

Discussion

1. Peter Westaway

Thank you for inviting me here to Sydney and thank you for giving me the opportunity to discuss this really interesting paper by Hyun Shin.

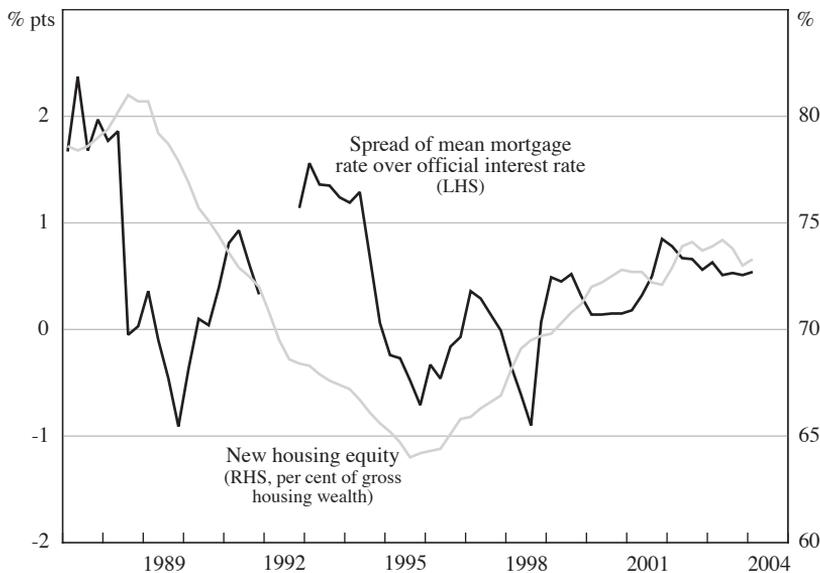
This paper has a very different tone to those of the rest of this conference. Most papers so far have been concerned with explaining the ‘Great Stability’; the observation that the volatility of inflation and output growth has declined markedly in recent years in most developed economies. Hyun Shin’s paper instead suggests that there may be forces which are tending to make business cycles more unstable.

Of course, the notion that asset prices interact with balance sheets to amplify business cycle responses is a familiar one (see, for example, the financial accelerator model of Bernanke, Gertler and Gilchrist 1999). The particular points that Hyun draws our attention to are that, in the context of household balance sheets, it may be dangerous to rely on housing collateral at the level of the aggregate economy; and that to the extent that housing collateral works via the bank capital channel, the increasing tendency for banks to mark their assets to market may accentuate these effects. And this may lead to significant non-linearities if it is more costly for households to unwind their debt when house prices fall, in particular if banks run up against Basel-related regulatory constraints on their capital requirements. Hyun also draws attention to the dangers for monetary policy-makers of ignoring these potential effects; a situation he characterises as one where policy-makers place too much focus on the IS curve, while ignoring the LM curve.

The mechanisms which Hyun describes are a particular type of credit channel effect. What do we mean by the credit channel? In its simplest terms, credit channel effects arise when the usual Modigliani-Miller assumptions are violated. So lending and investment decisions will be affected by the balance sheets of firms or households.

Credit channel effects have some important implications for the way that we should think about monetary policy. First, it means that the risk-free short-term interest rate is no longer a sufficient statistic for the effects of monetary policy – we also need to worry about the external finance premium. Second, it means that asset prices are no longer a shadow price reflecting underlying fundamentals – instead, asset prices will contain independent information and their movements will have effects on the real economy.

It is useful to link these abstract concepts with their empirical counterparts in the real world. So focusing on the behaviour of households, and here for the sake of my own convenience I unashamedly rely on the data for the UK that I could most easily lay my hands on, it is interesting to note in Figure 1 that there is a reasonably strong relationship between the external finance premium for households (measured by the spread of the mean mortgage rate over the official interest rate) and a measure of their net worth, here proxied by households’ new housing equity.

Figure 1: Household External Finance Premium and Net Worth

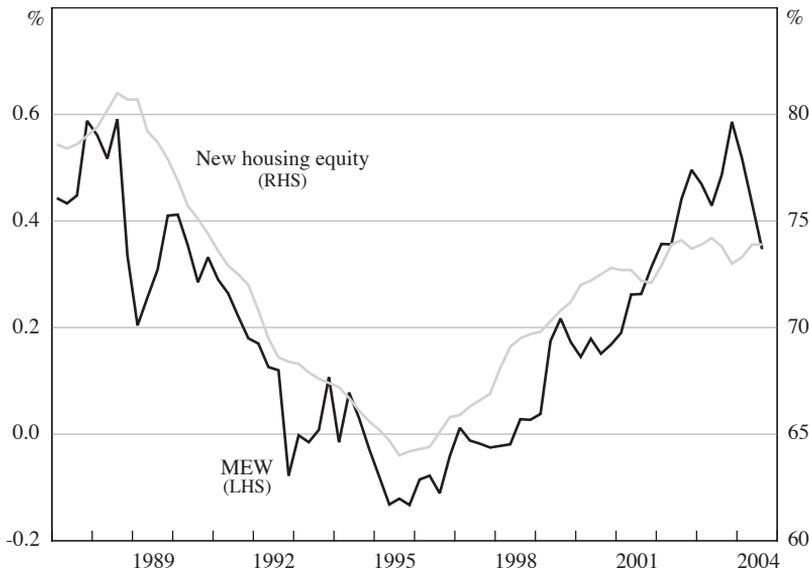
Sources: Bank of England; Council of Mortgage Lenders (CML) and the Office of the Deputy Prime Minister (ODPM), 'Survey of Mortgage Lenders'

And for households, one of the key mechanisms by which shocks to their net worth are translated into effective demand is via their ability to take out credit through mortgage equity withdrawal (MEW). Figure 2 illustrates that there has been a close correspondence between these series over the past two decades, although MEW had had a tendency to grow even more quickly during the recent episode of house price strength.

Now one question which Hyun raises in his paper is whether it is appropriate for borrowing to be collateralised by housing wealth when, from the perspective of the economy as a whole, housing does not really constitute net wealth. Or, as Hyun puts it much more graphically, when changes in housing wealth brought about by house price changes represent 'changes inside the Edgeworth box', rather than constituting an expansion of the Edgeworth box itself.

First, let me consider this question from the perspective of a macroeconomist. There is a longstanding debate about whether housing wealth should be included as part of a household's overall net wealth in the context of reduced form consumption functions that are typically included in macroeconomic models. The purist's view is that changes in aggregate housing wealth should not affect consumption since these increases can not be realised in aggregate (although the fact that one country's householders can sell their houses to foreigners represents a caveat to this view, as does the fact that older householders who do not have a perfect bequest motive may trade down to consume their housing equity at the expense of lower future consumption for their descendants). As an aside, I should mention that the Bank of England's new macroeconomic quarterly model (BEQM) does not include such a

Figure 2: Household Net Worth and Mortgage Equity Withdrawal
Per cent of gross housing wealth



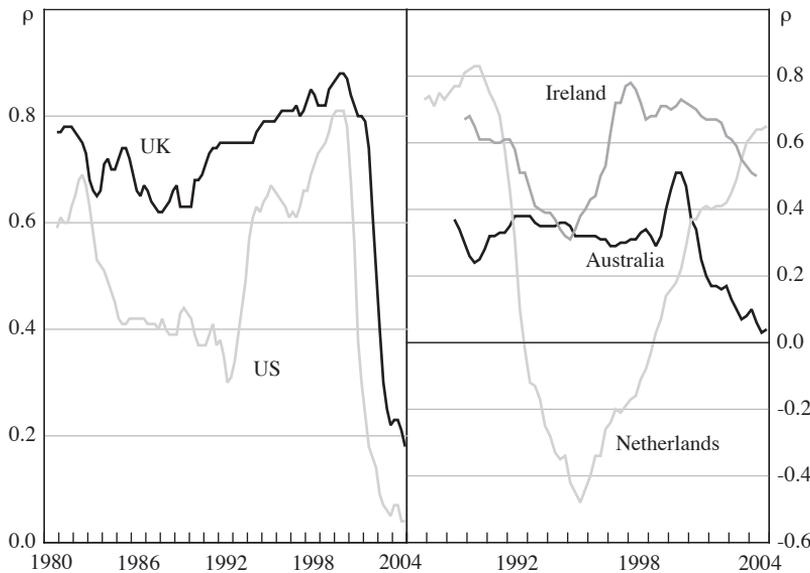
Sources: Bank of England; CML and ODPM, 'Survey of Mortgage Lenders'

direct wealth effect in its core dynamics, though house price effects are included in the non-core dynamics, to proxy the very type of collateral-based housing wealth effects articulated in Hyun's paper (see Harrison *et al* 2005).

Of course, because the channel by which housing wealth impinges on consumer spending is not straightforward, the strength of the bilateral correlation between them will depend on the shocks that are driving both. This is illustrated clearly by Figure 3, which shows how the apparently strong relationship between housing wealth and consumption in the UK through the 1980s and 1990s has since broken down completely. This suggests that a common set of shocks may originally have been driving both series, for example, relating to the strength of expected income growth. But more recently, shocks specific to the housing market may have caused the behaviour of the two to diverge. And a similar pattern has been present in the US. Interestingly, the pattern is largely absent in the countries shown in the right-hand panel, which include Australia.

Now let me turn to the financial stability question raised by Hyun, namely, whether housing wealth is a valid form of collateral. As he notes, it is certainly the case that housing wealth represents net worth at the level of the individual borrower, since for him it represents a claim on a future stream of housing services which he is able to exchange for goods in order to meet his liabilities. But for the system as a whole, householders can not all simultaneously convert their future housing services into goods. So if widespread attempts were made to realise this collateral and extract the housing equity, house prices would fall. This is the systemic risk that Hyun is highlighting in his model.

Figure 3: Real House Price Inflation and Consumption Growth
Rolling 10-year correlations



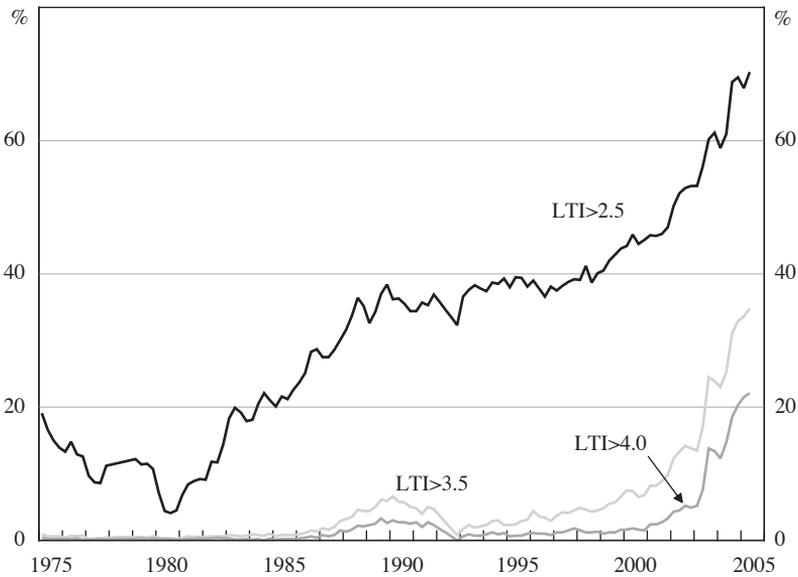
Source: author's calculations

The question I want to raise is whether equity-based collateral is necessarily any safer in a systemic sense. Equities, of course, represent a claim on a future flow of dividend income, which sounds as if it might be easier to convert into a medium that can be used to settle debt payments. But even so, if there were system-wide attempts to liquidate this equity-based wealth, it would also be the case that equity prices would fall and the value of the collateral would be compromised; this is exactly what happens to equity prices in models where demographic shifts in the size of the cohort of working-age people cause equity prices to fall.

So I remain to be convinced that the fact that housing does not represent net wealth in an aggregate sense necessarily makes it more vulnerable than other types of collateral. Ultimately I would like to see this proposition tested within a calibrated general equilibrium model of asset prices.

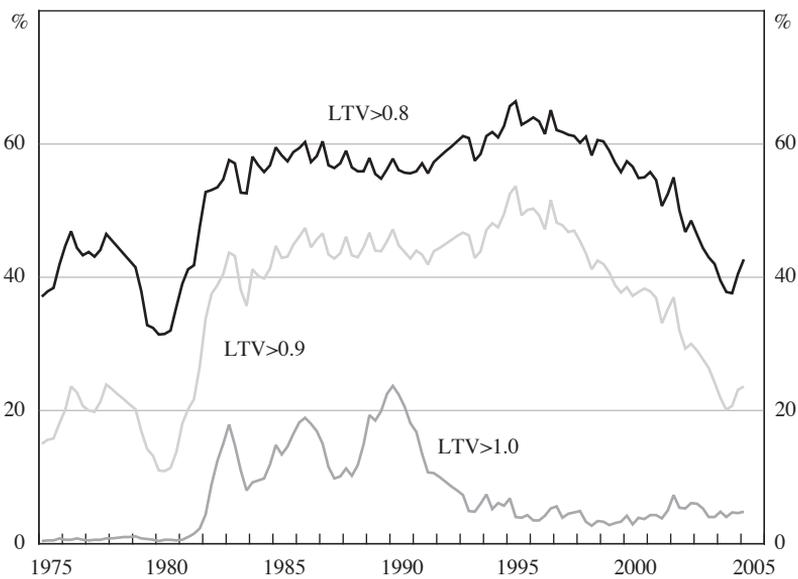
Even so, the logic of Hyun's argument is that it may be the case that lenders are over-reliant on this form of housing collateral, which may cause them to overestimate borrowers' ability to repay their debts. Again, to evaluate this proposition in the context of recent experience in the UK, Figure 4 shows that it would certainly seem that loan-to-income (LTI) ratios on new mortgages have increased markedly, as might be predicted by Hyun's model. But the message in Figure 5 from loan-to-valuation (LTV) ratios on new mortgages is much more encouraging and less alarming than Hyun's model might suggest, showing that only 5 per cent of new loans currently have LTV ratios greater than unity compared to over 20 per cent in 1990.

Figure 4: Loan-to-income Ratios of New Mortgages
Share of number of new mortgages



Source: CML and ODPM, 'Survey of Mortgage Lenders'

Figure 5: Loan-to-value Ratios of New Mortgages
Share of number of new mortgages



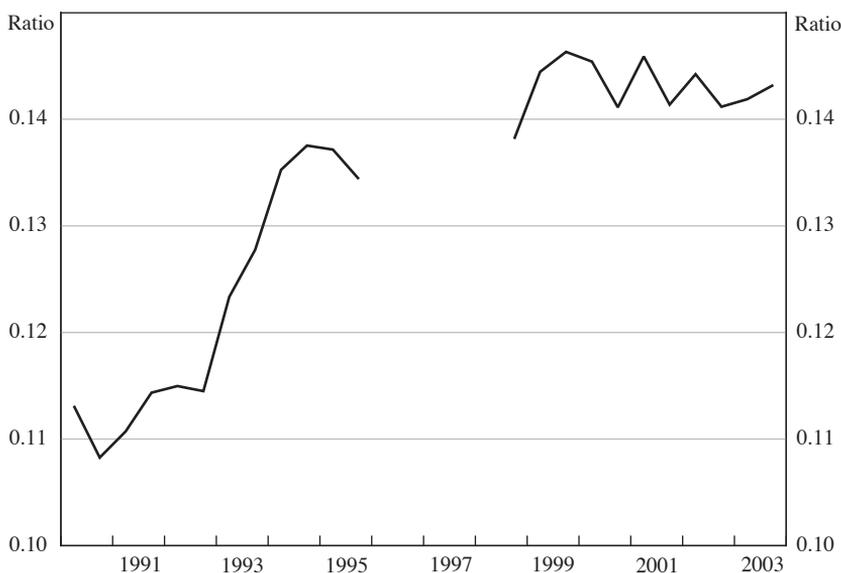
Source: CML and ODPM, 'Survey of Mortgage Lenders'

So how important do we think the ‘bank capital channel’ is? This is the particular form of credit channel emphasised by Hyun, whereby the effect of asset price changes on banks’ collateral impinges on their capacity to lend because of imperfections in the market for bank equity. Friedman once famously remarked that the bank capital channel was a ‘macroeconomic irrelevance and a pedagogical inconvenience’. But more recent work, summarised nicely by Van den Heuvel (2002), suggests that this channel may be important. The particular aspect that Hyun emphasises is the trend towards new accounting conventions which might cause banks to mark their assets to market more quickly than previously. In other work Hyun has done, he has drawn attention to the fact that this may inject artificial volatility into banks’ decision-making, thus leading to inefficient lending behaviour. In this paper, he shows how it implies that the usual amplification effect of the bank credit channel is likely to be speeded up (though it is difficult in Hyun’s stylised model to gauge how large these effects might be, and in practice his model may exaggerate the effects if banks are able to hedge their interest rate risk to some extent). He also suggests that significant non-linearities may be introduced in the downward phase of the cycle if falling bank capital interacts with regulatory constraints implied by the Basel II regulations. On this latter point, Figure 6 suggests that the risk-weighted capital asset ratio for UK banks, at least, is still well above the 8 per cent Basel recommendation (though, of course, individual banks may be affected by this constraint).

Finally, let me comment on the significance for monetary policy of the mechanisms identified by Hyun.

First, as Hyun correctly notes, it is important to be aware that the fact that credit channels may amplify the business cycle is not, of itself, a problem for monetary

Figure 6: Risk-weighted Capital Asset Ratio



Source: Financial Services Authority

policy, because the impact of a given change in interest rates is correspondingly greater in a world with higher leverage. The problem arises, of course, if the scale of these effects is uncertain and subject to non-linearities, and central banks need to be wary of this.

The second point Hyun raises, and one I want to take issue with, is the idea that central banks manipulate the yield curve by means of their communication policy. It is certainly true that there are times when the whole yield curve seems to move in the face of news which economic theory would suggest should only affect the front end of the forward rate curve. But in general, the aim of monetary policy is to affect real interest rates at cyclical frequencies, recognising the fact that neutral real interest rates are not under the control of central banks.

The final point Hyun makes is that policy-makers may be led astray if they continue to focus on an IS-curve view of the world which ignores shifts in the LM curve caused by credit cycle effects. My response to this is that an IS-curve approach is appropriate if modellers are capable of capturing the causes and effects of shifts in the external finance premium, and modify the effect of the interest rate in the model's implicit IS curve accordingly.

Let me conclude by reiterating that I found this a really interesting paper and any work that improves our understanding of how credit channels impact on the business cycle is very important in the context of both monetary and financial stability.

References

- Bernanke BS, M Gertler and S Gilchrist (1999), 'The financial accelerator in a quantitative business cycle framework', in JB Taylor and M Woodford (eds), *Handbook of macroeconomics*, Volume 1C, Elsevier Science Publishers, Amsterdam, pp 1341–1393.
- Harrison R, K Nikolov, M Quinn, G Ramsay, A Scott and R Thomas (2005), *The Bank of England quarterly model*, Bank of England, London.
- Van den Heuvel SJ (2002), 'Does bank capital matter for monetary transmission?', Federal Reserve Bank of New York *Economic Policy Review*, 8(1), pp 259–265.

2. General Discussion

The issue of whether houses should be viewed as part of net wealth was widely debated. One participant sought to distinguish between an increase in house prices stemming from pure price effects – in which case they conceded that there would be no increase in net worth – and an increase in house prices stemming from reduced interest rates, in which case they felt that savings on interest payments could be used to increase spending on other goods (and hence the price increase viewed as an increment to net wealth). Similarly, another participant noted that the role of foreigners in some countries' housing markets is increasing, raising the possibility that increased housing wealth can be realised by selling to non-residents. It was

also argued that higher house prices can bring forward consumption spending if consumers are not fully Ricardian, particularly with the growing prevalence of reverse mortgages. In reply to this, the author noted that the consumption of housing services is not fungible with other forms of consumption, making it very difficult for the household sector to reallocate their budget away from housing and towards other goods in the event of a rise in house prices. Furthermore, he sought to distinguish the role that equities play in net worth from that played by housing – following the comments of Peter Westaway – by saying that equities are, in theory, backed by a consistent flow of dividend income that can be liquidated.

The discussion then moved onto the financial system implications of the concerns raised by the author. One participant noted that this paper stands in contrast to some others presented at the conference in warning of the possibility of increased, not decreased, volatility associated with the financial system working to amplify shocks, often in an asymmetric fashion. It was suggested that this difference might stem from a different time horizon, with the current paper assessing volatility over a lower frequency than that addressed in earlier papers. Following these comments, other participants suggested that there would appear to be a role for regulation of the banking system, and not just of individual banks, if the concerns raised by the author are valid. Hyun Shin agreed with both these comments, but noted that it is very difficult for prudential supervision to address these issues, given that individual banks may have sound balance sheets in isolation (just not in aggregate), and that prudential supervision is largely the domain of lawyers, rather than economists. For this reason, he advocated for central banks to take a greater role in raising the debate on these issues.

This provoked a comment from one participant about the possibility of increasing moral hazard if regulation of the credit markets is increased. This participant argued that the increase in leverage seen in many countries during the 1990s could be an attempt by households to retain the same level of risk as previously in the face of declining output volatility, and suggested that further efforts to reduce risk could encourage households to again rebalance their risk profile. The author agreed with this, referring to it as the ‘paradox of stability’, and added that it may be one source of the ‘conundrum’ of declining long-term interest rates of late.

Finally, a few participants questioned the sensitivity of the author’s results to institutional settings. For example, a participant wondered whether the results depend on the default framework by noting that in a country such as Australia, it is less attractive for borrowers in distress to ‘walk away from’ their properties than, say, in the US. In this case, it is less likely that there would be a significant transfer of property on to banks’ balance sheets during periods of widespread financial distress. Similarly, another participant questioned what impact the practice of banks selling mortgages overseas would have on the paper’s results, while someone else asked whether it mattered whether it is mortgages or houses that are marked to market. The author responded by saying that the results are invariant to this latter point, but agreed that the former points would be important considerations for a more nuanced analysis.