



## Strengthening the financial system: comparing costs and benefits<sup>1</sup>

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Let me start by thanking Chairman SaKong and Chairman Draghi for inviting me. It is a privilege and an honour to speak this afternoon at the Korea-FSB Financial Reform Conference. And, it is always a pleasure to return to Seoul.

The title of this session is “Spillovers between advanced and emerging market economies and financial sector vulnerabilities”. I strongly suspect that everyone in this audience could write a book on this subject. Since I have only 20 minutes, I will limit the scope of my remarks to financial sector vulnerabilities and spillovers. But first, let me emphasise the obvious, but often overlooked, fact that the best way to prevent instability from spilling from one country to another is to prevent problems from arising in the first place. This means doing the mundane but essential work of strengthening financial systems, especially by building sufficient capital and liquidity buffers. Indeed, the patient efforts of many emerging countries, especially in this part of the world, to reform and strengthen their regulatory frameworks over the past decade are an important reason why the spillovers from the recent financial crisis in the US and Europe to these economies have been relatively mild. This is why my BIS colleagues in the Office for Asia and the Pacific have, from the beginning, corrected my terminology, insisting that I speak not about the *global* financial crisis, but about the *international* financial crisis. As they have said repeatedly, “There is no financial crisis out here.”

Before I continue, it is worth making one more introductory point – one which really is *global*. If we are to reap the benefits of a globalised economy then we have to maintain the momentum towards global financial integration. It is true that national boundaries can act as firebreaks against contagion, keeping out problems that originate in other jurisdictions. I would argue, however, that the solution is not to reinforce these barriers, but rather to make sure national authorities are comfortable that they will not be punished for their openness. 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 that a number of other speakers have already discussed today. Examination of the various proposals has focused, with good reason, on weighing the benefits and costs of improved regulatory standards. One thing that I would like to emphasise here is that, provided we

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<sup>1</sup> I would like to thank Ben Cohen for his assistance. The views expressed here are those of the author and do not necessarily reflect those of the BIS.



handle the implementation properly, these stronger standards should provide benefits from the day they are announced.

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 the bank's equity holders. But it also leaves banks with a smaller buffer to weather loan defaults and investment losses. Less liquidity essentially means 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 and difficulties in rolling over debt.

As we learned (or, I should say, re-learned) 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.

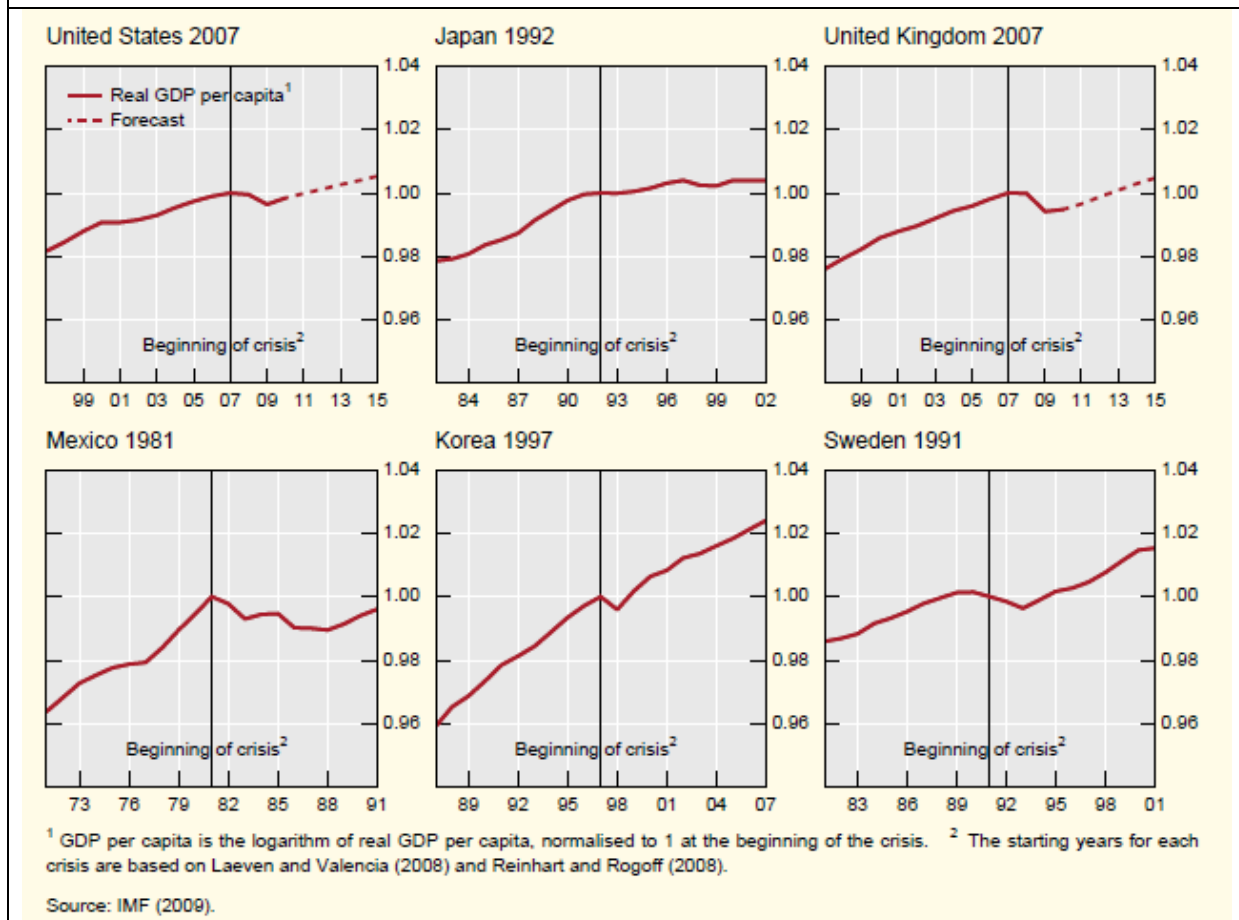
A recent report produced by a working group of the Basel Committee on Banking Supervision quantifies the benefits from stronger capital and liquidity buffers, and compares them to the long-term costs.

The benefit at the top of the list is that, with more capital and liquidity, the probability of crises is reduced. Everyone agrees that crises have serious costs in terms of GDP losses in the form of serious recessions or even depressions. And, the evidence strongly suggests that, following a crisis, there is a significant risk that growth will proceed on a lower path. But the longer-term effects of crises can vary substantially. Graph 1 from the Basel Committee working group's report provides examples: some countries return to earlier growth rates rather quickly, while others stagnate.

Turning to some numbers, after reviewing the large volume of research, the report 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 the GDP loss is around 60% of annual GDP. This means that reducing the probability of a crisis by even 1 percentage point each year should yield benefits of 0.6% of GDP (Table1).



Graph 1  
Output around banking crises



Basel Committee (2010), Graph 2, p 12.

Table 1  
Expected benefit of reducing the annual probability of crises<sup>1</sup>

Reduction in probability of crises (in percentage points)	Crisis have no permanent effect on output	Crisis have a long-lasting or a small permanent effect on output	Crisis have a large permanent effect on output
1	0.19	0.63	1.58
2	0.38	1.26	3.16
3	0.57	1.89	4.74

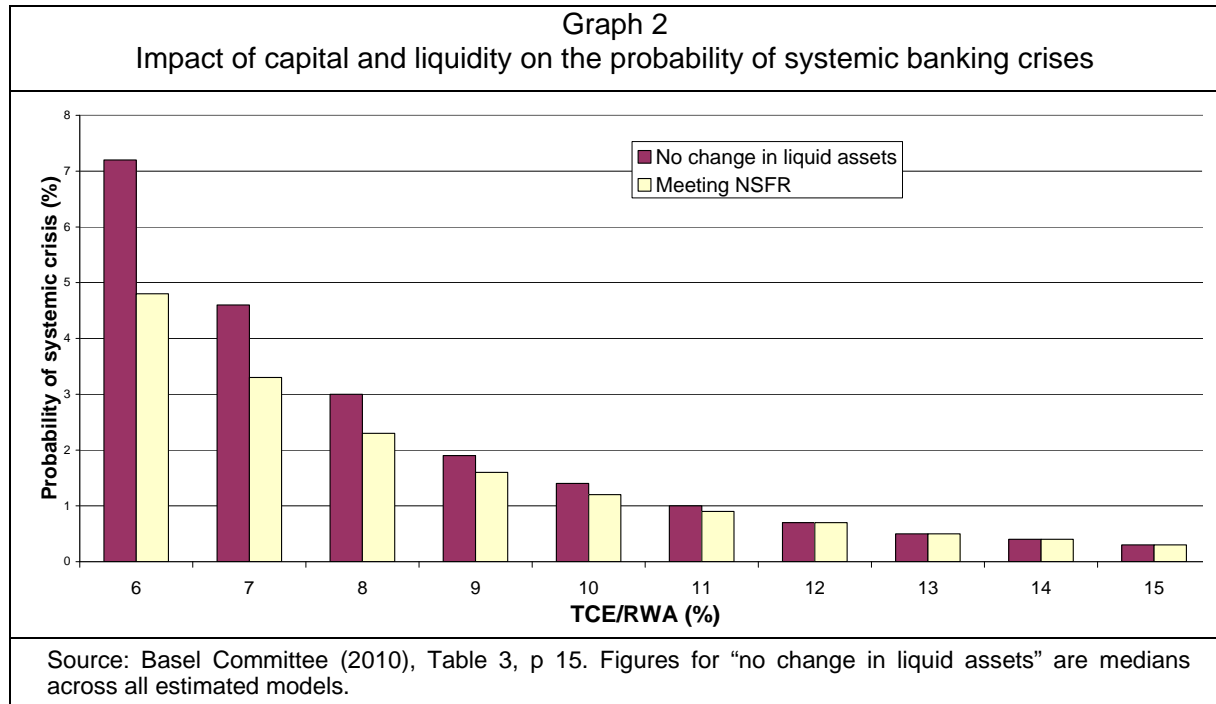
Note: <sup>1</sup> The expected benefits are the reduction in the (one-year ahead) probability of crises multiplied by the cumulative output losses due to a banking crisis. Cumulative output losses are 19% (no permanent effect), 63% (small permanent or long-lasting) and 158% (large permanent). All figures are in percent of long-run GDP.

Source: Basel Committee (2010), Table 2, p 13.

How great an impact do stronger capital and liquidity requirements have on the probability of a crisis? The group applied a number of models to this question. Starting from the report's



estimate of the pre-crisis long-term average global ratio of tangible common equity (TCE) to risk-weighted assets (RWA), which is about 7%, raising the capital ratio by 1 percentage point and meeting the Basel Committee’s new liquidity standard should cut the probability of crises in half, from 4.6% to 2.3%. Using our earlier estimate of GDP gains, that translates into a benefit of 1.4% of GDP (Graph 2).



The marginal impact of tighter standards diminishes as capital levels increase. This is unsurprising, as the probability that the minimum is breached declines as well. But, even if the ratio of TCE/RWA rises as high as 10%, the benefits of further increases in capital remain considerable.

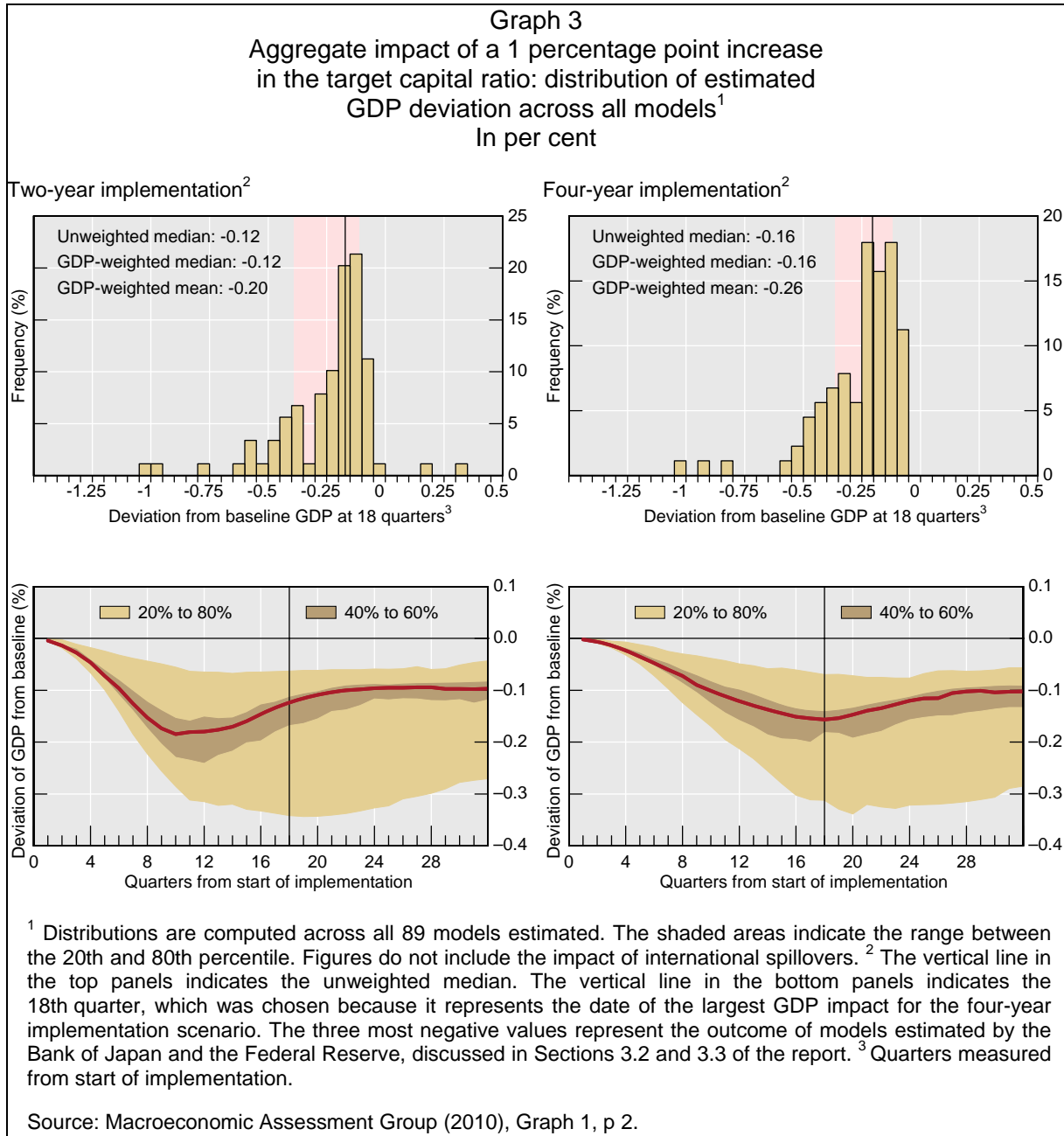
I should pause and note that I have found one aspect of the debate over strengthening capital and liquidity standards somewhat confusing. At times, I hear people say things suggesting that they believe that the costs of higher capital outweigh the benefits. Unless I am confused, an immediate implication of this position is that the cost savings from *reducing* capital standards outweigh the greater risks arising from smaller buffers. Since I doubt that anyone would argue for lowering the standards, I must conclude that there is a clear consensus for raising them. The only question is how far. And, looking at the report on the long-term benefits and costs published on 18 August, my conclusion is that benefits are not exhausted even for quite a substantial increase in standards.

As important as it is to keep these benefits in mind, there are also 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), a group that draws together the modelling expertise of two dozen national authorities and international organisations, and which I chair. The 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%. As shown in the bottom right-hand panel of Graph 3, 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 slowly recovers, 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.



This analysis assumes the higher capital requirement will be phased in over a four-year period. If the implementation is faster, say, two years rather than four, then the impact on GDP is likely to be both larger and earlier. Comparing the right-hand and left-hand panels of Graph 3, note that the estimated maximum decline in GDP is 0.22% rather than 0.19% and comes two years earlier. In terms of growth rates, a two-year implementation implies that (for each percentage point increase in target capital ratios) growth will be 0.09% lower for two and a half years rather than 0.04% lower for four and a half years.

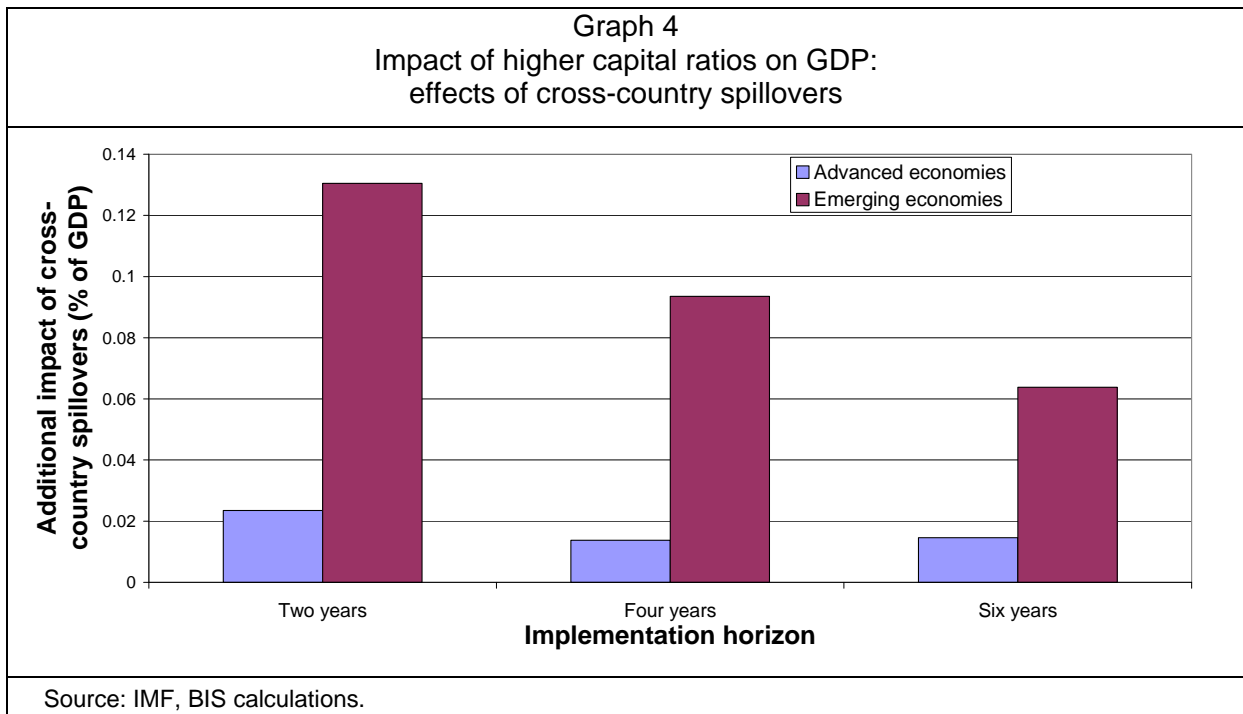


By contrast, the report concludes that lengthening the implementation period from four to six year makes little difference in the maximum decline in GDP. (Of course, if a similarly sized cumulative loss were spread over a longer implementation period, that would mean a smaller decline in annual growth, relative to trend, during the transition.)

The 0.19% figure just quoted is the sum of 0.16%, the median GDP decline estimated for specific countries by the numerous national authorities, plus 0.03%, which is the impact of international spillovers as estimated by the IMF as part of the MAG project.

Where do these spillovers come from? It is not hard to see that tighter regulatory standards will have a greater impact on any given country if they are put in place across all major economies at the same time, than they would if they were implemented in just one place. If just one country implements tighter standards, and these lead to a shortfall in demand while its banks adjust, it would be able to draw on demand in other countries, for example through a depreciating exchange rate. But if all countries are doing so, this option disappears – it's impossible for everyone to depreciate their currency or increase their net exports at the same time!

The IMF's model encompasses spillovers arising from movements in exchange rates and commodity prices, as well as shifts in global demand. The results are shown in Graph 4. Predictably, these spillovers affect emerging economies much more than they affect advanced ones: for a four-year implementation horizon, the maximum impact of spillovers is estimated at 0.09% of GDP for the emerging economies, compared with 0.01% for the advanced ones. But even for the emerging economies, the extra spillover effects are not large – remember that this represents a slowdown in growth spread out over four to five years. That is, an increased impact of 0.09% of GDP translates into a decline in annual growth of 2 basis points per year for each percentage point increase in the target capital ratio during the implementation period.



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, this should make it easier to meet the other, and vice versa.



To understand the MAG's result, imagine a stylised bank with a balance sheet that has the following composition. On the liabilities side, there are deposits and debt, for which the bank pays an average of 5%, and capital, with a return of 15%. Assets are composed of two thirds loans and one third a combination of liquid securities and cash. Now consider an increase in the capital ratio of 1 percentage point. This raises the cost of funds (the weighted average cost of capital, deposits and debt) by 10 basis points. To maintain its return on equity at 15%, the bank must recover this cost increase by raising the return on its assets. If this is done solely by raising rates charged to borrowers, since loans are two thirds of assets, it must raise lending rates by 15 basis points. I should note that we constructed this example well before the MAG members began reporting their results. It is gratifying to see that it is very close to the estimates obtained by both the MAG and the Basel Committee's long-term impact group, which used much more sophisticated methods.

What effect does this 15 basis point increase in lending rates have on the level of real output? The answer from the MAG work is that, ignoring international spillovers, such an increase results in a roughly equal decline in GDP. That is, for each 1 percentage point rise in the required target capital ratio, both the rise in lending spreads and the fall in the level of GDP (relative to the baseline) are around 0.15%. This is not far from other estimates of the transmission of interest rate increases to real activity.

Where do these impacts come from? Equity investors – suppliers of the bank's risk capital – require higher returns than depositors. So, higher capital requirements mean higher funding costs; costs that banks might try to recover by raising the loan rates they charge borrowers or by shrinking their balance sheets.

But banks can also meet the new requirements by some combination of retaining more earnings (by reducing dividends), decreasing remuneration rates on deposits and other liabilities, or reducing other costs of doing business (including managerial compensation). It is also possible that, as banks become safer, markets will require a lower return on equity, easing the pressure on funding costs. Any of these would reduce the degree to which lending rates would need to rise and loan volumes fall, attenuating the macroeconomic impact.<sup>2</sup>

In any event, most of the factors not considered by the MAG, such as limits to the market's capacity to quickly absorb large volumes of new bank equity issuance, would argue for a longer rather than a shorter transition period.

Studies published by banks come to different conclusions. For example, in June the Institute of International Finance (IIF) issued a report concluding that phasing in an increase in capital requirements of as little as two percentage points will lead to a drop of GDP of 3 percent in the G3 economies. That translates into a growth reduction of about 0.6% a year, while the comparable estimate based on the MAG result would be 0.08%. Why such a big difference? One reason is that the industry studies assume a much larger increase in the lending rate, largely reflecting the withdrawal of implicit government support. But as the industry studies also acknowledge, they have assumed no changes in dividends, compensation policies and operational efficiency, nor have they taken account of the benefits coming from a more resilient financial system, including the lower funding premia that safer banks need to pay.

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<sup>2</sup> Indeed, Elliott (2009), who estimated that each percentage point increase in capital ratios would lead to a 19 basis point widening in lending spreads if other factors were kept constant, concluded that the widening of spreads could be as low as 4.5 basis points if banks' return on equity, asset mix and other variables are allowed to change. Hanson et al (forthcoming) arrive at a similar estimate for the likely widening of lending spreads. They suggest that the only impact of capital and liquidity requirements would be due to effects that are not encompassed in Modigliani and Miller's (1958) idealised framework, notably the tax advantages of debt and the premium that banks would need to pay investors to hold longer-term, less liquid debt instruments.



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.

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