



**Remarks by Mark Carney
Governor of the Bank of Canada
Deutsche Bundesbank
14 September 2010
Berlin, Germany**

CHECK AGAINST DELIVERY

Bundesbank Lecture 2010: The Economic Consequences of the Reforms

“The power to become habituated to his surroundings is a marked characteristic of mankind.... We assume some of the most peculiar and temporary of our late advantages as natural, permanent, and to be depended on, and we lay our plans accordingly. On this sandy and false foundation we scheme for social improvement and dress our political platforms.”

— J. M. Keynes, *The Economic Consequences of the Peace*

Introduction

Keynes wrote prophetically of the economic consequences of the Treaty of Versailles. Could the same be said of current financial reforms? Are policy-makers taking for granted the essential role performed by finance in a vain pursuit of its risk-proofing? Do we assume that our “late advantage” of an open, global capital market and trade environment is a “natural, permanent” feature of the economic landscape?

Or is the other extreme possible? Are we being too timid? Consider the jaded attitudes of the bank CEO who recounted: “My daughter called me from school one day, and said, ‘Dad, what’s a financial crisis?’ And, without trying to be funny, I said, ‘This type of thing happens every five to seven years.’”¹

Should we be content with a dreary cycle of upheaval?

Such resignation would be costly. Even after heroic efforts to limit its impact on the real economy, the global financial crisis left a legacy of foregone output, lost jobs, and enormous fiscal deficits. As is typically the case, much of the cost has been borne by countries, businesses, and individuals who did not directly contribute to the fiasco.

If what’s past is prologue, growth will be lower and unemployment higher for years to come. The Bank of Canada forecasts that, as a result of the crisis, cumulative foregone economic output from 2009 to 2012 will be 16 per cent of GDP in Europe and 9 per cent of GDP in Canada (see Appendix, Chart 1). Over the longer term, we estimate that these shortfalls could grow to about 40 per cent and 30 per cent of respective GDP. Given the synchronous nature of this global crisis, there are reasons to fear such severe outcomes.

¹ J. Dimon, Chairman and CEO, JP Morgan Chase & Company, in testimony to the U.S. Financial Crisis Inquiry Commission, 13 January 2010.

Surely, and contrary to what some in the industry would have you believe, there is some price worth paying to reduce such tail risks in the future. This past weekend's historic Basel III agreement strikes exactly the right balance.

In my remarks today, I will focus on the costs and benefits of financial sector reform. I will argue that the economic case is compelling and the basic stakes enormous. Financial crises are normally followed by financial repression; economic downturns, by increased protectionism. Without credible, coordinated financial reforms, we risk losing the open trading and financial system that has underpinned the economic miracle of recent times.

The Role of the Financial Sector

Before analysing the impact of the reforms, allow me to discuss briefly the role of the financial sector and how it failed during the crisis.

By translating savings into productive investment, finance is central to economic growth. It has three core functions. First, through the payments system, it facilitates decentralized exchange, which is fundamental to the functioning of a market economy.

Second, finance transforms the maturities of assets and liabilities, taking short-term liabilities, such as deposits, and transforming them into long-term assets, such as mortgages or corporate loans. Households and businesses can therefore do the reverse, holding short-term assets and longer-term liabilities. This helps them to plan for the future and to manage risks arising from uncertainties over their cash flows. The social value of maturity transformation is unquestioned, but its performance creates fundamental risks, which requires public intervention.²

Third, the financial system intermediates credit, channelling funds from savers to investors. This allows savers to diversify their risk and everyone to smooth consumption over time and across states of the world. Young families can borrow to buy a house; students can pay for university. People can invest for their retirements and businesses can finance working capital and investment. However, if risk is persistently mispriced, these savings and investments will be misallocated and economic welfare reduced.

The Crisis

Financial services are supplied by a combination of banks and markets. In recent years, markets grew to the point that they became important alternatives to banks for corporate and household finance. More and more of the traditional functions of banks—including maturity transformation and credit intermediation—were conducted through a broader range of intermediaries and investment vehicles, which have been collectively referred to as the “shadow banking” system.³ All countries participated in these trends, to varying degrees.

² To manage the fundamental risk created by maturity mismatch, banks rely on two crucial supports: deposit insurance and the central bank as a lender of last resort to solvent but illiquid institutions. Banks implicitly accept a social contract that gives them access to liquidity support in times of stress in return for regulation of their behaviour at all times.

³ Shadow banks included investment banks, mortgage brokers, finance companies, structured investment vehicles, hedge funds, and other private asset pools.

From a financial system perspective, the deepening of markets is generally welcome because it makes the system more robust and increases competition. However, while markets expand the choices and lower the prices available to financial consumers, they function differently from banks. Unlike banks, markets rely more completely on confidence for liquidity. To maintain that confidence, markets need clear rules and robust infrastructure.

In response to the increased competitive pressure from markets, banks employed three strategies: increasing leverage, greater use of securitization, and the writing of deep out-of-the-money options. Though not recognised at the time, each increased risk in the system.

By borrowing in short-term wholesale markets to fund asset growth, banks became more dependent on continuous access to liquidity in money and capital markets.

By using securitization to diversify the funding sources and reduce credit risks, banks created new exposures. The severing of the relationship between originator and risk holder lowered underwriting and monitoring standards. In addition, the transfer of risk itself was frequently incomplete, with banks retaining large quantities of supposedly risk-free leveraged super senior tranches of structured products.

These exposures were compounded by the rapid expansion of banks into over-the-counter derivative products. In essence, banks wrote a series of large out-of-the-money options in markets such as those for credit default swaps.⁴ As credit standards deteriorated, the tail risks embedded in these strategies became fatter. With pricing and risk management lagging reality, there was a widespread misallocation of capital.

The magnitude of these developments was remarkable. In the final years of the boom, when complacency about liquidity reached its zenith, the scale of shadow banking activity exploded. The value of structured investment vehicles, for example, tripled in the three years to 2007. Credit default swaps grew sixfold.

Financial institutions, including many banks, came to rely on high levels of liquidity in markets. Short-term money markets were the predominant source of financing for the one-third increase in the gross leverage of U.S. investment banks, U.K. banks, and European banks. The system's exposure to market confidence was enormous.

Through all of this, a mirage formed of relentlessly expanding profitability in the financial sector. In the United States, between 2000 and 2006, corporate profits in the sector averaged over 36 per cent of total profits. It appeared briefly that finance was the ruler, rather than a servant of, the real economy. The large losses and costly bailouts required to repair balance sheets shattered this illusion.⁵

⁴ See A. Haldane, "The Contribution of the Financial Sector—Miracle or Mirage?" Speech delivered at the Future of Finance Conference, London, 14 July 2010.

⁵ It was not just a question of misleading data on profitability. The basic shortcoming of financial growth accounting also plagued compensation structures. Employees were paid in cash for positive net present value of long-tailed risks.

The shortcomings of regulation were similarly exposed. The shadow banking system was not supported, regulated, or monitored in the same fashion as the conventional banking system, despite the fact they were of equal size on the eve of the crisis.⁶

There were also major flaws in the regulation and supervision of banks themselves. Basel II fed procyclicality, underestimated risks, and permitted excess leverage. Gallingly, on the day before each went under, every bank that failed (or was saved by the state) reported capital that exceeded the Basel II standard by a wide margin.

Most fundamentally, the global financial crisis revealed the fallacy of composition that strong individual financial institutions collectively ensure the safety and soundness of the system as a whole. Even the most vigilant, microprudential regulatory regime can be overwhelmed by systemic risks. As a consequence, policy-makers now recognise that systemic risk is the product of the resiliency of financial institutions, the robustness of systemically important markets, and the interconnectedness between institutions and markets.

The G-20 Reform Agenda

The G-20 has initiated an extensive program of reform designed to improve the safety and robustness of the global financial system. The measures are mutually reinforcing, and all are necessary.

Building Robust Markets

The first strategy is to build robust financial markets by improving infrastructure and transparency.

In particular, keeping markets continuously open requires policies and infrastructure that reinforce the private generation of liquidity in normal times and facilitate central bank support in times of crisis. The cornerstone is clearing and settlement processes with risk-reducing elements, particularly central clearing counterparties or “CCPs” for repos and OTC derivatives. Properly risk-proofed CCPs act as firewalls against the propagation of default shocks across major market participants. Through centralised clearing, authorities can also require the use of through-the-cycle margins, which would reduce liquidity spirals and their contribution to boom-bust cycles.⁷

Reducing the Interconnectedness between Institutions and Markets

The second G-20 imperative is to create a system that can withstand the failure of any single financial institution. From Bear Stearns to Hypo Real Estate to Lehman Brothers, markets failed that test.

Today, after a series of extraordinary, but necessary, measures to keep the system functioning, we are awash in moral hazard. If left unchecked, this will distort private behaviour and inflate public costs.

⁶ Z. Pozsar, T. Adrian, A. Ashcraft, and H. Boesky, “Shadow Banking,” Federal Reserve Bank of New York Staff Report No. 458, July 2010.

⁷ Market resiliency can also be improved through better and more-readily available information. This reduces information asymmetry, facilitates the valuation process and, hence, supports market efficiency and stability. In this regard, priorities are an expansion of the use of trade repositories for OTC derivatives markets and substantial enhancements to continuous disclosure standards for securitization.

As a consequence, there is a firm conviction among policy-makers that losses incurred in future crises must be borne by the institutions themselves. This means management, shareholders, and creditors, rather than taxpayers.

Measures to expose fully firms to the ultimate sanction of the market will also reduce the interconnectedness between institutions. In addition to changes to market infrastructure, priorities include: staged-intervention regulatory regimes, “living wills” for banks, and better cross-border resolution regimes.

Another promising avenue is to embed contingent capital features into debt and preferred shares issued by financial institutions. Contingent capital is a security that converts to capital when a financial institution is in serious trouble, thereby replenishing capital without the use of taxpayer funds. Contingent conversions could be embedded in all future new issues of senior unsecured debt and subordinated securities to create a broader bail-in approach. Its presence would also discipline management, since common shareholders would be incented to act prudently to avoid having their stakes diluted by conversion. Overall, the Bank of Canada believes that contingent capital can reduce moral hazard and increase the efficiency of bank capital structures. We correspondingly welcome the Basel Committee’s recent public consultation paper on this topic.

Improving the Resiliency of Financial Institutions

The third priority is to improve the resiliency of financial institutions themselves. Creating more resilient institutions requires more and better capital, improved balance sheet liquidity, and enhanced risk management.⁸ This past weekend’s Basel III agreement delivers on these objectives by:

- Creating global standards for liquidity.
- Raising substantially the quantity, quality, consistency, and transparency of the Tier 1 capital base.
- Introducing a leverage ratio as a complement to the Basel II risk-based framework. The leverage ratio is, in effect, a safety harness that is designed to protect against risks that regulators think are low but which, in fact, are not.
- Introducing a capital conservation buffer above the minimum capital requirement to ensure that banks and supervisors take prompt corrective action and that banks can absorb losses during periods of financial and economic stress. This conservation buffer is to be complemented by a countercyclical buffer, which would vary over time. It should be at its maximum in periods when credit is growing rapidly and system-wide risks are rising. In times of stress, the buffer would be reduced to ensure that the flow of credit is not undermined by regulatory constraints.

The goal is to make financial systems less vulnerable to booms and busts so that crises are less frequent and less severe. Through evidence-based analysis, policy-makers can determine the package of reforms that will maximise these net economic benefits.

It is to this issue that I will now turn.

⁸ The crisis also underscored the need to better capture counterparty exposures, market risk, and a host of contingent claims.

The Benefits of Reform

The potential economic benefits of stronger capital and liquidity standards are significant. These benefits emerge from a variety of sources:

- Higher capital and liquidity standards will contribute to a lower incidence of financial crises.
- The severity of financial crises could also be reduced.
- The economy should benefit from smoother economic cycles.
- Higher standards should help to reduce the risk that resources are misallocated.

To put the magnitude of potential gains into context, consider more closely the costs of financial crises.

In the 10 years following a financial crisis, the median output growth rate decreases by 1 per cent, and the unemployment rate increases by 5 percentage points.⁹ Experience suggests that costs build well into the future. In studies released last month, the Basel Committee found that the median cumulative loss of past financial crises was 63 per cent of national GDP.

Given the scale of potential losses, there are clearly large benefits to reducing the frequency of crises (Chart 2). The extensive analysis of the Basel Committee suggests that higher capital and liquidity standards would do just that. In particular, the combination of strengthened liquidity standards and a 2-percentage-point increase in bank capital ratios would raise the annual expected level of GDP by 1.8 per cent relative to trend.

Because this improved performance accrues over time, it is a gift that keeps on giving. Using a conservative real discount rate of 5 per cent, the cumulative present value of this better performance is equivalent to more than 35 per cent of GDP, or €0.9 trillion for Germany.¹⁰

Some in Canada argue that our sound financial system implies that the potential gains are small for our country and the G-20 reforms are, therefore, unimportant. This is misguided. In open economies such as ours and Germany's, reducing the incidence of foreign crises is even more important than domestic benefits. Today's reality is one of deep interconnectedness, where financial problems in other regions spill rapidly into our own. In an increasingly multi-polar economy, we simply cannot afford to lurch from crisis to crisis every five years. To reduce this frequency, we need a strong, universally applied framework. The Basel III rules, combined with the FSB and IMF's review processes, have the potential to be just that.

⁹ See C. Reinhart and V. Reinhart, "After the Fall," forthcoming in *Macroeconomic Policy: Post-Crisis and Risks Ahead*, Federal Reserve Bank of Kansas City Economic Policy Symposium, Jackson Hole, Wyoming, 26–28 August 2010.

¹⁰ The Bank of Canada estimates the equivalent figures for Canada would be 1.1 per cent and 20 per cent of GDP.

Costs of Reform

Despite the clear benefits, stronger prudential standards also impose costs.

Banks can follow several strategies to meet regulatory demands for higher capital requirements. Most obviously, they could raise additional capital in public markets. If given sufficient time, they could generate capital internally through retained earnings. In addition, they could pass on some of the costs of the higher standards to their customers through higher interest spreads or increased fee income. Finally, they could shed, or slow the growth, of assets.

Past experience suggests that banks will use a combination of all these methods.¹¹ However, to be conservative, the Basel report assumes that banks would recoup the cost of higher capital and liquidity requirements entirely through higher lending spreads. The long-term estimate of the increase in lending spreads is then used as an input to a variety of models to assess the impact on output. By combining strengthened liquidity standards with a 2-percentage-point increase in bank capital ratios, expected output growth, relative to trend, is reduced by 0.25 per cent on average for the countries analysed (0.30 per cent for Canada). In present-value terms, this equates to about 5 per cent of GDP.

Together with these long-run costs, there are also costs incurred during the transition period. The Basel study estimates these through a sophisticated approach using a wide range of models.¹² The result for the group is a 1.1 per cent cumulative reduction in GDP over a four-year transition period (in present value).

A Conservative Estimate of the Net Benefits

Netting the long-run benefits of less frequent financial crises with the long-run and transition costs yields average net benefits for G-20 economies of 30 per cent of GDP in present-value terms, or about €10 trillion (Table 1).¹³

This estimate is conservative. The analysis understates the benefits of the new rules and errs on the side of overstating the costs. This bias is reflected in several key assumptions.

First, banks are assumed to fully pass on the costs of higher capital and liquidity requirements to borrowers rather than reducing their current returns on shareholders' equity or operating expenses, such as compensation, to adjust to the new rules.

Consider the alternative. If banks were to reduce personnel expenses by only 10 per cent (equal to a 5 per cent reduction in operating expenses), they could lower spreads by an amount that would completely offset the impact of a 2-percentage-point increase in capital requirements.

Second, higher capital and liquidity requirements are assumed to have a permanent effect on lending spreads, and hence on the level of economic output. No allowance is made for

¹¹ The longer the transition period is, the more important the internal generation of earnings will be.

¹² It was necessary to make a number of assumptions in this analysis. For example, it was typically assumed that monetary policy would respond to mitigate the effects of the more stringent bank capital and liquidity requirements. It was also important to include the spillover effects that occur across borders, magnifying the impact on output.

¹³ Assuming a 2-percentage-point increase in capital (plus liquidity changes). For Canada, estimates are approximately 13 per cent of GDP in present-value terms, which is equal to about Can\$200 billion (Tables 2 and 3).

the possibility that households and firms may find cheaper alternative sources of financing.

Third, the discount rate used to calculate net benefits was more than twice current real interest rates and the longer-run real growth rates of the Canadian and German economies.

Finally, the only benefit quantified is the gains to GDP resulting from a reduced probability of future financial crises.

Other Benefits from Financial Reforms Are Substantial

However, there are a variety of other potential benefits from higher capital and liquidity standards and the broader range of G-20 reforms.

First, the variability of economic cycles should be reduced by a host of macroprudential measures. Analysis by the Bank of Canada and the Basel group suggests a modest dampening in output volatility can be achieved from the Basel III proposals, as higher capital and liquidity allow banks to smooth the supply of credit over the cycle. For instance, a 2-percentage-point rise in capital ratios lowers the standard deviation of output by about 3 per cent.

A much more significant impact can be expected from other macroprudential instruments under consideration. These include varying loan-to-value and other credit terms in mortgage markets, adopting through-the-cycle margining in core funding markets, and the introduction of countercyclical capital buffers.

The Bank of Canada has modelled the potential impact of such a time-varying buffer and translated the gains from reduced volatility into domestic consumption and GDP. The preliminary findings suggest that the potential gains are in the range of 4 per cent to 6 per cent of GDP in present-value terms. In other words, countercyclical buffers alone could increase the net benefits of reforms by about 20 per cent. It is reasonable to expect similar results for other countries.¹⁴

Second, there is a range of initiatives under consideration to reduce moral hazard, including new frameworks for the effective resolution of banks, more intensive supervision of key institutions, the introduction of contingent capital, and the creation of more robust infrastructure.

Adoption of these measures should further reinforce the ability of Basel III standards to reduce the probability of crises and thereby increase net benefits.

Third, the totality of the G-20 reforms has the potential to shift the balance between resiliency and competition. By creating a system that is robust to the failure of a single firm, reforms could increase the competitive intensity in the financial services sector, with attendant benefits.

¹⁴ See C. Meh and K. Moran, "The Role of Bank Capital in the Propagation of Shocks," *Journal of Economic Dynamics and Control* 34: 555–76 (2010); I. Christensen, C. Meh, and K. Moran, "Bank Leverage Regulation and Macroeconomic Dynamics," forthcoming Bank of Canada Working Paper (2010); A. Dib, "Banks, Credit Market Frictions, and Business Cycles," forthcoming Bank of Canada Working Paper (2010).

A financial sector that is less volatile, less prone to debilitating crises, and more robust in the face of adverse shocks is likely to be viewed more favourably by investors and attract the investment needed to continue to expand in a sustainable manner. By reducing moral hazard, incumbents will also enjoy fewer oligopolistic privileges behind regulatory barriers to entry.

Greater competition commonly leads to more innovative and diverse strategies, which would further promote resiliency of the system. Greater competition and safer banks may also contribute to lower expected return on equity (ROE) for financial institutions. This, in turn, could help offset the costs and increase the net benefits discussed earlier.

These gains from competition could be considerable. The financial services sector earns a 50 per cent higher return on equity than the economy-wide average. If greater competition leads to a one-percentage-point decline in the ROE (through a decline in spreads), the estimated cost from a one-percentage point increase in capital would be *completely offset*.

Conclusion

The fundamental objective of the reforms is to create a system that efficiently supports economic growth while providing financial consumers with choice. The system must be robust to shocks, dampening, rather than amplifying, their effect on the real economy. It should also support sensible innovation. The system needs stable banks and robust markets, since both play a central role in financing, and, if properly structured, each can support the other.

This means ensuring that individual financial institutions are stronger and less systemically important, that more options for liquidity are available in all states of the world, and that the new measures promote competition.

A fully risk-proofed system is neither attainable nor desirable. The point is not to pile up so much capital in our institutions that they are never heard from again, either as a source of instability or of growth. The challenge is to get the balance between resiliency and efficiency right. The Basel III agreement accomplishes these objectives. Moreover, a careful analysis indicates that the economic case for the reforms is compelling.

Most fundamentally, successful implementation of the G-20 agenda will increase the likelihood of an open, flexible international financial and trading system. Modern Germany has prospered in this environment and has a great stake in leading the G-20 in building a more secure foundation for modern prosperity.

The Bundesbank has led the development of many of these reforms. Tremendous progress was made this past weekend, but there is still more to do. Germany's continued leadership in the coming weeks and months will be critical, so that we can finish building a solid financial foundation for growth and social improvement. We should all heed the words of President Weber: "Policy-makers now have to muster the political will to take the necessary steps, however contested and painful they might be."¹⁵

Thank you.

¹⁵ A. A. Weber, "The G20 Agenda on Financial Regulation," Dinner speech at the International Conference on Financial Market Regulation, 19 May 2010.

Appendix

Chart 1: An illustration of the cumulative output loss in Canada from the financial crisis

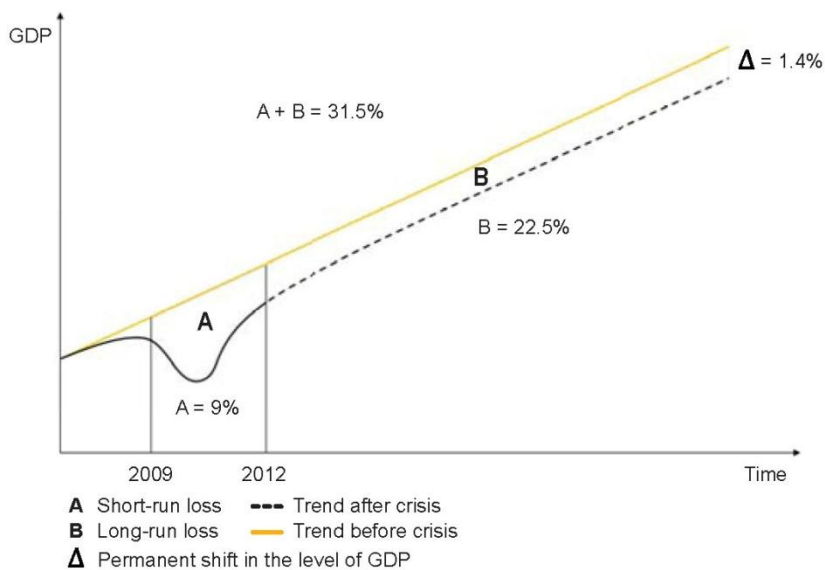
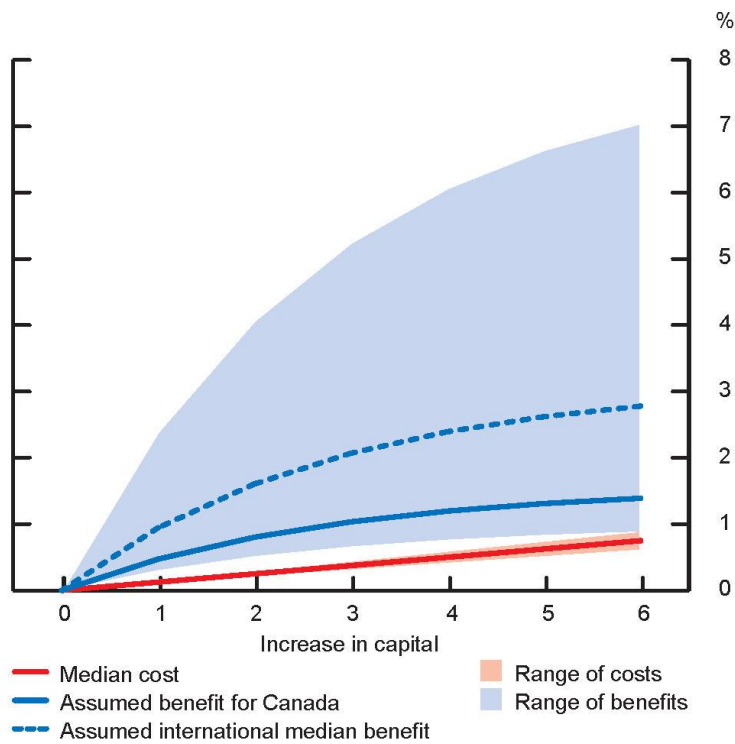


Chart 2: Expected longer-run benefits and costs of tighter capital and liquidity standards

In per cent of GDP



Source: Bank of Canada estimates based on LEI data

Table 1: Cumulative benefits and costs for the G-20 from stronger regulatory requirements (present value in per cent of GDP)

Increase in capital ratio (percentage points)	Long-run benefits (%)	Long-run costs (%)	Transition costs (%)	Net benefits (%)
2	36.4	-5.2	-1.1	30.1
4	45.8	-8.8	-2.2	34.8
6	50.4	-12.4	-3.2	34.8

Source: Basel reports and Bank of Canada calculations

Assumptions:

- Liquidity requirement is met, as defined in the LEI report.
- Cost of a crisis is 63% of pre-crisis output (equivalent to LEI median estimate).
- Discount factor of 5 per cent.
- G-20 GDP in 2009 is euro 33.3 trillion.
- Transition costs represent weighted average of discounted transition impact on U.S. and Europe, scaled to G-20 output (MAG report and Bank of Canada calculations).

Table 2: Estimated long-run costs and benefits for Canada from stronger regulatory requirements (expressed as annual percentage impact on the level of GDP)

Increase in capital ratio (percentage points)	Long-run benefits				Long-run costs			Net long-run benefits (%)	
	Benefit of reduced probability of crisis		Benefit of reduced economic volatility ^a	Benefit of reduced misallocation of resources	Total long-run benefits (%)	Cost of capital standards (%)	Cost of liquidity standards (%)		Total long-run costs (%)
	Domestic (%)	Foreign (%)							
2	0.3	0.8	Positive but not quantified	Positive but not quantified	1.1	-0.2	-0.1	-0.3	0.8
4	0.4	1.0	Positive but not quantified	Positive but not quantified	1.4	-0.4	-0.1	-0.5	0.9
6	0.5	1.1	Positive but not quantified	Positive but not quantified	1.6	-0.6	-0.1	-0.7	0.9

a. Evidence was found that increased capital reduced economic volatility for both the international and Canadian economies, but this was not quantified in terms of GDP.
Source: Bank of Canada calculations

Table 3: Present value of benefits and costs for Canada from stronger regulatory requirements

Present value of cumulative benefits and costs (as per cent of GDP)				
Increase in capital ratio (percentage points)	Long-run benefits (%)	Long-run costs (%)	Transition costs ^a (%)	Net benefits (%)
2	21.6	-6.0	-2.6	13.0
4	28.0	-10.0	-4.4	13.6
6	32.0	-14.0	-6.2	11.8

a. Transition costs represent additional costs incurred over the 10-year simulation period.

Note: A discount factor of 5 per cent was used for all present-value calculations.

Source: Bank of Canada calculations