

V. Financial regulatory reform: accomplishments, pitfalls, prospects

As the source of credit intermediation between lenders and borrowers, banks provide essential domestic and international financial services to consumers, businesses and government. A strong and resilient banking system is thus the foundation for sustainable economic growth. Throughout history, however, financial crises have occurred at one time or another in every region of the world and for a wide range of reasons. The most recent crisis, in 2007–09, revealed fundamental shortcomings in the operation and regulation of the banking system in many countries.

The crisis had its roots in the United States and spread primarily to other advanced economies, having originated in the imprudent use and inadequate regulation of complex securitisations by large banks. However, in a broader sense, the causes and evolution of the crisis reflect deficiencies that are typical of financial crises in general: investors chasing yield, too much credit, weak underwriting standards, an underpricing of risk, excessive leverage, and contagion.

Given the speed at which crises can arise and be transmitted around the globe, and given ever more rapid financial innovation, banks in all countries need to hold higher capital and liquidity buffers to protect the global banking system and economy from unforeseen risks. Unfortunately, memories tend to be short, and significant risks to the banking sector generally emerge after a period of complacency bred of apparent calm. Thus, the work to strengthen banking systems must be carried through now, when the crisis is still fresh in people's minds and policymakers and the wider public understand the urgency of an effective response.

All banks and jurisdictions must further strengthen resilience to crises

With its release of the Basel III rules on 16 December 2010, the Basel Committee on Banking Supervision set out new global regulatory standards on bank capital adequacy and liquidity to correct the deficiencies revealed by the crisis.¹ Some of the new rules represent a significant overhaul of existing global standards, others introduce rules where none previously existed. Taken together, they strengthen capital and liquidity regulation to promote more resilience in global banking. Thus fortified by Basel III, the international regulatory framework will better shield the financial sector from the next crisis, whatever its origin, and reduce the risk of spillover from the financial sector to the real economy. As risk-taking in the financial sector resumes, banks have started to accumulate capital and to adapt their funding strategies and broader business models to the new regulatory framework, which will call on them to target lower, more stable returns on equity.

¹ See the review of the Basel Committee's activities on pp 110–15.

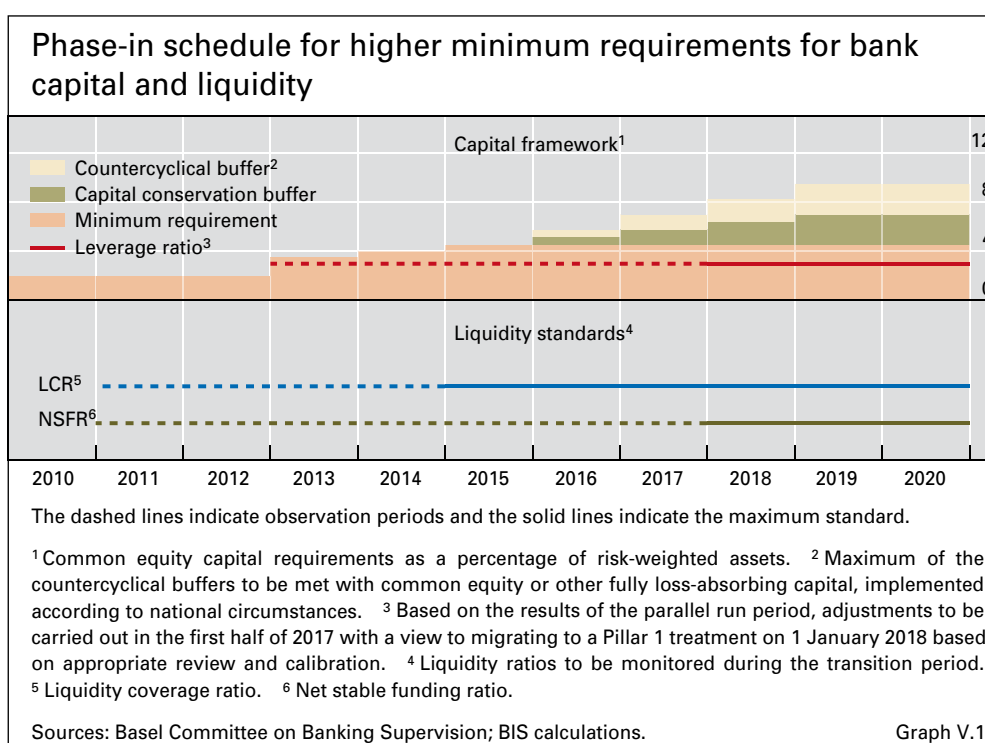
How the financial crisis is shaping regulatory reform

The severity of the crisis owed much to the fact that the banking sector in many countries had taken on too much risk without a commensurate increase in capital. Furthermore, this inadequate *level* of capital was of insufficient *quality*, as the latter had gradually eroded. Basel III tightens capital requirements, encompasses a broader array of risks, and explicitly addresses macroprudential aspects of banking system stability.

Bank capital

Basel III substantially raises the quality as well as the quantity of capital, with a much greater emphasis on common equity (Graph V.1; Box V.A). During the crisis, losses reduced banks' common equity. However, some banks maintained deceptively high ratios of Tier 1 capital to risk-weighted assets through the inclusion of other forms of financial instruments in the capital base. Moreover, non-common Tier 1 capital instruments often did not share in banks' losses through reduced coupon or principal payments and so did not contribute to maintaining the institutions as going concerns in any meaningful way. The artificially high Tier 1 risk-based ratios also meant that banks were building up high levels of leverage. Basel III therefore also introduces a simple leverage ratio that provides a backstop to the risk-based regime. The supplementary ratio, which is a measure of a bank's Tier 1 capital as a percentage of its assets plus off-balance sheet exposures and derivatives, will serve as an additional safeguard against attempts to "game" the risk-based requirements, and will mitigate model risk. By helping contain the build-up of excessive leverage, the leverage ratio will also complement other macroprudential measures, discussed below, to reduce systemic risk.

The leverage ratio will provide a backstop to the risk-based measures and help curb the build-up of excessive leverage



Box V.A: Capital instruments

The global banking system entered the crisis with an insufficient level of high-quality capital. The crisis revealed an inconsistency in how regulatory capital is defined across jurisdictions and the lack of disclosure that would have enabled the market to fully assess and compare the quality of banks' capital. In response, Basel III introduces a harmonised definition of capital that comprises the following components:

- **Common Equity Tier 1** – consists of the bank's common shares and retained earnings less regulatory adjustments (eg the deduction of goodwill). This component of capital fully absorbs losses while the bank remains a going concern. It is therefore the highest-quality component of a bank's capital. A key element of the new definition of capital is the greater focus on Common Equity Tier 1.
- **Additional Tier 1 capital** – consists of preferred shares and other capital instruments that comply with a set of criteria to ensure they can absorb losses while the issuing bank remains a going concern. These criteria include requirements that the instruments be subordinated, have fully discretionary non-cumulative dividends or coupons and have neither a maturity date nor an incentive to redeem.
- **Tier 2 capital** – consists of debt instruments that comply with a set of criteria to ensure they are able to absorb losses when a bank fails (ie when it has become a "gone concern"). These criteria include requirements that the instruments be subordinated, have a minimum original maturity of at least five years and contain no step-ups or other incentives to redeem. Regulatory recognition of these instruments is amortised over the five years before maturity.

During the crisis, a number of distressed banks were rescued by the injection of public sector funds in the form of common equity and other forms of Tier 1 capital. While this had the effect of supporting depositors, it also meant that certain capital instruments did not absorb losses. Therefore, in addition to the characteristics noted above, instruments in Additional Tier 1 and in Tier 2 must have a feature ensuring that they can be written off or converted to common equity when the issuing bank reaches the point of non-viability (ie the point at which the bank is unable to support itself in the private market) as determined by the relevant authority.

The Basel III definition of capital phases out innovative hybrid capital instruments, which provided an incentive to redeem through features such as step-up clauses. It also eliminates Tier 3 capital, which was short-term subordinated debt that was previously permitted to cover market risk.

In addition to the Basel III elements of capital, certain other instruments are being considered in the context of systemically important banks:

- **Contingent capital** (also called cocos) – debt instruments that convert to Common Equity Tier 1 capital through a write-off or conversion to common shares before a bank reaches the point of non-viability.
- **Bail-in-able debt** – debt instruments that convert to Common Equity Tier 1 capital through a write-off or conversion to common shares when a bank reaches the point of non-viability.

Risk coverage

The Basel Committee has also improved the risk coverage of the regulatory capital framework for capital market activities – a salient feature of the recent crisis, where trading exposures accounted for much of the build-up of leverage and were an important source of losses.² Weak capital, excessive leverage and inadequate risk coverage prevented the banking system from fully absorbing systemic trading and credit losses. Nor could it cope with the reintermediation of large off-balance sheet exposures that had built up in the shadow banking system. Under Basel III, banks will have to hold more capital against their less liquid, credit-sensitive assets whose holding periods are much longer than traditional trading positions. Trading activities will also be

Wider risk coverage and higher capital requirements for trading activities ...

² Trading exposures include positions in financial instruments and commodities held either with the intent to trade them or to hedge other trading activities. For purposes of calculating regulatory capital, such positions are subject to the Basel Committee's market risk rules and are said to be held in the "trading book".

... and for counterparty credit risk

subject to a stressed value-at-risk requirement. In addition, securitisation exposures in the trading book will be subject to capital charges more consistent with those for the banking book. Basel III also imposes higher capital requirements for counterparty credit risk, that is, for the amount that would be lost in the event of default by a counterparty to a financial contract. Moreover, Basel III creates incentives for banks to increase the use of central counterparties (CCPs) – financial institutions that act as intermediaries between market participants (see Box V.B) – while ensuring that the risk arising from banks' exposures to CCPs is adequately capitalised.

Liquidity

Liquidity risk management and profiles must improve

During the build-up to the crisis, many banks had operated with increasingly thin liquidity margins, placing undue reliance on easy access to market liquidity. At the height of the crisis, counterparties lost confidence in the liquidity of many banking institutions, severely straining their access to

Box V.B: The role of financial market infrastructures

Transactions in financial markets are conducted either on organised exchanges or over the counter (OTC). After the transaction is concluded, it is passed on to what is commonly known as the post-trade infrastructure. This process starts with the matching of the transaction and ends with its settlement. Settlement typically involves the transfer of money against the delivery of an asset or a financial instrument such as a derivative. In modern financial systems, settlement takes place in financial market infrastructures like large-value payment systems, securities settlement systems and central counterparties (CCPs).

The way these post-trade infrastructures are designed and how they function has important implications for financial stability because they can act as a channel through which disruptions can spread among financial market participants. Put differently, these infrastructures can serve as an important means to mitigate the risks arising from the “interconnectedness” of market participants and can reduce the risk of contagion.

The financial crisis revealed a striking weakness in the way important OTC derivatives, in particular credit default swaps, were processed in the post-trade phase. Many of these transactions were inadequately reported, and the bilateral exposures between counterparties were insufficiently collateralised.

Against this background, authorities from around the world are pushing for two significant changes in the post-trade infrastructure for OTC derivatives. Both should be implemented by the end of 2012.^① First, OTC derivatives will need to be reported to a trade repository (TR). A TR is an electronic registry that keeps a record of all relevant details of an OTC derivative transaction over its lifetime. This information can be used in various ways by the reporting institutions, authorities and the public. If all trades are reported to a TR, and the information is made available to the relevant supervisory authorities, then these authorities will be able to attain an overall view of the OTC derivatives markets, including the most important (gross and net) positions taken by the major dealers in these markets. If TRs had existed before the crisis, the build-up of huge derivative positions, such as those at American International Group (AIG), would have been observed much earlier.

Second, clearing OTC derivatives through a CCP instead of bilaterally can bring about several benefits from a financial stability perspective. A CCP interposes itself between the two original counterparties of a financial transaction, becoming the buyer to the seller and the seller to the buyer. In other words, the CCP isolates the original counterparties from each other should one of them default. Thus, it makes financial institutions less interconnected. However, since risks become concentrated in the CCP, the CCP itself needs to be highly robust: it must protect itself against the default of one or more of its members. To that end, the CCP requires its members to adjust their collateral at the CCP at least daily in accordance with the price movements of their positions.

^① See, for instance, G20, “Leaders’ statement”, Pittsburgh Summit, 24–25 September 2009.

funding. Basel III addresses the liquidity deficiencies that the crisis laid bare. The internationally harmonised liquidity framework consists of two minimum regulatory standards: the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR). They have complementary objectives.

The LCR is designed to bolster the short-term resilience of a bank's liquidity risk profile by ensuring that it has high-quality liquid assets in sufficient quantity to survive a plausibly severe stress scenario lasting for 30 calendar days. The stress scenario, designed by the Basel Committee, incorporates many of the shocks experienced during the crisis. It includes a partial run-off of retail deposits, a partial or complete drying-up of wholesale funding sources, a need to post additional collateral due to a credit rating downgrade, and unscheduled draws on unused credit and liquidity facilities.

The NSFR is designed to promote resilience over a longer time horizon by creating additional incentives for banks to use more stable sources of funding on an ongoing basis. These standards complement the Committee's 2008 *Principles for sound liquidity risk management and supervision*, the implementation of which will be assessed in the near term.

Macroprudential aspects

Basel III was designed to enhance both bank-specific soundness and wider banking sector stability. Thus, besides its firm-specific approaches, it incorporates macroprudential measures to explicitly address systemic risk.

During the crisis, mounting losses and the resulting strain on capital impaired banks' ability to lend – precisely at the time when economies were most in need of credit. This tendency for the financial system to amplify cyclical effects in the real economy, or procyclicality, combined with the interconnectedness of financial institutions that were considered too big to fail, exacerbated the crisis.

To help mitigate procyclicality in banking and the broader financial system, the new regulatory capital framework provides for building up capital in good times to levels above the minimum requirement. The resulting *capital conservation buffer* will help banks absorb losses during periods of financial and economic stress. As a bank's capital level moves closer to the minimum requirement, the conservation buffer imposes a progressively tightened constraint on the bank's discretionary distributions, such as dividends. Retaining a bigger proportion of earnings during a downturn will help ensure that capital remains available to support banks' ongoing business operations during the period of stress.

Basel III also introduces a *countercyclical buffer*. It is based on the observation that private sector credit growth that is out of line with historical experience often ultimately imposes losses on the lenders. The ratio of aggregate credit to GDP will serve as the reference for the build-up of the buffer, which will be implemented through restrictions on capital distributions identical to those that apply to the conservation buffer. Within countries, the authorities will impose this buffer only when they judge that credit growth is resulting in an unacceptable build-up of system-wide risk. Conversely, the buffer will be released when, in the judgment of the authorities, the capital

The two new liquidity standards will help improve resilience

Macroprudential elements of Basel III address systemic risk

Capital buffers will help mitigate procyclicality

Box V.C: National and international progress on implementing macroprudential policy frameworks

One of the key lessons of the recent financial crisis is that regulatory policy must have an enhanced macroprudential orientation to comprehensively address systemic financial risks. The national and international work to develop such a macroprudential policy has intensified and continues to grow, building on conceptual efforts by the BIS since the apparent coining of the term “macroprudential” by the Cooke Committee, the forerunner of the Basel Committee, in 1979.^①

Recent initiatives in a number of international forums^② have aided the formation of a clear consensus regarding the key features of an effective macroprudential framework. These include:

- effective integration of supervisory information, market intelligence and aggregate indicator data;
- recognition of the importance of domestic and cross-border interlinkages across financial institutions and markets;
- macroprudential instruments matched to the particular risks or imbalances diagnosed;
- macroprudential policy responsibility assigned to an independent central agency or formal committee, either within the central bank or involving the central bank in a key role;
- clarity of mandate, adequacy of powers and strong accountability; and
- clear macroprudential policy communications that link financial stability assessments to policy decisions and that manage public expectations about the capabilities of macroprudential policy.

Formal macroprudential policy arrangements that will enable these principles to be realised have been established or are well in train in many jurisdictions, including the United States, the United Kingdom and the European Union. In many cases, operations under new arrangements have begun. The emerging frameworks feature advancements in the structured, regular diagnosis of systemic risk. For example, these diagnoses are conducted at the international level by the Committee on the Global Financial System (CGFS), the Financial Stability Board (FSB) Standing Committee on the Assessment of Vulnerabilities, and the IMF-FSB Early Warning Exercise; and national financial stability reports are progressively strengthening their support of macroprudential policy. Basel III incorporates macroprudential capital elements, and many jurisdictions continue to accumulate practical experience with macroprudential instruments such as loan-to-value ratio caps and reserve requirements.

The powers, tools and accountability requirements for macroprudential policy are either well defined or in an advanced stage of development. The imperative now is to get actual policy operations up and running. To do so, key operational issues must be resolved, including the selection, design and calibration of instruments, the translation of risk indicators to instrument settings, and arranging for efficient decision-making by committees encompassing diverse policy interests and knowledge. In short, the development of macroprudential policy is moving from conceptual issues of design to practical questions of implementation.

The more technical phase of macroprudential policy development is being facilitated by increasingly useful data generated by the growing number of actual macroprudential interventions and improvements to statistical coverage. Nonetheless, a substantial amount of trial and error is likely to be needed for the time being, given the still-limited history of macroprudential policy usage. Sharing of practical experiences among macroprudential policymakers, including through the BIS and FSB processes, will promote the development of the international dimension of macroprudential policy and the refinement of national frameworks.

^① See P Clement, “The term ‘macroprudential’: origins and evolution”, *BIS Quarterly Review*, March 2010, pp 59–67. ^② See, for example, CGFS, “Macroprudential instruments and frameworks: a stocktaking of issues and experiences”, *CGFS Papers*, no 38, May 2010; and BIS-FSB-IMF, “Macroprudential policy tools and frameworks: update to G20 Finance Ministers and central bank Governors”, 14 February 2011.

can help absorb banking system losses that pose a risk to financial stability. The ability to run down the buffer without penalties will help reduce the risk of constraining the availability of credit.

The macroprudential elements of Basel III contribute significantly to the development of the broader macroprudential policy framework. The BIS has

advocated such a framework for some time and is encouraged to see the growth of national and international efforts to develop and implement it (see Box V.C). However, while much has been accomplished, more needs to be done, especially on practical implementation of the broad consensus now evident around the framework's core concepts.

Impact of the new requirements

A stronger, safer banking system allocates credit more efficiently, reduces the risk of a costly financial crisis and stabilises the environment for long-term business decisions. These benefits will begin to be reaped when the reforms are implemented. But the process of implementing the new framework will also impose some costs on banks and their customers as banks adjust their balance sheets and business models.

How much adjustment will be needed? The answer varies substantially across institutions and jurisdictions. In some economies, particularly those affected by the financial crisis, banks are still rebuilding capital and running off certain assets. In others, capital and liquidity levels already meet the new requirements. Regardless of their starting point, all economies will see some adjustment, given the significant qualitative and quantitative changes in supervisory definitions and approaches in Basel III.

To ascertain the impact of the new requirements and the corresponding adjustment, members of the Basel Committee conducted a comprehensive quantitative impact study (QIS).³ They found that, for a set of 74 large, internationally active banks (Group 1), the new capital requirements (including new deductions of capital from common equity) would have nearly halved the 31 December 2009 ratios of Common Equity Tier 1 (CET1) capital to risk-weighted assets, from a weighted average gross CET1 ratio of 11.1% (gross of current deductions, based on current risk-weighted assets) to an average net CET1 ratio of 5.7% (after application of regulatory deductions and based on new risk-weighted assets) (Table V.1). Because data pertained to most of the banks that met the specified Group 1 criteria, these figures are likely to be

Some banks will need to build up their capital and liquidity ...

... but the increases, in aggregate, are likely to be modest ...

Average capital ratios reported to the quantitative impact study							
	Number of banks	CET1		Tier 1		Total	
		Gross	Net	Current	New	Current	New
Group 1	74	11.1	5.7	10.5	6.3	14.0	8.4
Group 2	133	10.7	7.8	9.8	8.1	12.8	10.3

Ratios in per cent. CET1 = Common Equity Tier 1. Gross = CET1 (without deductions) relative to current risk-weighted assets. Net = CET1 (with deductions) relative to new risk-weighted assets. Current = capital and risk-weighted asset definitions currently in place. New = capital and risk-weighted asset definitions to be implemented under Basel III.

Source: Basel Committee on Banking Supervision, *Results of the comprehensive quantitative impact study*, December 2010.

Table V.1

³ Basel Committee on Banking Supervision, *Results of the comprehensive quantitative impact study*, December 2010.

close to the actual weighted average capital ratio for the world's large, global banks. For a sample of 133 smaller banks (Group 2), measured capital ratios would also fall, but to a lesser extent, with the net CET1 ratio declining from 10.7% to 7.8%.

These results suggest that some adjustment within the global banking system is to be expected as banks work to meet the new requirements. However, the improvements in capital positions since the end of 2009 should mitigate this to some extent. The adjustment will also be eased by improvements in bank profitability and behavioural shifts over the transition period.

Banks have already begun to accumulate the additional capital that they will need (Graph I.7, left-hand panel). Banks' capital-raising in 2008–09 largely made up for their losses on writedowns related to the crisis (Graph V.2). More recently, some have started to raise private capital, both to repay official capital injections and to achieve stronger capital positions overall. For the most part, however, banks have accumulated capital through higher retained earnings, with increased profitability largely reflecting a fall in loan loss provisions (Table V.2).

In contrast to previous international regulatory initiatives, the formulation of the Basel III proposals was guided by top-down analysis of the potential macroeconomic impact. Thus, alongside their bottom-up efforts to cumulate the impact of higher requirements on individual banks, regulators looked closely at the growth impact during the transition to stronger capital and liquidity requirements as well as the costs and benefits to the economy over the long term.

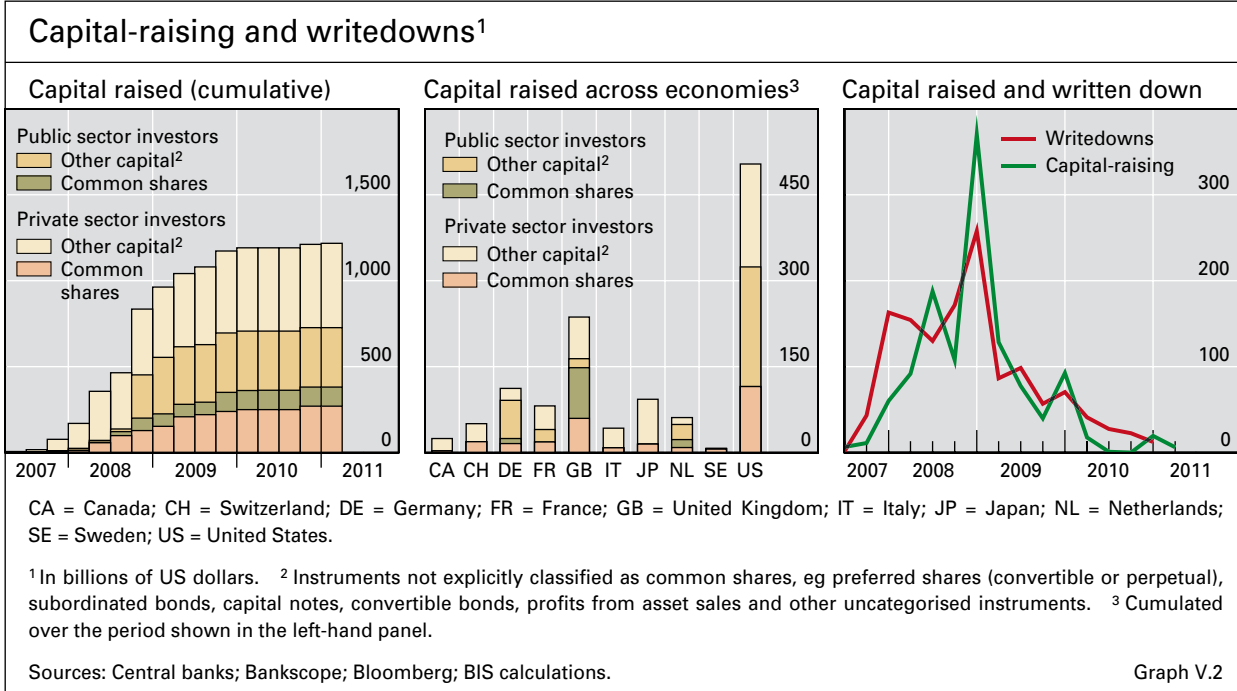
To examine potential transitional impacts on lending and investment, the Financial Stability Board (FSB) and the Basel Committee assembled the

... and banks have already started to adjust

Profitability of major banks ¹												
As a percentage of total assets												
	Pre-tax profits			Net interest margin			Loan loss provisions			Operating costs ²		
	2010	2009	2008	2010	2009	2008	2010	2009	2008	2010	2009	2008
Australia (4)	1.14	0.93	1.01	1.89	1.88	1.66	0.31	0.54	0.26	1.24	1.20	1.21
Austria (2)	0.67	0.63	0.46	2.50	2.46	2.44	0.97	1.20	0.56	1.94	2.00	2.00
Canada (5)	1.01	0.72	0.47	1.65	1.73	1.39	0.26	0.45	0.21	1.87	2.04	1.69
France (3)	0.45	0.18	0.04	1.11	1.02	0.68	0.26	0.36	0.18	0.63	1.10	0.97
Germany (4)	0.17	-0.11	-0.46	0.85	0.80	0.62	0.14	0.41	0.20	1.19	1.00	0.73
Italy (3)	0.37	0.36	0.27	1.74	1.92	2.02	0.60	0.76	0.42	1.70	1.79	1.86
Japan (10) ³	0.30	0.29	-0.16	0.51	0.96	0.93	0.10	0.32	0.42	0.49 ⁴	0.86 ⁴	0.83 ⁴
Netherlands (2)	-0.04	-0.15	-0.61	0.82	0.98	0.80	0.28	0.33	0.21	1.39	1.01	0.90
Spain (4)	0.95	0.88	1.07	2.26	2.27	1.85	0.83	0.94	0.53	1.56	1.49	1.40
Sweden (4)	0.61	0.34	0.67	0.89	1.02	0.99	0.11	0.46	0.11	0.88	0.95	0.90
Switzerland (4)	0.66	0.21	-1.75	0.54	0.56	0.61	0.01	0.10	0.12	2.13	2.10	2.57
United Kingdom (7)	0.25	-0.04	-0.05	1.03	0.95	0.86	0.61	0.90	0.39	0.90	1.18	0.99
United States (7)	1.02	0.42	0.28	2.62	2.71	2.30	0.87	1.72	1.21	2.94	2.79	2.45

¹ Largest banks in each country by total asset size. The number of banks in the 2010 data is indicated in parentheses. ² Sum of personnel and other operating costs. ³ Q2 2010 data. ⁴ Does not include personnel costs.

Source: Bankscope. Table V.2



Macroeconomic Assessment Group (MAG), consisting of macroeconomic modellers from a number of central banks, national regulators and international organisations. The MAG concluded that the transitional effects were likely to be modest.⁴ Using median results from the suite of models and relatively conservative assumptions, the group estimated that bringing the global common equity capital ratio to a level that would meet agreed targets over eight years would result in a maximum decline in GDP, relative to baseline forecasts, of 0.22% over 35 quarters (Graph V.3, right-hand panel). This is equivalent to a shortfall from baseline in average annual growth of GDP of 0.03 percentage points (3 basis points) during these 35 quarters, after which the growth rate would accelerate back towards the baseline. The 97 models used in the study produced a wide range of estimated impacts. The 20th percentile estimate produced a maximum GDP decline of 0.1% and the 80th percentile estimate a decline of almost 0.5%. However, most of the results clustered around the median, with the estimated paths between the 40th and 60th percentile tending to be very close to the median forecast. The macroeconomic impact of liquidity requirements was more difficult to estimate but also seemed to be small.

The macroeconomic impact of the transition is unlikely to be significant

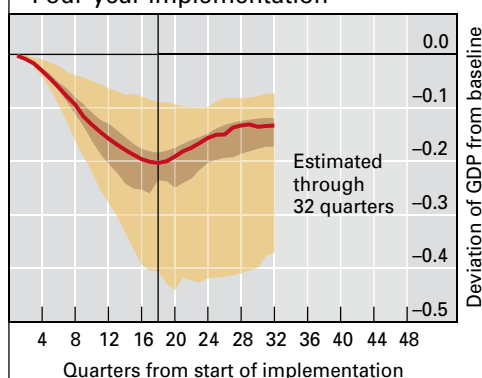
The MAG noted that banks may choose to implement the reforms on a faster schedule than the one set out by supervisors. The group found that implementing the reforms over four years rather than eight (Graph V.3, left-hand panel) would lead to a slightly greater decline in the average annual growth rate of GDP over a shorter period, specifically a reduction of 5 basis points from baseline over 18 quarters, followed by a return towards baseline.

⁴ See Macroeconomic Assessment Group, *Final Report*, December 2010.

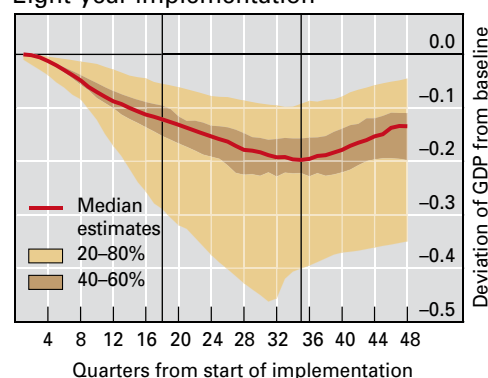
Aggregate impact of a 1.3 percentage point increase in the target capital ratio¹

In per cent

Four-year implementation²



Eight-year implementation³



Results from a set of macroeconomic forecast models estimating the impact on GDP, relative to baseline forecasts, if the Common Equity Tier 1 capital (CET1) ratio of banks is increased 1.3 percentage points over four years (left-hand panel) and eight years. The increase would raise Common Equity Tier 1 capital from 5.7% of risk-weighted assets, the level estimated by the QIS that large (Group 1) banks would have had at end-2009 under Basel III capital requirements, to 7%, which under Basel III is equal to the sum of the minimum CET1 ratio and the capital conservation buffer. The shaded areas show the range of estimated GDP paths between the 20th and 80th percentiles (light brown) and the 40th and 60th percentiles (dark brown) across the estimated models.

¹The vertical lines indicate the 18th and (for the eight-year case) 35th quarters. ²Distributions are computed across all 89 cases used in the MAG Interim Report, excluding those designed to measure the impact of international spillovers. ³Distributions are computed across all 97 cases contributed to the MAG, excluding those designed to measure the impact of international spillovers.

Sources: Macroeconomic Assessment Group (MAG), *Interim Report*, August 2010; MAG, *Final Report*, December 2010. Graph V.3

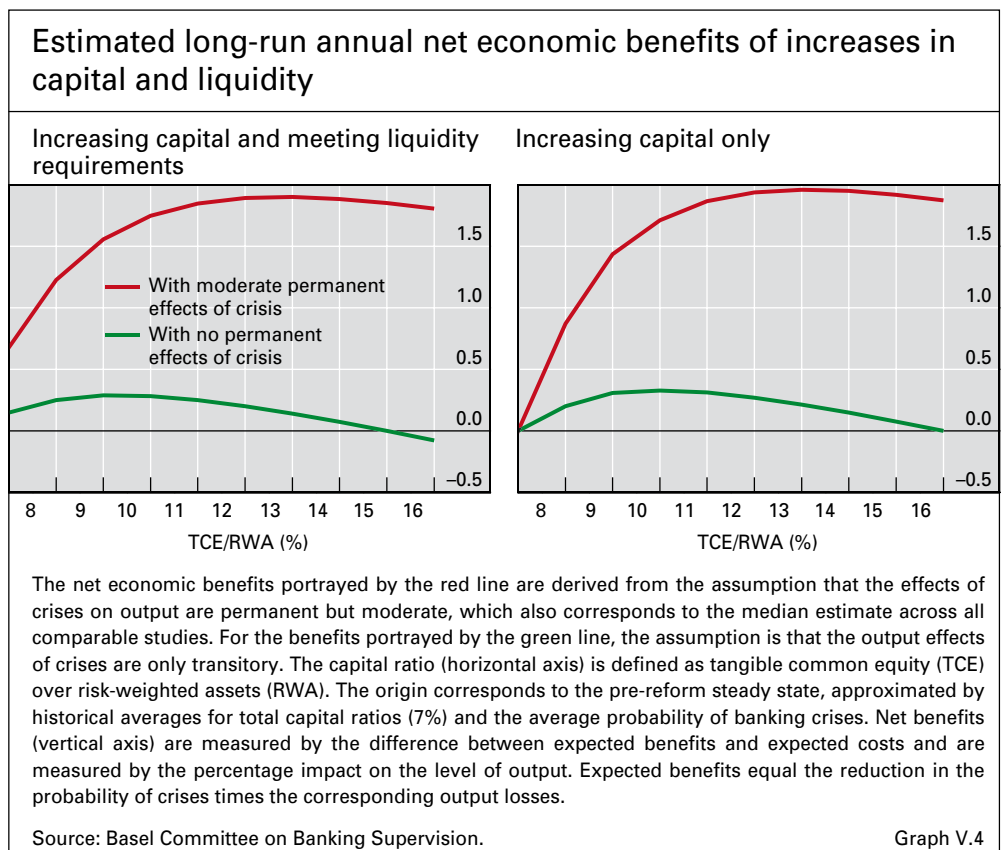
While the MAG analysis focused on the transitional costs of the new regulatory framework, a Basel Committee subgroup examined the long-term economic impact (LEI) of the reforms, comparing costs with benefits. The costs mainly related to higher lending rates linked to a higher cost of bank funding.⁵ The group noted that this was actually a conservative assumption, since it ignored the fact that safer bank balance sheets should reduce the costs of banks' equity and debt funding to an extent that would at least partly compensate for the cost of holding more equity relative to debt. Another conservative assumption was that any increase in bank funding costs would be passed entirely into lending rates. These costs were set against a number of benefits, including a likely reduction in the frequency and severity of banking crises. The group found that, historically, banking crises occur in any given country on average once every 20–25 years. Estimated cumulative discounted output losses from banking crises vary widely but have a median of 60% of pre-crisis GDP. Thus, for example, a 1 percentage point reduction in the likelihood of a crisis should yield a benefit of around 0.6% of GDP.

⁵ See Basel Committee on Banking Supervision, *An assessment of the long-term economic impact of stronger capital and liquidity requirements*, August 2010.

The LEI group concluded that the long-term benefits of stronger capital and liquidity requirements substantially exceed the costs for a broad range of minimum capital requirements⁶ (Graph V.4). The magnitude of the benefits depends critically on whether output after a financial crisis eventually returns to where it would have been had no crisis taken place (the benefits portrayed by the green lines in Graph V.4) or permanently moves to a lower path (that is, a permanent relative reduction, in which case the benefits are as portrayed by the red lines). If, as concluded by most studies, a crisis leads to a permanent relative reduction in output, then the net benefit from reducing the risk of a crisis should be correspondingly greater.

Over the longer term, the benefits are expected to outweigh the costs

Along with other analyses, the MAG and LEI studies played an important role in informing the decisions ultimately taken by policymakers, namely to mandate relatively high minimum buffers for high-quality capital and liquidity while allowing banks a lengthy transition period. With the outlines of the international framework now essentially settled, banks have started to adjust their balance sheets and business models to the new requirements, while the regulatory agenda has moved on to a number of other, complementary issues.



⁶ The LEI exercise used capital ratios calculated under the older, pre-Basel III definitions for capital and risk-weighted assets. The findings of the QIS suggest that banks' current ratios of tangible common equity (TCE) to risk-weighted assets (RWA) under the Basel III definitions tend to be roughly two thirds of those calculated using previous concepts. The figures on the horizontal axis in Graph V.4 should be adjusted accordingly.

Outstanding issues and future work

The reform agenda now encompasses implementation of regulations complemented by more intensive and intrusive supervision; more extensive regulation and supervision of systemically important financial institutions (SIFIs) and development of effective cross-border resolution regimes; and broader consideration of non-bank financial firms and the shadow banking system. The Basel Committee is also reviewing the distinction between the regulatory banking book and the trading book.

Implementation

The Basel III rules need to be implemented in a timely and globally consistent manner. All member countries of the Basel Committee must now translate the Basel III texts into national regulations and legislation in time to meet the 2013 deadline.

Basel III will be phased in so as not to impede the economic recovery

The Committee and its oversight body of Governors and Heads of Supervision have consistently stated that the new standards will be introduced in a manner that does not impede the economic recovery. Thus, they have chosen a staggered timeline for implementation (Graph V.1). For example, the July 2009 enhancements that strengthen regulatory capital and disclosure requirements are due to take effect no later than the end of 2011. The Basel III requirements themselves begin to take effect from the beginning of 2013 and will be phased in by 2019. This time frame includes an observation period to review the implications of the liquidity standards for individual banks, the banking sector and financial markets, with a view to addressing any unintended consequences. Similarly, the Committee will assess the impact of the leverage ratio on business models during the transition period in order to ensure that it achieves its objectives.

The impact of the new standards will be monitored and unintended consequences addressed

Jurisdictions and banks must begin Basel III planning

Like all Basel Committee standards, Basel III sets out *minimum* requirements, and the transitional arrangements are the deadlines for adopting the new standards. Countries should move faster if their banks are profitable and are able to apply the standards without having to restrict credit. Banks should not be permitted to increase their capital distributions simply because the deadline for achieving the minimum standards is still some way off, particularly if there are signs of growing macroeconomic risks and imbalances. Therefore, banks, for their part, must also begin to plan and to prepare.

Full, timely and consistent implementation is needed

Basel III is the core regulatory response to problems revealed by the financial crisis. Delay or weakening of the agreements would jeopardise financial stability and the robustness of the recovery over the long term. The full, timely and consistent implementation of *all* relevant standards by banks, along with rigorous enforcement by supervisors, is critical. Ultimately, both the official and the private sector will reap the benefits of a more stable financial system.

More intensive and more intrusive supervision

Implementation efforts need to be supplemented by strong and enhanced supervision of individual banks. Strong supervision is needed to ensure that banks operate with capital levels, liquidity buffers and risk management

practices that are commensurate with the risks taken. It must also address the consequences of financial innovation or risks of regulatory arbitrage that regulation cannot fully capture and, more generally, address the firm-level consequences of emerging risks and economic developments. National authorities must supervise in a more intensive and more intrusive fashion, especially for the largest and most complex banks. It will also be important to reinforce both the firm-specific and macroprudential dimensions of supervision and the way they interact.

Supervisors need both a firm-specific and a macroprudential focus

In particular, as it carries forward its work on the implementation of the supervisory review process under Basel II (ie Pillar 2), the Basel Committee will foster the adoption of better supervisory practices.

Systemically important financial institutions

Reducing the risks posed by financial institutions that are systemic in a global context (global systemically important financial institutions, or G-SIFIs) is a high priority for the international regulatory community. Basel III will enhance the quality and quantity of capital for all banks, but it does not fully address the externalities or spillover effects that G-SIFIs generate. Additional policy tools are necessary.

Additional policy tools are needed to address SIFIs ...

In November 2010, the FSB introduced a policy framework for these institutions. It recommends that G-SIFIs have higher loss-absorbing capacity to reflect the greater risks that they pose to the global financial system and that these institutions be subject to more intensive and coordinated resolution planning to reduce the probability and impact of their failure. This will help ensure that G-SIFIs can be closed or wound up quickly without destabilising the financial system or exposing the taxpayer to the risk of loss. In addition, the FSB calls for enhanced supervision of SIFIs that will be more intensive and effective than in the past.

... including capital surcharges ...

The Basel Committee has developed quantitative indicators and qualitative elements to identify G-SIFIs. Work is also continuing on calibrating the additional loss absorbency that G-SIFIs should have, which could be met through some combination of common equity and contingent capital. The Committee will pursue this work in close cooperation with the FSB in the coming months.

More effective cross-border bank resolution

Higher loss-absorbing capacity for G-SIFIs and their effective resolution complement each other, but neither by itself is sufficient. The financial crisis also illustrated the importance of effective cross-border crisis management. The scope, scale and complexity of international financial transactions expanded at an unprecedented pace in the years preceding the crisis, while the tools and techniques for handling cross-border bank resolution have hardly evolved. Some of the events during the crisis revealed gaps in intervention techniques and, in many countries, a lack of appropriate resolution tools. Actions taken to resolve cross-border institutions during the crisis tended to be ad hoc, severely constrained by time, and dependent on a significant amount of official support.

... and better and more coordinated resolution regimes

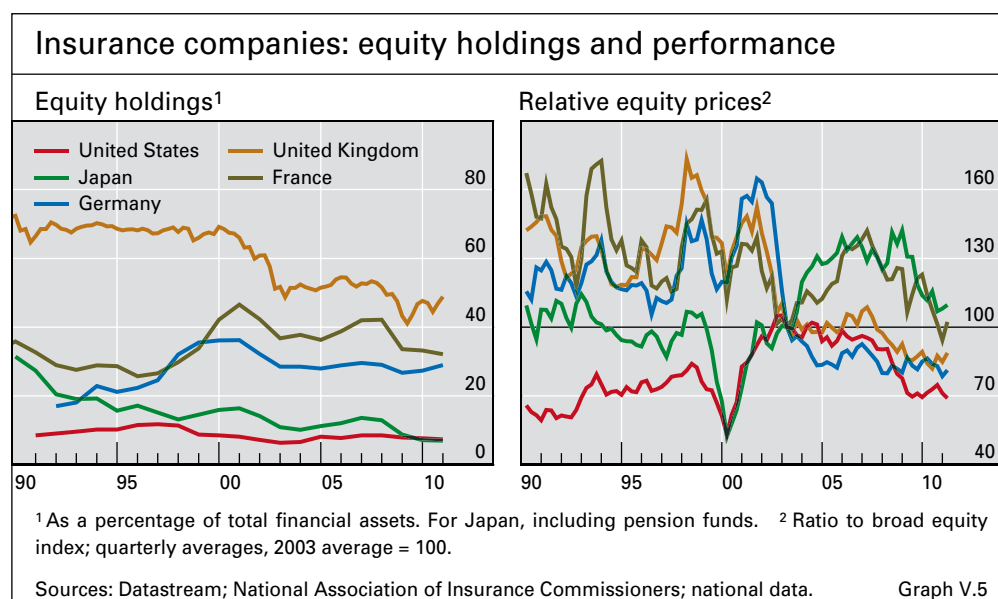
In March 2010, the Basel Committee issued recommendations to strengthen national resolution powers and their cross-border implementation. The recommendations also covered firm-specific contingency planning for banks and home and host country authorities. Contagion can be reduced through risk mitigation mechanisms such as netting arrangements, collateralisation practices and the use of regulated central counterparties. These and other measures would help limit the market impact of a bank failure. The recommendations should lead to practical and credible plans to promote resilience in periods of severe financial distress and to facilitate a rapid resolution if necessary.

Building on the recommendations, the Basel Committee and the FSB are assessing progress in national and multinational efforts to enhance authorities' ability to manage and resolve distressed banking institutions in a manner that minimises disruptions to the financial system. The two bodies are evaluating legal and policy changes that would assist authorities in addressing future needs for crisis management and bank resolution.

Other financial sectors and firms

Work to strengthen the regulation of SIFIs also needs to take account of differences across financial sectors. The FSB will review how the different regulatory measures fit together and whether there are inconsistencies or contradictions among the standards. For instance, deeper consideration is needed to assess the systemic importance of insurance companies and their role in financial stability. Insurance companies tend to have very different risk characteristics from those of banks, particularly regarding liquidity. Insurance company balance sheets also differ considerably across countries, for example in terms of the exposure to equity markets (Graph V.5, left-hand panel). Except for unusual cases such as American International Group (AIG) and the monoline insurers, these institutions proved broadly resilient during the financial crisis (Graph V.5, right-hand panel).

Review of insurance companies' systemic importance



Hedge funds are another set of firms for which regulatory instruments and objectives differ sharply from those appropriate to banks. Despite major investment losses and outflows during the crisis, assets and leverage in the hedge fund sector have been broadly stable in the post-crisis period (Graph V.6).

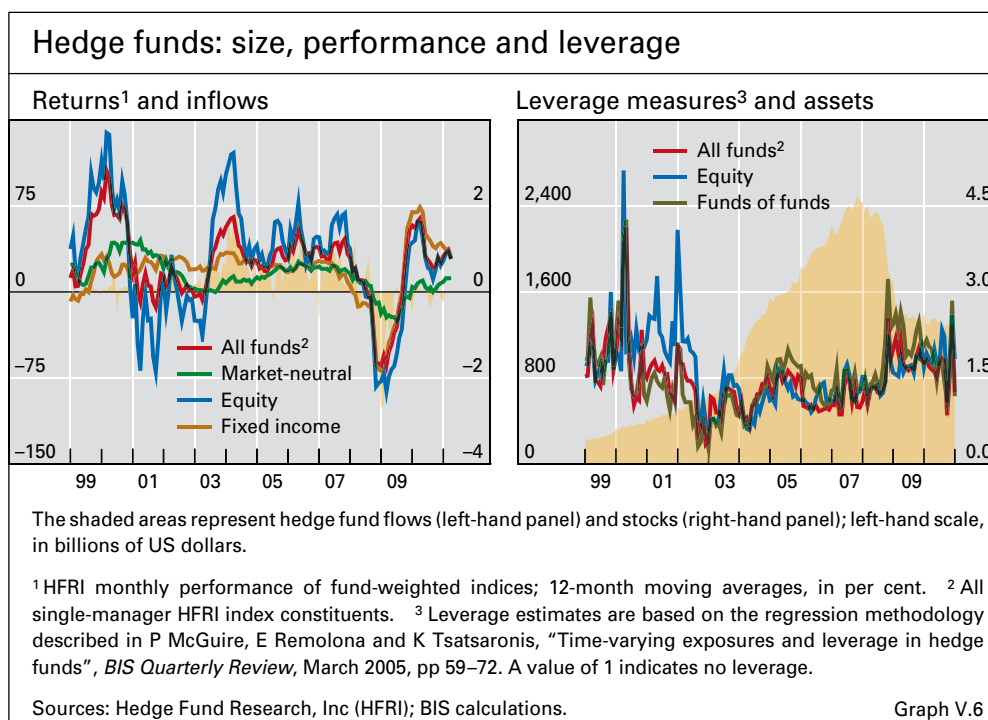
Shadow banking

Shadow banking refers to credit intermediation that takes place outside the traditional banking system and involves maturity or liquidity transformation. Examples include the activities of money market funds, lending by unregulated finance companies, the issuance by specialised conduits and investment vehicles of commercial paper backed by longer-term assets, and the funding of securitisation activities through repo markets. The shadow banking system is, however, closely intertwined with the regulated system. Large banks typically draw substantial income from shadow banking activities and retain both direct and indirect credit and operational exposures to them through business lines such as loan origination, credit enhancements, backup liquidity lines, brokerage services, warehousing and credit insurance.

Shadow banking can perform valuable functions, including facilitating credit extension to certain sectors and providing banks and investors with a range of vehicles for managing credit, liquidity and maturity risks. However, the financial crisis demonstrated that shadow banking can also give rise to a number of risks in the broader financial sector. Some of these risks (such as those related to bank exposures through contingent credit lines) are being addressed through the improvements in bank regulation as well as through initiatives such as stronger regulation of credit rating agencies and money

Shadow banking also raises systemic risk issues ...

... which can be mitigated through addressing gaps in data and regulatory frameworks ...



market funds. Other aspects are more difficult to deal with, especially those that call for a high degree of coordination across regulatory agencies, both within and across national boundaries. For example, judging the extent of liquidity mismatch in a bank-sponsored investment vehicle may require input from banking and market regulators in several jurisdictions.

... as well as strengthened monitoring

Another lesson of the crisis was that activities in the shadow banking system need to be monitored in order to improve the ability of authorities and market participants to understand and anticipate the build-up of systemic risks. For example, in the years leading up to the crisis, US money market funds were important providers of funding to European banks. As a result, the disruption to the US money market fund sector in the aftermath of the Lehman Brothers bankruptcy in September 2008 had knock-on implications for European bank funding as well as for foreign exchange swap markets because the banks had used these instruments to swap their funding from dollars into local currencies. Existing statistical frameworks do not provide adequate information for assessing these risks (see Chapter VI).

International coordination will be essential

Shadow banking's potential threats to financial stability must be reduced. First, firm-level disclosure and system-wide statistical frameworks need to be improved to ensure that the build-up of risks can be monitored properly. Improved data need to be accompanied by regular monitoring of those indicators that can be informative about the nature and locus of potential systemic risks. Second, gaps in regulation need to be identified and addressed, with the goal of reducing risky build-ups of leverage and maturity and liquidity mismatches, wherever these occur in the financial system. Rules that mitigate these risks in a consistent way across different entities and activities would reduce the scope for regulatory arbitrage. Given the global nature of many shadow banking activities, these efforts need to be coordinated at the international level. At the request of the G20, the FSB plans to submit recommendations on these issues in the course of 2011.

Other regulatory and supervisory initiatives

The financial crisis exposed significant flaws in the existing regulatory capital approach to market risk and trading activities. The most immediate shortcomings were remedied in the July 2009 enhancements to the regulatory capital framework. The Basel Committee is now also carrying out a fundamental review of the trading book framework and expects to conduct a public consultation on its findings around end-2011.

Fundamental review of the trading book framework

There are a number of key questions: how to remove opportunities for arbitrage across the banking book and trading book, how to define trading activities, and how to capture risks in trading books (and possibly market risk more generally). Under the current regime, banking book exposures are subject to capital charges against credit risk (through the Basel II credit risk framework) and also against foreign exchange risk and commodities risk (through the market risk framework). Positions in the trading book are subject to capital charges against interest rate risk, foreign exchange risk, equity position risk and commodities risk (through the market risk framework).

The evolving financial system

The new regulatory framework is being implemented at a time when other factors are also influencing the shape of the financial system in the aftermath of the crisis. Market participants have resumed taking on risk. This can be seen in the strength of credit and equity markets (Graph I.1), increased capital flows to emerging economies (Graph I.2), and the revival of high-yield bond issuance (Graph V.7, left-hand panel). There has also been a revival of financial innovation, as can be seen in the growth in financial instruments such as synthetic exchange-traded funds (ETF) (Graph V.7, centre panel) and commodity-linked investment vehicles (Graph IV.B). In the near term, the recovery of risk-taking and innovation across various dimensions will pose an important challenge for authorities as they consider whether and how to deploy the tools at their disposal to address potential threats to financial stability.

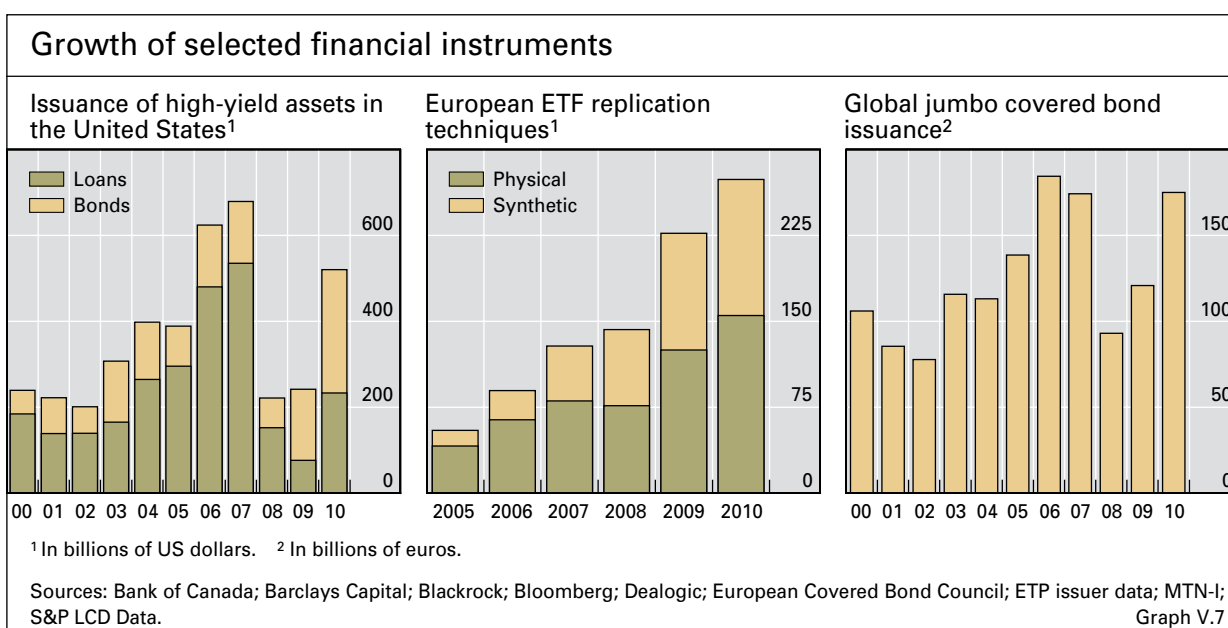
Over a longer horizon, banks and other financial institutions have begun to modify their business models. As already noted, capital levels have increased, mostly through the accumulation of retained earnings. Many banks have started to put in place more stable and resilient funding structures, improve their risk disclosures and exercise greater control over their costs. These changes come in response not only to strengthened prudential frameworks but also to a greater awareness of, and sensitivity to, institution-level risks on the part of banks' managers, shareholders and counterparties.

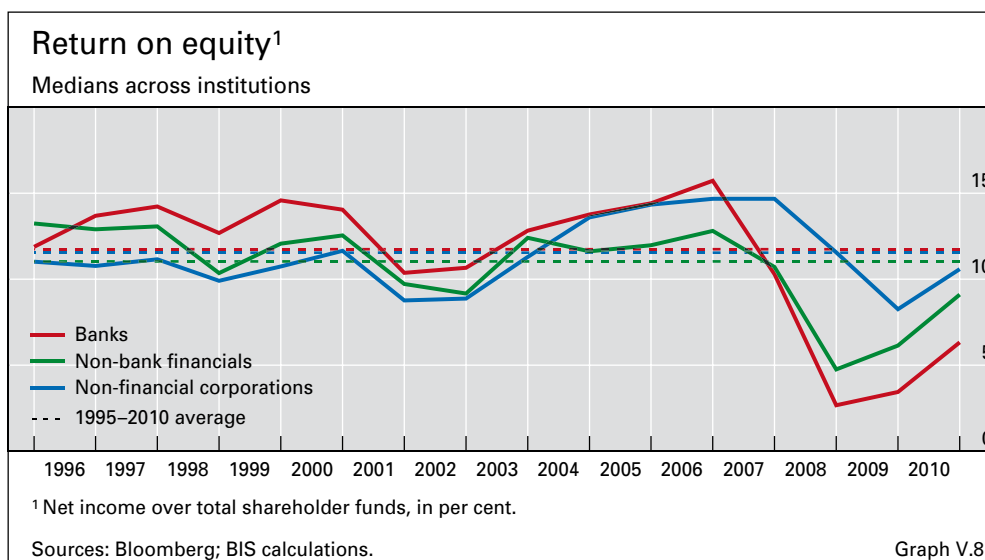
This evolution in bank business models will necessarily be reflected in lower, more stable returns on equity (ROEs), since bank balance sheets will be less risky. However, it is not yet clear that bank managers and shareholders have revised their targeted ROEs accordingly. In the years leading up to the crisis, many banks targeted ROEs of 20% or more, although the global banking sector as a whole achieved a median ROE of 15–16% (Graph V.8). ROEs fell sharply for both banks and non-bank financial firms during the crisis, suggesting that the earlier high levels were in fact a result of higher leverage

Banks have resumed risk-taking ...

... and have begun to modify their business models ...

... but will need to target lower returns on equity ...





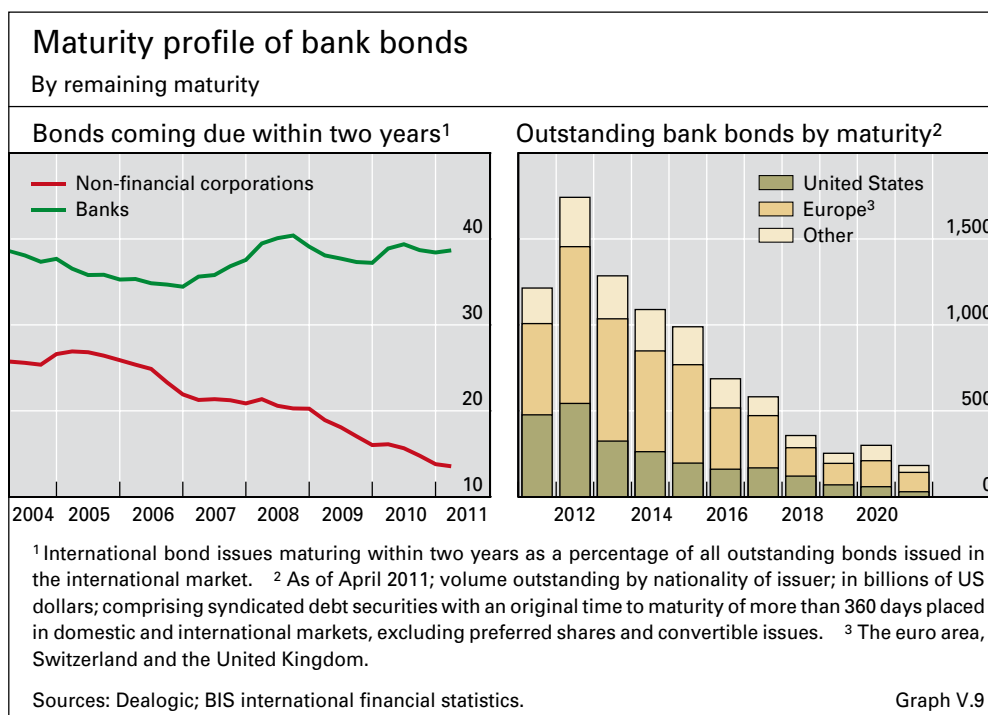
and risk-taking, some of which was hidden from view at the time (see BIS, *80th Annual Report*, Chapter VI). Over a longer time horizon, financial firms have tended to achieve ROEs of 11–12%, which is close to the average for non-financial corporations. Unusually high financial ROEs are a likely indicator of a build-up of risk-taking, especially if ROEs are seen to rise across many institutions at the same time.

... and address short- and long-term funding needs

Bank business models have also evolved with respect to funding structures and strategies. In the near term, central banks are likely to withdraw the extraordinary funding they provided to wholesale markets during the crisis, while banks' funding maturities remain short, leaving many banks exposed to substantial near-term refinancing needs (Graph V.9). Banks in many of the advanced economies have funded themselves at very low interest rates for several years, potentially leaving them exposed to any increase in rates and exposing the system as a whole to interest rate risk.

Looking at longer-term trends, heightened awareness of banks' funding liquidity risks on the part of fixed income investors has resulted in increased covered bond issuance (Graph V.7, right-hand panel). The growth in covered bonds also reflects uncertainty about the status of unsecured creditors under possible revisions to resolution frameworks. Legislative frameworks for covered bonds have been enacted or are under consideration in a number of jurisdictions where these structures had not previously been in use.

Regulatory frameworks will be more effective to the extent that they support and reinforce the aspects of these trends that are beneficial for financial stability while addressing any potentially destabilising side effects. For example, the increased emphasis on common equity capital in Basel III both reflects and reinforces a heightened focus on higher-quality capital on the part of bank investors and counterparties. Covered bonds offer a second example: increased covered bond issuance will need to be accompanied by improved disclosure of the overall encumbrance of bank assets, in order to allow secured and unsecured creditors to make an accurate assessment of balance sheet risks.



Summing up

The financial crisis severely tested banking systems, and the deficiencies it revealed warranted a swift and comprehensive official response. The Basel Committee and the FSB introduced a series of strong international measures, capped by the Basel III framework issued in December 2010. The crisis revealed that risk can be transmitted through unexpected channels. Thus, while Basel III responded to the lessons learned from the recent financial crisis, it is primarily designed to improve the resilience of all banks regardless of complexity and size and in all jurisdictions. Moreover, while the global regulatory reform programme will impose some transitional costs, rigorous analyses conducted by the Basel Committee, the FSB and the BIS have concluded that the medium- and long-term investment in improving banking system resilience will yield benefits that far outweigh the costs. Banks have already begun to adjust to the new requirements, although they have also resumed taking on higher levels of risk.

Achieving international agreement on stronger policy frameworks was the first step in global regulatory reform. The next step is full and timely implementation of the new global standards and all other prudential standards. More intensive and intrusive supervision will be needed to help ensure that banks implement these standards and that all jurisdictions enforce them in a coordinated, consistent manner.

The policy response to the weaknesses revealed by the crisis continues. Outstanding issues include dealing with systemically important institutions, designing more effective cross-border bank resolution regimes, and addressing the risks relating to shadow banking activities. Meeting these challenges will be the focus of the next phase of global regulatory reform.