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# C.D. Howe Institute COMMENTARY

FINANCIAL SERVICES

# Look Before You Leap:
## A Skeptical View of Proposals to Meld Macro- and Microprudential Regulation

Nick Le Pan

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The recent international financial crisis has not set the stage for sweeping regulatory reform in Canada, and it would be inadvisable to assign responsibility for financial system stability to a single agency.

## The Study in Brief

Many domestic and international policymakers are determined to meld a systemic view of risk and resilience to the established regulation of banks and other financial institutions, with the aim of enhancing the stability of the international financial system. They want to add "taking account of financial system stability" as a supplement to the mandates of all central banks and regulatory authorities.

This *Commentary* explores the Canadian experience with financial system regulation. It concludes that it is essential to have a better definition of systemic risk, so that expectations of central banks and regulators are made clear.

Further, it is inadvisable to assign responsibility for ensuring the stability of the financial system to a single agency – what matters more are processes to promote the realistic consideration of risk, to promote constructive challenge among authorities, to resolve tradeoffs among different policies, and to strengthen the "will to act," when economic circumstances warrant.

The *Commentary* also considers the G-20 case for reducing "procyclicality" in financial regulation, as exemplified by the international capital rules and standards collectively known as Basel II. But Basel II has considerable benefits with respect to financial stability that should not be undermined. The existing degree of procyclicality in regulation is not well understood: procyclicality is often confused with asset-bubble issues, and some current proposals for addressing it could in fact make matters worse.

Finally, when it comes to regulatory capital requirements, new measures that might be required should be discretionary, not based on automatic alteration of prudential rules in response to macroeconomic variables. New proposals should address directly the need to change the behaviour of market participants, through changes in how they set and disclose capital targets over the business cycle.

### The Author of This Issue

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### About the Institute

Domestic and international policymakers are determined to meld a systemic view of risk and resilience to the established regulation of banks and other financial institutions, with the aim of enhancing the stability of the international financial system.

They want to add "taking account of financial system stability" as a supplement to the core mandates of all central banks and regulatory authorities (see G-20 2009a, 2009b).

This paper critically explores the issue of financial institution regulation, Canadian experience, the factors influencing successful regulation and the closely related issue of which entities should be regulated to ensure the safety and soundness of the financial system, and which institutions should have access to the safety net. I conclude that it is essential to have a better definition of macrosystemic risk, so that expectations of central banks and regulators are made clear. Further, I suggest that it is inadvisable to assign responsibility for ensuring the stability of the financial system to a single agency – that what matters more are processes to promote the realistic consideration of risk, to promote constructive challenge among authorities, to resolve tradeoffs among different policies, and to strengthen the will to act.

I also consider the G-20 case for reducing "procyclicality" in financial regulation, as exemplified by the international capital rules and standards collectively known as Basel II, from the accord on international standards reached in that Swiss city in 2004. I argue that Basel II has considerable benefits with respect to financial stability that should not be undermined, that the degree of procyclicality is not well understood, that procyclicality is often confused with asset-bubble issues, that models to forecast cycles accurately are not readily available, and that inappropriately designed policies might exacerbate cycles.

Finally, I propose a number of practical ways to move forward, including strengthening international peer review beyond that scheme the G-20 proposes.

## Background

Most countries have well-established prudential regulatory systems for banks and insurers that focus on the health of individual institutions, have an explicit or implicit mandate to set rules for risk-management practices, require entities to hold adequate capital, and exercise powers to intervene in various ways, including, in the case of serious deficiencies, forcing closure and resolution. These systems are seen as contributing to public confidence in financial institutions – a good example is the legislative mandate of Canada's Office of the Superintendent of Financial Institutions (OSFI)[1] – and early intervention in cases of potential financial difficulty is often seen as key to successful regulation. The criteria for such regulation, and related activities by banks themselves, are codified in the Basel Core Principles for Effective Banking Supervision (BIS 2006), which are matched by similar principles for securities and insurance regulation. These principles are the basis for the Financial Sector Assessment Program (FSAP) of the International Monetary Fund and the World Bank (see IMF 2009). This peer review system has assessed publicly over one hundred countries since 1999, but not the United States.

Some observers see "macro" or "system" stability as more than the sum of the safety and soundness of individual institutions (see Borio 2003; BIS 2008), yet few countries assign any explicit role to any one organization for monitoring or regulating macrostability. Central banks and, to some extent, treasuries have this responsibility *de facto* by virtue

The views in this document are mine and do not reflect those of any organization with which I am associated. I wish to thank John Crow, David Dodge, Frank Milne, John Pattison, Finn Poschmann, and Gordon Thiessen for comments on an earlier draft.

1 *Office of the Superintendent of Financial Institutions Act,* RS 1985, c18 (3rd Supp), sections 3 and 4.

of the former's role as lenders of last resort and latter's as the only authorities that can commit public money – although deposit insurers also are often able to provide guarantees with government backing. In Canada's case, the mandate of the Bank of Canada does not include financial system stability For its part, OSFI's mandate includes "monitoring and evaluating system-wide or sectoral events or issues that may have a negative impact on the financial condition of financial institutions."[2] But macroprudential stability seems to mean more than that.

## Problems with Predicting Macro-Systemic Failures

A wag once said that the trouble with early warning is that it is early and it is only a warning. There is more truth in that than many leaders and policymakers are prepared to admit. In fact, macroprudential regulation is ill defined and has the potential to conflict both with the regulation and supervision of individual institutions and with other macroeconomic goals. A significant literature concludes that unclear mandates do not help authorities to achieve their goals, nor do they help market participants to anticipate the actions of authorities and to adapt their behaviour in response. Central bankers point out that their credibility, which is a key ingredient of their stock-in-trade, and that of regulators suffers if the goals of this macroprudential role are not clear and if they lack tools that are commensurate with the objectives they are assigned (see, for example, Bernanke 2008). Without more clarity with respect to mandates, peer assessments under the FSAP cannot know what to look for and when to praise or criticize.

Thus, a clearer definition of macroprudential regulation is needed to determine appropriate policy responses, the reasonable authority and accountability arrangements for various agencies, and the results that reasonably can be expected by the public and legislatures. I also believe that much can be accomplished by incorporating lessons already learned in better fulfilling existing mandates. It is important that these improvements not be lost in the design of "new architecture" for financial system regulation if progress in reducing the incidence and severity of future financial crises is not to be jeopardized.

## The Intention of Macroprudential Regulation

At their summit held in London in April 2009, the leaders of the G-20 agreed:

- to establish, as a successor to the Financial Stability Forum (FSF), a new Financial Stability Board (FSB) with a strengthened mandate and that would include all G-20 countries' international financial institutions such as the IMF and the Basel committee, as well as Spain and the European Commission;
- that the FSB should collaborate with the IMF to provide early warning of macroeconomic and financial risks and the actions needed to address them;
- to reshape regulatory systems so that the authorities are able to identify and take account of macroprudential risks; and
- to extend regulation and oversight to all systemically important financial institutions, instruments, and markets, including, for the first time, systemically important hedge funds (G-20 2009a).

The evolution of the G-20 as a policy-setting and coordination group, together with the expanded membership of both the FSB and the Basel committee, puts these organizations in a much better position to succeed. A working group report to the G-20 summit notes that "national financial regulatory frameworks should be reinforced with a macro-prudential overlay that promotes a system-wide approach to financial regulation and oversight and mitigates the build-up of excess risks across the system" (G-20 2009b, ii). The report notes this will require better

2 Ibid., 4.(1)*(d)*.

coordination among the various financial authorities within each country, that their mandates should take account of financial system stability, and that effective tools are needed to address systemic risks. The report also notes that rules should be "complemented with the informed judgment of financial sector authorities based on their joint assessment of the risks across the financial system" (G-20b, recommendation 3, p5). Tools suggested include simple indicators to measure the build-up of leverage, capital requirements that adjust over the cycle, loan-loss provisioning that incorporate all available credit information, the use of longer historical samples to assess risk and margin requirements, and a narrower focus on loan-to-value ratios for mortgages.[3]

### *The Development of the Macroprudential Concept*

In the late 1990s, central banks and the Bank for International Settlements (BIS) started promoting the idea of macroprudential regulation, or macrostability (see BIS 2000; Crockett 2000). This was beyond the essential contribution that macroeconomic policies should make to the safety and soundness of the financial system. Macroprudential regulation would also differ from the risk proofing of payment, clearing, and settlement systems, and from the contribution to public confidence and system stability of effective prudential regulation of commercial banks, investment banks, and insurers, backed by deposit insurance and effective lender-of-last-resort facilities. The concept was based on three key points: that there were direct and indirect interconnections among financial institutions, which were not well understood; that different financial markets could exhibit perfect correlation in times of crisis, thus severely undercutting the benefits of risk management or creating interconnections; and that there were endogenous risks, from individual entities' choice of actions to protect themselves, which could result in more macroinstability.

In response, many central banks began to publish and give prominence to regular financial system reviews as a contribution to financial stability (see, for example, Bank of Canada 2002). Internationally, in 1998 the FSF was created at the initiative of G7 finance ministers and central bank governors on the basis of the recommendations of the Tietmeyer report (1999), which they had commissioned. The goal of the FSF, which consisted of prudential regulators, central banks, treasuries, and international financial institutions and standards setters, was "to promote international financial stability, improve the functioning of financial markets and reduce the tendency for financial shocks to propagate from country to country, thus destabilizing the world economy" (Tietmeyer, p5). Its mandate was to assess vulnerabilities affecting the international financial system; to identify and oversee action needed to address these; and to improve coordination and information exchange among the various authorities responsible for financial stability (Tietmeyer 1999). Necessary changes to enable the FSF to achieve its goals would be enacted by the relevant national financial authorities.

Despite all this, the international community failed to act on the warnings it received, when doing so could have lessened either the likelihood of the recent crisis or its impact. Why? First, it is important to recognize that the origin of the problem was not worldwide, so it was not obvious that the entire worldwide financial system needed to be revamped. Nor was the source just regulatory failures or bank risk-management failures. Macro policy and other explicit policy choices, such as the promotion of home ownership by lower-income individuals and resulting imbalances, were key drivers. And while weaknesses in the US regulatory system and US monetary policy choices were important, there appear to have been macro policy and regulatory and supervisory failures in the United Kingdom and the euro zone as well. They at least added to the spread of the crisis and its seriousness once it

3 Both a recent FSA report (Turner 2009), endorsed by the UK government, and a plan by the current US administration (United States 2009) contain similar notions.

got going. In Canada, in contrast, inflation targeting, the regulatory system, reasonable risk management, and other policies largely shielded the country from serious asset bubbles and financial system trouble, although it is still exposed to export and foreign-lender risks.

With the proposed establishment of the new FSB, the G-20 hopes for an international regulatory framework with a more interventionist mandate, more follow-up, better staff support, better links to the IMF, early warning exercises, and improved reporting to G-20 finance ministers and central bank governors. These are helpful developments but, as I note below, crucial to success will be the mind set and leadership to take reform seriously.

In the *Financial System Review* that it started publishing in 2002, the Bank of Canada noted that it

> is one of several federal and provincial agencies and organizations in Canada that promote the safety and efficiency of our financial system....The Bank contributes a broad perspective that reflects the major activities in which it is engaged. As the monetary authority, the Bank brings a macroeconomic or system-wide point of view to issues concerning the financial sector, as well as extensive knowledge of financial markets. As the source of ultimate liquidity to the financial system (and, thus, the lender of last resort) the Bank is acutely aware of stresses that can develop in the system during times of financial turbulence....The goal of the Financial System Review…is to share with financial system participants and the Canadian public the Bank's research, analyses, and judgments on various issues and developments concerning the financial system…[and to] contribute to greater understanding of such issues and promote a more informed discussion of policy and developments in Canada and abroad….[and thus] enhance the efficiency and stability of the Canadian financial system. (Bank of Canada 2002, iii.)

In the mid-1990s OSFI's mandate was clarified to give it formal early intervention powers and to strengthen its will to act expeditiously in identifying safety and soundness problems and to force financial institutions to take appropriate measures. Explicitly, this included the possibility that individual institutions might fail, whereupon OSFI would be able to apply to wind up the failing institution. In that eventuality, OSFI is required to consult with the minister of finance as to whether there are public-interest reasons for not proceeding, and if so, the government would have to bring resources to the table to solve the problem. Otherwise the superintendent of financial institutions and, ultimately, the minister would be in untenable positions vis-à-vis both their mandates and the public if they were to allow a nonviable entity to continue operating. I believe these mandate changes are key to Canada's success in regulating and supervising financial institutions over the past 10 years.

Recently, the Canada Deposit Insurance Corporation (CDIC) has received additional tools with which to resolve failures. These generally start with OSFI's determining whether or not an institution is viable, which is correctly within its role and mandate, and then a determination by CDIC (whose board includes public and private sector representatives) whether it is in the interest of system stability and least cost to assist in a resolution or to allow liquidation. Recent amendments allow the minister in some cases to suspend the least-cost-determination process to permit CDIC to consider systemic implications by themselves.

Canada has had experience of cooperative mechanisms with the workings of the Financial Institutions Supervisory Committee (FISC), which was created by statute in the mid-1980s in part to deal with the "will-to-act" issue in the wake of the failure of several western Canadian banks. Its members are the governor of the Bank of Canada, the superintendent of financial institutions, the deputy minister of finance, the chair of the CDIC, and, more recently, the commissioner of the Financial Consumer Agency of Canada. FISC principals meet regularly, with the superintendent chairing, its minutes are provided to the minister of finance, and it performs post mortems on past problems.

Will to act is also strengthened by checks and balances among FISC partners in assessing financial conditions. If one member of FISC, for example, were to express serious reservations about a situation for the record, it would behoove other members to take it seriously. At the same time, these institutional arrangements promote solutions that can meet the various organizations' mandates. Clarity of understanding, constructive tensions, respect for others' mandates, and continuity of senior-level involvement are important success factors in dealing with problems over the past 15 years. However, as I note below, Canada is well placed to take advantage of the room to enhance these improvements considerably to account more effectively for macroeconomic factors.

## *The Meaning of Macroprudential Regulation*

The concept of macroprudential regulation can be broken down into five types, each with different remedies (see also Borio 2008 for a review of the macroprudential concept). Four of these can be dealt with fairly briefly; the fifth, the idea that regulatory rules and accounting standards ought to be less procyclical, deserves a more extended analysis.

PAYMENT SYSTEM RISK, PLUS: The design of the various payment-clearing and trading systems that underpin the financial system can be a source of risk propagation. This is close to the historical sense of systemic risk, and correctly leads to the need for certain payment-clearing and settlement and trading systems to operate with central counterparties and more standardized contracts on recognized exchanges. Payment-clearing and settlement systems matter for the propagation of risk and for the ability of authorities to deal effectively with problems at one institution, while isolating impacts on others.

This system needs to be extended to other market-clearing mechanisms – a current example is the failure to require robust arrangements in the market for credit default swaps (see Federal Reserve Board of New York 2008). A single organization needs clear authority to identify potentially systemically important markets and to require clearing houses and exchanges to be set up. In Canada, this could be a natural extension of the Bank of Canada's existing power, but for certain markets it likely would have to be implemented by securities commissions – here, Canada's lack of a national securities commission would complicate implementation.

NONPAYMENT SYSTEM INTERCONNECTIONS: Other nonpayment-system-related interconnections between financial institutions, as counterparties or operational dependencies, also could propagate material risk from one entity to others – this is the "too-interconnected-to-fail" issue. Other types of interconnection are hardly new; what the recent crisis showed, however, was that market participants failed to recognize the extent of their interconnections and might have relied too much for comfort on the too-big-to-fail doctrine. One suitable response to this failure would be for financial institutions to disclose more completely to counterparties and regulators the size and nature of their interconnections and the nature of their exposure to risk to enable them and their counterparties to react appropriately (see CRMPG III 2008). It also suggests requiring large players to broaden their stress testing to consider more sophisticated event risk and more sophisticated analysis of concentrations of exposure. This would not require new rules or macroprudential overrides of regulatory, monetary, or fiscal decisions.

Key to success here would be the ability to deal with a problem at one large entity without propagating life-threatening impacts to others. That does not mean macroprudential regulation, but better information on interconnections; better tools; more effective, coordinated bankruptcy or conservatorship powers, together with authority to guarantee liabilities if necessary; and better execution in crises. Practising how authorities would handle failure of large financial institutions, including understanding where they would get the necessary resources, would make a major contribution to system resilience. Doing so would require participation of all authorities in a country and, arguably, would benefit from major cross-border participation. It would take serious effort to be successful.

SYSTEMIC-IMPACT EVENTS: Some events can affect the entire system or significant parts of it, and thus can pose systemwide problems such as unsuspected correlations between risks in panic situations – for example, the Y2K scare, pandemics, earthquakes, and other major market disruptions. Systemwide events call for a broader approach than prudential supervisors often have been able to take. Event risk of this sort is, I believe, rightly handled by involving each authority and market participant in appropriate systemwide monitoring, analysis, and stress and scenario testing. The process might then identify the policy remedies, if any, within each competency that is appropriate to the situation.

As with all stress testing, the key is to consider plausible but realistically stressful situations. Sometimes the policy remedy is to deal directly with the situation in order to reduce the risks, and sometimes resilience requires more financial buffers. The challenge is to have the mindset to take these tests seriously, an attribute that has not always been evident in national authorities or international financial institutions.

A key priority, in my view, is for central banks and regulators to develop an analytical framework of macroprudential risks and risk mitigators, and to enhance information collection, analysis, and monitoring accordingly. This would parallel the framework that microprudential supervisors use to assess the risks and resiliency of individual institutions. Some of the macroprudential risk categories might be the same as those supervisors use – for example, credit risk, operational risk, and liquidity risk – but the focus of the monitoring and analysis would differ.

The framework would cover markets and more than just regulated institutions – indeed, that is where additional analysis and monitoring could be most useful. For example, for credit risk, the macro framework would look for the presence of bubble conditions in various markets, measures of leverage in various parts of the system, and indicators of pricing overshoots. For operational risk, the framework would look to changes in systemwide operational vulnerabilities and identify operational risk concentrations – for example, entities that play key operational roles in several important markets. In addition, the framework could have uniquely macro elements, such as monitoring signs of stress related to various macro imbalances. Interconnections (direct and indirect) could play a more prominent role in the macro framework than they would in the micro framework. For a country such as Canada, there should be a foreign element, even if just as a way to monitor and assess the adequacy of domestic buffers. The central bank would be key in leading this analysis on a broader basis, but the prudential supervisor could make a major contribution from its perspective and risk-database related to regulated institutions.

Such a framework, in my view, is essential to promoting effective analysis and monitoring, to supporting the judgments that authorities will need to make, including with respecting to tradeoffs, and to enhancing communication with markets and thereby clarifying market expectations. Macro system stress testing and scenario building, which some central banks and regulators have resisted, also need to be much more frequent – doing this only when the FSAP team comes to call is not sufficient. Better information about the links between the regulated and unregulated sectors would be important to do this well. Major unregulated players should be asked to participate in such stress analysis from a systemic perspective, which would also take resources and commitment.

The scenario methodology that should be adopted is to catalogue potential low-probability but high-impact events, analyze the balance of forces impinging on them, and monitor for changes in the balance of those forces (see McColl 1999).

SYSTEMWIDE EXCESSIVE RISK: The report of the G-20 Working Group on Enhancing Sound Regulation and Strengthening Transparency (2009b) refers to a macroprudential overlay to deal with systemwide developments that lead to a systemwide build-up of excessive risk. What does this mean?

We know that many of the causes of the current crisis were foreseen by someone, even if the totality was not. We know that there were failures of action. We also know that deliberate policy choices by certain governments were a contributing factor, as was some countries' failure to coordinate macro policies while encouraging leverage and broad access to home ownership.

So what is presaged by this macroprudential overlay? Is this about recognition of asset bubbles and action by authorities, including monetary authorities, to lean against them? How are the well-known tradeoffs between this and other monetary policy goals to be determined? Is this about macro considerations overriding normal regulatory or supervisory action? Or is it about collective action by authorities to limit the build-up of leverage or the extension of financial services to a whole new range of borrowers who might have unrecognized risk characteristics?

Here, the nexus with other policies and responsibilities is likely to be much closer, and so the policy tradeoffs are much more important. And it might be unrealistic to expect prudential regulators or even central banks to convince governments or legislatures to put macroprudential considerations at the forefront. However, if countries choose to adopt a more risky point on the tradeoff curve, it is reasonable to expect them to be better prepared to deal with resulting shocks.

Government policy choices that have huge impacts on the build-up of unsustainable bubbles and stresses in the financial system can be quite varied. Recent examples include global savings imbalances related to monetary and fiscal policy choices in the United States; exchange-rate and pro-savings policies in China and other parts of Asia; stresses in certain euro-zone countries from the exchange rate at which they joined the zone; promotion of debt for home ownership by tax preferences and government guarantees (though not in Canada); and "light touch" regulation in the United Kingdom.

Yet, we need to be realistic about what macroprudential regulation can achieve in the face of these sorts of influences. Nor should we muddy the mandate of prudential authorities in pursuit of macroprudential stability. How is this supposed to play out in the case of a particular problem financial institution? We would not want OSFI to shade its judgment on whether an entity is viable on the basis of concern about systemic implications. But it is reasonable to expect that the speed and method of resolution of a problem might be affected by such considerations.

Greater clarity of what this means in practice is essential to avoid a muddle. Better monitoring by authorities following a well-developed framework would help immensely. Most financial crises, including the current one, resulted from high leverage and significant concentrations of risk (see Minsky 1986; Kindleberger and Aliber 2005). But good macro data on, and monitoring of, various measures of leverage at both the domestic and international level are virtually nonexistent, and monitoring and stress testing to explore the risks in concentrations could improve materially. This by itself would be a major contribution to financial stability.

## The Procyclicality of Rules

### *Defining the Problem*

The procyclicality of capital rules refers to the idea that the minimum capital required under the Basel II accord, which is based on banks' internal risk ratings, will rise in economic downturns as risk increases. Normally, in a recession, available capital might decline, owing to reduced net income. The worry is that banks' responses – for example, cutting back on lending as capital requirements increase in a downturn – will exacerbate the economic cycle. This is related to overall credit cycles.

For this reason, concerns exist about the procyclicality of rules for capital and provisioning.

Both the G-20 (2009b) and the Turner report (2009) in the United Kingdom propose a combination of automatic capital adjustments and judgment to build up buffers in good times. More clarity is needed on goals to bring the right tools to bear. I favour discretionary approaches using the existing tools in the Basel II accord with a material increase in international coordination and better links and coordination between regulators and those with macro perspectives. I also believe that the behaviour of rating agencies and markets should be altered for any proposal to be effective.

One needs, however, to distinguish between the credit cycle and asset bubbles. Traditionally, the credit cycle has been seen as systemwide, while asset bubbles are phenomena that develop late in the upswing in specific sectors and burst close to the upper turning point – over the past two decades, there have been examples in housing, commercial real estate, and dot-com high-tech shares.

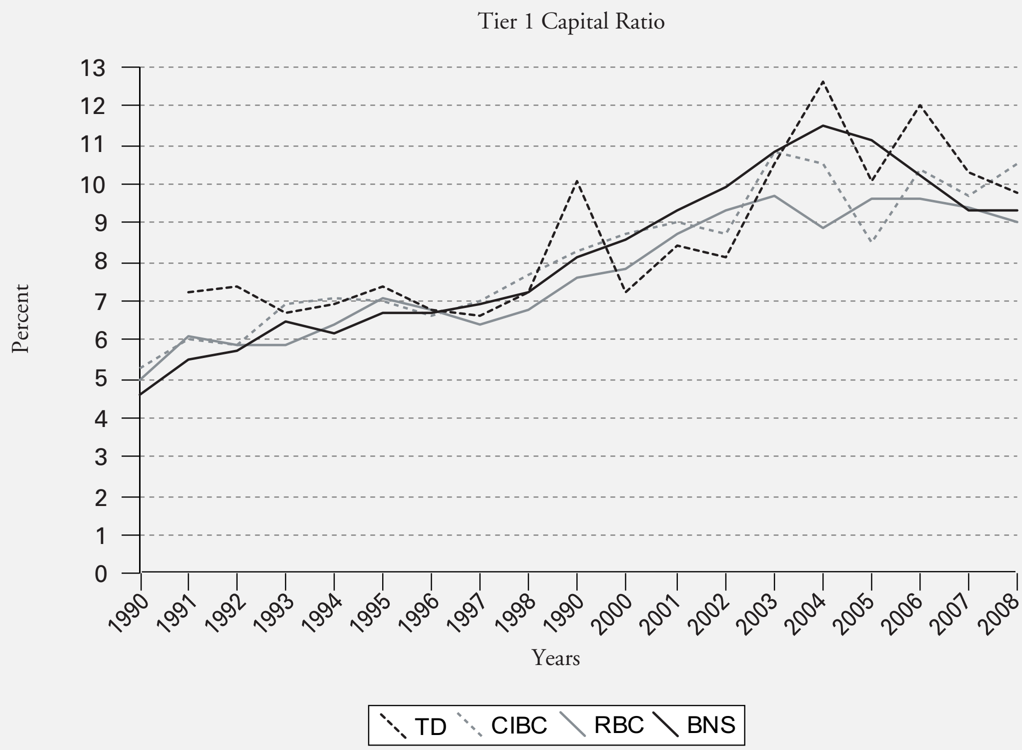
Leaning against bubbles refers to the idea that economic upswings, periods of monetary laxity, or global imbalances might be accompanied by high, bubble-like growth in certain asset markets, and suggests that the tools in Basel II should be used to counter those conditions and, it is hoped, to reduce the size and impact on the economy as a whole of the subsequent correction in those markets. Different tools would be used for different cases – for example, overall adjustment to required capital minimums would not target a housing bubble, but some countries tried overriding certain banks' overly optimistic models of housing risk, which could be helpful if better coordinated and pursued more aggressively. And because the effects of credit cycles and asset bubbles are likely to differ across countries and across different cycles, it is hard to see how relatively automatic measures based on macro variables could be effective. Dealing with procyclicality resulting from credit cycles on an automatic basis would require determining turning points in economic cycles before the fact. This is not likely to be possible – we have never been successful in putting monetary or fiscal policy on automatic pilot for similar reasons. However, it could be helpful to strengthen and systematize the surveillance work of the IMF and national authorities by feeding indicators of these cycle and bubble effects into periodic discretionary regulatory or macroeconomic judgments. Such a strategy would mirror and support what OSFI successfully did in Canada in the late 1990s, when the agency pushed for higher provisions and capital levels for Canadian banks. Indeed, having a better understanding of the framework and associated monitoring of macro risk would have helped OSFI in reaching its judgments and explaining and justifying its actions.

### *How Big Is the Problem?*

Before we can design new measures, we need to have more information on the size and nature of the problem. The Canadian experience shows that, under the 1988 Basel Accord (Basel I), capital ratios have not been static (see Figure 1). Over the past two decades, actual Tier 1 (core) capital ratios of the major banks have roughly doubled, due to a combination of regulatory pressure in the mid-late 1990s – OSFI's introduction of higher capital targets – and, more recently, market and rating-agency pressure. It is not possible to measure exactly how much these increased capital ratios have been offset by the rise in off-balance-sheet assets. There is no published information on the size of the procyclical effect under Basel II, although it has been mitigated by the design of the Basel II parameters and by banks' being encouraged to use parameters in their internal models that look beyond the short-term horizon and factor in downturns (for instance, by way of "through-the-cycle measures").

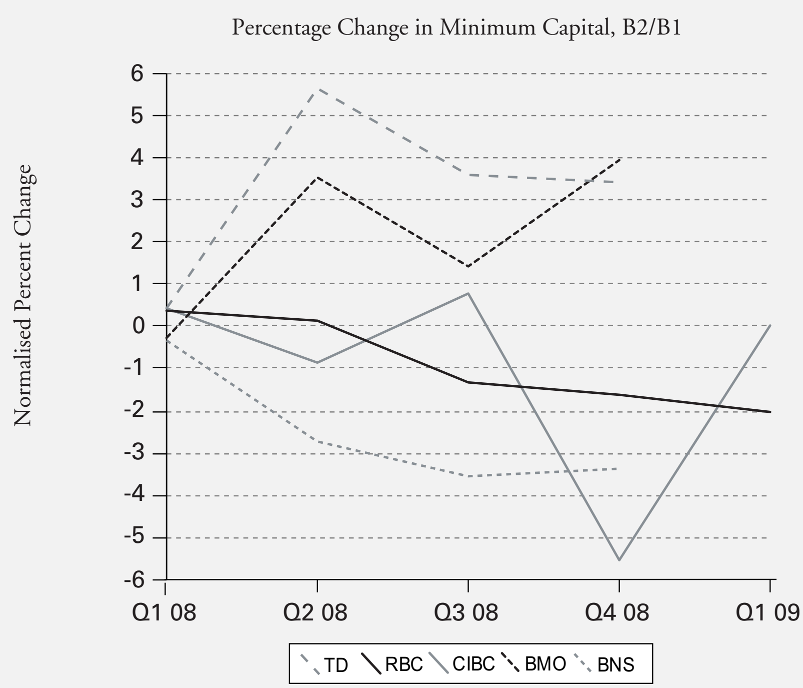
In Canada, changes in the major banks' risk-weighted assets were different under the Basel I and II measures during 2008 and the first quarter of 2009 according to the banks' own quarterly reports (see Figure 2); however, that is the only source of parallel information available, and it is hard to see a clear pattern. Lack of information means that measures should not be hardwired, but should be adjustable as experience emerges. Better

## Figure 1: Capital Ratios of Canada's Tier 1 Banks, 1990–2008




Note: Tier 1 capital is defined by the Basel rules and is essentially a bank's high-quality, core capital.
Sources: Annual reports of the Bank of Nova Scotia, CIBC, Royal Bank of Canada, and TD Canada Trust, various issues.

## Figure 2: Change in Risk-Weighted Assets of Canada's Tier 1 Banks under the Basel I and Basel II Accords, 2008:1Q–2009:1Q




Note: Risk-weighted assets have been adjusted to remove the impact of the temporary OSFI floor.
Sources: Quarterly reports of the Bank of Montreal, Bank of Nova Scotia, CIBC, Royal Bank of Canada, and TD Canada Trust, various issues.

disclosure by banks of the degree of procyclicality in their capital models is important to determining a policy response and in influencing the behaviour of markets and rating agencies.

Some proposals would tie capital requirements to macro indicators or to such financial sector indicators as profits, rather than establish requirements based on institutional risk alone. This could lead to an individual bank's capital requirements diverging significantly from its risk, but this might encourage the bank to manage its affairs so as to avoid capital requirements. Measures unrelated to the riskiness of individual banks also could act perversely: if the rules require banks to increase capital in an upswing, a bank with a unique large loss could find its problem exacerbated.

### *Altering Market Behaviour*

Market participants' behaviour needs to change if these proposals are to be effective. To date, this requirement has not been considered adequately. There is a complex interaction between minimum capital requirements, market and rating-agency perceptions of banks' safety and soundness over an economic cycle, accounting rules, desired capital held by banks, and economic capital measures used by banks in their lending decisions. In particular, the rules under Basel II and market forces are leading banks to hold desired capital well above the minimum. Banks have incentives to manage their actual and desired capital so that they do not have to raise expensive or unavailable capital during a downturn or lose core customers. So banks' desired and actual capital is likely to be less procyclical than the minimum capital required under Basel II.

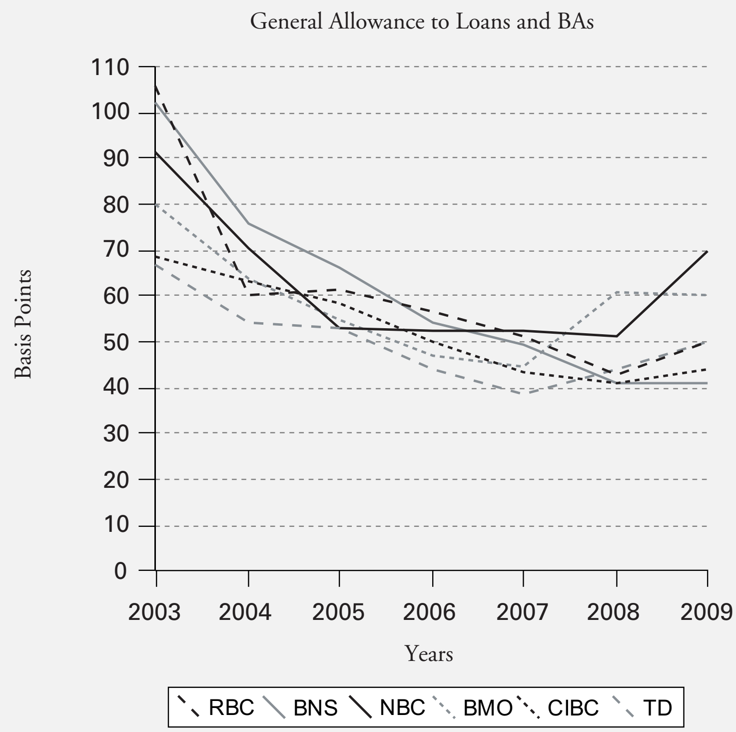
Proposals that neglect these factors could make the economic cycle worse. To work, reforms need to be symmetrical, but they might not work out that way if wrongly designed. For example, some procyclicality proposals, had they been in place during the past five years, would have raised minimum capital requirements as the upswing proceeded. To be effective, they would have led to increases in desired and actual capital held. Now would be the time to lower minimum requirements under these proposals as the downturn occurs, but rating agencies and counterparties might well see capital reductions as weakness in current markets. If these realities had prevented capital reductions from being effective, the previous increases would have made the downturn worse! Expectations of a variety of market participants would have to be altered if the reform proposals are to be effective; dictates from central banks and regulators likely would not be enough.

A number of measures would help change banks' behaviour. For example, most banks now use variants of point-in-time and through-the-cycle measures, but no major internationally active banks should use point-in-time measures in their models, and they should be required to analyze and report to supervisors and markets the degree to which their estimates are through the cycle. Banks also should have incentives to set desired capital targets for the high and low points of the cycle, not just their static measures as is now the case, taking account of the cyclical sensitivity of their own portfolios. If banks do not move to publish these after a reasonably short period of testing, we should consider requiring them to do so. Further, rating agencies should give stress test results and banks' dynamic targets, not just static metrics, much more weight in their rating methodology.

Reducing capital requirements in downturns might increase risk taking by banks at such times – including making risky acquisitions at the wrong time on the basis that capital requirements will go down. Macroeconomists want banks to lend in downturns, while regulators want them to avoid doing something stupid. Coordination mechanisms need to respect these differences and to find an appropriate balance.

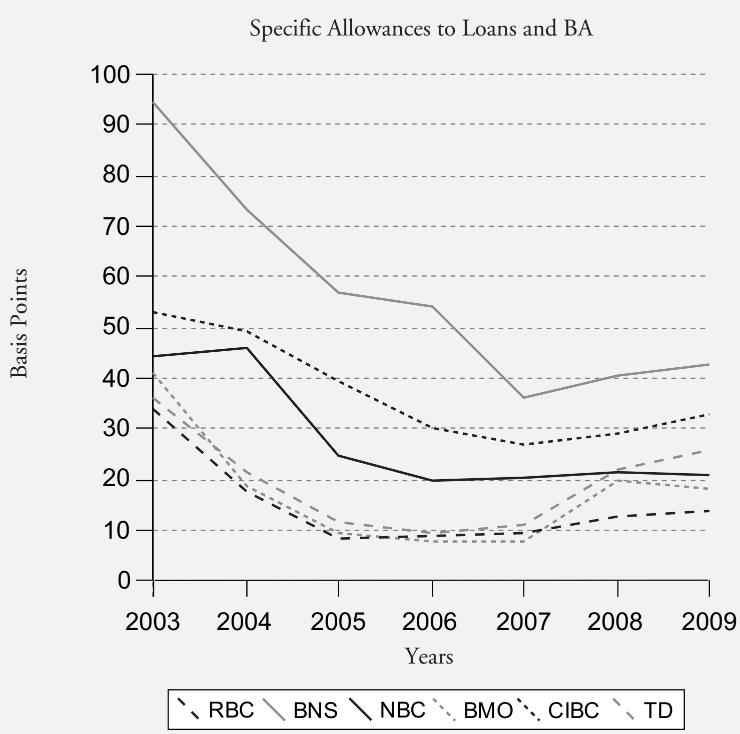
Canada's experience with general provisions for loan losses is salutary in terms of what can happen if behaviour is not adjusted (see Figures 3 and 4). OSFI succeeded in the late 1990s in pushing for higher general provisions and, internationally, regulators successfully pushed accounting standards setters to allow a broader range of factors to influence provisioning. But the two figures show that the goal of having general provisions rise semi-automatically during upswings and decline during downturns has not been achieved, in part because inadequate attention was paid to how markets and other actors, such as auditors, would react.

## Figure 3: General Allowances to Loans and Bankers' Acceptances, Canada's Tier 1 Banks, 2003–09




Source: PriceWaterhouse Coopers Canada, Canadian Banks: Perspectives on the Canadian Banking Industry. Toronto, various years.

## Figure 4: Specific Allowances to Loans and Bankers' Acceptances, Canada's Tier 1 Banks, 2003–09




Source: PriceWaterhouse Coopers Canada, Canadian Banks: Perspectives on the Canadian Banking Industry. Toronto, various years.

### *The Importance of Buffers above Minimum Capital*

For risk-based capital rules to be effective, buffers of actual capital above minimum should expand and contract over a cycle. Banks that have higher buffers could allow their capital ratios to decline further as economic conditions deteriorate before they would have to take action to pull back lending. So increasing the margin of actual over required capital (measured at the midpoint of a cycle) would deal in part with procyclicality issues. Markets are already creating this result.

We don't need to design new architecture to deal with the pro-cyclicality issue. The stress-testing requirements already in the Basel II rules should be used more aggressively to deal with procyclicality concerns at systemically important banks. These requirements are a key tool for ensuring that buffers are appropriate. There is room, for example, for supervisors and central banks to share information internationally on the appropriate macro stress tests that should be applied by their major banks during upswings. Authorities should make clear that they would not expect banks to hold capital to meet the same stress tests, starting from a lower base, during downturns. It would also be helpful if stress test results for major banks were reported annually to supervisors, compared internationally, and a summary published showing the average and range of approaches and outcomes. Such a change might be a waypoint to broader regular disclosure.

And making progress in these areas will be helped immeasurably when the U.S. completes adoption of Basel II, which is still not yet fully in place in that country. Canada, Europe, Japan and a range of other countries, in contrast, are now well into Basel II implementation.

### *The Will to Act*

Dealing with asset bubbles and credit cycles on a discretionary basis requires a mechanism for identifying when certain markets are overheating or when the credit cycle overall is likely to turn. This requires judgment and willingness to act. That is why the analytical macro-risk framework and monitoring I suggest above is so important. Actions in one country without the possibility of coordination with others can open up material competitive advantages and disadvantages, so it is necessary to design processes that support and encourage the exercise of judgment and willingness to act internationally – an aspect on which the G-20 report (2009b) is light.

It is here that the roles of central banks and prudential regulators are key. One or more authorities, domestically and internationally, need to believe that their job is regularly to monitor for overheated conditions in specific markets. In Canada, the Bank of Canada naturally could lead in that role, with OSFI contributing from its perspective. Each needs to be accountable for its input and for the conclusions reached and actions taken (or not taken) based on that input. They need to report their views to a coordinating body for exchanges of views and follow-up, but one body should not override others' mandates. Internationally, the revamped FSB might work this way; in Canada, as FISC, by statute, focuses on individual institutions, there could be a new body with a specific focus on macrostability issues and involving key securities commissions and perhaps others as well.

To deal with procyclicality on a purely discretionary basis, without certainty or continuity of capital rules, would lead to markets' being surprised and would reduce effectiveness. Hence, the framework should be communicated to markets on a periodic basis. But the way in which monetary policy or fiscal policy is regularly adjusted should not be the model for prudential capital rules.

## Who Needs Regulating for Safety and Soundness?

The issues of who ought to be regulated for the safety and soundness of the financial system and what macrostability regulation means are intertwined. There are some obvious agreed points, such as effective, comprehensive, consolidated regulation and supervision of banks, investment banks, and insurers by a well-resourced organization. The United States did not follow these practices in all cases, and Canada does not for dealers that are independent of banks or for parts of the credit union movement. But what about the so-called shadow banking system? Historically, authorities constructed the regulatory dike at the edge of the banking, insurance, and investment banking sector and took several actions to reinforce that dike, relying on regulating banks' relations with the conduits, hedge funds, and off-balance-sheet vehicles, including seeing that there was adequate capital to deal with eventualities.

It seems to me that the current crisis shows us that we needed to have done this better, not necessarily by having broader safety and soundness regulations or extending the implied safety net. Some of the assessments of stress impacts clearly were not severe enough, nor were all the linkages among markets, other entities, and banks well understood. Some countries, notably the United States, did not follow the model fully. But is that model of where to draw the line now obsolete? Do we need somehow to identify other systemically important players and have some prudential regulatory system in place? Even now it is not clear that hedge funds, for example, were in any sense a cause of the current crisis, though they were part of the transmission mechanism once the problem was well started.

The leaders of the G-20 (2009a) propose to amend regulatory systems so that authorities are able to "identify and take account" of macroprudential risks across the system, including in banks, shadow banks, and private pools of capital. That is consistent with my view of the importance of better monitoring and analysis of interconnections. There is also to be "oversight to ensure they have adequate risk management" (2009a, 3). But the G-20 leaders seem to contemplate no power to force changes if risk management is not adequate or to limit exposures or leverage in these systemically important entities. This holds the risk of creating responsibility without authority.

Central banks and regulators should have access to information from nonregulated players so that they are better able exercise their mandates with respect to the financial stability of the regulated sector. But an explicit mandate for stability more broadly, accompanied by a right to more information with unclear power to require changes outside the regulated sector when a serious problem is believed to be brewing, would not be helpful. It would be better if the status of these systemically important shadow entities with respect to lender-of-last-resort funding were clearer.

The US plan (see United States 2009), in contrast to that of the G-20, has a clear and coherent hierarchy: registration and information from private pools of capital to allow assessment of systemic risk, and authority to deem entities to be systemic and subject to prudential standards and requirements with respect to capital, liquidity, and risk management and to prompt corrective action.

### *Shoring Up the Dike and the Mandate to Obtain Information*

What is required is much better shoring up of the dike between the regulated and unregulated players, which would make it more credible that others will be permitted to fail. Part of that shoring up involves risk-management practices, monitoring, and perhaps rules regarding individual banks' gross and net financial exposure to unregulated entities, provisions that the G-20 plan includes.

Any shoring up of a dike requires being able to see what is happening on the other side of it, in order to ensure that it is high enough to serve its purpose. So we should ensure that the financial authorities are given more information on what is occurring in the unregulated sector, both in aggregate and for specific larger players. Then, relevant surveillance of regulated players, based on a more realistic analysis and macro stress testing, could be performed regularly. At the same time, it must be made clear that knowledge of what is happening in the unregulated sector is needed to help the authorities fulfill their mandate to ensure the stability of regulated entities, not to regulate the entities outside the dike. I would not go farther than that.

Some observers support a system of prudential regulation extended to a much wider range of players. However, it is hard to sort out in advance what should be the criteria for choosing how to extend the net. The G-20 and other reports duck this issue. Some suggest that any entity above a certain size, leverage, and dependency on wholesale funding should face simple prudential regulation like an investment bank or commercial bank (see, for example, Eatwell and Persaud 2008), but I doubt this could work in practice – and regulatory capriciousness based on "I know a systemic entity when I see one" is not desirable.

The pressures of competition and availability of capital and talent will lead to new entities being set up outside of the prudentially regulated sphere. Substantial players might well re-emerge that are essentially the same as the regulated entities. Should these be regulated? Some will say yes, and if they are in fact systemically important, it is hard to disagree. This might make a case for a backstop authority to designate entities that are systemically important – and engaged in activities equivalent to those of investment or other banks – and subjecting them to some form of regulation.

To extend bank-style regulation broadly, along with a safety net, would be costly and likely to divert the attention of regulators from their main tasks. However, enhanced disclosure requirements for the extended entities should be part of any new system (see CRMPG III 2008). It used to be argued that this was pointless as positions can change rapidly and positions were proprietary. Perhaps, but even information at a fairly high level that is several months old can give markets and authorities some sense of areas in need of further investigation.

## Who Should Be in Charge?

There is often a temptation to make one organization responsible for dealing with events with systemwide impacts and build-up of risk and with adjusting capital rules over credit cycles or asset bubbles. My experience suggests that would be a mistake. What is necessary is constructive challenge and an effective forum in which to reach an accommodation of views in the limited number of cases where there are conflicts of mandates. Having one mandate or one organization that trumps others is likely to lead to problems.

It is clear that supervisory agencies can struggle to develop and use macroeconomic skills. On the other hand, prudential supervisors' mind-sets are correctly focused on risks, negative outcomes, and the tails of the distribution of outcomes. And they often have extensive knowledge of institutions, complex products, and the details of risks and risk management. They also have important tools with which to effect corrective action at the level of individual institutions, which is often where such action should be taken. A focus on this mandate, and not confusing it with others, is a success factor in my view.

Historically, some central banks have found it hard to develop and maintain valuable expertise in the financial stability area. For the purposes of their core monetary policy task, it is more important for them to think about, research, and forecast the central point of the distribution of economic outcomes, not the size of the tails. Financial stability and prudential regulation, on the other hand, are all about the tails of the distribution of outcomes. If central banks are to play a larger role in macroprudential surveillance and monitoring and if supervisory institutions are to consider the macro aspects, they need to be better staffed and organized. And maintaining links with a wider range of systemically important nonbank market participants, rather than just the biggest, requires the right kind of expertise as well. In some countries, central banks are also bank supervisors; in fact, no one approach is demonstrably superior, nor does the central bank have to be the supervisor to contribute a macroprudential view and have it heard. In Canada, however, it would be unwise to shift the responsibility for bank regulation or supervision to the Bank of Canada. Nor should it be able to dictate prudential rules, or supervisory actions with respect to individual institutions

### *The Importance of an Effective Challenge Process*

I believe that the regulatory system could benefit from challenges and multiple contributions from different perspectives. That argues for a structured process involving authorities that subsequently act in their individual realms of competence, which also allows for constructive tension between mandates to be worked out. Each authority, however, should remain accountable for the exercise of the powers it has in its primary mandate. I do not think we want a central bank or treasury dictating to a prudential supervisor when to alter capital requirements, just as we would not want a supervisor or treasury dictating to a central bank how to handle asset bubbles, or a central bank or supervisor telling a treasury how to handle tax or guarantee policies that promote leverage.

What we do need is an effective forum in which different points of view can be brought to the table and considered, after which each participant would act in its own sphere. In cases of serious disagreement, participants should be able to challenge one another's views and be accountable for their conclusions. One authority needs to own this process, but that is very different from owning the whole problem and having all the tools.

Strengthening the links between regulators and central banks is key. This is, however, a two-way street. Even in Canada, where I believe the links are very good, the Bank of Canada could have better understood from OSFI what was happening with individual institutions during the credit crisis, while OSFI could have obtained better macro stress assessment from the Bank. There are no impediments to that happening – that kind of in-depth sharing does not undermine anyone's independence. I think the Canadian experience of coordination generally has been exemplary, supported by a long line of governors, superintendents, and deputy ministers. They have understood that senior-level engagement – on a regular basis, not just in times of crisis – respect for one another's roles, high-quality, timely information sharing, and joint contribution to strategy development and execution are essential to effectiveness. FISC works: it does promote the "will to act" by all. We do not need memorandums of understanding and protocols. The public post mortems on some other countries' recent failures suggest that they could learn from Canada's experience.

### *The Role of Securities Regulators*

Securities regulators need to be part of the system, but how? In Canada, that is a unique challenge. If we had a national securities regulator, the head of such an organization would also be a member of FISC or a separate financial stability committee. But with our current securities regulatory structure, we would need to add twelve people (one for each jurisdiction), or at least the four most important. There are also important potential conflicts of roles and mandates and legal authorities – such as the issue of disclosure versus secrecy during pre-crisis periods. But the benefits, including cooperation and coordination in preparing and sharing information on what is occurring in markets from a financial-stability perspective, are hugely important. We don't want well-functioning, existing coordination mechanisms between federal authorities to be disrupted. So, if we have to form a separate committee on system stability, that would be fine as well. It should be chaired by the Finance department, not by OSFI or the Bank of Canada. Finance is best placed to help participants bring together and reconcile what may be different views from those with macro and micro expertise.

Regardless, adding systemic stability to the mandate of a securities commission would require a different focus and expertise to be brought to bear, which would be a challenge, and which is why I see a commission's roles as contributory, not leading on macro stability issues.

This also raises the issue of what happens when federal authorities identify an issue of material financial stability in markets where the only tools are in the hands of provincial commissions or the self-regulatory organizations that report to those commissions. Significant persuasion and follow-up would be necessary, but having a structured process in which representatives of commissions participate would be an improvement on what Canada has now, even if it would be less than ideal.

## The Will to Act: Peer Assessments

Finally, recall that various authorities or critics recognized many of the risks to the stability of the financial system over the past decade, which only serves to highlight the importance of the will to act. But the will to act cannot be legislated or written into rules. Partly, it derives from effective processes, with continuity, follow-up, and supportive resources. I hope the redesigned FSF, with interaction among the G-20, the BIS, the

Basel Committee on Banking Supervision, and the IMF will be an improvement internationally. Success will depend on the leaders of these organizations taking this mandate seriously, following good processes, giving it adequate resources, and being open to contrarian views.

The FSAP peer review process can support the capability and will to act. The G-20 report (2009b) rightly indicates that all G-20 countries should commit to undertaking such a review, and that the basis on which countries are assessed should be broadened to encompass macroprudential oversight and the scope of regulation. But systemically impor-tant countries are to be subject to self-assessments only every five years and updates are to be only "in consultation with" the IMF and the World Bank.

This does not go far enough. Reviews should also include the scope and effectiveness of crisis-management and problem-resolution tools, and there should be mandatory updates on a preset schedule, with scope depending on circumstances. Moreover, to be effective, the resources to do these assessments at the IMF and World Bank need to be increased and upgraded, more senior reviewers are needed to challenge major countries effectively, and senior staff and the boards of the international financial institutions must treat the results of these reviews with more seriousness. In addition, the core principles for effective banking supervision under the Basel accord need to be adjusted to reflect the recommendations of the G-20 leaders by, for example, incorporating critiera of an effective process for adding a country's macroprudential input to decisionmaking by the central bank and regulatory authority.

## Conclusion

The international community now has an oppor-tunity to improve the coordination of microprudential regulation with macro considerations. But to be successful, the reform proposals need to meet a number of criteria.

First, the major industrialized countries should ensure that they have learned the lessons from the crisis that has affected the existing system before rushing into major changes in architecture. This includes ensuring that they have effective, well-resourced, consolidated regulation and supervision of banks, investment banks, and insurers; better stress testing, including at a systemwide level; better monitoring by regulators and central banks, and the IMF and FSB of the two sources of most crises – leverage and concentrations – both within individual countries and internationally; a better understanding of interconnections; more effective ability to force risk proofing of key markets; and better crisis simulation and preparedness to deal with major problems in financial institutions. For its part, Canada needs minimal improvements to complete the comprehensive consolidated regulation system, but ought to press ahead with national securities regulation.

Second, the Bank of Canada and OSFI should make major strides in monitoring, stress testing, further risk proofing key market infrastructure, and better understanding interconnections, without fundamental mandate changes. The Bank could contribute best from a macro perspective using its knowledge of markets and clearing and settlement systems, with OSFI contributing from a micro perspective using its knowledge of institutions and financial sector developments at a more detailed level.

Third, as financial stability is added to the mandates of national authorities, the FSB interna-tionally and, in Canada, the Department of Finance, the Bank of Canada, and OSFI need to define better their expectations of the contribution macroprudential regulation can make to system stability. Initially, this should focus on better monitoring of macroprudential risks and developments and more focused macroprudential input into policy decisions of governments, regulators, and central banks. Policymakers should be clear, however, that this would not eliminate risks to financial stability.

Fourth, the FSB and the Bank of Canada should develop an analytical framework of macroprudential risks and mitigators, with input from OSFI and securities commissions, to complement OSFI's well-established microprudential risk framework. The goal should be to ensure that macroprudential input is added value, not just overlap and duplication of existing risk assessment by banks and prudential regulators. This macro framework should focus much more broadly than on regulated banks and insurers. The Bank, in cooperation with OSFI and securities commissions, should use this framework to drive enhanced data collection and the monitoring and analysis of macroprudential risk indicators to support discretionary judgments by those responsible for whether, when, and how to adjust various policy tools. That would also improve communication with markets. The prime forum for discussion of these judgments and for working out appropriate tradeoffs among the goals and mandates of various authorities should be the financial stability cooperation group that I suggest below.

Fifth, in implementing the recommendations of the G-20, the minister of finance should not fundamentally alter the mandates of the various authorities (the Bank of Canada, OSFI, and CDIC). It should be clear that the need to contribute to financial stability should not alter OSFI's prime responsibility to regulate and supervise institutions for safety and soundness and to intervene early to resolve problems, nor should it alter the Bank's responsibility for monetary policy – indeed, both mandates already contribute to financial stability. The Bank's mandate to deal with systemic payment-clearing and settlement systems perhaps should be expanded to include systems that underlie securities transactions. The federal government should not assign responsibility for macroprudential stability or authority to override microprudential or other policy decisions to one agency, but should expect material enhancements in the input of each into others' decisionmaking. The Bank could lead in macrofinancial analysis and monitoring, but there is a material role for OSFI as well.

Sixth, the FSB should design better processes internationally, to support challenges and improve the effectiveness of decisionmaking by the various authorities within their core mandates. In Canada, this means the government's putting in place a formal financial stability cooperation group similar to the existing Financial Institutions Supervisory Committee (which should remain focused on matters relating to institutions) that should involve federal financial authorities and major securities commissions. In its processes, this group should consider and regularly monitor tail scenarios and seek the views of outsiders on financial stability issues. Securities commissions could contribute to, but not lead on, macro stability issues. The group should be advisory and not have the authority to override any participant's ability to meet its primary mandate. It should be chaired by the finance ministry (with beefed-up support), which is best placed to help reconcile disparate views from other participants.

Seventh, internationally, the IMF should design a better, more regular peer review process than the G-20 contemplates to support the capability and will to act. IMF financial sector assessments should also include the scope and effectiveness of tools for crisis management and problem resolution; there should be mandatory updates for major countries on a preset schedule, with scope depending on circumstances; the Basel core principles for effective banking supervision, which are the basis for assessments, should be updated to reflect the G-20's recommendations; and the resources devoted to assessment efforts should be increased materially.

Eighth, in Canada, the federal government should not extend a safety and soundness mandate to the shadow banking system. Rather, it should give prudential regulators and central banks better access to information about and risk assessment of the linkages between regulated entities and other market players.

Finally, to address procyclicality of capital rules, the Basel Committee on Banking Supervision and national authorities responsible for implementing Basel II, such as OSFI, should use existing tools better, including stress testing under Basel II, to deal with concerns about how regulations affect the separate cases of asset bubbles and the credit cycle. These measures should be discretionary, not based on automatic alteration of prudential rules in response to macro variables. Proposals should address directly the need to change the behaviour of market participants and rating agencies, not just of banks, through changes in how they set and disclose capital targets over a cycle and the methodology of rating agencies. The Basel Committee and the national authorities that are implementing Basel II should develop and publish better information on the degree of procyclicality in capital rules, and should proceed cautiously and flexibly with discretion and disclosure.

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