

# Discussion

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## 1. Prasanna Gai

Kuttner and Shim take on a very ambitious and worthwhile task, for which they deserve to be congratulated. The questions that they pose, and the answers they seek, are central to the design of macroprudential policy in the post-crisis era. Their paper brings together a very large dataset, spanning more than 50 economies over three decades. And it carefully catalogues all the policy measures that might be deemed ‘macroprudential’ over that period – a major undertaking in itself. These policy measures fall into three groups: non-interest rate monetary policy measures, prudential tools and fiscal actions. Using an empirical variant of Poterba’s (1984) user cost model, Kuttner and Shim uncover statistically significant effects on housing prices (and credit growth) when the authorities wield these tools.

Before taking too much comfort in the efficacy of macroprudential measures from such results, it is important to step back and ask what the aim of macroprudential policy really is. Gai, Haldane and Kapadia (2011) argue that macroprudential policy is about the *taming of systemic risk*, namely the externality that financial system participants, typically banks, impose on each other when undertaking their actions. Viewed in this light, we would want to decompose asset price movements into those due to (a) ‘fundamentals’; (b) ‘systemic’ externalities; and (c) other factors. Indeed, this amounts to an elaboration of the decomposition that Haibin Zhu referred to in his earlier discussant remarks. A macroprudential tool is, thus, a form of Pigovian tax whose efficacy must be judged on how well it addresses the systemic externality and *not* on how well it affects housing prices *per se*.

The recent academic literature has attempted to pinpoint the externalities critical to systemic risk and guide our thinking on the role of housing markets in financial crises. The academic literature has gone beyond modelling housing prices as the discounted stream of housing services, and I would urge the authors to reflect on how these newer ideas may be incorporated into their work. Three contributions deserve particular mention. Allen and Carletti (2011), building on earlier work by Allen and Gale (2000), emphasise the role of agency considerations in driving the link between housing prices and systemic risk. They distinguish between people who borrow with their own money and property speculators with limited liability who are able to default without penalty. Burnside, Eichenbaum and Rebelo (2011) lay stress on the heterogeneity of expectations about fundamentals. In their model, some agents are optimistic about the future while others are less so. When these agents meet in a social setting, the stage is set for some of them to change their beliefs – network and infection-type arguments drive housing price dynamics. Finally, Brunnermeier and Pedersen (2009) and Plantin and Shin (2011) advance arguments in which the ‘weight of money’ in the housing market generates balance sheet interdependencies – investors piling into the housing market can change collateral valuations and hence the funding costs of others.

In addition to knowing what the systemic externalities are, the interaction of these externalities with the state of the financial system also governs the behaviour of housing price dynamics. Warnock and Warnock (this volume) remind us that different countries have very different abilities to transform assets, and the effects of financial innovation are important to take into account. An instance where such an interaction is especially germane is the connection between the so-called 'search for yield' and 'shadow banking' activity. In the years leading up to the crisis, central bankers warned against the growing 'search for yield' mentality of financial sector participants, many of whom took advantage of the 'originate and distribute' banking model to generate substantial systemic risk via housing markets.

As it stands, the Kuttner and Shim analysis is silent about such considerations – they rely on Woodford's (2010) notion of an 'intermediation shock'. Housing booms and busts, in this world, are a consequence of positive and negative shocks to intermediation that are transmitted through spreads. This is too simplistic in my view. It is possible to extend the Poterba framework to provide a more explicit treatment of the relationship between financial innovation and systemic risk externalities, albeit in an ad hoc manner. Such an approach would, nevertheless, enrich the role of financial intermediation in the analysis and I recommend that the authors extend their work in this direction.

It also seems worth emphasising that while housing is a systemically important sector, it is not the only one. The Texan banking crisis of the 1980s was, for instance, triggered by problems in the petroleum sector; railroads assumed centre stage during the US banking problems of the 1890s. Indeed, systemic crises seem to have their origins in a relatively small set of real sectors in which banking sector exposures have been particularly concentrated. Ellis, Kulish and Wallace (this volume) makes a start at identifying some of the characteristics of these sectors and their industrial organisation that deserve careful study. Key characteristics include high fixed costs, low marginal costs of production, intense competition, high leverage and uncertain cash flows. Although such issues are beyond the remit of Kuttner and Shim's analysis, it points to how broad macroprudential policy can become and opens up the question of whether the central bank should (and could) be tasked with this role.

Finally, the authors may wish to reflect upon whether macroprudential policy may, of itself, have supported property market imbalances during the sample period. McKinnon and Pill (1999) remind us how the moral hazard that was implicit in the fixed exchange rate regimes of economies like Thailand (and thus the macroprudential policies required to support the peg) created asset price bubbles in the lead-up to the Asian financial crisis. And policy may have asymmetric effects that need to be characterised. For example, expansionary policy settings can be effective in stimulating credit and growth in the property sector. But once oversupply conditions are reached, it is no longer clear whether policy (monetary or macroprudential) will be effective. Typically, during such periods, agency risk rears its ugly head and distorted incentives, in which management gets a larger share of the benefits but does not share proportionately in the losses, can drive excessive credit growth, despite the best efforts of the authorities.

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## 2. General Discussion

The effect of expectations on the model's results was the focus of initial discussion. One participant suggested the community's expectation that central banks do not to respond to asset prices could explain the modest effect of short-term interest rate changes on housing prices. It was noted that the low interest rate sensitivity of housing prices was evident in both the paper's model and in vector autoregressions that examine the impact of exogenous interest rate shocks. *A priori* the participant's expectation was that monetary policy would have a larger effect on housing prices under flexible inflation-targeting regimes. In response, co-author Kenneth Kuttner said the relative effect of monetary policy on housing prices under different monetary policy regimes could well be different. As an example, Prof Kuttner said that if a central bank was changing interest rates to target a certain level of asset prices, there would be a lot of variation in the policy rate and no movement in property prices yielding a regression coefficient of zero.

Another participant suggested that endogeneity was a possible explanation for the modest estimated effect of interest rates on property prices. They said in a world where central banks react to property price increases, interest rates are likely to be high when prices are growing fast due to a common third factor. And while the narrative and rhetoric of the Federal Reserve goes against the assumption that central banks react to property prices, in many economies this is not the case, and accordingly, the endogeneity problem would lead to estimates biased against finding monetary policy effectiveness. In responding, Prof Kuttner agreed and reiterated that the

paper's model was not trying to identify the effects of exogenous monetary policy shocks, much less exogenous changes in macroprudential policies.

Discussion of the interest rate sensitivity of housing prices prompted another participant to draw attention to the role of credit market liberalisation. They suggested that pricing becomes more important in the control of credit when moving to a more liberalised credit regime. As a result, they said not controlling for changes in credit conditions will result in a large downward bias on the interest rate effect.

More generally, another participant queried the policy applicability of conclusions drawn from linear models. The Australian experience in 2003 was proffered as an example. It was noted that around this time, the Reserve Bank of Australia had a policy of talking to the general community about the risks in the housing market, with the Governor giving many speeches about the unsustainability of current trends and talking about the risks in the housing market. It was suggested that this was part of a general strategy of bringing the community's attention to risks in the housing market. Then, at the end of 2003, the RBA increased interest rates twice for a cumulative increase of 50 basis points. The participant said, in retrospect, these increases had a very material effect on the housing market because the community understood the central bank's concerns and recognised that the Bank was prepared to raise interest rates to alleviate them. Against this background, the participant called for econometric work to be richer to capture these types of non-linear reactions to monetary policy, or if that is impossible, for research to be supplemented with case studies. In response, co-author Ilhyock Shim accepted that an individual central bank is not likely to use a large cross-country regression to inform their decisions and noted that adding an event study to the current paper would be a useful extension.

In the same vein as the previous comment, another participant noted that the estimated elasticities from the paper's model were conditional on central banks' communication strategies. They said that if central banks started to talk more about housing prices, larger elasticities with respect to the effect of monetary policy on housing prices may be estimated. To this end, it was suggested that one way to strengthen the paper would be to examine the stability of estimated coefficients over time. A further issue raised by the discussant was the generally insignificant effect fiscal policies were estimated to have on housing prices and credit. The participant was surprised by this result given their prior that some fiscal measures – such as the tax deductibility of interest rate payments – should have a large effect on housing prices and credit.

On the effect of macroprudential policy tools, one participant was puzzled by the different effects of loan-to-value (LTV) ratios and debt-service-to-income (DSTI) ratios on housing prices and credit, with the former significantly affecting housing *prices* and the latter significantly affecting housing *credit*. They noted that these macroprudential tools are mutually reinforcing in their effect on credit and thus if one of these tools was tightened then the level of housing prices should decline. Both authors acknowledged that this was puzzling and said they had tried to reconcile this puzzle. Prof Kuttner suggested one possible reason for the differing effects was that LTVs are tied explicitly to prices, and therefore, if prices are rising faster than appraisals, LTVs can become an important binding constraint on housing price growth. He also said it should be borne in mind that the DSTI ratio does affect credit and, in an extra link not reported in the paper, there is very strong Granger causality from credit to prices.

## DISCUSSION

Another participant inquired about the incidence and effectiveness of excluding non-locals from purchasing homes as a policy tool for taming housing prices. The use of this instrument in China was said to be very effective, yet controversial. Dr Shim noted that such exclusions were in their database as policy instruments and there was probably one other country aside from China implementing these measures. Nonetheless, it was an uncommon occurrence and, as such, it was difficult to isolate the effectiveness of this policy tool.