
Financial stability, monetary stability and public policy

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The interplay between financial and monetary stability has received considerable attention in recent times, from policymakers and academics alike. This article reviews the broad themes that have emerged in the recent literature and highlights several key issues that merit attention by researchers. In particular, the optimal combination of instruments designed to achieve these twin goals of policy simultaneously remains a relatively underexplored area of research.

Introduction

Maintaining financial and monetary stability are two key concerns of public policy, and it is recognised that significant welfare costs can arise from a failure to do so. But are these twin goals — and the policies used to pursue them — mutually reinforcing? And under what circumstances, if any, might they conflict? What does this imply for the conduct of public policy, both within and outside central banks?

Such questions have received increased attention over recent years, partly because of a perception that the potential of financial instability has increased at a time when many countries appear to have secured monetary stability.⁽²⁾ The debate has also been reinforced by institutional changes within central banks, where the long-standing concern for overall financial stability has, in many cases, become more explicit.

One view of the relationship between monetary and financial stability is that policymakers in each sphere should concentrate on achieving their individual goals, treating developments in the other merely as an input into the decision-making process. An alternative view, however, is that a combination of initiatives, encompassing both monetary policy and financial stability instruments, may be able to achieve better outcomes in both and, as such, would be welfare enhancing.⁽³⁾

But understanding the complex interplay between the twin goals of central bank policy is by no means an easy task. A key problem is the difficulty in defining the concept of and instruments used to achieve financial stability. Haldane *et al* (2004) propose that financial instability introduces deviations from the optimal saving and investment plan of an economy due to imperfections in the financial sector.⁽⁴⁾ On this broad definition, a wide range of instruments might be considered by policymakers, not all of which lie in the compass of the central bank.

In contrast, the central tenet of monetary stability — to maintain a low and stable (positive) rate of goods and services price inflation — is more widely agreed, as are the instruments with which to achieve it.⁽⁵⁾

This article proceeds by considering the potential influence — both positive and negative — of monetary policy on financial stability, and *vice versa*. We then highlight some alternative policy options for dealing with financial imbalances put forward in the literature, and a final section concludes.

Monetary policy and financial imbalances

Successful monetary policy tends to support financial stability, in part, by helping remove the distortions in price signals associated with high and volatile inflation. These distortions can lead to an intertemporal

(1) This article was written while Chay Fisher was on secondment at the Bank of England.

(2) For example, see the discussion in Crockett (2003).

(3) See, in particular, Borio and White (2004).

(4) Although this article proceeds with that definition in mind, a number of alternatives exist. See Houben *et al* (2004) for a survey.

(5) The precise institutional frameworks differ across countries, however, and debate continues on various aspects. For example, Cecchetti and Kim (2003) examine the case for targeting the path of the price level, rather than the rate of inflation.

misallocation of resources and a build-up of imbalances in financial balance sheets that can sow the seeds of crisis.⁽¹⁾ Price stability has, therefore, often been thought of as a necessary (but not sufficient) condition for promoting financial stability.

Conversely, the failure to maintain low and stable inflation — or otherwise conducting monetary policy that is in hindsight too loose — can conflict with the aims of financial stability policy. One example is the Nordic banking crises in the late 1980s and early 1990s, where Drees and Pazarbasioglu (1998) argue that monetary conditions were not tightened either by enough or in a timely manner and, thus, contributed to the build-up of financial imbalances.⁽²⁾

In an environment of high inflation, it is also possible that a rise in real interest rates designed to lower inflation could act as the *trigger* for an unwinding of financial imbalances and, as borrowers' balance sheets come under pressure, a period of financial distress.⁽³⁾ The transition may prove particularly difficult for banks that have adapted their businesses to a high inflation environment, especially if it exposes previous shortcomings in risk management.⁽⁴⁾

But perhaps of more interest in the current low inflation environment is a situation where monetary policy is successful in achieving its aims (ie price stability), yet still might conflict with (future) financial stability by facilitating the conditions for financial imbalances to develop.⁽⁵⁾ Recently, some commentators — including Borio and Lowe (2002), Borio and White (2004) and Goodfriend (2003) — have suggested that such a situation could arise because of a so-called 'paradox of credibility'. The paradox is that the success of central banks in reducing inflation expectations may have introduced stickiness in prices, which might mask the build-up of imbalances in the real economy. If the signal from consumer prices is weakened, monetary policy may be slower to respond to emerging imbalances and unwittingly contribute to the conditions for financial instability.

Amato and Shin (2004) present a theoretical analysis of the interaction between inflation expectations and firms' price-setting behaviour that highlights conditions under which aggregate prices may not be a reliable indicator of imbalances in the real economy. They show how, in a competitive environment, public information 'crowds out' private information so prices might not respond to underlying fundamentals, as reflected in firms' marginal cost. Moreover, if the central bank is credible, beliefs may become centred around the inflation target so, again, prices may not respond to marginal cost pressures. But while the potential for a paradox makes intuitive sense, the circumstances under which it compromises the signals from goods and services inflation have yet to be established empirically.

The accumulation of financial imbalances in an environment of low and stable inflation — whether or not because of a paradox of credibility — raises questions about whether public policy can do more to prevent their build-up.⁽⁶⁾ A series of recent papers highlights the benefits and potential costs of using monetary policy in such a proactive manner. Broadly speaking, the protagonists are often characterised as split into two camps, though the distinction is often blurred and the differences in policy prescriptions are sometimes subtle.

On one side of the fence are those who argue that an explicit proactive response to financial imbalances is neither desirable nor feasible. There are a number of practical concerns that have been raised — and well documented elsewhere — including the following five issues.

First, intertemporal distortions cannot be identified with enough accuracy to guide a monetary policy response. For example, asset price misalignment and the financial imbalances it engenders are inherently difficult to identify at the time and their existence is often only clear with the benefit of hindsight.⁽⁷⁾ Gruen *et al* (2005) argue that formulating an appropriate policy response to an asset price bubble

(1) Such episodes, which include so-called 'asset price bubbles' and periods of excessive lending by banks are documented in Borio and Lowe (2002).

(2) Posen (2003), however, questions the causal link between asset price misalignments and indicators of loose monetary policy across a number of OECD countries.

(3) On the other hand, if the central bank adopts a more expansionary stance of monetary policy than justified by the inflation outlook, for fear of triggering a financial crisis, it might facilitate the conditions that could lead to a worse crisis in the future.

(4) Lindgren *et al* (1996) identify a significant reduction in inflation as a factor in 21 of 36 episodes of financial instability they examine.

(5) Notwithstanding Posen's findings, it seems reasonable to suggest that monetary policy mistakes are more likely to conflict with financial stability.

(6) Although many papers focus on asset prices more narrowly.

(7) Greenspan (2002) is often cited in support of such an argument, with reference to the US share market bubble of the late 1990s.

depends on knowledge of the stochastic properties of the bubble, and the associated information requirements may be prohibitive.

Second, it is likely to be very difficult to calibrate the size of a proactive monetary policy reaction. Bean (2003) and Greenspan (2002), among others, argue that the size of an interest rate rise needed to burst an asset price bubble may be so large that it could lead to a significant economic downturn.

Third, the appropriate timing of a proactive monetary response is difficult to determine. In their asset price bubble example, Gruen *et al* (2005) suggest that a condition under which a proactive response is plausible includes a situation where the bubble is unlikely to burst of its own accord over the monetary policy horizon, otherwise the policy prescription would be to lower rates to offset the impact of the predicted downturn. But, given the lags in the impact of monetary policy, a proactive response to a bubble is unlikely to be plausible.

Fourth, political economy constraints would need to be overcome if the central bank were to raise interest rates in the absence of obvious near-term inflationary pressures. Although, Borio and White (2004) argue that these 'while serious, ...are not immovable'.

The fifth concern is the potential moral hazard risk of a systematic proactive response of monetary policy to financial imbalances. For example, Ferguson (2003) argues that investors may undervalue the risks they take on if they expect that the central bank will invariably act to offset future financial stability concerns.⁽¹⁾

The policy prescription that often flows from these concerns is that central banks should only react to asset prices and financial imbalances to the extent that these affect the outlook for future inflation and output.⁽²⁾ Therefore, monetary policy should instead be directed at alleviating the fallout of financial imbalances and instability — notwithstanding the moral hazard implications of such an approach.

In the other broad camp are those who argue that the potential costs of financial instability are large enough to warrant a more proactive approach to monetary policy.⁽³⁾ Prominent advocates of early monetary policy action include Borio and Lowe (2002), Bordo and Jeanne (2002), Dupor (2002), and Cecchetti *et al* (2000),⁽⁴⁾ who argue that central banks should 'lean against the wind' of emerging financial imbalances by raising interest rates to reduce the probability of costly financial instability in the future. Such a strategy can be likened to taking out insurance, with the insurance premium being slower output growth in the near term (Bordo and Jeanne (2002)).

Those in favour of a proactive monetary policy response typically acknowledge the difficulties noted above but, naturally, offer counter-arguments. In particular, on measurement and identification — perhaps the key objections to proactive monetary policy — there are at least two retorts. First, measurement difficulties ought not to stand in the way of attempting to incorporate the information in the monetary policy decision, especially since many other common inputs — such as the output gap — are also very difficult to measure (Cecchetti *et al* (2000)).⁽⁵⁾ Second, there have been some recent advances in techniques aimed at predicting financial vulnerability. Borio and Lowe (2002) and (2004), using a 'signalling' framework, suggest that cumulative processes of credit, asset prices and investment provide 'reasonably strong circumstantial evidence that useful *ex-ante* indicators of financial vulnerability can be constructed'.⁽⁶⁾ But, as the authors themselves acknowledge, much remains to be done in this area.

In terms of the monetary policy framework, some in the 'proactive camp' argue that a flexible inflation-targeting framework is sufficient, emphasising the importance of greater flexibility in the forecast horizon. Bean (2003) makes a similar point. An additional explicit reference to financial imbalances is not necessary because a sufficiently flexible, forward-looking inflation-targeting framework is able to take into account the impact of potential financial instability on future inflation and output.

(1) Filardo (2004) notes the potential trade-off between the moral hazard cost and the potential macroeconomic cost of central bank inaction.

(2) See, for example, Bernanke and Gertler (1999) and Ferguson (2003). But, even so, the predictive power of asset price changes is not clear. See Stock and Watson (2003) and Clews (2002) for a UK perspective.

(3) See Hoggarth and Saporta (2001) for estimates of the cost of financial instability.

(4) See also Kent and Lowe (1997).

(5) Others disagree — Gertler (2003), for one, suggests that the analogy is 'dead wrong'.

(6) Borio and Lowe (2002). Gertler (2003) offers a critique of their techniques. And see Bell and Pain (2000) for a general review of leading indicator models of financial distress.

Although proposals for the underlying policy framework appear similar, where opinion seems to differ is on the relative weight that should be given to potential financial instability within that framework. That, in turn, is likely to be influenced by judgements of the relative costs of policy mistakes and attitudes to policymaking in the presence of uncertainty. On the former, there is an argument that the impact of policy mistakes may be asymmetric and that the cost — in terms of lost output — of tightening policy under the mistaken belief that unsustainable financial imbalances are developing may be lower than not acting and letting a boom-bust cycle run its course (Borio and Lowe (2002)). Possible changes in the dynamics of the economy — brought about by financial liberalisation and (credible) monetary policy focused on price stability — may also warrant greater attention to financial imbalances (Borio and White (2004)).

While there is general acceptance that financial instability is costly, there is little evidence against which to assess the costs and benefits of alternative policy actions. This is because of the absence of counterfactual episodes and appropriate models with which to assess the welfare effects; an important area of further research effort.⁽¹⁾

A more formal way of analysing the relative weight that should be given to financial imbalances is beginning to emerge in the literature on monetary policy and ‘extreme events’. This work aims to shed light on the optimal monetary policy response to low-probability, high-impact events, of which the bursting of an asset price bubble can be seen as an example.⁽²⁾ Svensson (2003) shows how the optimal policy response to extreme events depends on the precise specification of the policymaker’s loss function. At one end of the spectrum, if the central bank operates according to certainty equivalence (as with a quadratic loss function) it will act to offset the (probability-weighted) average size of the shock, implying a high probability that actual inflation will undershoot the inflation target. At the other end of the spectrum, if the central bank operates according to a ‘perfectionist’ loss function (hitting the target exactly), it will completely ignore low-probability shocks.

In the absence of more formal models, researchers often appeal to case studies. The problems in Japan following the share market and property price cycle in the late 1980s are sometimes cited as an example of both a situation where asset price bubbles can develop in a low inflation environment, and where policymakers should have paid more attention to developments in asset markets. Cecchetti *et al* (2000), for example, note that ‘...Japan’s experience suggests that a single-minded focus on narrowly defined inflation may not always provide the best guide to monetary policy’. But Goodfriend (2003) and Posen (2003) take an alternative view, arguing that, although Japanese monetary policy should have indeed been tighter in the late 1980s, higher interest rates were justified by reference to more traditional indicators of inflationary pressure alone, so the policy mistake was not caused by lack of attention to asset prices.⁽³⁾

Bergman and Hansen (2002) attempt to assess empirically the interaction between financial stability and monetary policy in Sweden. They incorporate indices of financial distress into a vector autoregressive (VAR) framework with output, prices and interest rates (and further extended to include the ratio of credit to GDP). In the four-variable VAR, the authors find that price shocks have a more pervasive impact than interest rate shocks on financial instability, but suggest that ‘monetary policy has contributed to aggregate financial instability throughout our sample’.⁽⁴⁾ In their analysis, contractionary monetary policy acts as a shock that motivates financial instability, but it is also possible that previously loose monetary policy helped sow the seeds for future distress (see Drees and Pazarbasioglu (1998)).

Influence of financial stability policy on monetary stability

Financial stability policy has the potential both to support and to complicate monetary stability through its interaction with both the goals of monetary policy and the capacity to implement a policy change. Unlike monetary policy, financial stability policy in many countries involves the financial regulator, the central bank and the fiscal authority. Each authority can have different objectives and different instruments with which to meet them. Ensuring financial stability —

(1) See Haldane *et al* (2004) for a discussion and application of some models aimed at tackling this issue.

(2) Filardo (2004) offers an alternative perspective that explicitly recognises model uncertainty and in which policymakers use a mini-max criterion, ie they seek to minimise the maximum possible loss to society.

(3) Okina *et al* (2000) suggest, however, that the spurt of inflation may have been due to a tax-induced one-off adjustment in the price level.

(4) Their results are sensitive to both the measure of financial distress and inclusion of the credit to GDP ratio.

promoting the optimal savings-investment plan for the economy as a *whole* — therefore requires considerable co-ordination between agencies.

On the positive side of the ledger, financial stability policy supports monetary policy. One of the ways it can do so is by providing the foundation for a stable monetary transmission mechanism. The financial system is important to the transmission of monetary policy because of its role in facilitating the pass-through of interest rate changes to loan demand — the ‘interest rate channel’. In this respect, a well-functioning financial system that is robust to shocks — for example by holding sufficient capital and liquidity — is a key input to the effective operation of monetary policy.

The efficient resolution of financial crises is another important means by which financial stability policy can support monetary policy. A key objective of crisis resolution is to minimise the disruption to financial intermediation and consequences for the macroeconomy (Hoggarth *et al* (2003)). Policymakers have a range of resolution strategies at their disposal, from liquidity support to guarantees of liabilities and nationalisation of parts of the financial system. Hoggarth *et al* (2003) conclude that the potential costs — both direct (fiscal) and indirect (eg moral hazard) — and benefits of crisis resolution strategies depend crucially on the nature of the shock to the financial system.

Claessens *et al* (2003) consider how the cost of financial crises is affected by three types of official policy — liquidity support, (explicit) government guarantees on liabilities, and regulatory forbearance — and by structural and institutional factors. Their results suggest that limited liquidity support may prove more helpful than open-ended commitments. Using a cross-section of 35 banking crises, they find that the three policies not only add to the fiscal cost of crises, but ‘extensive’ liquidity support and regulatory forbearance actually contribute to lower GDP growth and delay the economic recovery, rather than the reverse as intended. Improving institutional arrangements, such as the legal framework, lowers both fiscal and economic costs.⁽¹⁾ Hoggarth *et al*

(2003) also find that, after controlling for other factors affecting the output loss (eg the credit to GDP ratio), open-ended liquidity support is associated with large falls in output.

Conditions in the financial system and financial stability policies, can also, however, complicate the operation and goals of monetary policy.⁽²⁾

Banks may have a more prominent role in the transmission mechanism than implied by the interest rate channel alone, through a so-called ‘bank lending channel’. In the presence of imperfections, or frictions, in capital markets (eg information asymmetries) a shock to banks’ balance sheets (eg tighter monetary policy) may translate into a reduced supply of funding to customers who are unable to switch their source of funds.⁽³⁾ These borrowers may face a ‘credit crunch’ if the cost of bank loans increases more than proportionately to the monetary policy tightening, or is associated with some form of non-price restriction on loan supply (Hall (2001)). Small to medium-sized firms, in particular, may find it difficult to access capital markets if bank funding dries up, and may therefore have to curtail their investment plans. The initial health of banks is likely to influence the strength of the bank lending channel.⁽⁴⁾

Recent studies have focused on the specific role of banks’ capital in the bank lending channel — that is, loan supply could be restricted as a bank attempts to restore its capital ratio following a shock. For example, Aikman and Vlieghe’s (2004) simulation results show that shocks to the economy are amplified and become more persistent in the presence of capital market frictions, especially when the shock is directly to banks’ net worth.⁽⁵⁾

It also, however, raises the possibility that financial stability policy could act as the shock as well. For example, regulatory capital could be a binding constraint on banks’ behaviour if they are forced to raise new capital to meet minimum requirements. One implication for monetary policy is that, if capital ratios are close to the regulatory minimum, the effectiveness of

(1) The focus is, however, on techniques aimed at resolving crises once they are in motion or have reached a near-critical stage, rather than where support to otherwise healthy institutions heads off potential problems (Goodhart (2003a)).

(2) Tucker (2004) explores the important role played by the liquidity management of banks in the implementation of monetary and financial stability policy.

(3) The other element of the overall ‘credit channel’ is the ‘balance sheet’ channel which focuses on the health of borrowers’ balance sheets, rather than those of lenders. Hall (2001) provides a good summary of both.

(4) Empirical evidence on the strength, and main determinants of, a possible bank lending channel is mixed and varies across countries. For recent evidence see Angeloni *et al* (2002) (euro-area countries); Driscoll (2004) (United States); Huang (2003), Atanasova and Wilson (2004) (both United Kingdom).

(5) See Haldane *et al* (2004) for an alternative calibration of the model.

an easing in monetary policy in stimulating aggregate demand may be weakened as banks are forced to raise additional capital before they can expand lending in response to increased demand for loans. This would have the effect of delaying the monetary stimulus. These so-called ‘financial headwinds’ may have delayed the recovery in the US economy in the early 1990s.⁽¹⁾

Such a process can act as a shock if there is a *change* in regulatory requirements and/or tougher enforcement by regulators. A number of papers have analysed the latter proposition by considering whether regulators make qualitatively tougher assessments of banks’ financial conditions or more vigorously enforce regulations during periods of banking sector fragility. Peek and Rosengren (1995) find that in New England in the early 1990s, banks subject to regulatory enforcement actions reduced their lending to a greater extent than other banks, after controlling for other characteristics.

Berger *et al* (2001) attempt to quantify the extent of US bank supervisors’ ‘toughness’ and its impact on US bank lending during the early 1990s and the ‘boom’ period of the mid-to-late 1990s. Controlling for indicators of banks’ health and their operating environment, they find evidence supporting the hypotheses that supervisory assessments were tougher in the earlier period and weaker in the latter, and that in turn had an effect on banks’ lending behaviour. However, the economic significance was found to be small.

The interaction between financial stability policies, such as capital regulation, and the real economy raises the further issue that the underlying design of regulatory policy may change bank behaviour in a way that complicates the pursuit of monetary stability. One way in which it might do so is by exacerbating the so-called procyclicality that some suggest is inherent in the financial system.⁽²⁾ For example, it has been argued that the risk assessments embodied in the new Basel II capital accord might induce banks to reduce their capital during good times and increase it in the bad times. By doing so, the behaviour of banks could amplify the economic cycle, thereby complicating the task of monetary policy.⁽³⁾

Interaction between financial stability policy and monetary policy

So far we have described the role of financial stability policy largely in terms of supporting the underlying health of the financial system. In this respect, it tends to support monetary policy in a passive sense. But can financial stability policy also be used proactively? And might there be a combination of policies that can achieve better outcomes from a social welfare perspective?

One of the arguments against using monetary policy proactively to combat the emergence of financial imbalances is that it is a blunt instrument that may have undesirable consequences for some sectors in the economy not directly affected by financial imbalances. By itself, this implies that a more targeted approach to policy, focused on the source of the friction underpinning the financial imbalance, may be preferable. In this vein, financial stability authorities have a number of policy options at their disposal, including (but not limited to) prudential regulation and disclosure policy.⁽⁴⁾

Proactive prudential policy?

As noted above, the tendency of the financial system to act in a procyclical manner and amplify economic cycles has received increased attention in recent times. This procyclicality, it has been argued, is due to a ‘financial accelerator’⁽⁵⁾ caused by information asymmetries and the interaction between credit growth and collateral values. Difficulties in measuring how risk is evolving over time and the fact that market participants have incentives to react to risk in ways that are socially sub-optimal (Borio *et al* (2001) may also contribute to the amplification of economic cycles.⁽⁶⁾

These links between the financial system and the economic cycle raise at least two, closely related, issues in the context of this article. First, can prudential policy be used in a proactive manner to help prevent the build-up of financial imbalances? And second, can prudential policy do more to limit the cost of financial instability than at present.

(1) In reviewing evidence on the influence of bank capital on real activity, BCBS (1999) note that the distribution of capital among banks as well as the aggregate capital ratio is potentially important.

(2) See, in particular, Borio *et al* (2001) for a comprehensive analysis of procyclical behaviour.

(3) Kashyap and Stein (2004) discuss the point in detail.

(4) Discretionary tax policies may also be an option, but a discussion of tax instruments is beyond the scope of this essay. See the findings of the G-10 Contact Group (2002) for more detail.

(5) See Bernanke *et al* (1999).

(6) For a formal model of the procyclicality of the financial system and its attendant welfare costs, see Gai *et al* (2005a). Gai and Vause (2005) present a measure of investors’ risk perceptions over the economic cycle.

There appears to have been little policy research explicitly addressing the first question, with Carmichael and Esho (2003) a recent exception. Overall, they find scant support for using prudential regulation such as portfolio restrictions and adjustments to minimum capital ratios to control the emergence of asset price bubbles.⁽¹⁾ This conclusion is based largely on the practical difficulties of implementation, the potential efficiency costs of overly restrictive regulation and (to the extent banks' judgement is supplanted by that of the regulators) the view that such policies would be contrary to the move towards encouraging internal risk management.

More generally, it would appear that using discretionary changes in prudential policy over the course of an economic cycle to deal with emerging financial instability is beset by similar problems to using monetary policy — namely identification, calibration and timeliness.⁽²⁾ Implementation would also require a high degree of co-operation between policymakers.

In contrast, there seems to be more support for considering adjustments to the prudential framework designed to help limit the impact of financial instability. This may be partly achieved by specifying rules that require changes in prudential variable(s) — eg loan to valuation ratios, capital ratios — over the cycle, though the rule itself may be fixed.⁽³⁾

Goodhart (2003b), for example, proposes a number of ideas for consideration, including linking loan to valuation ratios to the real percentage change in the underlying asset's price, and conditioning capital adequacy requirements on the rate of growth of bank lending relative to its trend. Kaufman (1998) also suggests that raising capital ratios in an environment of rising asset price inflation may help insulate banks from the fallout of a subsequent unwinding. Schwartz (2002) reaches a similar conclusion, arguing in favour of capital requirements that increase along with the amount of new credit backed by the collateral of the asset class that is growing most strongly.⁽⁴⁾ It is also possible that

such policies could help slow the development of financial imbalances, at the margin. As noted, however, Carmichael and Esho (2003) argue that countercyclical adjustments to capital adequacy standards may be costly in terms of economic efficiency.

One example of counter-cyclical prudential policy is the statistical, or 'dynamic', provisioning method pioneered by Spanish regulators, where banks make provisions against expected losses over the term of the loan, rather than actual losses in the event of default.⁽⁵⁾ Arguably, this could help adjust for banks holding relatively low buffers during an economic upswing (when risks are materialising), if they misperceive the extent of the underlying risks (Borio *et al* (2001)).

While there is little historical precedent against which to assess these propositions, anecdotal evidence suggests that they have some merit. Hong Kong introduced maximum limits on loan to valuation ratios in the early 1990s in response to developments in the property market, in addition to recommending that banks restrict the share of property in their loan portfolios to 40%, which was around the average at the time.⁽⁶⁾ Property prices subsequently peaked in 1997, before falling by over 65%, making it difficult to argue that the prudential measures prevented a bubble emerging. But, as Gerlach and Peng (2002) suggest, the response of credit to property prices seems to have been more muted and helped the banking system emerge in relatively good health.⁽⁷⁾

Overall, the proposals to adjust prudential frameworks to help insulate the financial system from the impact of financial imbalances have typically been general in nature. Statistical provisioning aside, there has been little in the way of precise proposals. In part, this may reflect practical constraints to their implementation.

Communication and disclosure

A third alternative available to policymakers is to make more effective use of communication strategies with

(1) They are, however, in favour of stress testing and dynamic provisioning.

(2) Borio *et al* (2001) note other difficulties such as avoidance by banks and the potential for regulatory forbearance.

(3) Borio *et al* (2001) make the distinction between these types of rules and purely discretionary changes in prudential requirements in response to specific developments, which they find support for but argue should only be used in extreme circumstances.

(4) Schwartz (2002) emphasises that shifting portfolio compositions by financial institutions may be the crux of the problem.

(5) See Fernandez de Lis *et al* (2001), Carmichael and Esho (2003) and Borio *et al* (2001) for discussions. We sidestep the potential tension between accounting and financial stability raised by this issue. See Michael (2004) for a discussion of accounting standards and financial stability.

(6) See Yue (2001). The Hong Kong experience is more an example of a discretionary change in prudential policy, rather than a type of evolving 'rules'.

(7) Another possible example is the introduction of restrictions on credit card lending in Thailand in April 2004 (see BIS (2004)).

market participants. The aim would be to attempt to counteract the market failure induced by the types of information asymmetries that could be driving asset prices out of line with fundamental values. Gai and Shin (2003) argue that this is best achieved by improving ‘common knowledge’ of fundamental valuations and the systemic aspect of risk through regular publications such as financial stability reviews. An increasing number of central banks are now publishing stand-alone financial stability reports.

Gai *et al* (2005a) argue the information requirements expected of a central bank in dealing with asset price misalignment and financial imbalances are formidable. Nevertheless, central bank disclosures can guide market expectations, particularly to the extent that public disclosures of fundamental variables driving asset prices are less noisy than the private signals of investors. Central bank disclosure policy may therefore help ease the task of policymakers using interest rates to achieve financial stability ends. But the effectiveness of enhanced communication in influencing outcomes is difficult to gauge, particularly if it is battling against a tide of buoyant sentiment.

A related issue is that enhanced disclosure by private sector participants could help alleviate the burden on other policy instruments by facilitating market discipline on risk-taking by financial institutions. Recent policy initiatives — including pillar three of Basel II and the push towards improved international

accounting standards — have sought to support such an outcome. Enhanced disclosure may also play a role in alleviating the types of information asymmetries, such as monitoring costs implicit in financial intermediation, described by Haldane *et al* (2004).⁽¹⁾ And empirical evidence over a range of countries provides broad support for such policies (Baumann and Nier (2003)).

Concluding remarks

There has been considerable research and discussion on the relationship between monetary policy and financial stability in recent times. While considerable progress has been made on certain aspects, many issues at the heart of the relationship remain unresolved.

Our article suggests two areas where there is scope for further work. First, the early identification of risks to financial stability. If incipient financial imbalances are easier to detect and the reasons for their emergence well understood, then appropriate policy prescriptions can be implemented.

Second, alternative policy tools to complement monetary policy deserve more careful consideration. Relatively little analysis has been undertaken to explore how prudential design and disclosure policy by public authorities can best be implemented in a co-ordinated fashion so as to address issues of systemic stability.

(1) However, as Haldane *et al* (2004) note, identifying the underlying friction and its impact on banks’ behaviour is an area that requires further research.

References

Aikman, D and Vlieghe, G (2004), 'How much does bank capital matter?', *Bank of England Quarterly Bulletin*, Spring, pages 48–58.

Amato, J and Shin, H S (2004), 'Imperfect common knowledge and the information value of asset prices', *mimeo*, London School of Economics.

Angeloni, I, Kashyap, A, Mojon, B and Terlizzese, D (2002), 'Monetary transmission in the euro area: where do we stand?', *ECB Working Paper no. 114*.

Atanasova, C and Wilson, N (2004), 'Disequilibrium in the UK corporate loan market', *Journal of Banking and Finance*, Vol. 28, Issue 3, pages 595–614.

Bank for International Settlements (2004), *Annual Report*, Basel, June.

Basel Committee on Banking Supervision (BCBS) (1999), 'Capital requirements and bank behaviour: the impact of the Basel Accord', *Working Paper no. 1*, April.

Baumann, U and Nier, E (2003), 'Market discipline and financial stability: some empirical evidence', *Bank of England Financial Stability Review*, June, pages 134–41.

Bean, C (2003), 'Asset prices, financial imbalances and monetary policy: are inflation targets enough?', in Richards, A and Robinson, T (eds), *Asset prices and monetary policy*, Reserve Bank of Australia Conference, Sydney, 18–19 August, pages 48–76.

Bell, J and Pain, D (2000), 'Leading indicator models of banking crises — a critical review', *Bank of England Financial Stability Review*, December, pages 113–29.

Berger, A, Kyle, M and Scalise, J (2001), 'Did US bank supervisors get tougher during the credit crunch? Did they get easier during the banking boom? Did it matter to bank lending?', in Mishkin, F (ed), *Prudential supervision: what works and what doesn't*, University of Chicago Press, Chicago.

Bergman, U and Hansen, J (2002), 'Financial instability and monetary policy: the Swedish evidence', *Sveriges Riksbank Working Paper no. 137*.

Bernanke, B and Gertler, M (1999), 'Monetary policy and asset price volatility', *Federal Reserve Bank of Kansas City Economic Review*, Vol. 84, Issue 4, pages 17–51.

Bernanke, B, Gertler, M and Gilchrist, S (1999), 'The financial accelerator in a quantitative business cycle framework', in Taylor, J and Woodford, M (eds), *Handbook of macroeconomics*, Vol. 1C, North Holland, Amsterdam.

Bordo, M and Jeanne, O (2002), 'Monetary policy and asset prices: does 'benign neglect' make sense?', *IMF Working Paper no. 02/225*.

Borio, C, Furfine, C and Lowe, P (2001), 'Procyclicality of the financial system and financial stability: issues and policy options', *BIS Paper no. 1*.

Borio, C and Lowe, P (2002), 'Asset prices, financial stability and monetary stability: exploring the nexus', *BIS Working Paper no. 114*.

- Borio, C and Lowe, P (2004)**, 'Securing sustainable price stability: should credit come back from the wilderness?', *BIS Working Paper no. 157*.
- Borio, C and White, W (2004)**, 'Whither monetary and financial stability? The implications of evolving nature of policy regimes', *BIS Working Paper no. 147*.
- Carmichael, J and Esho, N (2003)**, 'Asset price bubbles and prudential regulation', in Hunter, W, Kaufman, G and Pomerleano, M (eds), *Asset price bubbles: the implications for monetary, regulatory, and international policies*, MIT Press.
- Cecchetti, S, Genberg, H, Lipsky, J and Wadhvani, S (2000)**, 'Asset prices and central bank policy', *Geneva Reports on the World Economy no. 2: International Centre for Monetary and Banking Studies*.
- Cecchetti, S and Kim, J (2003)**, 'Inflation targeting, price-path targeting and output variability', *NBER Working Paper no. 9672*.
- Claessens, S, Klingebiel, D and Laeven, L (2003)**, 'Resolving systemic financial crises: policies and institutions', prepared for World Bank conference on 'Systemic financial distress: containment and resolution', 8–9 October.
- Clews, R (2002)**, 'Asset prices and inflation', *Bank of England Quarterly Bulletin*, Summer, pages 178–85.
- Crockett, A (2003)**, 'Central banking under test?', in 'Monetary stability, financial stability and the business cycle: five views', *BIS Paper no. 18*.
- Drees, B and Pazarbasioglu, C (1998)**, 'The Nordic banking crises: pitfalls in financial liberalisation?', *IMF Occasional Paper no. 161*.
- Driscoll, J (2004)**, 'Does bank lending affect output? Evidence from the US states', *Journal of Monetary Economics*, Vol. 51(3), pages 451–71.
- Dupor, W (2002)**, 'Nominal price versus asset price stabilization', *mimeo*, Wharton School, University of Pennsylvania.
- Ferguson, R (2003)**, 'Should financial stability be an explicit central bank objective?', in 'Monetary stability, financial stability and the business cycle: five views', *BIS Paper no. 18*.
- Fernandez de Lis, S, Martinez Pages, J and Saurina, J (2001)**, 'Credit growth, problem loans and credit risk provisioning Spain', *BIS Paper no. 1*.
- Filardo, A (2004)**, 'Monetary policy and asset price bubbles: calibrating the monetary policy trade-offs', *BIS Working Paper no. 155*.
- G-10 Contact Group on Asset Prices (2002)**, 'Turbulence in asset markets: the role of micro policies', Basel.
- Gai, P, Lester, B and Millard, S (2005a)**, 'Asset prices, financial imbalances and central bank policy', paper presented at the World Congress of the Econometric Society, 22 August 2005, London.
- Gai, P and Shin, H S (2003)**, 'Transparency and financial stability', Bank of England *Financial Stability Review*, December, pages 101–08.
- Gai, P and Vause, N (2005)**, 'Investors' risk appetite', *Bank of England Working Paper no. 283*.

Gerlach, S and Peng, W (2002), 'Bank lending and property prices in Hong Kong', *Hong Kong Monetary Authority Quarterly Bulletin*, August, pages 1–10.

Gertler, M (2003), 'Commentary: whither monetary and financial stability', in *Monetary policy and uncertainty: adapting to a changing economy*, Federal Reserve Bank of Kansas City, Symposium, Jackson Hole, 29–30 August.

Goodfriend, M (2003), 'Interest rate policy should not react directly to asset prices', in Hunter, W, Kaufman, G and Pomerleano, M (eds), *Asset price bubbles: the implications for monetary, regulatory, and international policies*, MIT Press.

Goodhart, C (2003a), 'Comments at panel session at the World Bank conference on 'Systemic financial distress: containment and resolution', 9 October.

Goodhart, C (2003b), 'The historical pattern of economic cycles and their interaction with asset prices and financial regulation', in Hunter, W, Kaufman, G and Pomerleano, M (eds), *Asset price bubbles: the implications for monetary, regulatory, and international policies*, MIT Press.

Greenspan, A (2002), 'Economic volatility', in *Monetary policy and uncertainty: adapting to a changing environment*, Federal Reserve Bank of Kansas City Symposium, Jackson Hole, 29–30 August.

Gruen, D, Plumb, M and Stone, A (2005), 'How should monetary policy respond to asset-price bubbles?', *International Journal of Central Banking*, forthcoming.

Haldane, A, Saporta, V, Hall, S and Tanaka, M (2004), 'Financial stability and macroeconomic models', Bank of England *Financial Stability Review*, June, pages 80–88.

Hall, S (2001), 'Credit channel effects in the monetary transmission mechanism', *Bank of England Quarterly Bulletin*, Winter, pages 442–48.

Hoggarth, G, Reidhill, J and Sinclair, P (2003), 'Resolution of banking crises: a review', Bank of England *Financial Stability Review*, December, pages 109–23.

Hoggarth, G and Saporta, V (2001), 'Costs of banking system instability: some empirical evidence', Bank of England *Financial Stability Review*, June, pages 148–65.

Houben, A, Kakes, J and Schinasi, G (2004), 'Toward a framework for safeguarding financial stability', *IMF Working Paper no. 04/101*.

Huang, Z (2003), 'Evidence of a bank lending channel in the UK', *Journal of Banking and Finance*, Vol. 27, Issue 3, pages 491–510.

Kashyap, A and Stein, J (2004), 'Cyclical implications of the Basel II capital standards', *Economic Perspectives*, Federal Reserve Bank of Chicago, Quarter One, pages 18–31.

Kaufman, G G (1998), 'Central banks, asset bubbles, and financial stability', *Federal Reserve Bank of Chicago Working Paper no. 98-12*.

Kent, C and Lowe, P (1997), 'Asset price bubbles and monetary policy', *Reserve Bank of Australia Research Discussion Paper no. 9709*.

Lindgren, C, Garcia, G and Saal, M (1996), *Bank soundness and macroeconomic policy*, IMF, Washington.

- Michael, I (2004)**, 'Accounting and financial stability', Bank of England *Financial Stability Review*, June, pages 118–28.
- Okina, K, Shirakawa, M and Shiratsuka, S (2000)**, 'Asset price bubbles and monetary policy: Japan's experience in the late 1980s and the lessons', *Institute for Monetary and Economic Studies, Discussion Paper 2000-E-12*, Bank of Japan.
- Peek, J and Rosengren, E (1995)**, 'Bank regulation and the credit crunch', *Journal of Banking and Finance*, Vol. 19, Issues 3–4, pages 679–92.
- Posen, A (2003)**, 'It takes more than a bubble to become Japan', in Richards, A and Robinson, T (eds), *Asset prices and monetary policy*, Reserve Bank of Australia Conference, Sydney, 18–19 August, pages 203–49.
- Schwartz, A (2002)**, 'Asset price inflation and monetary policy', *NBER Working Paper no. 9321*.
- Stock, J and Watson, M (2003)**, 'Forecasting output and inflation: the role of asset prices', *Journal of Economic Literature*, Vol. 41, Issue 3, pages 788–829.
- Svensson, L (2003)**, 'Optimal policy with low-probability extreme events', *NBER Working Paper no. 10196*.
- Tucker, P (2004)**, 'Managing the central bank's balance sheet — where monetary policy meets financial stability', speech to mark the 15th anniversary of Lombard Street Research, 28 July.
- Yue, E (2001)**, 'Marrying the micro- and macro-prudential dimensions of financial stability — the Hong Kong experience', *BIS Paper no. 1*.