsibilities if resourcing is inadequate. Nevertheless, the ambit of market conduct regulation is gradually being extended, and real estate would seem the next logical step.

The need for further research, both national and international

Globally and nationally, securities regulators need to build up capability in financial risk analysis and economic research, to be able to identify and assess risks to financial stability, to engage with other agencies in consideration of pre-emptive regulatory policy measures, and to advise on implementation of countercyclical and macroprudential regulatory measures.

This paper in Chapter III has set out many topics where our lack of understanding could have contributed to the build-up of risks within the financial system and therefore helped lead to the crisis. Further research is needed to throw a light on:

- *how banking and capital market developments are inseparable and fluctuations in financial conditions have a far-reaching impact on the workings of the real economy*

- *the economics of credit cycles, as explored in the 1960s to 1990s by US economist and banker Hyman Minsky*
- *asset price bubbles, especially in housing*.
- *the size of the finance sector and the impact of interconnections between financial sectors in different countries*.
- *network resilience*
- *the 'shadow banking system'*
- *the procyclicality of much regulation*
- *the behaviour of financial market participants and financial services agents*

Overall there is also a need for much better modelling of risks and economic interactions, including work on the flow of funds and the flow of risk. Very practical use can be made of a better understanding of insights from agency, network and behavioural theories.

In addition, the crisis has exposed flaws in the pre-crisis policy and regulatory framework, required officials to explore new approaches during the crisis. It forces us all to think about the architecture and implementation of post-crisis policy and regulation. There will be considerable experimentation with new (and newly rediscovered) tools. This learning-by-doing creates an obligation on securities regulators to cooperate in the experiments until the new overall approach is settled.

The crisis has also exposed a need for better research at an international level, research that is responsive to the needs of regulators, supervisors and policy makers. This could include establishing international regulatory benchmarks and external ‘peer-reviewed’ risk assessments, as inputs to IOSCO's work on systemic risk and supervisory cooperation. A web of (well funded) institutions undertaking an international competition in identifying risks would be best: the alternative, an immediate search for consensus, too often becomes a 'race to the bottom' and the 'lowest common denominator'. A proper competition in identifying risks, properly funded across agencies with clear responsibilities for financial stability and managing systemic risk, may overcome the tendency in the past for bad news and unpleasant views to be 'swept under the carpet'.

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V. CONCLUSIONS

The crisis had many origins, not just regulatory policy and its implementation. This review shows the crisis exposed an excessive faith in the self-balancing merits of the market-based deregulatory mindset that dominated thinking before the crisis. The goal of avoiding such a crisis again requires us to rethink the conceptual framework and operational assumptions that should be applied to post-crisis securities regulation.

This paper has drawn out some lessons about the way we thought and what we now know, canvassing the goal of financial stability, the assignment of regulatory tools to objectives, the foundations of the conceptual framework and operational assumptions underpinning securities regulation, and the regulatory approach and its architecture and coordination. The paper has commended a focus on the lessons from agency, network and behavioural theories and a more concerted regulatory focus on housing markets. It has also discussed at length the research that would now assist securities regulators.

Rethinking should not be rushed. This paper provides a very preliminary review. Many loose ends and unanswered questions remain. Similar introspection is occurring at every level and in every forum, in macroeconomics, financial economics, in fiscal, monetary, competition and prudential policy.

How best to achieve financial stability is a key question. Hyman Minsky probably was right in saying that stability inexorably leads to instability, so financial stability as a goal is going to be very difficult to deliver. In addition, the greatest danger now is that we will over-regulate, sap the availability of finance and stunt enterprise and limit economic growth more than would be required to minimise the risk of excessive financial instability. The need for judgement in the application of regulation remains as challenging and valuable as ever.

The underlying macroeconomic ideal will still involve stable growth and stable inflation: it is hard to envisage unstable growth and more or variable inflation being desired as intermediate outcomes to avoid an excessive build-up in risk-taking. But regulators have many warning signals to consider, including imbalances in the composition of demand and output, the behaviour of asset prices and the leverage of different agents. Regulators also have an array of new policy tools and instruments to consider for use, including improved risk reduction and disclosure requirements, realigned incentives, loan-to-value ratios and suitability tests, and improved education as well as a greater spread of capital, liquidity, leverage, tax and resolution tools. The challenge will be to learn how to use these instruments in the best way in combination with monetary and fiscal policies.

This will require very active and improved economic research capacity in the ranks of securities regulators, much of it focused on risks. Better, competitive research is desirable at the national and international levels. However, a better research capacity will not guarantee a better outcome: William White reminds us that prejudices led to prescient early warnings being ignored ahead of the recent crisis (White 2010).

Even with improved research and better processes to ensure it is taken into account, the financial system no doubt will be a source of crisis again at some point in the future. Hopefully, in that case, by applying the lessons now learned, it will not be a repeat of the crisis just past but a new form of crisis. And maybe some potential crises can be defused before they occur.

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