



Financial reform: a progress report¹

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The motive for financial regulation is straightforward: left to their own devices, banks hold too little capital and too little liquidity. Lower capital means higher returns to a bank's equity holders. But it also leaves banks with a smaller buffer to weather loan defaults and investment losses. Less liquidity essentially means that a higher fraction of the bank's long-term assets have been funded with short-term debt. The greater this maturity mismatch, the higher the bank's interest rate margins and profits. But this also heightens the bank's exposure to sudden withdrawals of deposits and difficulties in rolling over debt.

As we learned (or, I should say, relearned) during the crisis, the upside of these risks belongs to banks' shareholders and managers, but a significant part of the downside risk is borne by all of us. The size of a bank's capital and liquidity cushions determines how much of this risk belongs to us and how much to the bank. Larger buffers align the bank's incentives more closely with socially optimal ones, thereby reducing the exposure of taxpayers to systemic crises.

The principles seem pretty straightforward. Their application, however, is complex. One reason for this, among many, is that regulation is conducted by sovereign states (along with some transnational structures such as the European Union), while most of the world's biggest banks operate on a global scale. The solution to the difficulties this poses is not to reinforce national barriers, but rather to make sure national authorities are confident that they will not be punished for their openness. This is a crucial point that underlies everything we do in the sphere of international regulatory cooperation. If we are to reap the benefits of a globalised economy and ensure a level playing field, then we have to maintain the momentum towards global financial integration. That, in turn, requires international cooperation in regulation and supervision – a cooperation that is at the heart of the G20 and Basel processes.

This brings me to the global agenda for strengthening capital and liquidity standards. Examination of the various proposals has focused, with good reason, on weighing the benefits and costs of improved regulatory standards. Some critics have said that, even if the benefits of the new standards outweigh the costs, they represent tinkering at the edges rather than the needed fundamental change in how banks are regulated. One thing that I would like to emphasise here is that, taken together, the new standards will indeed produce a significant increase in the capitalisation of the banking sector worldwide. Provided we handle

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the transition properly, these stronger standards should provide benefits from the day they their implementation begins.

The need for meaningful increases in both capital and liquidity buffers has had a prominent place in the international policy agenda since the early stages of the financial crisis. Over the last few weeks, global central bankers, regulators and supervisors have come to agreement on most of the details of the new framework, at least as it relates to bank capital. I'd like to take a moment to go through the main aspects of this agreed-upon framework. As you'll see, it is not enough to focus on a specific headline number or ratio. To understand the full ramifications of the reforms to the global regulatory framework, it is essential that we consider the entire package.

To see what I mean, start with the simple division of minimum capital requirements into their three constituent parts: the numerator (how you measure capital), the denominator (how you measure the assets against which loss-absorbing capital must be held) and the ratio itself. The new standards agreed by the Governors and Head of Supervision of the 27 Basel Committee member countries have strengthened all three of these.

First, regarding the numerator, the Basel Committee's efforts to strengthen the capital base have been focused on common equity, the most loss-absorbing form of capital. The result is a much *stricter definition* of what counts as common equity. The capital structure has also been harmonised and simplified with stringent qualifying criteria for Tier 1 and Tier 2 capital.

Second, regarding the denominator, the Committee has taken a series of measures to ensure that the regulatory capital framework covers *the full range of significant risks*. Adequate capital can only protect against unexpected losses provided all risks are comprehensively covered. During the crisis, capital for trading book exposures was appallingly inadequate. In response, the Committee bolstered the trading book rules to capture the credit risk of complex trading and derivative activities. The Committee's response also included higher capital requirements for resecuritisation exposures. It is now finalising new rules for counterparty credit risk that will strengthen the resilience of individual banks and reduce the risk that shocks will be transmitted from one institution to the next through the derivatives and financing channel.

And third, looking at the *capital adequacy ratio* itself, a key component of Basel III is a significant increase of the *minimum common equity requirement* to 4.5%. This compares to the current minimum requirement of 2%. But because of the changes in the definition I just mentioned, this simple comparison dramatically understates the degree to which banks will have to increase their capital. Shifting from the old, lenient definition of capital to the new, stricter one cuts the existing amount of capital eligible to meet the requirements in half. That is, given the current composition of assets banks are holding, the previous minimum would be closer to 1%. So, the additional capital banks will be required to accumulate is much greater than a casual glance would make it appear.

But this dramatic strengthening of the regulatory minimum – the level below which a bank can expect to be shut down – is only the first step. The crisis showed us the importance of building *capital buffers* during good times in order to create a cushion that can be drawn down in times of stress. Taking this lesson to heart, the Basel Committee embraced the creation of a *capital conservation buffer*, set the level at 2.5% and required that it be made up of common equity. Adding this to the 4.5% figure for the minimum requirement gives you a 7% overall ratio.

The Committee has also endorsed the creation of a *countercyclical buffer* that will increase the conservation buffer by up to an additional 2.5 percentage points during periods of excess credit growth.

To put these numbers into perspective – 4.5% minimum plus 2.5% conservation buffer plus 2.5% countercyclical buffer – I note that during the recent crises, losses experienced by large



globally active banks at the 99th percentile were 4–5% of risk-weighted assets. That is, 99% of observed losses were equal to or less than 5% of risk-weighted assets.

My conclusion is clear: once you work your way through this maze of numbers the only possible conclusion is that Basel III represents a substantial, meaningful expansion of the capital buffers supporting the global banking system. Not only that, but the effective rate at which the stronger requirements are introduced is much faster than it might appear. The reason is that the change in the definition of capital is phased in at the same time that the ratios themselves are increased. So, once the stricter definition of eligible capital is taken into account, the effective increase in the requirements is from 1% to 7%. This excludes the countercyclical buffer, but includes the conservation buffer, which all banks will hold. That is, unless banks wish to be subject to sanctions, the new requirement is 7%. That's a sevenfold increase.

Our estimates show that the *actual* level of common equity under the new definitions is currently 5–6% for the largest global banks. Many banks, therefore, will need to enhance their capital positions significantly just to ensure that they stay above the new minimum with the normal safety margins that any prudent banker would want. I should note that there is, of course, considerable variation across banks in both the current level of capital they hold and the implications of the definitional changes.

In my remarks thus far, I have emphasised that the new capital framework has three parts: a minimum plus two buffers, a *conservation buffer* and a *countercyclical buffer*. Appropriate design of the buffers is essential. The principle is that banks should increase the level of capital they hold when times are good (and its price is low) in order to be able to draw it down when times are bad (and its price is high). Looking at the *capital conservation buffer*, proper implementation leads to imposition of constraints on discretionary capital distributions, like dividend payments and bonuses, when banks' capital levels fall within this buffer. This will help ensure that capital remains available to support banks' ongoing business operations and credit extension during periods of stress, while keeping their capitalisation level high enough to absorb what might be substantial losses.

The principle behind the *countercyclical capital buffer* is that it will be imposed when a credit bubble has given rise to the build-up of system-wide risk. The buffer would be released when, in the judgment of the authorities, it would help absorb losses in the banking system that pose a risk to financial stability.

Taken as a whole, the result is a framework that reduces both the likelihood of excessive credit creation when times are good and the possibility of a credit crunch when times turn bad. That is, the framework is macroprudential in nature, designed to reduce systemic risks of the sort that precipitate crises like the one we have just lived through.

I should note that the Basel Committee and the Financial Stability Board are currently examining the role of additional macroprudential measures designed to mitigate *systemic risk*. This includes the possible usefulness of a capital surcharge for the largest, most systemically important firms (SIFIs), and the potential of bail-in debt to obligate lenders to these firms to bear more of the risk if the SIFI should fail. The Basel Committee and FSB are also looking into the possibility that contingent capital – financial instruments that can be written off or converted to common shares under certain conditions – could play a role in meeting any systemic surcharge requirements.

Yet another lesson of the crisis was that there are circumstances in which risk-weighted capital ratios provide a misleading picture of banks' overall health. That is, there are times when the risk weighting rules understate the actual risks. To address the potential for the underestimation of risk, the new framework introduces a *leverage ratio* as a backstop to the risk-based requirements which should help to contain the build-up of systemic risk that arises when leverage expands quickly.



Turning to liquidity, in response to the pressures experienced during the crisis, the Basel Committee will introduce internationally harmonised minimum standards for *liquidity risk*. Two regulatory standards have been developed to achieve separate but complementary objectives. The liquidity coverage ratio identifies certain liquid assets that can be used to offset net cash outflows under short-term stress scenarios specified by supervisors. The net stable funding ratio is a full balance sheet metric that compares an estimate of reliable funding sources under more prolonged and less acute stress than the liquidity coverage ratio.

Maturity mismatches were certainly at the core of the recent crisis (and quite a few earlier crises as well). But at the same time, we have to acknowledge that maturity transformation is one of the things we rely on the banking system to do. There may never be enough short-term liabilities issued by governments and the private sector to satisfy the natural need for liquid short-term savings instruments by individuals and corporations, so we shouldn't begrudge banks their primary function of providing these vehicles to the public, and remunerating them with the returns they can earn on longer-term assets. But at the same time, we can make sure that banks hold more liquid assets and manage their liquidity risks appropriately. This is the objective of the Basel Committee's new standards. The goal is to minimise the exposure of the banking system and, potentially, the public at large to unwelcome shocks to the supply and demand for liquid assets.

I should note that, as I think about liquidity regulation, I keep coming back to a question that economic research does not yet seem to answer: if we need maturity transformation – and, as I have just noted, I believe we do – how much do we need? To see how we might get to an answer, start by thinking about the maturity structure of the capital stock in the economy. Longer-lived capital is probably more efficient at production, but less flexible in the face of unforeseen changes in technology. This suggests that economies with the *right* maturity structure for their capital stock will grow faster. But long-lived capital projects require financing, and the longer the maturity of the financing, the less risk the builder/investor faces. So, the more maturity transformation there is in the financial system, the longer-lived the capital stock in the economy will be. And, up to a point, this is a good thing. But how far do we want to go?

Returning to the topic at hand, I think everyone agrees that the more capital and the more liquidity in a financial system, the lower the probability of a crisis that imposes significant, widespread, economic costs. Crises have serious short- and medium-term costs in the form of serious recessions or even depressions. And the evidence we have strongly suggests that, following a crisis, there is a significant risk that output will not return to its previous long-term growth path, even if the growth rate recovers.

Turning to some numbers, after reviewing the large volume of research, a recent report by a working group of the Basel Committee concludes that, in any given country, serious financial crises occur every 20 to 25 years. In other words, the average annual probability of a crisis is of the order of 4–5%. And the median estimate for GDP loss is around 60% of annual GDP.

How great an impact do stronger capital and liquidity requirements have on the probability of a crisis? Starting from the report's estimate of the pre-crisis long-term average global ratio of tangible common equity to risk-weighted assets under the revised definitions, raising the capital ratio by some 4 percentage points and meeting the Basel Committee's new liquidity standard should cut the probability of crises from 4.6% to below 1%. Even at higher capital ratios, the benefits of further increases in capital remain considerable.

As important as it is to keep these benefits in mind, any adjustment in standards will entail some transitional costs. Fortunately, a careful assessment of the macroeconomic impact leads to the conclusion that the costs are modest, especially if the new standards are phased in over an appropriate transition period.



This is the conclusion reached by the FSB/BCBS Macroeconomic Assessment Group (MAG), which brings together the modelling expertise of two dozen national authorities and international organisations, and which I chair. The group's interim report concludes that, for each percentage point increase in required capital implemented over a four-year horizon, the level of GDP relative to the baseline path declines by a maximum of about 0.19%. This maximum GDP loss occurs four and a half years after the start of implementation, after which GDP recovers towards its baseline level. Another way to look at this is in terms of growth rates. The MAG found that, for the first four and a half years, growth would be roughly 0.04% *below* trend. Following this, the economy would slowly recover, with growth 0.02% *above* trend. MAG members applied many different modelling techniques to this problem, so it is notable that most of the estimates were clustered relatively close to this median path. These results should be reassuring to those who are worried that the new standards could be a drag on demand at a time of weak recovery in many economies.

If the implementation is *faster* – say, two years rather than four – then the impact on GDP is likely to be both larger and earlier. The estimated maximum decline in GDP in the case of two-year implementation is 0.22% rather than 0.19%, and comes two years earlier. In terms of growth rates, a two-year implementation implies that each percentage point increase in target capital ratios subtracts 0.09% from growth for two and a half years, compared with the 0.04% subtraction in growth over four and a half years that we saw in the case of four-year implementation.

By contrast, the report concludes that *lengthening* the implementation period from four to six years makes little difference in the maximum decline in GDP. Of course, if a similarly sized cumulative loss were spread over a longer implementation period, that would mean a smaller decline in annual growth, relative to trend, during the transition. The MAG also examined the impact of tighter liquidity requirements, and found a similarly mild impact. And note that liquidity and capital requirements complement one another: if a bank meets one set of standards, it should be easier to meet the other, and vice versa.

Based on the results of the MAG, the significant reforms announced by the Basel Committee are being introduced in a way that will not impede economic recovery, while providing necessary time for implementation in individual jurisdictions. Implementation of the main components of the various buffers is not targeted for completion until the beginning of 2019 – in effect, an eight-year transition. However, national authorities can – and should – impose standards that are both higher and phased in more quickly if deemed appropriate in their context.

Let me conclude with a few open issues – things that we will need to watch over the next few years to make sure that the new framework is effective in achieving its goals.

First, as I mentioned at the beginning, implementing the new framework should provide benefits to the system from day one. Indeed, the recent announcement of these agreements provided certainty and clarity. During the transition to the new standards, markets will have greater assurance that banks will indeed be stronger, and banks will have a clear path to reaching that goal. But the transition could still hold some risks. For example, there are limits to the market's capacity to quickly absorb large volumes of new bank equity issuance. And markets may need time to realign their expectations for the returns they receive on banks' debt and equity. Most of these factors would argue for a longer rather than a shorter transition period, so it is helpful that the new Basel framework will be phased in over a period of eight years.

Second, even as the overall level of capital in the system rises, we can never be sure that this will be enough to enable the system to withstand a shock of the dimensions of what we saw over the last few years. Certainly, some banks will still be vulnerable to the consequences of mispriced assets, poor risk assessments and a failure to anticipate sudden shifts in financial markets. But, as I noted earlier, the losses of almost all banks during the



recent crisis would have been covered by the buffers in the new framework. And the new requirements should provide more breathing space when a large shock inevitably hits – as banks are absorbing losses, there will be time for the capital conservation measures and countercyclical buffers to kick in, and for banks and the public sector to assess the situation and devise appropriate responses.

Third, while these reforms will strengthen the banking system, we need to do more to address systemic risks contained outside traditional banks, where a vast amount of intermediation still takes place. Strengthened disclosure of securitisation instruments, tougher regulation of money market funds and other non-bank intermediaries, and stronger capital requirements for banks' securitisation-related activities are all being implemented, and are part of the solution. But we also need to look more closely at the maturity mismatches and implicit leverage embedded in this system, and seek ways to prevent them from having systemic consequences. I would put these issues at the top of the regulatory agenda going forward.

A clear lesson of this financial crisis is that the safeguards that were in place were too weak. Another is that, while our globalised system has brought many benefits, globalisation also means that weaknesses in one country's financial system can spread quickly to others. Building a stronger system is clearly in everyone's interest.

But reinforcement is not free. Fortunately, the short-term costs are likely to be small and largely transient, while the benefits of a stronger and healthier financial system will be there for years to come.