

William R White: Making macroprudential concerns operational

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Introduction

In recent years, we have witnessed many bouts of financial instability arising from a wide diversity of proximate causes: operational problems, institutional failures, short-term problems in the functioning of financial markets, mean revisions in overextended financial markets, and contagion across markets and between countries.¹ In this paper, I focus on problems arising from financial overextension or systemic imbalances since they often lie at the heart of other observed problems.

As hypothesised in a recent paper,² the increasing incidence of financial instability arises from the coincidence of three secular trends. The first is liberalisation of global markets for goods and services. Together with advances in technology, and technology transfer to such giants as China and India, this has contributed to disinflationary pressures globally over an extended period. The second is the liberalisation of financial markets, which, again together with advances in technology, has increased the likelihood of justified optimism (favourably affecting credit and resource allocation) turning into unjustified optimism which breeds boom-bust cycles. The principal manifestations of this have historically been rates of growth of credit, asset prices and fixed investment well above historical norms; in effect, imbalances. The third secular trend has been the narrowing focus of “independent” central banks on the objective of constraining the rate of growth of prices of currently produced goods and services, regardless of other short-term developments. Echoing insights from an earlier literature,³ the “elasticity” of the financial system has increased while at the same time policy resistance has decreased. Rupture is commonly the end product of such overextensions.

The dynamics of cycles of this sort can vary widely, but they have three common features. First, lending and debt levels rise sharply in the upturn. Second, credit originators tend in the upswings to generate common exposures and thus all become vulnerable to the same shocks subsequently. Third, the appetite for risk, the health of the financial system and the state of the real economy tend to become endogenous. In the upswing, the appetite for risk rises, with initially positive effects on the real economy and the financial system, which further stimulates risk-taking. In the downswing, this dynamic process goes into reverse, with accumulated consumer and corporate debt loads weighing down the economy even in cases where the financial system initially remains quite healthy.⁴ Whether a weak financial system constrains the real economy, or whether a weak economy eventually threatens the financial system, the central point is the endogeneity of all variables of interest. Evidently this makes forecasting outturns particularly difficult, especially when we add in the non-linearities associated with both interactive processes and discrete bankruptcy events.

What do we mean by macroprudential concerns? In effect, they have to do with avoiding the kind of problems just described, with their attendant heavy costs in terms of output and employment. The policy challenge is to find ways of reconciling the unquestioned benefits in efficiency arising from each of the three secular trends with the occasional risks arising from their joint evolution over time.

How can we make these macroprudential concerns operational? Two things seem to be required. First, there must be a convincing assessment that systemic imbalances are emerging which have the potential to impose economic costs. This issue of “vulnerability indicators” is touched on in Section 1. Second, given such an assessment, the incentives must be in place to allow the instruments of

¹ Examples of each are provided in White (2004).

² See Borio and White (2004).

³ See Laidler (1999), Chapter 2.

⁴ The health of the financial system will initially be supported by lower interest rates should monetary policy be eased in the face of an economic slowdown. However, if lower rates and the search for yield also encourage a continuation of the risk-seeking investment behaviour which characterised the upturn, this could feed back negatively on the health of the financial system over time. See White (2004).

macroprudential policy to be used appropriately.⁵ In Section 2 the core elements of an “idealised” macroprudential framework to respond to systemic imbalances are laid out. They include the possible use of prudential instruments as well as the use of monetary policy, and also the possible interaction between these policy instruments. In this regard, some consideration is given to the kind of institutional relationships that might best contribute to good macroprudential policy. In Section 3 a long list of existing impediments (disincentives) to the suggested use of macroprudential instruments is surveyed. Section 4 concludes with a consideration of some practical steps that might be taken to reduce these disincentives.

In a recent paper, Houben et al⁶ distinguish between three states of the financial world: stability, impending instability and actual instability. This paper deals only with the second state of affairs, and thus has nothing to say about issues of crisis management and crisis resolution. However, the recognition that eventual crises could have heavy fiscal costs would seem to imply that Treasury officials might also be interested in both constructing and participating in a macroprudential framework that operates effectively. Just as war is too important to be left to the generals, financial stability may be too important to be left to the prudential authorities and the central bankers.

1. Evaluating macroprudential risks

How can we best evaluate whether systemic imbalances are building up in such a way that they justify a policy response? In principle, the task is to evaluate the expected loss arising from these imbalances, where this is the multiple of the probability of financial stress times the loss given stress, and to compare this to the costs associated with the use of policy instruments to avoid the problem. No aspect of this calculus is easy. The probability of financial stress can be increased by many factors, but can as well be reduced by other developments occurring simultaneously. Consider, for example, how the capacity of time-varying risk weights to promote procyclicality under Basel II can be offset by the spreading culture of risk management engendered by the same process. The costs associated with a prospective “bust” (the loss given stress) will also depend on a myriad of factors, not least the health at the time of the three principal components of the financial sector: financial institutions, markets and the underlying infrastructure. This said, the historical record indicates quite clearly that the economic costs of financial crises are very likely to be some multiple of percentage points of GDP. Finally, the costs of using policy instruments to avert macroprudential risks must also be assessed. Higher interest rates to lean against a boom might have the effect of driving inflation rates below targeted levels. Moreover, from a Schumpeterian perspective, such a policy might stop out the “creative” aspect in the process of creative destruction and put the economy on a permanently lower growth path.

These difficulties admitted, many official agencies are paying increasing attention to data that might throw some light on macroprudential vulnerabilities. The IMF has suggested a list of Financial Soundness Indicators for individual countries, and uses them in the context of their Financial Sector Assessment Programs. The Committee on the Global Financial System, which meets at the BIS, also compiles statistics bearing on the evolution of balance sheets over time (especially debt positions) for the major economies, and on the exposure to risks of various sorts (liquidity, credit and market) in major financial markets. While welcome, none of these indicators in themselves give much of a flavour of how vulnerabilities of various sorts might interact with systemic implications. In effect, they are micro data grossed up to macroprudential dimensions. Accordingly, they provide information neither about the distribution of risks nor about the interplay between market participants which can cause one kind of risk to suddenly be transformed into another.⁷ A parallel might be drawn with the stress tests now being conducted regularly by many of the larger financial institutions. These commonly indicate that

⁵ An analogy can be drawn with the workings of FIDICIA in the United States. When an indicator (capital ratio) falls below certain benchmark levels, the regulatory authorities are required by law to act in certain ways!

⁶ See Houben et al (2004).

⁷ By way of example of such transformations, consider the currency mismatch problem in Mexico in 1994. Banks were both lending and borrowing in dollars, and had essentially a matched book. They were therefore bearing no market risk. Their customers, however, were borrowing in dollars in spite of their revenues being mostly in pesos. When the peso collapsed, many of these companies proved unable to service their debts. The default of so many companies threatened the survival of the Mexican banking system; in effect, market risk turned into counterparty risk. During the LTCM crisis, fears about counterparty risk led to a drying-up of market liquidity which eventually forced official intervention.

institutions are well prepared to meet most individual shocks, but they rarely consider a configuration of shocks generated endogenously in the system. In particular, these stress tests rarely consider circumstances in which other major players, some initially more vulnerable than others, are reacting similarly and simultaneously to a shared set of exposures.

Some of my colleagues at the BIS have recently developed an interesting methodology for evaluating the probability of financial stress, which also has the merit of being quite simple. Using only ex ante information, Borio and Lowe (2002a) demonstrate econometrically that financial crises in industrial countries are likely to be preceded by some combination of sustained above normal rates of growth of credit, asset prices and investment. In a separate paper, Borio and Lowe⁸ show that the same pattern applies for emerging market countries, with overvalued exchange rates also playing a role in predicting crises. These models have the added advantage of producing a relatively low level of false positives. Recent work by Morris Goldstein and Philip Turner (2004) puts the emphasis on currency mismatch problems in emerging market economies, cases where borrowers have liabilities that must be serviced in foreign currency whereas revenues are denominated in domestic currency. They conclude that the loss given stress (in particular, currency depreciation) is positively related to the degree of currency mismatch in the debtor economy. A similar calculus might reveal the exposure of creditor countries today to a possible further depreciation of the US dollar, given that virtually all exposure to US borrowers is in US dollars. Clearly, all of the work referred to in this paragraph is at an early stage of development and further refinements could well pay big dividends.

A further reason for wishing to develop better measures of expected loss given financial stress is that current measures can be seriously misleading.⁹ Consider first the currently available methodologies for measuring credit risk. The risk assessments of rating agencies tend to rise more in recessions than in the preceding upturn, a reaction more to the materialisation of risks than to their build-up. Banks' internal ratings also tend to improve in good times, presumably because banks often look only a short time ahead and simply extrapolate recent default experience. As for quantitative models for evaluating credit risk, most do not incorporate macro variables and rely heavily on such market-determined variables as equity prices and credit spreads. Unfortunately, these are precisely the variables that are most likely to be biased by the market's excessive optimism during periods when serious imbalances are emerging. Finally, it should be noted that, when calculating expected losses, none of the above approaches recognises that the probability of default of a given credit tends in practice to be highly correlated with the loss-given-default.¹⁰

2. Core elements of a macroprudential framework

The objective of a macroprudential framework is to limit system-wide financial excesses that could feed back on the real economy with significant economic costs. The relevant authorities must use the instruments at their disposal to limit the expected losses arising from such developments, recognising that common exposures of financial institutions and market participants can exacerbate the financial and economic cycle in both directions. Moreover, common exposures also mean that the authorities face a significant problem of "fallacy of composition". That is, recommending what might be appropriate for a single market participant could well exacerbate system-wide problems should everyone do the same thing for the same "good" reason.

How can the insights above be translated into better operational policies? The first point to note is that traditional microprudential standards and codes of good behaviour still need to be strongly encouraged. If individual institutions are well managed, if markets function efficiently and if the infrastructure supporting the financial system is strong, then incidents of financial stress are likely to be less frequent and the associated costs reduced. The attention paid to such issues by the various committees that meet at the BIS,¹¹ the Financial Stability Forum and the Bretton Woods institutions attests to their importance.

⁸ See Borio and Lowe (2004).

⁹ On this, see Borio (2003), pp 13-14.

¹⁰ See Altman et al (2002). Also Lowe (2002).

¹¹ The BIS has a committee of national experts to deal with each of the constituent elements of the international financial system. The Basel Committee on Banking Supervision is concerned with banks (and the International Association of Insurance Supervisors with insurance companies). The Committee on the Global Financial system monitors the functioning

However, given a macroprudential focus, the nature of the monitoring of the components of the system must change. Particular focus must be put on those parts of the system likely to have knock-on effects elsewhere. From this perspective, banks, as suppliers of liquidity to the system, are more important than insurance companies. By the same token, large financial firms should receive more careful monitoring for imprudent behaviour than smaller firms whose failure might be more easily absorbed without systemic implications. Indeed, their capital requirements might be calculated differently to reflect such externalities. Finally, given the growing importance of markets - for the provision of credit, the transfer of risk, and the management of risk by financial institutions - it is crucial that markets continue to function properly under all circumstances. The implication is that market surveillance must be strengthened under a macroprudential framework.

The most important guiding principle for a macroprudential framework would be that policies need to be applied more symmetrically over the cycle - tightened as vigorously in the up phase as we observe easing in the down phase. This has a number of implications for the conduct of prudential policy and for monetary policy. As for the former, means must be found to ensure that the capital of financial institutions is built up during cyclical upswings. This would have the dual merit of both restraining excesses during the upswing and providing a cushion to moderate the downturn, when it does eventually materialise. As for monetary policy, a tightening response in the face of growing imbalances would again moderate the worst excesses and could obviate the need for subsequent radical easing. In an environment of initially low inflation, a more symmetric policy over the cycle would also lower the likelihood of policy rates ratcheting down over successive cycles to approach the zero lower bound. This could become a significant problem if deflation were also to emerge in such an environment. While this suggestion concerning symmetry might seem strange to some, it simply parallels the earlier suggestion for more aggressive tightening of fiscal policy during upturns. More symmetry over the cycle in the operation of fiscal policy is needed to help avoid the continuous ratcheting-up of debt levels over time.

Implementing prudential policy in the manner suggested might be done in various ways. To the degree that financial regulators felt sceptical about their capacity to evaluate the changing probability of systemic stress, they might be inclined to eschew a discretionary response and to focus on some simple rule-based procedures to govern private sector behaviour. Goodhart and Danielsson (2001) suggest relating certain prudential norms to the rate of growth of loans or of asset prices. These prudential norms might apply to the pricing of risk,¹² to the accumulation of provisions for losses (expected losses) or to the accumulation of capital (unexpected losses). Indeed, the Spanish authorities have already implemented a system of "dynamic provisioning" which ensures that loan loss provisions rise with loan levels, on the assumption that loss experience going forward will be the same as the average loss experience based on historical experience over the full cycle.

Presuming that regulators did feel more confident in their prediction that systemic imbalances were rising to dangerous levels, they might also have recourse to more discretionary action. In particular: cash reserve ratios and secondary liquidity requirements might be increased. Loan-to-value ratios might be tightened, repayment periods shortened, collateral requirements strengthened and margin requirements for speculative trading increased. Such measures were very commonly used in industrial countries 20 or 30 years ago and have been used more recently to good effect in both Hong Kong SAR and Singapore. In the former case, the avowed purpose was not to stop the perceived property boom, but rather to ensure that the banks would remain healthy even in the event of a subsequent bust. Finally, and for the sake of completeness, it should be noted that fiscal measures might also prove useful in some circumstances. Reducing the extent to which debt service charges (particularly for housing) could be deducted from taxable income would probably have an effect. Other fiscal changes (eg turnover taxes in the housing market) might also be thought useful.¹³

Implementing monetary policy as suggested above might also be done in a variety of ways. A more rule-based approach might focus on the rates of growth of monetary aggregates or credit aggregates, similar to the way policy tended to be conducted in some countries in the 1970s. The difference,

of markets, and the vulnerabilities of the system as a whole. Finally, the Committee on Payment and Settlement Systems oversees an important part of the underlying infrastructure of the system.

¹² Goodhart made this point again in his Per Jacobsson Lecture (2004).

¹³ A recent study by the Group of Ten Contact Group (2003) into the microeconomic policies contributing to the turbulence in asset prices is worth reading in this regard.

however, would be that the policy tightening would be as much directed to heading off incipient financial excesses, with a potential for financial instability, as it would be to resisting inflationary pressures. A two-pronged approach, a variation on the current approach of the European Central Bank, might then have something to recommend it.¹⁴ Goodhart (2004) and a host of others have also suggested ways in which credit growth and asset price increases might be linked more tightly to subsequent movements in policy rates.

In contrast, monetary policy might rather be used in a highly discretionary way to respond to growing imbalances that were judged by policymakers to threaten financial instability. Arguably, this is the approach that has recently been taken by both the Bank of England and the Reserve Bank of Australia. In the face of rapid increases in housing prices, and an associated rapid increase in both household debt and household spending, both central banks raised policy rates even though actual (if not necessarily projected) inflation was well under control. Similarly, in Sweden the monetary authorities did not lower rates by as much as might have been expected given an undershoot of their inflation target. They cited their concern about very rapid increases in house prices as the reason.

Cooperation among official agencies pursuing macroprudential objectives would ideally begin with agreement that a problem was emerging. A first step in providing official resistance to emerging imbalances might be statements of concern, presumably with one voice from different sources. Akin to the “signalling” function of foreign exchange intervention, this might be sufficient to moderate the rate of growth of credit, asset prices and investment. One possibility would be that market participants might be prompted to question the inherent soundness of their current investment strategies. Another might be that they would begin to develop concerns about more concrete policy measures which might result in their current investment strategies becoming less profitable and/or more risky. The likelihood of this happening would of course depend on the respect with which official views were regarded and, more importantly, on the credibility of the implied threat of action.

In all likelihood, and this would certainly be true in the early days after the establishment of a macroprudential framework, talk alone would not suffice to alter market sentiment. In the first instance, the official community might turn to tighter prudential regulation. This has the advantage of directly targeting an important source of concern; namely, the health of the financial system. Moreover, were the excesses largely confined to certain sectors, regulatory guidance as to exposure levels might be particularly useful. At a later stage, if required, the monetary authorities might begin tightening monetary policy. The advantage of this instrument is the broad scope of its impact, which could help to moderate a generalised tendency in the economy towards the development of imbalances. Perhaps the conclusion to be drawn is that both prudential and monetary instruments might have to be used jointly as described, recognising that over time the need to have recourse to the latter would decline as the credibility of official threats became better established.

What kinds of processes and institutional arrangements between official agencies would best contribute to the efficient pursuit of a macroprudential agenda? Perhaps the most serious problem to avoid is that of macroprudential concerns falling between the cracks. That is, while each agency recognises that a problem is emerging, it feels that it is the responsibility of some other agency to do something about it. One possible answer would be to create a committee involving all those concerned with systemic stability, but with a mandate to ensure macroprudential monitoring and the appropriate policy response. In some countries, this would imply widening the mandate of already existing committees set up to ensure a consistent official response to crisis resolution.¹⁵ The committee might well be chaired by the central bank representative given that central banks have a more “top down” perspective, focusing on the system as a whole,¹⁶ while prudential agencies (or central bank supervisory departments for that matter) have traditionally approached issues from the “bottom up” perspective of individual institutions.

¹⁴ The ECB was denied responsibility for supervisory oversight on the grounds that this might dilute its commitment to monetary stability. It is ironic that, more recently, the ECB has justified retention of the second pillar on the grounds that it can provide an early warning of financial excesses.

¹⁵ See Goodhart et al (2002).

¹⁶ Central banks would also be more likely to incorporate macroeconomic considerations into their analysis. Thus, the build-up of corporate or household debt might be thought worrisome even if the health of financial institutions was not thought to be at risk.

It is notable that a committee of this type already exists at the international level - the Financial Stability Forum - though not yet in most national jurisdictions. This committee brings together senior Treasury, central bank and supervisory officials from systemically important countries, along with representatives of the major international financial institutions and the standing committees of the BIS. The committee routinely assesses financial vulnerabilities arising from conjunctural developments as well as from ongoing structural change. While the committee as such has no powers - it is not a super-regulator¹⁷ - the insights gained from its deliberations seem on occasion to have led to changes in domestic prudential if not yet monetary policies. The Forum might also have a role to play in the event of an international financial crisis needing management or resolution. Fortunately, this capacity has not been tested to date.

3. Current impediments to effective macroprudential action

The previous section has set out an “idealised” framework for the implementation of macroprudential policies. In addition to the many legitimate questions that might be raised about the desirability of the suggestions made, there are a number of practical impediments to implementation of any sort of macroprudential framework. Forbearance can be an issue at the systemic as well as the institutional level. Some of these impediments are of a general nature, others affect prudential authorities in particular, while still others affect the conduct of the monetary authorities. After identifying the nature of these impediments, consideration is then given as to how they might be removed.

In addition to normal bureaucratic inertia, the principal impediment to implementing macroprudential policies in practice is uncertainty as to the significance of potential systemic problems. The evaluation problem mentioned above is serious. Moreover, it has probably become more so in recent years given the massive structural changes under way in the financial industry, characterised above as securitisation, consolidation and globalisation. Market mechanisms now allow the wholesale transfer of risks, and the final resting place is more unclear than ever before. While no one really knows, the common presumption is that these risks are now safely in the hands of those who can best bear them. Consolidation is also viewed by some as a positive development, increasing the diversity of revenue flows into financial firms and reducing risk. Others, however, point to an associated degree of concentration in certain markets that is unprecedented, and the implications of which cannot thus far be reliably assessed. Globalisation has likewise allowed a welcome dispersion of shocks, in the view of some, while increasing the chance of contagion in the view of others. The central point is that uncertainty about the seriousness of a problem, particularly if a number of agencies must be convinced, is likely to be a significant impediment to action. As the French put it so well, “Dans le doute, abstiens-toi”.

A closely related problem is that policy action to curb excesses in the private sector is bound to be resisted since private gains are at stake. At the intellectual level, the suggestion that the public sector knows better than the collective wisdom of “the market” will be vigorously disputed. Those finding themselves inside bubbles (ex post) are always unable to recognise it ex ante. At the practical level, lobbyists, lawyers and enlisted media will be used to sell the idea that “this time it’s different” and that there need be no policy resistance to macroprudential concerns.

A final general concern is that policymakers will commonly have no clear idea of what effect their policy actions might have. In part, this is for the same reasons that cast doubt on whether there is a macroprudential problem in the first place. But, in addition, such uncertainty will be compounded by the fact that financial imbalances may already be very well developed by the time agreement can be forged on the need to act. An example of this kind of problem is being seen in the United States, where policy rates are now being raised back towards more “normal” or “natural” levels after a long period of exceptionally easy monetary policy. The reliance on “measured” policy moves, and the care taken to communicate the Fed’s policy intentions, attests to the delicate situation in which the authorities now find themselves. Heavy debt accumulation by households and increased leverage by financial firms raise the prospect of a different response to policy tightening than might earlier have been expected. Growing suspicions as to the continued reliability of domestic measures of inflationary pressures (“gaps”) in an increasingly globalised real economy only add to the uncertainty.

¹⁷ In the light of the globalisation process in the financial industry, a number of commentators have suggested the need for an international super-regulator. See Eatwell and Taylor (1998) and Currie (1999). Political realities, particularly but not exclusively in the United States, make this a non-starter for the foreseeable future.

There are particular impediments to prudential authorities behaving as suggested above. First, and perhaps most important, they do not have a macroprudential culture. It is a big leap for supervisors, in large part lawyers and accountants by training, and used to evaluating the health of single institutions, to think systemically. Shocking systems of simultaneous equations to see the effects on market clearing conditions is not their natural pastime. Moreover, it is an even bigger leap for prudential authorities to be convinced that action is needed when the financial system seems healthy, and only the corporate and household sectors seem overextended. Surely, they would argue, this is someone else's responsibility. A second very practical concern is that, in most jurisdictions, the prudential authorities do not have the power to use prudential instruments in the way recommended. Acquiring such rights would probably involve a long and difficult political process. Consider, for example, the strong opposition already being mounted by the accounting profession and the tax authorities to the idea of forward-looking provisioning for expected losses. How the use of such instruments, effectively imposed from outside, might be reconciled with the current trend to relying more on financial firms' internal assessments of the risks they are bearing is a closely related question.

Third, there is the fallacy of composition problem referred to above. How could the prudential authorities convince individuals to behave in ways that seemed to conflict with their own best interests? They would have to be persuaded both that it was in the common good of all to do so,¹⁸ and that other providers of credit would not be "free riders" gaining new customers even as they practiced restraint. Finally, and closely related, prudential policies to reduce "excesses" in the financial system would have to be quite comprehensive, or else the demand for credit would simply shift to unregulated sectors and new sources of such credit would arise. Indeed, a large and growing proportion of credit is already provided directly through markets rather than regulated financial institutions. Considerations such as these imply that the use of monetary policy might also have to be contemplated¹⁹ if imbalances in the financial system are to be effectively constrained.

Unfortunately, along with the general impediments against the use of policy for macroprudential purposes, other considerations militate against the specific use of monetary policy. The first of these is that monetary policy is generally committed to the objective of domestic price stability, whether in the context of a formal "inflation targeting framework" or not. If rates must be raised for macroprudential reasons when inflation is under control, then the inflation target may be undershot. Some worry that this could undermine the credibility of the whole regime. At the very least, there is an inconsistency that will need to be publicly and convincingly explained. Moreover, in a world of liberalised capital flows, there is the problem that higher interest rates might serve to draw in foreign capital in significant ways. A stronger exchange rate might lower domestic prices and increase the undershoot of the target inflation rate. Conversely, actions taken to prevent the exchange rate from rising (intervention) might conceivably result in an increase in domestic liquidity that would fuel imbalances rather than moderate them.

Finally, it may prove (indeed has proved) difficult to get policymakers to focus on the simultaneous occurrence of a number of developments as the only reliable indicator that imbalances are building up. Rather, there has been a tendency to suggest that the macroprudential approach comes down to "targeting asset prices", and various well known objections can be raised to this. Which of many asset prices should be targeted? What should be the targeted level? Would interest rates high enough to "burst the asset price bubble" not cause enormous damage elsewhere in the economy? This narrow focus on asset prices as the core of the problem will have to be replaced by a broader conceptual framework if anything practical is to be done about macroprudential concerns using monetary policy.

4. Can current impediments be removed?

Given enough conviction that a macroprudential framework is needed, steps could be taken to deal with some of the above impediments to its effectiveness. The phrase "given enough conviction" is, however, crucial since there will clearly be both costs and risks involved with changing the status quo. In this spirit, what follows are less recommendations than possibilities to be evaluated.

¹⁸ In this context, safety nets are a major complication. Why should a firm worry about systemic problems if it feels that it will somehow be made whole by the state?

¹⁹ See Borio and White (2004).

It was suggested above that uncertainty as to whether macroprudential imbalances were approaching dangerous levels would militate against a policy reaction. That is because tighter policy would clearly have costs in terms of either economic efficiency or lost output. The assumption underlying this reaction, however, is that policymakers have an objective function that they are trying to maximise. The question that should be asked is whether policymakers ought not rather to be following a minimax strategy that focuses on avoiding truly bad outcomes. With such an approach, uncertainty about the possible build-up of financial imbalances that could lead to heavy costs would in fact tilt the balance more towards preventive action by the official sector. The bias to inaction could be reduced even more by research studies. One objective would be to indicate the extent to which internal governance and market discipline could be shown historically to have promoted rather than impeded procyclicality in the financial system. Another might simply be to improve further the reliability of the promising indicators of financial vulnerability suggested by Borio and Lowe, among others.

The fact that there would initially be no popular support in the private sector for macroprudential policies could be overcome through better education. Recall that there was no popular support initially for the battle against inflation, but eventually the pursuit of this objective became the conventional wisdom. The fact that so many central banks already publish financial stability reviews indicates that such an education effort is already under way. The danger that repeated warnings without subsequent crisis might threaten credibility could be offset by more systematic references to the preventive actions undertaken in response to such warnings. In addition, emphasis might be given to observed changes in private sector behaviour generated by the establishment of a macroprudential framework. Again, an analogy can be drawn with changes in the process of forming inflationary expectations after central banks credibly committed themselves to this objective.

Uncertainty as to the effects of implementing macroprudential policies could also impede policy reaction. Yet, it bears repeating that the longer imbalances are allowed to build up the greater such uncertainty becomes. The interaction of high debt levels, financial leverage and higher interest rates, for example, clearly threatens non-linear responses. The way to avoid this problem is rather to act early, in a pre-emptive way, with as much clarity as possible about both the objective of policy and how the authorities intend to achieve it.

Turning to the impediments affecting the proposed behaviour of prudential regulators, the current "culture" of microprudential surveillance could with time be complemented by macroprudential concerns. More meetings between the various official agencies concerned would eventually generate a shared trust, a shared set of objectives, and a shared understanding of problems and potential solutions. This is the process that Kapstein (1992) describes as accounting for the remarkable success of the Basel Committee over the course of the years. If this can occur at the international level, surely it would also be possible at the national level? As noted above, the Financial Stability Forum is already providing an international example of inter-agency cooperation, as are the now regular meetings taking place at the BIS between the G10 Governors and their respective counterparts from the independent regulatory agencies.

The fact that prudential agencies do not in general have the power to use macroprudential instruments is not surprising. Given that to date there has been no agreement that a problem exists, no priority has been given to implementing solutions. However, were there to be a growing public conviction of the need for an effective macroprudential framework, the opposition of special interest groups would gradually be overcome. Moreover, legislative means would more easily be found to support achievement of the objective desired. This said, the capacity of participants in a liberalised financial system to find ways around regulatory constraints, not least through markets, puts limits on the effectiveness of such macroprudential measures and points again in the direction of a monetary response.

An important impediment to the use of monetary policy to mitigate macroprudential problems is that higher interest rates could drive forecast CPI (say) inflation below some targeted or desired level. Some worry that this might lead the public to believe that the authorities were no longer interested in stabilising prices, and that this might encourage inflationary expectations over time. Recognising this as a logical possibility, the first point to make is that it is not at all obvious how a policy that drives inflation below target would raise inflationary expectations. The second point is that a macroprudential framework can be described in ways that are fully consistent with retaining concerns about prices as the primary objective of monetary policy. If measured inflation is low, higher interest rates to respond to macroprudential concerns may drive it to unacceptably low levels. However, if the financial excesses are not checked, the bust following the boom seems likely to push inflation lower still. Resisting the financial excesses, and avoiding the worse of the two outcomes, can then legitimately be

described as consistent with the pursuit of price stability, albeit over a somewhat longer horizon than central banks commonly target today. Recognising that a boom-bust sequence at low inflation could result in continuously falling prices, such a policy might even be described as insurance against deflation. Since nominal rigidities can (although they need not) make deflations resistant to policy stimulus,²⁰ insurance of this sort might be cheap at the price.

The problem of capital inflows being generated by higher interest rates is a potentially serious one. One possibility might be a measured use of capital controls. Another possibility would be to let the exchange rate rise, accepting unwanted near-term disinflationary pressures (especially in the traded goods sector) as the price to be paid for avoiding still stronger downward pressures on prices over the longer term. The least attractive option would seem to be massive foreign exchange intervention, as currently practiced by a number of Asian countries, which further compounds the underlying problem of excess credit creation both at home and abroad.

The final impediment to the use of monetary policy for macroprudential purposes, technical difficulties having to do with a focus on asset prices, will only be removed when these narrow questions are put into a broader conceptual framework for evaluating macroprudential concerns. For some, this will require a paradigm shift which will not be easily achieved. If one believes that financial imbalances are truly dangerous, this must be considered an unfortunate constraint on policy. In contrast, for those that do not believe in such dangers, the fact that monetary policy will continue along the same successful path it has followed for over a decade will seem fully satisfactory.

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²⁰ For an analysis of such phenomena see Chapter 4 of the *73rd Annual Report of the BIS*.

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