

# ‘Some New Directions for Financial Stability?’

C.A.E. Goodhart  
Deputy Director, Financial Markets Group  
London School of Economics

## 1. Introduction

When the in-coming Labour government in the UK transferred responsibility for the supervision of banks to the newly formed Financial Services Authority (FSA) in May 1997, at the same time it reaffirmed, (e.g. in the Chancellor’s statement on the Bank of England of 20 May 1997, reprinted in BEQB, 1997, p. 246), that the Bank of England retained responsibility for overall financial stability. But what exactly are the functional responsibilities of a central bank which is required to maintain systemic financial stability without having supervisory oversight of individual financial institutions? Particularly since a number of other major countries have been following this same route, for example in Scandinavia, Japan, Germany, Austria, and now China, it is worth starting with this question.

Several aspects of this role are clear and relatively uncontroversial. Whereas the FSA has responsibility for supervising the individual financial institutions,<sup>1</sup> the central bank retains responsibility for the smooth running of the domestic payments system, and by extension oversight of the structure and soundness of the clearing and settlement systems of the main financial markets, money and bond markets, the foreign exchange market and (perhaps to a somewhat lesser extent) of the equity market. Similarly the central bank will be the body most concerned with the inter-linkages between domestic financial markets’ and payments’ systems and international markets and systems, in the European case with the Target system.

A second, associated, function, thrown into prominence by 9/11, is to undertake contingency planning against a major physical disruption of markets whether by terrorism or natural causes.

A third role, perhaps the best known component in this portfolio of operational tasks, is to provide injections of liquidity, either to the financial system as a whole via open market operations, or via Lender of Last Resort actions to individual institutions. A problem with

---

<sup>1</sup> Whereas it is clear that the FSA has sole responsibility for supervising individual financial institutions, the division of responsibility for systemic financial developments is more nuanced. Thus the Financial Services and Markets Act in the UK also gives the FSA a parallel responsibility for “maintaining confidence in the UK’s financial markets”.

such latter LOLR operations is that they might put taxpayers' money at risk. In many cases of bank rescues, for example in Scandinavia and Japan, the scale of the losses were such that only the fiscal authority could take up the burden. Even when this was not so, as in the case of the Johnson Matthey bank rescue in 1984 in the UK, lending by the central bank may involve some subsequent loss, and the taxpayer is the residual owner of the central bank. Such losses from LOLR are the more likely, the greater the incentive on a commercial bank in trouble to defer approaching the authorities until it has used up every other possible avenue of raising funds. Is there an analogy here at the international level with the IMF and national governments?

Moreover, the official body which such a troubled bank must first approach in the UK is the FSA, not the Bank. Consequently a decision of how to deal with an impending financial crisis has to depend on a troika, or combination of three authorities, FSA, Bank and Treasury (or Ministry of Finance) and hence the political authorities.

While this troika has been nicely formalised, in the UK at least, by a Memorandum of Understanding (MOU) and the establishment of a Tripartite Standing Committee, the implications of all this for the international handling of crises have not been, in my view, so clearly prepared, at least in the European context, and I shall turn to this specifically later. One immediate conclusion, however, is that the central bank in a country where the banks, (or a significant proportion of the major banks, as in the USA), are subject to supervision by a separate supervisory authority, can hardly any longer be the sole financial representative at national, or international, discussions of regulatory changes.

The period from 1974 until the end of the 1990s when the Basel Committee on Banking Supervision was a private informal enclave of central bankers, establishing soft law for the international financial architecture, was constitutionally extraordinary, though generally beneficent. It deserves a full, detailed historical treatment. Be that as it may, the separation of supervision from central banks, and the enhanced involvement of Ministries of Finance, (together with the greater role of the IMF and World Bank in this field), is now making the procedures for reforming the international financial architecture, both globally and in the European Union, more messy and complicated, but somewhat more 'democratic', than perhaps they used to be.

So there are lots of valuable and useful bits and pieces that come under the wing of the financial stability function, but it is, perhaps, arguable whether they amount to a coherent whole. Moreover, until a crisis comes along, this branch has no regular unilateral decision that it can take, unlike a Monetary Policy Committee setting interest rates. In most cases decisions, for example on regulatory changes, are taken after much discussion between FSA, Treasury and the Bank, or even more tortuously in international committees. There is no clear-cut instrument, nor a clear-cut objective, except the negative one of avoiding financial instability.

Indeed there is currently no good way to define, nor certainly to give a quantitative

measurement of, financial stability. When Phil Davis, who has established a professional chat group of experts on this subject on the internet, asked the group to define financial stability, the most persuasive responses were that it was just the absence of financial instability.

Let me put the problem another way. When a central bank issues an Inflation Report, it describes what has been happening to a whole series of economic variables, and (usually) sets out some account of its forecasts for the main macro objective variables (e.g. inflation and output). While this is commonly done descriptively in words, lying behind it all are (a suite of) quantitative economic models, (based on some combination of theory, practical relevance and empirical fit). In comparison, the Financial Stability Reviews put out by much the same central banks, and indeed initiated once again by the Bank of England, have roughly similar descriptions of financial developments, and very useful and interesting these are, but there is no overall, coherent model lying behind it all, as in the case for the Inflation Report. With imitation being the sincerest form of flattery, the Bank of England has been recognized as leading the way so far for those Central Banks without responsibility for supervision of individual banks.

Yet there is a long way yet to travel. In this talk I shall outline some new directions that we need to consider in this field. First, I shall develop the theme already noted, which is that we need to construct models of systemic stability, not just of individual bank probability of default; second, that we need to pay more heed to the links between fiscal and monetary policies on the financial stability side; third, that, exhausted as you all may be by the marathon effort of agreeing Basel II, we do need to go on to integrate concern with interest margins and liquidity alongside the reforms to risk-related capital adequacy requirements; and finally that the combination of risk-related CARs and the on-going trend to market, or fair value, accounting behoves us all to give further, serious consideration to ways of mitigating procyclicality.

## 2. A Research Agenda

So, I have become increasingly of the view that what needs to be done is to construct an underlying model that can act as an intellectual backstop to the systemic Financial Stability function, analogously to the way that macro-forecasting models provide the intellectual backbone to the MPC's interest rate decision. A major problem in this respect is that almost all the quantitative techniques for risk measurement that have been devised apply to the individual (banking) institution, not to the banking system as a whole. This is true, for example, of Value at Risk (VaR) techniques, Merton models,<sup>2</sup> stress and scenario testing, at least as usually applied, etc., etc.

---

<sup>2</sup> Martin Summer, in on-going work with Alfred Lehars, is, however, extending work on Merton models to a portfolio of banks.

Almost by definition such exercises relating to individual banks cannot cope with interactions, or contagious effects, between banks. And there are many potential channels for such contagion, not just via the inter-bank market, which is now being studied (for example by Cocco et al (2003), Elsinger et al, (2002), Furfine (1999), Upper and Worms (2001), Wells (2002), but also through reputational channels, and via the effects of one bank's actions on the market prices and conditions facing other banks (see Cifuentes, Ferrucci and Shin, Bank of England, 2004).

It is certainly likely that a financial (or banking) system with weak (strong) individual component institutions is likely to be systemically fragile (robust). Nevertheless it is simple to think of numerous conditions under which the inter-linkages are such that systems containing individually fragile banks are nevertheless systemically robust, and vice versa. For example, at the end of the 1980s the Japanese banks appeared individually strong and powerful, yet they were systemically fragile in the face of sharp asset price declines.

Given the context of the exercise, aimed at constructing a model suitable for analysing and quantifying systemic financial stability issues, a number of special characteristics for such a model become essential. First, there must be incomplete financial markets; otherwise all contingencies can be hedged, and the need, and role, of financial intermediaries such as banks becomes moot. So there is a need to think carefully about the form of such incompleteness. Second, banks must behave in different ways; they must be heterogeneous. It is impossible to consider contagion, or even to have an interbank market, in a representative bank model, or, what comes to much the same thing, in a world of  $n$  identical banks.<sup>3</sup>

Third, and most important and most difficult, it is necessary to model default. Most macro models effectively assume that there is never any default, with a transversality condition which implies that all debts are repaid by the final horizon. Such an assumption is totally out of place in any model of systemic risk. Properly modelling the default process is extremely hard to do, particularly since it involves such patent non-linearities. In my view the best approach to this, out of relatively few attempts by the profession, has been by Martin Shubik, and his colleagues and followers. Martin has modelled default as part of a choice process by agents, who choose a path of behaviour giving rise to some endogenous frequency of default, with that frequency depending, inter alia, on the stochastic state of nature and on the severity of the penalty agents incur in a case of default. Endogenous default may be either strategic or due to ill-fortune, and is perfectly consistent with equilibrium and the overall well-functioning of markets.

Anyhow, I have been fortunate to work with one of Shubik's best followers and students, Dimitri Tsomocos. With the help of another colleagues, Ton Sunirand, we have tried to construct a theoretical model involving these three features, incomplete financial markets,

---

<sup>3</sup> Of course a shock could hit a particular bank(s), making that bank want to borrow from other banks, but then the banks would have become, ex post, heterogeneous.

heterogeneous banks and heterogeneous bank customers, and an essential role for both liquidity and default. As you can probably imagine, these features add to the complexity of the model; but we have tried to make versions of the basic framework simple enough so that it can be calibrated from the data of any banking system.

Two of the papers have been submitted for publications, (in Economic Theory and the Journal of Financial Stability), and are available already as LSE Financial Markets Group Discussion Papers.<sup>4</sup> The ultimate aim of this exercise is to try to lead the way towards a quantitative measure and model of systemic, aggregate financial stability, which can complement the continuing risk measurements of individual institutions. If this can be done, it could start to provide an intellectual backstop to the more descriptive commentaries in Financial Stability Reviews; and possibly to allow for a more coherent unification of the various roles of a central bank in its Financial Stability remit. Moreover it could usefully focus discussion on questions of what data are necessary to examine systemic financial stability issues empirically. Nevertheless there are lots of problems to overcome in such an ambitious programme, and our own models mentioned above no doubt suffer from manifold deficiencies. But I remain confident that this is the right direction for research and analysis in this field to proceed.

### 3. Burden Sharing in the case of Financial Crises with International Overlaps

So the first of my proposed new directions relates to an ambitious, but difficult, agenda for research. The second concerns a more organisational and administrative set of issues. This relates to the crucial linkages between fiscal and monetary policies. One of the advantages of belonging to the Chartalist school of monetary history, as I do, is that recognition of the importance of such linkages becomes almost second nature.

Fortunately for my audience this is not a prelude to launching into yet another discussion of the late-lamented Stability and Growth pact. In any case this is now sub judice, and we await with interest what the European Court of Justice will pronounce on the subject. Instead my point is that the linkages, between fiscal and monetary policies, are just as important and as problematical on the Financial Stability side, as on the Macro Monetary Policy side, of central bank operations.

As I indicated earlier in my Introduction, the scale of losses involved in major financial crises and banking reorganisations has been massive in many countries, as well documented by Bordo et al (2001), Caprio and Klingebiel (1996 and 1999), Frydl (1999), Hoggarth, Reis and Saporta (2001) and Lindgren, Gardia and Saal (1996). Such events continue, for example in Argentina and Turkey. Moreover, even smaller losses, such as might feasibly be met out of central bank capital, ultimately fall on the taxpayer, now that central banks are public sector

---

<sup>4</sup> Also see Catarineu-Rabell, Jackson and Tsomocos, (2003) and Tsomocos, (2003 a and b).

bodies. An exception occurs when the loss is met by a deposit insurance fund which is financed by the private sector, but such funds tend to become exhausted quite quickly on occasions of serious systemic risk.

This actually raises an interesting historical question, which is why did most economists and commentators think, as they mostly did until recently, that central banks could resolve banking crises unilaterally, without recourse to the deeper pockets of the public purse, i.e. the Treasury. One reason is that small, perhaps even medium, sized crises could be met, as in the case of the first Baring's crisis in 1890, by the central bank pressurising private sector banks to absorb a major proportion of any residual loss through joint guarantees and lending. Indeed this continued in the UK as the main form of burden sharing through the Fringe Bank crisis of 1973/74, and up to the Johnson Matthey bank failure in 1984. But this latter demonstrated that this approach was reaching the end of its useful life, though it resurfaced once again in the USA in a somewhat new guise in the LTCM crisis.

The problem that the Bank of England faced in the Johnson Matthey instance was that so many of the major banks in London were foreign-owned. Not only were such banks less under the thrall of the Bank, and less subject to arm-twisting, but they could also claim, in this more litigious age, that their own shareholders at home might sue them for inappropriate use of equity funds in helping to prop up a competitive, and furthermore foreign, bank. It is my understanding that, from that time onwards, the Bank of England has taken it as axiomatic that no significant bank rescue exercise can proceed without the positive involvement of the Treasury, and by extension of the Chancellor. The situation is somewhat different in the case of the USA, where the Federal Deposit Insurance Corporation Improvement Act of 1991, or FDICIA, legislates how bank insolvencies are to be treated; but in most other countries the position is much the same as in the UK.

Thus banking crises will often require significant fiscal input, for example for recapitalisation, and the handling of such crises will need to be agreed with the relevant fiscal, and political, authorities. There is no particular administrative problem with that within a national context, though it may add to co-ordination and operational difficulties when crises come to be handled by a committee, rather than having a single locus for decisions.

The problems arise when the crisis has international dimensions, perhaps especially so within the European Union where the geographical domain of monetary policy, under the aegis of the ESCB, differs from that of financial stability policies, still under the control of the national central banks of the euro-zone. Let me, however, defer from discussing the particular problems of the EU for the moment, though I will return to them.

Let us assume two countries, A and B, where a bank headquartered in A has a subsidiary in B. Something happens that makes A's regulators want to shut down that bank, but B's officials want their own subsidiary to continue. The likelihood is that reputational effects would make the survival of the subsidiary on its own improbable, (as was the case for the

perfectly well-functioning BCCI subsidiary in Hong Kong). How would B's officials negotiate with A's regulators, given the time pressures and likely market responses to any news leaks?

The problem is worsened if measures have occurred which will place much, or most, of the burden on the depositors and/or fiscal authorities in B, whether, or not, the losses have arisen in B. Assume that the B subsidiary is profitable, but that the headquarters in A, perhaps at the behest of the authorities there, transfers much of the subsidiaries' profits and assets to prop up the main bank. Moreover, the bankruptcy laws in A might ring-fence assets in A so that A depositors were paid off before B depositors got a look-in. Whether on purpose, or not, in a globalised financial system losses occurring in a bank in one country could be effectively passed through to the depositors or to the fiscal authorities in another country. There is no mechanism in place to devise a generally acceptable sharing of burdens from international (banking) crises<sup>5</sup>; perhaps the position of the foreign banks in Argentina could be taken as a case in point. Can we rely on voluntary co-operation and co-ordination between the countries involved under such crisis circumstances? Frankly I am doubtful.

These problems are perhaps most acute in three groups of countries. The first group consists of those countries, such as the transition countries in Eastern Europe, whose banks are mostly foreign owned. They stand at risk to supervisory decisions taken by headquarter home countries to which they are not party. The second is the UK because so many foreign banks have a presence in London, and because, as the main international financial centre, any cross-border crisis is likely to cause some reverberations there. The final group consists of those countries whose domestic banking systems are already largely inter-penetrated, such as in Scandinavia and Benelux. Since all three groups are European, this is primarily a problem for the EU to handle, even aside from the concerns expressed by many about the differing domains of macro monetary and financial stability policies within the Euro-zone.

Given that an aim of the Lisbon process is to establish one single, common European financial system, a logical step might seem to be to shift both the fiscal competence to deal with banking crises and the banking supervisory function to the federal EU level. It is, however in my view, not possible to move one of these (the fiscal and supervisory functions) without the other. Moving the fiscal function to the federal level, while leaving the supervisory function at the national level, would cause too much moral hazard, since each national supervisor would know that other taxpayers would pay much, or perhaps most, of the bill for lax supervision and forbearance. Moving the supervisory function, while leaving the fiscal function at the national level, would be inconsistent with the postulate that if the national Treasury has to pay, it is going to want to control what is being paid for. He who pays the piper calls the tune. That was the fundamental premise behind the Brown/Eichel Oviedo letter, and remains valid.

---

<sup>5</sup> If there were no transactions costs, no time pressures and no political constraints, such issues could be resolved by Coaseian bargaining between the parties. It was, however, Coase's main point that such an idealised world does not exist.

I doubt whether it will prove possible in the foreseeable future to move the fiscal function for crisis resolution to the EU level. The costs of handling such a crisis are not quantifiable in advance, and are open-ended. Even though there would only be a need to fund, through borrowing and taxation, such fiscal costs on an ex post basis, without a prior agreement on how such taxes, and borrowing, were to be carried out, a fiscal resolution at the EU level would not be ex ante credible.

Absent such a shift of the fiscal competence for crisis resolution to the EU level, calls for transfers of supervisory functions to a central, European body are, in my view, nugatory and little more than whistling in the wind. That, alas, brings us back to the question of how to share out the burden of rescues when the relevant public authorities are national but the financial system is international.

In this context, and given these suppositions, perhaps the best strategy for the ECB might be to develop a role as an independent, unbiassed and expert arbiter on handling such financial crises as have important international facets, both within the EU, and between the EU and other non-EU countries. Its judgments and pronouncements in this role would not (and probably also should not) have any legal effect. But its position, expertise, and the possibility of publication of (parts of) its judgments on whether an overall rescue would be advisable, and perhaps even some tentative comments on the appropriate division of burden sharing between the relevant national regulatory authorities,<sup>6</sup> should exert some considerable moral suasion, and allow compromise solutions, especially intra-EU to be reached. This route, in my view, would be more likely to be fruitful than any continuing push towards centralisation of banking supervision, given the probable inability to achieve a federal fiscal competence for crisis management.

Even then there is a serious question whether the national Finance Ministries, who will ultimately have to provide the tax-payer based support to finance any such rescue, would be willing to give much locus to any independent body, such as the ECB, to determine the weights of individual member states in a support package. They might prefer to keep the discussions in forums in which the relevant individual nation states are directly represented, such as the EFC or the Committee of European Banking Supervisors. But then who could help relieve any dead-lock if national representatives could not agree directly amongst themselves, as seems all too likely?

Because of the need for any such arbiter to have full access to confidential commercial data, and of the potential sensitivities inherent in the exercise, it would be difficult, if not impossible, to delegate this role to an independent, academic body, pace my friends on the European Shadow Financial Stability Committee who have advocated an independent

---

<sup>6</sup> There might be a concern that the ECB would be entering the political domain by commenting on the sharing of fiscal burdens between nation states. This consideration just reinforces the point that centralisation of regulatory functions in the EU will be impossible unless, and until, the associated fiscal competence is also centralised.



Financial Regulatory Forum. Even if they were to sign an official document about observing confidentiality, they would need to be so publicly accountable as to become, in effect, another public sector body themselves. Also for natural reasons of expertise, familiarity with monetary and banking issues, and co-ordination with other macro monetary policy issues, the ECB would be a better home for the arbiter role than the Commission.

So my second proposed new direction for financial stability would be to encourage the ECB to be in a position to be able to adopt a role of arbiter on handling financial crises when these have inter-country European overlaps, in those cases of disagreement and deadlock between the national bodies.

#### 4. Concern with Other Aspects of Risk

I have always told my students, to whom I teach monetary economics, on no account become a bank supervisor. The pay is not commensurate with the likelihood of losing your reputation. The best a supervisor can expect is not to be noticed; everything else that goes wrong on your watch will be blamed on the supervisor, whether, or not, that is equitable; the pun is intentional.

I could have added that the task of devising good and effective financial regulation is truly like the labours of Sisyphus. And at least Sisyphus could reminisce about the reasons he got condemned to roll the stone uphill, which was that he had seduced scores of inappropriate ladies, whereas I surmise that most of those on the Basel Committee just found themselves in the wrong place at the wrong time.

Actually Sisyphus' myth does have another real lesson for bank supervisors. You know how banks can make risk apparently disappear off-balance sheet by securitisation and credit risk derivatives. Sisyphus had a neighbour, Autolycus, who could make objects temporarily disappear from sight and was stealing Sisyphus' cattle. Sisyphus dealt with this by marking the bottom of their hooves, and was able to track their passage through the muddy ground. So the moral of this story is that if the final resting place of risk is hard to observe, at least try to track its passage through the markets.

But the reason why trying to devise good financial regulation is like the labours of Sisyphus is not just that financial innovation and interactions between the supervised and the supervisors will continuously require any such regulation to be revised and updated, though this too will happen, and Basel II will be succeeded in due course by Basel III; but also that there are so many aspects of risk, and no one set of negotiations can, or will, fully take on board all of them.

The focus of Basel II was, of course, on the application of capital to credit risk, and to other operational risks. While such concerns are entirely valid, I want on this occasion to note that

there are numerous other facets of risk management which also need our attention. I shall pick out three such considerations briefly now, these are, first the need for liquidity, second the need for an appropriate pricing of risk via interest rate margins, and third the need for devising an appropriate structure of incentives to encourage bankers (and for that matter also supervisors) to abide by the various standards and requirements that may have been promulgated.

One remarkable feature of the last forty years is the degree to which the attention of regulators has swung from concerns about liquidity, with requirements for various cash and liquidity ratios, to a focussed concentration on capital requirements. In my view this pendulum has swung far too far.

For example, when capital requirements bite in cyclical downturns, it will usually not be a good time to raise new capital. Banks will be forced to shrink their books. As Cifuentes, Ferucci and Shin (2004) note, asset sales which drive down market prices will adversely impact the assessed capital values of all other banks also holding such assets, thereby potentially inducing dynamic instability. Something very like this affected the Life Insurance companies in the UK in 2002. Such a cause of instability will become more serious, the more accounting shifts to a market, or fair, value basis, which is the subject of my final section.

The point which I want to make now, however, is that the maintenance of sufficient liquid assets by the banks protects the system as a whole from damaging fluctuations in asset prices when adverse conditions force banks to shrink their books. There is also a concomitant obligation on the authorities to maintain the liquidity of such markets to enable such adjustments to proceed smoothly. Since much of the benefit of any bank holding more liquid assets accrues to other banks, (since its attempts to shrink its book would then have less effect on their own asset values and hence capital), while the negative effect on profitability is almost entirely internalised, there will be an incentive for banks to hold less than the socially optimal amount of liquid assets. It is arguable that the case for externally imposed liquid assets ratios is actually much stronger than the case for externally imposed risk-related CARs. As noted earlier the pendulum has swung much too far recently.

Banks' holdings of liquid assets not only protects other commercial banks, it also protects the monetary authorities, and helps them to maintain systemic stability. The more liquid assets a bank has, the longer it can sustain adverse clearings. That provides a breathing space, and in cases of financial crises, time is of the essence. Time is necessary to gather and transmit information, and to agree on the best course of procedure. It is liquid assets, not capital, that provides time in crises. Indeed one measure, and not necessarily a bad one, of appropriate liquidity is that banks should have enough to continue business to the nearest weekend even in the face of widespread public doubts about their solvency.

Let me turn now from liquidity to margins. It is common to talk about the need to price risk correctly. It is frequently said that this is key to good risk management. Yet we do not mean by this the application of sufficient capital; rather the need for sufficient margins to provide a

return on loans that will offset expected losses on those loans that do not perform, NPLs. Now the discussion on whether capital should be applied to expected losses, EL, as well as unexpected losses, UL, did properly surface in Basel II, especially in the context of credit card business. But I do wonder whether the integration of interest rate margins, alongside capital requirements, has yet been taken far enough.

It is, for example, a stylised fact, explored for example in the work of Barth, Caprio and Levine of the World Bank, that banking systems with a larger proportion of public sector banks (and perhaps other non-profit-maximising banking entities) are more fragile. Might this be, at least in part, because the public sector banks can, and do, for a variety of reasons so reduce interest rate margins that the private sector banks cannot obtain a viable risk/return profile. One thinks of the post office banks in Japan and indeed Germany, as well as the Landesbanken there.

One measure of risk appetite is the scale and extent of risk margins. We often think that the shrinkage of such margins during periods of boom and confidence is a sign that the financial system may be taking on too much risk, and vice versa during depressions. Perhaps one approach to countering procyclicality in the financial system would be to have the various regulatory requirements, for example capital and liquidity requirements vary inversely with margins, so that when risk margins fell during booms, relative to the historical norm, aggregate required ratios would rise, and vice versa.

Let me end this penultimate Section of my talk by noting an, apparently irresistible, temptation among regulators to focus solely on what banks should desirably do, and issue regulations, suggested Standards and codes of conduct (n.b. the ROSC list of the IMF) that exemplify such good behaviour. While this has considerable merit and use, rather like giving a booklet on good etiquette to a potentially naughty child – so he knows what is desirably expected – what is, in fact, both more difficult and more important is to have worked out what sanctions to apply, for example if the naughty child throws his food onto the floor. That example shows just how difficult putting sanctions in place can be; but it was done in FDICIA, but has yet really to be tackled at Basel, perhaps because this is just too constitutionally and administratively difficult to do at the international level. Yet establishing an agreed procedure for handling a breach of regulations is as, or more, important than trying to fine tune the optimality of the inevitably somewhat arbitrary details of the regulations themselves. The importance of devising a set of sanctions to give bite and back-up to Standards, Codes and other regulatory requirements was a theme that Peter Kenen emphasized in his contribution to the Per Jacobsson panel discussion in June, 2000, and I would echo all that he said then.

## 5. How to Smoothe out Volatility?

For my final topic I want to consider an (accounting) issue that tends to split Europeans and Americans. This is whether banking data should in all cases be presented on a market, or fair, value basis, or whether in some cases it is desirable to present such data on an historic

cost basis, or to apply some other form of smoothing device. The Europeans argue that markets can be extremely volatile, so that using so-called fair value data will enhance financial instability. For example in a financial panic, all asset values will shrink dramatically. Using current market valuations, the capital ratios of banks will contract sharply. This would lead them to cut back lending just at a time when continuing, indeed additional, loans are desirable, perhaps even essential from a macro view-point. Think of the equity crash of October 1987, or the bond market crisis in October 1998. Is it sensible to impose an accounting methodology that would have the effect of exacerbating such near-panics?

Moreover, one of the main purposes of financial intermediation is to allow the private sector to smooth out consumption over time, and, in particular, to obtain funding for consumption and investment from banks during bad times, periods of recession. As Freixas and Tsomocos (2004) show in their model, a shift from historic cost accounting to market value accounting lessens the ability of banks to undertake this smoothing function.

In the 1960s, discussion of this issue in the UK revolved around the question of whether commercial banks should be allowed to maintain 'hidden reserves', and the same valid arguments were put forward in support, including as I recall from the Bank of England. But in the event the maintenance of hidden reserves was terminated, and for essentially the same reason as all devices for smoothing the data are attacked. Such devices are usually not transparent, are capable of manipulation, lessen the availability of information, including early warnings of impending problems in financial institutions, and are likely to lead to a misallocation of investable funds. For a time the line of defence for historic cost accounting could be held on the grounds that for bank loans to the private sector there was no proper market, and hence no market value on which to base accounts. But the advent of securitisation and credit default derivatives are eroding the basis of that argument, at least in developed countries.

Market values are indeed volatile, and often seem tenuously related to fundamentals. But anyone who can systematically foresee when the market has overshot, and is due for a correction, should be rich enough not to care about accounting issues. For the rest of us poor mortals, the market's valuations may seem erratic, but at least they are (in most cases) objective and not subject to manipulation and abuse. It is an unreliable measuring rod, but the best we have.

So, there has been a progressive trend towards fair (market) value accounting. Given this trend, it is perhaps surprising that ratings agencies purport to set ratings on the basis of some cyclical average, 'looking through the cycle'. Moreover, commercial banks using the Internal Ratings Basis (or IRB) approach are being encouraged to follow the same procedure. But this is just a standard smoothing device, and subject to much the same criticisms as the others.

I had, until recently, long defended the use of such smoothing devices for banks, but market

innovations and the trend of thought on this subject mean, I believe, that their day is done. Fair, market values reign, OK? Well, not entirely OK, because that still leaves us with the problem of enhanced volatility and worsened fragility. As Gordy (2003) and Gordy and Howells (2004) have noted, if the accounts, ratings, valuations are all to be based on current market values, then, if volatility in the system is to be restrained, we should do so by applying offsetting adjustments in the parameters that are used in the various regulatory ratios, solvency ratios, CARs, etc. This idea has much in common with the Spanish dynamic pre-provisioning approach.

How does one work this trick? This is, in essence, what several economists at the BIS have been proposing, notably Borio and White (2003), Borio, Furfine and Lowe (2001), Borio and Lowe (2002), alongside Gordy and Howells (2004). They have proposed several alternatives. The procedure that I like best is to relate the required ratio to the rate of change of the key systemic factor over some recent period; admittedly the formula would be somewhat arbitrary, and would require considerable empirical study before adoption. Thus the CARs relating to commercial loans might depend on the rate of growth of GDP, on property loans to the rate of growth of property prices, on housing loans to housing price inflation, on equity holdings to equity price changes, etc.

But does that not mean that regulatory ratios would be reduced in bad times, during recessions, just when individual banks, or insurance companies, were at their most fragile, horror of horrors? Yes, it does, but that is looking at the glass half-empty. The basic idea would be to set the initial, (minimum), ratio(s) at a level suitable for bad, recessionary times. Then the above procedure can be envisaged as imposing add-ons to (capital) requirements during better times, with such requirements increasing sharply during periods of (unsustainable) booms in the relevant systemic factor. The glass is at least half-full, if not better than that.

If, for example, such a procedure had been applied to life insurance companies, or to the treatment of housing loans, in the UK this would have helped to lessen the asset price booms and busts. Again I hope to do some empirical work on this issue in the future.

## 6. Conclusions

So, let me conclude. Over the course of the last fifteen, or so, years – dating perhaps from the adoption of operational independence and inflation targeting in the Reserve Bank of New Zealand Act, where I was privileged to act as an external adviser to the RBNZ – the macro-monetary policy side of central banking activities has made enormous progress, in operational success, in practical procedures and in theoretical understanding.

I do not really see an equivalent success on the financial stability side, yet, despite the prodigious efforts of all those working at Basel. I hope that it will come in the next fifteen years. For that to occur, however, I believe that those working on this side need to take some new directions. First, we need a better, systemic model of financial fragility, notably a model which incorporates default as a central, essential element. I have tried, with colleagues, to

give a lead here. Second, the close relationship between fiscal policies and financial crisis management needs to be better appreciated, and the roles of certain international institutions, (notably the ECB), re-interpreted in the light of such assessment. Third, we have to extend our gaze beyond risk-related capital requirements to integrate risk margins, liquidity requirements and an appropriate set of incentives and sanctions into an holistic approach to financial regulation. Finally, the time has now come for a general adoption of fair value accounting, with no more smoothing devices. Instead, the systemic smoothing should come by adjusting the regulatory ratios in response to fluctuations in, rates of growth of, the main relevant systemic factor in each case.

I recommend these new directions to you, without, I fear, much confidence that they will be followed.

### Bibliography

Barth, J.R., Caprio, G. and Levine, R., (2000), 'Banking systems around the globe: Do regulation and ownership affect performance and stability?', Conference on Prudential Supervision: What Works and What Doesn't, National Bureau of Economic Research Inc., January.

Borio, C., Furfine, C. and P. Lowe, (2001), 'Procyclicality of the Financial System and Financial Stability: Issues and Policy Options', in Marrying the Macro and Micro-Prudential Dimensions of Financial Stability, BIS Papers, number 1, March, pp 1-57.

Borio, C. and P. Lowe, (2002), 'Asset Prices, Financial and Monetary Stability: Exploring the Nexus', paper presented at the BIS conference on "Changes in Risk through Time: Measurement and Policy Options", BIS working papers, number 114, July.

Borio, C. and W.R. White, (2003), 'Whither Monetary and Financial Stability? The Implications of Evolving Policy Regimes', in Monetary Policy and Uncertainty: Adapting to a Changing Economy, Jackson Hole Symposium, August 2003, (Federal Reserve Bank of Kansas City).

Brown, G., (1997), 'Statement on the Bank of England, 20 May', Bank of England Quarterly Bulletin, 37 (3), August.

Caprio, G. and Klingebiel, D, (1996), 'Bank insolvencies: Cross-country experience', World Bank Policy and Research WP 1,574.

Caprio, G. and Klingebiel, D, (1999), 'Episodes of systemic and borderline financial crises',

mimeo, World Bank.

Catarineu-Rabell, P., Jackson, P. and D.P. Tsomocos, (2003), 'Procyclicality and the New Basel Accord - Banks' Choice of Loan Rating System', Economic Theory (forthcoming).

Cifuentes, R., Ferrucci, G. and H.S. Shin, (2004), 'Liquidity Risk and Contagion', Bank of England, work in progress, January draft.

Cocco, J.F., Gomes, F.J. and N.C. Martins, (2003), 'Lending Relationships in the Interbank Market', London Business School, work in progress, August draft.

Elsinger, H., Lehar, A. and M. Summer, (2002), 'Risk Assessment of Banking Systems', Mimeo, Oesterreichische Nationalbank, August.

Freixas, X. and D.P. Tsomocos, (2003), 'Book vs. Fair Value Accounting in Banking, and Intertemporal Smoothing', Saïd Business School, Oxford, work in progress, November draft.

Frydl, E.J., (1999), 'The length and cost of banking crises', IMF working Paper 99/30.

Furfine, C., (1999), 'Interbank Exposures: Quantifying the Risk of Contagion', BIS Paper, No. 70, June.

Goodhart, C.A.E., Sunirand, P. and D.P. Tsomocos, (2004), 'A Model to Analyse Financial Fragility: Applications', Financial Markets Group, LSE, Discussion Paper # 482, February.

Goodhart, C.A.E., Sunirand, P. and D.P. Tsomocos, (2004), 'A Model to Analyse Financial Fragility', Financial Markets Group, LSE, Discussion Paper # 492, April.

Gordy, M.B., (2003), 'A Risk-Factor Model Foundation for Ratings-Based Bank Capital Rules', Journal of Financial Intermediation, July, 12 (3), pp 199-232.

Gordy, M.G. and B. Howells, (2004), 'Procyclicality in Basel II: Can we treat the disease without killing the patient', Board of Governors of the Federal Reserve System, work in progress, May Draft.

Hoggarth, G., Reis, R. and V. Saporta, (2001), 'Costs of banking system instability: some empirical evidence', Bank of England, working paper.

Kenen, P.B., (2000), 'Financial-Sector Reform in Emerging-Market Countries - Getting the Incentives Right', in Strengthening the Resilience of Financial Systems, BIS, Per Jacobsson Foundation, (Lucerne: BIS), 2000.

Lindgren, D.-J., Garcia, G. and M. Saal, (1996), 'Bank soundness and macroeconomic policy', IMF, Washington DC.

Tsomocos, D.P., (2003a), 'Equilibrium Analysis, Banking and Financial Instability', Journal of Mathematical Economics, 39 (5-6): 619-655.

Tsomocos, D.P., (2003b), 'Equilibrium Analysis, Banking, Contagion and Financial Fragility', Bank of England Working Paper No. 175.

Upper, C. and A. Worms, (2001), 'Estimating Bilateral Exposures in the German Interbank Market: Is there a Danger of Contagion?', BIS Paper, No. 1, March.

Wells, S., (2002), 'UK Interbank Exposures: Systemic Risk Implications', Financial Stability Review, Bank of England, December, pp 175-82.



New risks for financial stability. Regulation and policies to address these new risks. The digital transformation of the financial sector: some concrete examples. Glossary. Published articles. Fsr. Financial stability review. April 2016. Financial stability in the digital era. 2011-2020. The digital transformation of the financial sector: some concrete examples. Money and payments in the digital age: innovations and challenges François VELDE, Federal Reserve Bank of Chicago. Future evolution of electronic trading in European bond markets Elizabeth CALLAGHAN, International Capital Market Association. Emergence of big data: how will it impact the economic model of insurance? Thierry DEREZ, Covaa.

Financial stability is defined in terms of its ability to facilitate and enhance economic processes, manage risks, and absorb shocks. Moreover, financial stability is considered a continuum: changeable over time and consistent with multiple combinations of the constituent elements of finance. The paper also discusses several practical implications of the definition that should be considered when using it for policy analysis or developing an analytical framework.