

# Agenda

Advancing economics in business

## Procyclicality and financial regulation

Current micro-prudential regulation, notably the Basel Accords on capital adequacy, has focused on the individual bank. While necessary, this has led, along with the introduction of 'mark-to-market' accounting, to a procyclical regulatory bias, instrumental in aggravating the current financial crisis. Professor Charles Goodhart outlines how the cyclical effects of financial operations might be measured, transformed into a counter-cyclical set of instruments, and applied to financial institutions as part of the macro-prudential supervisory framework

Much analytical and empirical work was done to warn that the combined introduction of Basel II and the new International Financial Reporting Standards (IFRS) 'mark-to-market' accounting system would have a significant, and potentially dangerous, impact on the procyclical variation of banks' required capital adequacy ratios.

In a recent paper, Repullo and Suarez conclude that:

the new requirements might imply a substantial increase in the procyclicality induced by bank capital regulation. Specifically, despite banks taking precautions and holding larger buffers during expansions in order to have a reserve of capital for the time when a recession comes (and capital requirements rise), the arrival of recessions is normally associated with a sizeable credit crunch, as capital constrained banks are induced to ration credit to some of their dependent borrowers.<sup>1</sup>

Although more work does need to be done to quantify the extent of procyclicality, the existence of such an effect and the basic reasons why it has occurred are now widely accepted, and deplored. Basel II and IFRS were not introduced out of some perverse wish to destabilise the world's financial system, although they have played a supporting role in that outcome.

Indeed, Basel II incorporates the best available current thinking on micro-prudential behaviour for individual banks, and while 'mark-to-market' may have unfortunate systemic side effects, it, like democracy, only appears to deliver such bad results until all other alternatives have been tried—and, generally, found to be (much) worse.

Basel II and IFRS do not need to be rejected, but rather supplemented by effective counter-cyclical instruments, which need to be sufficiently powerful to overcome—and even to reverse—the procyclical tendencies of Basel II and IFRS. This is the theme of the recent Geneva report, which I draw from in this article.<sup>2</sup>

### Rowing against the tide

By most standards, the 15 years between 1992 and 2007 were a 'golden age'. Growth was steady and, by historical standards, quite rapid. Inflation was reduced, and then kept to target. Unemployment and interest rates fell to low levels and were held there. It was more than a 'great moderation'; it was a triumph. As the engineers of this promised land, central bankers were feted and lauded. Politicians claimed to have abolished the cycle of boom and bust. The sub-prime mortgage market was viewed as a splendid innovation, extending the benefits of home-ownership to a swathe of formerly disadvantaged citizens (and immigrants). And so it was, so long as nominal housing prices continued, on average, to rise.

The two examples of great systemic financial crashes in the 20th century (the USA in the 1920s and Japan in the 1980s) also occurred after 'golden ages' with rapid (and quite steady) growth and low inflation. When conditions have become so favourable, risk will appear to be low, and increases in asset prices almost assured. Against this background only the faint-hearted refrain from debt-enhanced expansion.

In a boom, everything is going well. It is natural, and self-serving, for all concerned—financiers, investors, politicians and borrowers—to assert, and often to believe, that the good times are due to their own

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personal skills and acumen. There will be confident assertions that this is no temporary bubble, but is the result of a more fundamental improvement in productivity, or risk management, or technical innovation, or whatever. Almost all concerned will want to believe that.

So, regulatory action to counteract booms will always be unpopular. Many, if not most, of Alan Greenspan's arguments for not attempting to mitigate asset price bubbles represented an appreciation of the unpopularity of such an exercise. If counter-cyclical measures are going to be unpopular when imposed in a boom, they will have to be rule-based.

Only a rule, perhaps introduced in the aftermath of a financial crisis, will be a sufficient commitment device to ensure that such an unpopular step is taken when required. In a sense, regulators and/or supervisors already had full discretionary powers to introduce as strong counter-cyclical powers as might possibly be needed, under Pillar 2 of Basel II. But they were not used to this end, and were unlikely to have been.

## Measures and instruments

There are a number of measures that can be applied to the individual bank, or financial institution, to assess its contribution to systemic cycles. These include the leverage ratio, and the growth rate of certain balance sheet items (eg, total assets, total private sector deposits, bank lending to the private sector, etc). One concern here is that high leverage, or the fast growth of an individual bank, might be of somewhat less systematic concern if the system as a whole is less extended.

So, one might want to interact individual bank measures of expansion with an aggregate (national) measure, relating perhaps to average leverage ratios, overall growth rates of bank lending, or to measures external to the financial system, such as growth rates of certain sets of asset prices, or GDP.<sup>3</sup>

If the sanction against excessive expansion were severe and/or long-lived, the regulated would have a strong incentive to shift their expansion outside the ambit of the control, and there would be some competitive advantage to the unregulated in taking up such business. Disintermediation would occur. Regulators and supervisors have to be aware and alert to try to limit this inevitable process.

When the authorities have chosen their preferred measure(s) of the extent to which a financial intermediary is contributing to systemic (over- or under-) expansion, the next stage is to translate that into a macro-prudential instrument. This has been done, for example, in Spain, by applying bank credit

expansion to dynamic provisioning; in the USA, via the 1991 Federal Deposit Insurance Corporation Improvement Act; and now in Switzerland, by applying targets, sanctions for shortfalls, and minima to leverage ratios. In our Geneva Report we propose interacting these measure(s) with the pre-existing Basel II Tier 1 ratio.

A wide range of combinations is possible. Thus, one could relate provisioning to leverage ratios, or apply targets, sanctions for shortfalls and minima in capital ratios, to bank credit expansion. Which combination of measures and instruments is best could be another subject for research; and the ultimate judgement would involve a number of considerations—eg, efficacy, ease of avoidance, simplicity, consistency with accountancy and tax regimes, and so on.

A further issue relates to liquidity. The ability of a financial system to ride out a cyclical downturn, or bust, in asset prices depends not only on how far it has extended its asset portfolio, but also on the structure of its liabilities. If there is no maturity mismatch, it can get through such a bust relatively unscathed. So, as we argue in the Geneva Report, there needs to be both measures of maturity mismatch, and an instrument to induce financial intermediaries to control the extent of such a mismatch. We propose, once again, interacting it with the (Basel II) capital requirement, although this has provoked the question of whether we may be putting too much weight on the use of time and state-varying capital requirements. This may well be so, but what are the alternatives?

## To which institutions should such instruments be applied?

An individually systemic institution, or market, is one which cannot be shut down, closed or liquidated without unacceptable effects on the functioning of the rest of the system (externalities). Whether an institution is systemic in this sense will, however, depend on circumstances. It is easier to liquidate a bank which has been brought to its knees by fraud in good times (eg, Barings 1995) than one which has problems with its loan book in bad times (eg, Northern Rock 2007). Even so, regulators and supervisors need to consider, in advance, the criteria which should determine whether an institution is systemic, and even to make a provisional (confidential) listing of such institutions.

Such individually systemic institutions need to have both macro-prudential controls (eg, on leverage and rates of expansion) and micro-prudential controls on their individual riskiness, (eg, limits on concentration and Basel I and II capital adequacy requirements). Some commentators have gone further and have argued that regulatory requirements should be more

closely calibrated to the institutions' relative systemic footprint, so that the (largest) most systemic institution gets the toughest regulation, with gradual easing as the institutions become (smaller and thus) less systemic.

I doubt whether it is, as yet, practicable or feasible to do this. While there are ways to measure the systemic impact of any particular institution's failure on the rest of the financial system, these are novel, untried in practice, and time- and state-variable.<sup>4</sup> I regard it as premature to use these criteria to set relative capital adequacy requirements, although I do think that all regulators and/or supervisors should use and monitor current developments via such measurement techniques.

So, for the time being, we could just have a divide between those institutions which are individually systemic, and those that are not. Those that are should be subject both to macro-prudential and to micro-prudential regulations. But what about those that are below this line—ie, not individually systemic? In the Geneva Report we have divided these latter into three categories:

- those institutions that are not individually systemic, but 'systemic as part of a herd';
- those institutions that are large, but not levered or mismatched;
- those institutions that might be deemed 'tinies'.

Let us take these in reverse order, tinies first. The tiny institutions are clearly not systemic, and do not need any macro-prudential control. But depositors and clients need as much, or even more, customer protection as with larger (and more experienced) institutions. The emphasis in this case needs to be on customer protection and the prevention of fraud. Sufficient micro-prudential control needs to be applied for this purpose.

Moving on next to large, but not systemic, institutions. Here we have in mind mainly insurance companies, especially life insurance companies, and pension funds. In these cases there is little, or no, leverage, and the liabilities are generally of longer duration than the assets, so there is relatively little maturity mismatch. In such cases there is again (at least, in general), no need for macro-prudential controls.

On the other hand, being large-scale repositories of private sector savings, these institutions must behave in a way that is individually prudent. They should, therefore, be subject to full micro-prudential regulation and supervision. Unit trusts, and closed-end trusts, also fall into this category.

The final category consists of those institutions which are too small to be individually systemic, but which are levered, and can therefore be 'systemic as a herd'. Here we can, perhaps, make a sub-division between those institutions which only, or primarily, accept funds (deposits) from professional investors (eg, hedge funds and private equity), and those which accept funds from small depositors (eg, small banks, savings and loan associations, building societies and savings banks).

The former probably only need macro-prudential controls (reporting, and being subject to control over, leverage ratios and rates of expansion).<sup>5</sup> On the other hand, those that take funds from small and non-professional investors must remain subject not only to macro-prudential, but also to micro-prudential, control.

## The structure of regulation and supervision

The focus of our work, especially in the Geneva Report, has been on the need for macro-prudential regulatory controls, to supplement micro-prudential controls. These macro-prudential controls need to be capable of counter-cyclical adjustment, in order to counter the procyclical effects of the combination of the Basel Capital Accords and mark-to-market, fair value accounting under IFRS. The next question is: how should the administration of these two, different kinds of control be structured?

Our basic answer to this is that micro-prudential controls should be undertaken by a single financial services authority, covering the whole range of financial services, and all institutions. In contrast, macro-prudential control and oversight should be undertaken by the central bank. Micro-prudential oversight should be done on a consolidated basis, primarily by the financial services authority in the home country, whereas macro-prudential control should be assumed by the central bank in the host country.

Let me expand on the above assertions. Macro-prudential oversight and control need only be applied to a sub-set of financial intermediaries—the larger, levered (and mismatched) institutions; micro-prudential oversight will be needed for all intermediaries, including many without systemic impact, and for which the central bank has no expertise. Micro-prudential oversight is concerned with the conduct of business and the prevention of fraud, whereas macro-prudential oversight relates to the interface between the financial system as a whole and the real economy.

Fraud and the abusive conduct of financial business are, alas, perennial, and a central bank should want to

avoid a loss of reputation when such abuses occur. But when a systemic, cyclical failure occurs, the central bank cannot, and should not, avoid becoming fully involved, if only because some of the key instruments involved (eg, the adjustment of interest rates and the provision of liquidity, via open market operations; quantitative easing; and lender of last resort actions) are integral to the functioning of central banks.

A central bank with macro-prudential control responsibilities will want direct access to on-site inspection of systemic institutions, and the ability to approach smaller institutions in the 'systemic as a herd' category. That will require some overlap with the similar micro-prudential investigations of the financial services authority. Systemic, large banks, for example, would be subject to approaches from two oversight bodies. But these two bodies will have quite different viewpoints, and will have distinct agendas. While it may seem a minor waste of resources to have two oversight authorities examining the same institution, if that were to help prevent systemic financial crises (which are demonstrably extremely expensive), it would be fully justified.

We have proposed, in the Geneva Report, additional macro-prudential controls. Despite the varying relationships that currently exist, from one country to another, in the relationships between central banks and other financial supervisory bodies, we believe that it follows quite logically that these extra controls should be administered by the central bank (and that micro-prudential and conduct-of-business supervision should be undertaken by a, or several, financial supervisory authority(ies)). What is more radical, and no doubt contentious, is our further proposal that central bank macro-prudential controls should be applied on a host country basis, whereas micro-prudential control should be on a consolidated, home country basis.

There are several reasons for this proposal. In the first place, despite increasing economic globalisation, we do not yet have a single world cycle. Credit, and asset price, expansion took quite different paths in, for example, the USA, Spain, Germany, Japan and China between 2003 and 2006. While the principles and methodology of counter-cyclical regulation need to be agreed and harmonised on a worldwide basis, its application needs to be appropriate to conditions in each regulatory area.

Next, the authorities, especially the central bank of each regulatory area, are charged, by their government, with the responsibility of maintaining the health and proper functioning of their own financial

system. Unless they have the powers and instruments to do so, they cannot properly carry out their chief function. Especially in the many countries where subsidiaries of foreign banks play a major role in the domestic financial market, this implies that the host central bank should have command over the local macro-prudential controls applied to such subsidiaries' capital and liquidity. Admittedly, this would introduce some frictions into the operations of large, cross-border, systemic international banks.

Then again, the experience of the last couple of years reinforces the fact that 'cross-border banks are international in life, but national in death'. When financial turmoil strikes, crisis management has become the responsibility of the nation state, and it has been extremely expensive to carry out such responsibilities. When a cross-border financial institution has gone under—eg, Lehman Brothers, Fortis, Dexia—the pieces have been picked up by the respective nation states involved. Recapitalisation, guarantees, insurance against defaults, 'bad banks', etc—all have been undertaken by the relevant nation states.

It would be difficult to leave such expensive crisis management as a national responsibility, while transferring regulation and supervision to a supra-national level—in the Eurozone for example. The burden of crisis management falls, at present, on national taxpayers.

To leave that burden on national taxpayers while supervision were undertaken by a supra-national body, whose control was divorced from the national government, would constitute a version of taxation without representation, and would not have proper democratic legitimacy. Those, especially those in Europe, wishing to shift supervision onto a pan-European basis, need to review first, as a precondition, how expensive crisis management can be undertaken and financed on an equivalent pan-European basis.

Moreover, while we advocate placing responsibility for macro-prudential control with the host country central bank, we see and support the need for consolidated, micro-level control by the home country financial services authority, as has been the objective of the Basel Committee on Banking Supervision. This would give a different twist, and a larger role, to the College of Supervisors, since the home country would have the final say on micro-prudential issues, whereas the host country (ie, the central banks) would determine their own macro-prudential instruments. This would lead to a better, and more useful, balance in such discussions.

**Charles Goodhart**

<sup>1</sup> Repullo, R. and Suarez, J. (2009), 'The Procyclical Effects of Basel II', work in progress, CEMFI, Madrid.

<sup>2</sup> See Brunnermeier, M., Crockett, A., Goodhart, C., Persaud, A. and Shin, H. (2009), 'The Fundamental Principles of Financial Regulation', Geneva Report, CEPR, ICMB and VoxEU.

<sup>3</sup> See Repullo, R., Saurina, J. and Trucharte, C. (2009), 'Mitigating the Procyclicality of Basel II', work in progress, CEMFI, Madrid.

<sup>4</sup> For example, Segoviano, M. and Goodhart, C. (2009), 'Banking Stability Measures', work in progress, International Monetary Fund, January.

<sup>5</sup> The Madoff case has, however, shown that even professional investors, or those who can afford professional advice, can be gullible. Some limited form of micro-prudential oversight, if only to check that the balance sheet has been properly audited, may remain necessary.

If you have any questions regarding the issues raised in this article, please contact the editor, Derek Holt: tel +44 (0) 1865 253 000 or email [d\\_holt@oxera.com](mailto:d_holt@oxera.com)

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