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FRAMEWORK FOR SECURITIES REGULATION POST-GFC

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I. INTRODUCTION AND SUMMARY

This paper seeks to contribute to the rethinking of securities regulation that is underway around the world, taking a three step approach.

1. It reviews what we thought we knew.
2. It identifies what we learned from the crisis, highlighting where we were wrong and what we now know.
3. It makes a very preliminary stab at what this implies in terms of a new conceptual framework for securities regulators.

For brevity, “securities regulation” refers to regulation not just of equities, bonds and collective investments, but also to derivatives and other financial products. In some countries, the securities regulator also regulates credit.

The paper's structure and content owes much to the staff position note "Rethinking Macroeconomic Policy" by three IMF staffers (Blanchard *et al* 2010). We seek to complement its root-and-branch rethinking.

The paper is 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?) itself confirmed that prejudice.

In addition, in the three years since the first clear signs of crisis, many immediate lessons have already been identified. Detailed work to improve securities regulation is under way in every country and across the world under the auspices of IOSCO and the G20. There is 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.

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This review seeks to build on the learning and the responses made so far. This progress has been made with the pre-crisis mindset still top of mind, to make the old regime work more safely.

However the main conclusion so far drawn by the G20 leaders is that the arms of policy – macroeconomic, prudential and regulatory – were inadequately directed towards financial stability. The debates over how to achieve financial stability will strongly influence the post-crisis approach to be adopted for securities regulation.

The results are presented under four 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; and
4. Research by securities regulators.

The main conclusion of this paper is that the conceptual framework that underpins securities regulation has to take into practical account two things. 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 and market participants. 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 We can all be wise in hindsight, but it is fair to say that deregulatory market-based 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

"There 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)

2.2 In practice this meant that

(a) regulators could assume that information asymmetry and conflict of interest problems would be adequately resolved by disclosure and fairness regulation, and risk appropriately assessed and allocated

(b) those responsible for corporate governance and market gatekeepers could be relied on to minimise risks and uphold standards

(c) innovation in products and markets was to be welcomed, to complete the risk spectrum and facilitate risk transfer and re-allocation

(d) a bigger finance sector, bigger financial intermediaries and greater international financial connections were thought beneficial for economic growth and welfare

3. The Regulatory Approach, Regulatory Architecture and Coordination

3.1 Local suitability determined the approach, the architecture and the arrangements for coordination

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 split the prudential and securities regulation functions between 'twin peaks' or more

3.4 Some had structures in place to ensure effective coordination, and others did not

4. Research within Securities Regulators

4.1 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

How the pre-crisis conceptual framework for securities regulation spread

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 (Jordan 2009).

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).

Part of the appeal was the interlocking and self-reinforcing 'beauty' of the market-based conceptual framework. Similar beauty was also seen in economics and in 'efficient markets theories' (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 over the past half century.

Key aspects of the conceptual framework

Taken together, we can identify several components of the prevailing conceptual framework underlying securities regulation, including that:

- A. *Markets are generally self-stabilising. As a result regulators intervened rarely and only if justified by market failure. Our role was to stay out of the way of market developments, imposing as few barriers to their expression as possible*
- B. *Disclosure overcomes information asymmetries and resolves conflicts of interest. No further protections were felt to be required – other than action to protect market integrity*
- C. *Corporate governance imposes effective discipline on risk taking. Corporate governance therefore was seen as a cornerstone of market-based processes*
- D. *Market gatekeepers uphold proper standards. The standards set by market gatekeepers therefore were relied on by regulators and by investors*
- E. *Interconnections between markets and innovations in finance generally add to welfare. Completeness and size of markets therefore were seen as measures of success*
- F. *The behaviour of actors in the market is in effect 'rational'. Market prices therefore were the best (or least bad) indicator of rationally evaluated economic value*

Writing with the great advantage of 20/20 hindsight, it is clear that assumptions formed much of the foundations that underlay these beliefs. But 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 operation of the financial sector was very much an unpacked 'black box'.

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. Nevertheless there were some countries that did use financial regulation as a tool of broader macroeconomic policy. The IMF staff study commended Spain and Colombia, which introduced rules that *de facto* link provisioning to credit growth, as notable exceptions. There were also active changes in housing loan-to-value ratios and land supply policies in Hong Kong, to counter the pro-cyclical impact of the interest rate settings imported from the US.

Research

The 'black box' that the financial sector filled in models of the economy and the assumptions of rational actors and full disclosure of information was not an encouragement for research. Nevertheless, many securities regulators had built up economics research teams to support the regulatory work shaped by the pro-market deregulatory mindset.

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 risks

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

2.3 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. Ex-Chairman of the Federal Reserve Board of Governors Alan Greenspan starkly expressed the disappointment experienced by regulators at the failure of market discipline to control risk, which was at the heart of the conceptual framework underpinning regulation

"Those 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)

2.4 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

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

2.6 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

2.7 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

3.5 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

3.6 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

3.7 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. Research within Securities Regulators

4.2 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. 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

4.3 With little international research capability, 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.

Most of the beliefs were found to be overstated, rather than 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, like Mark Twain, started to worry 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 have incentives to pursue their own self-interest rather than the interests of others, including issuers and investors.
- C. *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 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 we know that 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 light of the prevailing mindset), professional and/or sophisticated investors seemed to make as many or more mistakes as did retail investors.

Since the crisis 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 (i.e. semi-strong) efficient but occasionally very inefficient. (Smithers 2009).

If, as it seems, markets are at least 'semi-strong efficient' for long periods, and thus hard to forecast, most investors, retail and institutional, gain little from active management to try to beat the market. They should focus on 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 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 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 in the face of complexity and innovation (Haldane 2009).

3. Quantitative measures of risk were wrong

The data fed into the models were atypical, from an era of stability. The prosperity and lack of volatility in the 'Great Moderation' underestimated risks. The models underestimated 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. 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 lack of understanding of the economics of securities markets and the interconnections with the broader finance sector and the economy.

We did not adequately understand:

- *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).
- *the economics of credit cycles, as explored 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 also observe that regulators are seduced by the prosperity of a boom, contributing 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. Though it extends beyond the current scope of securities regulation, the entire approach to regulation of the housing market warrants further thought, to gain for participants the benefits of finance innovations (risk management, hedging, narrower spreads, reductions in information asymmetries and improved alignment of interests of agents and clients) (e.g. Shiller 2003).
- *the size of the finance sector and the impact of interconnections between financial sectors in different countries*.
 - 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. And the international dimension is increasingly important (Kubelec and Sá 2009).
 - Some have questioned the optimum extent of the finance sector in relation to the economy and the utility of further expansion, and even proposed some shrinkage (Haldane 2010).
- *network resilience* (Haldane 2010). Deregulation swept away barriers that previously 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'* (“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)). For instance, although intended to disperse credit risk to those who were better able to absorb losses, 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).
- *the procyclicality of much regulation.* Regulation too often is pro-cyclical on the downside as well as the upside: prudential and securities regulation interacted to amplify effects that transformed the decrease in U.S. housing prices into a major world economic crisis.
- *the behaviour of financial market participants and financial services agents.* Agents in the financial services sector appear only too driven by self-interest and incentives, a problem often overlooked in conventional theory. Without a fiduciary duty to serve the interests of clients, agents often tend to pursue their own ends, earning rewards on inappropriate sales of risky and complex instruments. This insight has led to several thoughts:
 - The previous reliance on disclosure was misplaced: necessary, so improvements are desirable, but unlikely to be sufficient. In particular, enforced 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 is often the more certain and less costly approach in the long run.
 - Some see the conflicts of interest between bankers and contributors to funds management schemes as so great that bankers should be prevented from owning funds management businesses (Zingales 2009). Alternatively, new agencies have been proposed, to develop standardized financial products coupled with corresponding disclosure principles: conform or explain material differences (Fisch 2010). Others wonder if professional and sophisticated investors should be treated differently to retail investors.

The regulatory approach, regulatory architecture and coordination

Though there has been no conclusive debate, it does seem that the "black letter law" versions of rules-based approaches in the crisis were more prone to incomplete regulatory coverage of innovations than were principles-based approaches.

In addition, when selecting a regulatory architecture for a country, it is important to bear in mind the process involved in regulating. Regulation of market conduct occurs daily, very different in practice to prudential and systemic risk monitoring, which has a longer-term

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

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 paradigm that 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.

This is especially so in banking. Central banks had been expected to rescue the illiquid but not the insolvent (Bagehot 1873), an initially useful constructive ambiguity. But in the crisis the insolvent also had to be rescued. 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 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. By now, it is clear that the new narrative will have financial stability at its centre.

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

2.8 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

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

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

2.11 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

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

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

2.14 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

3.8 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

3.9 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

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

3.11 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. Research within Securities Regulators

4.4 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

4.5 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 stability sets a goal ranking at least equally to the promotion of economic growth or the

achievement of market efficiency. Financial and systemic stability has moved from being an additional task for central banks to be an explicit objective for central banks or a separate system risk regulator (IMF 2010).

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).
- The broadest definition would be where the efficiency of financial intermediation is not likely to be subject to significant adverse shocks.

The broader the definition of financial stability the less the maintenance of stability can be the sole responsibility of the central bank.

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 than in the past 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 equities markets displayed substantial intra-day price movements, will require 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

Fundamental thinking has begun in the macroprudential regulation space (Haldane 2010), with detailed considerations being explored for managing systemic risk (IMF 2010).

The potential is to extend the range of effective policy instruments 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.

From a securities regulatory perspective, we agree that commercial banking and its credit intermediation function are so special that prudential regulation is necessary for commercial banks and like service providers.

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

So far, there is no 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 address this moral hazard. There is also no consensus over what 'insurance premium' is worth paying to secure adequate financial stability. What is decided will be critical for securities regulators.

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

We see the pursuit and maintenance of financial stability as a very difficult goal. Collectively market participants and regulators may want financial stability, but a 'free-rider' problem is likely to frustrate its achievement. For any individual, greater financial stability implies a reduction in risk, which will signal to that individual that it is safe to take on more debt and more risk. The aggregated actions of individuals will increase risk and the prospect of greater instability.

It may well be that financial stability is better interpreted as a very broad goal, or regulators will be forced into an ever-tightening spiral of restrictions that drastically impede economic activity.

We think that the way ahead for securities regulators is to help create a financial environment in which all actors in financial markets (be they issuers, investors or agents) can make more rational informed decisions. This will require regulatory actions that take into account what we have learned from behavioural economics and agency theory. Regulation should take behavioural biases into account. It should also 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'.

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.

As for the appropriate regulatory architecture:

- There is support within the IMF in favour of a systemic risk regulator and/or moving prudential regulation back into the central bank, as is being implemented in the UK. Dividing the responsibility for financial stability among a number of regulators may 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 it has the expertise in making economic and financial stability assessments.
- However, centralising all financial sector regulation into one agency offends the Tinbergen principle, that each independent objective needs a separate and independent instrument. An alternative would be to make the separate agencies more independent and accountable (along the 'twin peaks' line in Australia). Separation is a 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.
- In addition, to avoid gaps and promote accountability, it is better to have one market conduct regulator and one prudential regulator than several in a country.

In any event we favour creating a framework for cooperation and sharing between agencies, within and across borders.

Home truths for securities regulation

Many securities regulation 'motherhood' truths have come to the fore as a result of the crisis, including those enunciated 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 OTC trading*
- *Raising regulatory standards for risky instruments may push them to less regulated jurisdictions*

But questions arise on what to do if products cannot be made simple or transparent 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.

We also recognise the risk of spill-over and regulatory arbitrage. However some non-bank activities are complementary to – rather than substitutes for – bank activities, and will be cut back (rather than expanded) if banks are less active. The net effect of tighter bank regulation will have to be monitored. Also, it may be that we can develop macroprudential instruments that can restrain excess in the intermediation done by 'shadow banks' by influencing banks' supply of credit to them (Tucker 2010).

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.

Overall we see a need for much better modelling of risks and economic interactions, including work on the flow of funds and the flow of risk. Specific research topics on areas of inadequate understanding were set out in Section III. We emphasise the very practical use of a better understanding of insights from agency theory, network economics and behavioural theories. We also see real benefits that could flow from applying what we have learned about effective securities regulation to the housing market.

There will also be new – post-GFC – challenges warranting research, one being the regulatory consequences of the transition to high frequency trading and other electronic means of submitting orders across markets.

The crisis has also exposed a need for better research at an international level, responsive to the needs of regulators, supervisors and policy makers. International benchmarks and external 'peer-reviewed' risk assessments would be useful. A web of institutions competing in identifying risks would be best: the alternative, a search for consensus, becomes a race to the bottom and ensures perceptive research on risks would be ignored.

V. CONCLUSIONS

The crisis exposed an excessive faith in the self-balancing merits of the pre-crisis market-based deregulatory mindset. The goal of avoiding such a crisis again requires us to rethink the conceptual framework that should be applied to post-crisis securities regulation.

Rethinking should not be rushed. There are many unanswered questions. Similar introspection is occurring in macroeconomics and in financial economics, and in fiscal, monetary, competition and prudential policy.

All lessons from the crisis need to be carried forward into the brave new world of regulation in which financial stability and the containment of systemic risks are to play a greater role. But the baby should not be thrown out with the bathwater: many of the elements of the pre-crisis consensus still hold. The laws of economics have not been repealed. A lower cost of capital is still a vital goal. However, information asymmetry, principal-agent problems, misaligned incentives, complexity and uncertainty persist as fundamental problems.

An immediate take-away is that the extent of the changes to the approach to securities regulation depends on the success of efforts to contain the systemic risk to financial stability from 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, or by leaving those risks unchecked, then securities regulation itself will have to focus more on assessing and restricting risks to systemic stability.
- If however, as we 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, markets and human behaviour works and in understanding – and monitoring – the tracking of financial risks. We emphasise the wide range of topics to be researched.

How best to achieve financial stability is a key question. But we expect financial stability is going to be very difficult to deliver. The greatest danger now is that we will over-regulate, sap the availability of finance, 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.

Our most confident prediction is that securities regulators will seek to draw more on an improved economic research capacity, 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 if no one pays attention.

Even with better processes to ensure research is taken into account, the financial system will be a source of crisis again. Hopefully, by applying the lessons now learned, it will not be a repeat of the crisis just past. And maybe some potential crises can be defused before they occur.

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