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Speech

Finding the Right Tool for Dealing with Asset Price Booms

Speech given by

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“When the only tool you have is a hammer, it is tempting to treat everything as if it were a nail.” - Abraham Maslow (1962) from Mark Twain

I am mightily pleased to be the MPC speaker at this year’s MPR conference, and to make a presentation to so many market participants. Too late for the years of the Great Moderation, I have joined a central bank just in time for the recovery (we hope and expect) from the worst financial crisis in seventy years. Unsurprisingly, and not unjustifiably, monetary policy as practiced in the run-up to the crisis has come under critical scrutiny. Among the many factors leading to the crisis, too easy or too narrowly focussed monetary policy is now widely cited as a contributing factor. This belief leads naturally to adding consideration, if not targeting, of asset price booms when setting monetary policy.

I agree that the need to do something to pre-empt boom-bust credit cycles is now self-evident on its merits. I agree that central banks must share the responsibility for making that attempt to stabilize the economy. I oppose, however, taking asset prices directly into account when setting monetary policy (as opposed to noting their effect on forecasts of consumption, investment, et al). I oppose so doing for a very simple reason: trying to manage asset prices, let alone pop bubbles, with monetary policy instruments will not work.

This is now an embattled position to take – many central bankers who previously were sceptical of such measures have changed their views to support “leaning against the wind,” and the sophisticated commentariat has almost universally lent its support.² Yet, just because a bad situation calls for a solution does not mean there has to be a way to fix it, at least not with what instruments are on hand. Wishing does not make it so. Furthermore, just because something is so widely believed as to be taken for granted, does not make it true. The belief

¹ This work benefitted from earlier presentations at the Austrian National Bank’s Macroeconomics Conference in May 2009 and in a workshop at Bruegel in October 2009. I am grateful to participants in those events, particularly Jean Pisani-Ferry and Jakob von Weizsaecker, and to Kate Barker, Charlie Bean, Spencer Dale, Paul Fisher, Neil Meads, Dave Ramsden, Paul Tucker, and Andrew Wardlow for insightful comments and suggestions. Neil Meads and Tomas Hellebrandt provided excellent research assistance. The views expressed are solely my own, and not those of the Bank of England, the MPC, or any of its staff.

² See IMF (2009), Dale (2009), Kohn (2008), Munchau (2009), Papdemos (2009), Trichet (2009), White (2009), and Wolf (2009). Earlier calls for leaning against the wind included Bordo and Jeanne (2002), Borio and Lowe (2002), Borio and White (2003), Cecchetti, et al (2002), Issing (2003), Roubini (2006), and White (2006).

that monetary conditions are responsible for asset price booms and bubbles, no matter how intuitively obvious it appears to many observers, is not supported by the data.

We would be better off if we could prevent asset price booms and busts, and it is clear that monetary policy as currently practiced is not sufficient to do so. But, if as I will argue, adjusting monetary policy to take asset prices into account will not do it, what will? Several approaches combined are probably necessary. The macroprudential proposals coming out of the recent discussion paper of my colleagues in financial stability at the Bank of England (2009), which go beyond the proposals to date from the Financial Stability Board focusing on cyclically-adjusted capital requirements for banks, is a strong contribution in this effort.³ As we have seen in the experience of countries whose banks were well supervised but still suffered in the crisis, however, it seems to me that even if better designed, concentrating our efforts on just banks is unlikely to be enough. I propose that, as a complementary policy, we also add to our toolkit some changes to real estate taxes and regulation, providing a counter-cyclical element to the structures already in place in that area as well.

I use the term ‘toolkit’ quite deliberately. When it comes to asset price booms, we should think of ourselves as homeowners confronted by a leaky showerhead. This will be far more practically rewarding than talking about unrealistic abstract ideas of ‘liquidity.’ If I have just a hammer in my toolbox, and I take that to the showerhead, I am only going to make things worse, if I hit it hard enough to have any impact at all on the water flow. That is what a monetary policy tightening would do: either nothing, or hit the system so hard that it breaks down. I need a different tool which is right for the job. If the leak is in a small spot, it might be duct tape; if the leak comes from the head being loose, I might need a wrench. But I will get a lot further going to get the right tools rather than insisting on using the hammer that I have at hand.

Monetary Policy is Not to Blame for the Bubbles – The primary thrust of criticism, after the bubble, of inflation targeting as a monetary regime has been of its supposed too narrow focus. By supposedly requiring policymakers to only care about inflation, inflation targeting induced them to ignore the booms arising. Otherwise, it is asserted, policymakers could have looked at a broader set of indicators (including growth of monetary aggregates) and would have reacted to potentially harmful developments that did not show up in inflation forecasts.

³ See Bank of England (2009), Borio (2009), Financial Services Authority (2009), Schinasi (2009), Tucker (2009), and Vinals (2009) for some of the proposals, and related discussions of bank supervision and regulation.

The more sophisticated versions of this view claim that asset price movements give information that is independent of inflation indicators or usual Taylor rule concerns, and that the information should be acted upon by central banks, despite the short-term output costs. All of these criticisms come down to saying that monetary policy should have been tightened more than inflation targeting central banks did in the run-up to the boom, and that monetary policy should be more ready to tighten policy in response to potential new bubbles than inflation targeting would indicate doing in the aftermath.

What is ironic if not misguided about this line of attack is that, right up until the global financial crisis, the criticism of inflation targeting was that inflation targeting paid too little attention to output fluctuations. The criticism then essentially was that inflation targeting was too tight a policy versus what was desirable. This, for example, is one of the key reasons why inflation targeting was never formally proposed let alone adopted by the Federal Reserve in the US – inflation targeting was seen by some, including in Congress, as contradicting the Fed's dual mandate to worry about both output volatility and price stability. I do not believe that criticism was ever valid, but it points out how much of a shift has taken place for inflation targeting to be criticized now on the other side as too concerned with short-term output losses.

Just because inflation targeting is attacked from both sides does not mean it is the right monetary policy framework. One side could be correct, and moderation is not always a sign of optimality. Still, if one thinks about this situation empirically, it is difficult to see how inflation targeting's focus on medium-term (two- to three-years ahead) inflation is the source of the problem. The central bank that did not have formal inflation targeting and was mandated to care about output as well as inflation (the Fed) had a boom. The central bank that had a monetary pillar to go with inflation targeting and was mandated to care about that as well as inflation (the ECB) had booms in a number of its currency zone member states. The central bank that had the purest form of inflation targeting (the Bank of England) had a boom, too.

If monetary policy instruments were to dependably manage asset prices, three things would have to be true⁴:

1. Central banks could identify booms or bubbles far enough in advance;
2. Central banks have an instrument – interest rates and/or narrow money growth – that dependably affects the relevant asset prices; and
3. The benefit of central banks pre-empting bubbles outweighs the cost of deviating from price and output stabilization.

Point 1, identifying bubbles or at least booms that could lead to bubbles is potentially doable. Some, such as Blanchard (2000) or Bordo and Jeanne (2002), have long argued that discerning unsustainable asset price levels or trends is no more difficult than other calls central banks have to make with respect to potential output or exchange rates. While I might beg to differ on this a little, and I certainly do not want to publicly evaluate any particular asset market's sustainability (sorry), I agree that this is not a sufficient objection.

Point 3, the cost-benefit assessment of whether or not pre-emption of potential bubbles is on net worthwhile remains quite difficult to judge. The initial arguments on this score by Bernanke and Gertler (2001) that the costs of pre-emption would outweigh the benefits, based on the Japanese experience of the 1980s and early 1990s, were highly persuasive. We still wait, however, for an equally persuasive analysis of the net benefits or costs of so doing in light of our recent experience – and that will depend upon how the recovery goes. It is safe to say that in light of the enormous costs of the current crisis, the case for pre-emption is much stronger than it once was, and gets stronger still the more persistent the recession.

The issue I want to focus upon today, however, is # 2. Do central banks have an instrument that dependably affects asset price trends or levels? The short answer is no. There is no dependable relationship between central bank's instrument interest rates, real or nominal, with either housing price growth or equity market appreciation for a wide variety of countries. Figure 1 presents annual housing price inflation for the OECD economies (subject to data availability) for 2004-07 and real policy interest rates, and one finds a cloud, meaning no correlation between the two.⁵ To drive home the point, the UK observations are

⁴ Bean (2003, 2009), Kohn (2006, 2009), and Posen (2003, 2006) offer this approach to the problem. See also Mishkin (2008).

⁵ Switching to multi-year averages or including 2003 or 2008 observations makes no difference to this picture.

designated by red, and, despite the Bank of England setting among the highest policy interest rates over the period in real-terms, the UK obviously had a housing price boom.

The same lack of pattern applies if one considers equity price appreciation, as done in figure 2. Differing monetary policy goals are presumably proxied by the differences in the instrument interest rates, given how little difference there was in inflation forecasts over this period for the countries considered. So the presence or absence of appreciably different monetary goals during the pre-crisis period made no difference to the emergence of booms (or at least to asset price appreciation).

As shown in figures 3 and 4, there is still no actionable connection if one turns to excess broad money growth (M4 in the UK, analogous aggregates elsewhere).⁶ A relationship does emerge with housing prices, though there is still none between broad money and equity prices. This indicates that housing prices behave differently than equity prices, a point I will return to below. The utility of even this relationship for monetary policymaking, however, should not be exaggerated. First, there is a reverse causality here, with rising housing prices causing the creation of additional credit through increasing collateral values, so the strength of the relationship should not be overstated.

Second, and more importantly, central banks do not control broad money growth – they only control short-term interest rates and (at best) narrow money growth. See figures 5 and 6 (the latter omitting the Spanish outlier, which should strengthen the relationship if any).

Obviously, central banks can and should have intermediate targets that are not necessarily under complete control – what else is inflation targeting if not targeting the medium-term forecast? – But it matters how much partial control one has. In that regard, as was seen with the rather spotty history of monetary targeting in the 1970s and 1980s, there is a real risk that efforts to target such an indicator would only lead to financial innovations that would remove that indicator's relationship with real economic outcomes, such as housing price increases.

These scatterplots of cross-country experience in the pre-crisis period may seem too simple, but the results they give are consistent with more econometrically ambitious studies, such as those of Assenmacher-Wesche and Gerlach (2008) and of Goodhart and Hoffman (2009)

⁶ We use the definition of excess monetary growth given by Bordo and Jeanne (2002), sustained growth in the designated aggregate by greater than one standard deviation above long-term trend. The lack of relationship is robust to large variations in this definition.

utilizing panel vector-autoregression methods.⁷ They are also consistent with studies looking at data cross-sectionally at earlier cases, such as Posen (2003). It is a robust reality that cross national differences in monetary ease, whether measured by interest rates or by narrow monetary aggregate growth, do not predict differences in asset price booms or even the existence of booms. Growth in broad money, which central banks cannot control does have a two-way relationship with housing prices, which is of limited monetary policy utility.⁸

Sometimes what seems to everyone the obvious cause of something else proves to be nothing more than a myth. As Benjamin Franklin showed with his kite, lightning bolts were caused by electrical storms, not by heavenly bodies (or nasty spirits). Fire is not created by phlogiston, nor is disease the result of ill humours in the body. Light is transmitted by photons, not suspended in the ether. In economics, it was proven that demand and incentives, not laziness, which causes unemployment. Someday, the idea that asset price booms come from monetary conditions will be another recognized fallacy, left in the dustbin of history, like these other once widely held misapprehensions.

Monetary policy tightening will not work against bubbles: Still, even if monetary conditions are not a pre-requisite for an asset price boom, it is perhaps possible that tightening of conditions could limit or counteract the boom once underway. By ‘leaning against the wind’, proponents must mean central banks raising interest rates or otherwise tightening policy in response to asset price booms beyond what inflation forecasts call for. These calls duck the question of what scale of ‘leaning’ is required. ‘Leaning’ gives the impression of a rather subtle adjustment, just somewhat tighter policy than one would have absent evidence of asset price inflation. Yet, all indications are that it would take extremely aggressive policy action to counteract boom dynamics, whether in terms of expectations or access to credit when leverage is available off of rising asset prices. It is quite a daunting prospect to tell a central bank to raise interest rates by 250 basis points when there are no signs of inflation, but it is doubtful that anything much less would have an effect.⁹

⁷ My scatter plots are drawn from work in progress (with Neil Meads) which includes more recent experience and some additional variables that the aforementioned papers do not. We are grateful to Charles Goodhart and Boris Hoffman for their generous sharing of their dataset, which we are extending.

⁸ See Price’s (2009) discussion of Goodhart and Hoffman as well as Assenmacher-Weshe and Gerlach (2008), and the earlier one in Posen (2003).

⁹ See Bean (2009), Mishkin (2008), and Posen (2006) for discussions of this point.

The record so far suggests that the interest rate tool is ill-suited at best for dealing with asset price booms. In the infamous Japanese property and equity bubble of the 1980s, the Bank of Japan actually did start raising rates faster than a Taylor rule would have indicated, albeit late in the game in 1989.¹⁰ Such rate increases were consistent with the stated intent of the BOJ to pop the bubble, and clearly motivated in response to asset prices, not output or inflation. The interest rate increases proved ineffective – while they may have caused some brief slowdowns and temporary reversals in equities and property prices, the bubble kept on inflating overall into 1992. It was only a financial regulatory change, regarding the reserve and collateral requirements for banks lending on real estate, which led to the end of the boom and subsequent crash.¹¹

Similarly, the Reserve Bank of Australia raised interest rates in 2003-04 to pop the real estate booms in Melbourne and Sydney – as in Japan, deed matching word in that the policy tightening could not be justified on inflation forecasts alone. And similarly to Japan, after an initial deflating effect, the boom just returned, with Australian property considered overvalued by the IMF less than two years later. There are strong arguments for why the fundamental sources of housing market strength may be sound in Australia, but the monetary efforts to contain the boom did not seem to work. There is no other example of bubble popping success for ‘leaning against the wind’ advocates to draw upon.

Still, the suggestion is made about adjusting interest rates to pop bubbles. A perceptive commentator typifies this view by arguing: “[C]entral banks should use existing leeway in their monetary policy. In an ideal world, a single policy instrument should focus on a single target, but this is not an ideal world...In practice this would mean that a central bank should, by reflex, not always choose the lowest interest rate consistent with its definition of price stability. It should choose a higher rate in the presence of a bubble. With hindsight, if central banks had not cut interest rates quite so aggressively in 2003-04, we would probably still have had a bubble, but perhaps a smaller one.” (Munchau (2009)).

So we assembled the sample of available cases of asset price booms, both in equity markets and in residential real estate, for 17 major economies for which data is available to investigate

¹⁰ Cargill, Hutchison, and Ito (2000) and Jinushi, Kuroki, and Miyao (2000) analyse this episode.

¹¹ See Cargill, Hutchison and Ito (2000) and Hoshi and Kashyap (1999)

this claim.¹² Some variation across countries over time should show up in the degree of asset price booms, depending upon the degree of monetary tightening during the booms – that is, unless only extremely severe monetary tightening, beyond that seen in response to an asset boom in any advanced economy to date, is what is needed to cut off the bubble. That would be taking the hammer to the leaky showerhead with a vengeance indeed.

The results are given in figures 7-9 for residential real estate, and in figures 10-12 for equity prices. In both sets, the cumulative increase in the asset price is plotted against the change in the given monetary instrument (rise in real or nominal interest rate, decrease in rate of excess monetary growth), measured from the point of tightening (trough in interest rate, peak in monetary growth rate). It is not so fun to present or to see figures showing no relationship, but look at the nearly flat correlation lines on these scatterplots as the near smoking gun. Even when central banks did tighten during asset price booms, it had no consistent effect on the growth of asset prices.¹³

These calls for leaning against the wind also run into the face of logic and experience for all but perhaps the largest or most closed economies. Open economies that raise interest rates to cut off booms can find that policy makes matters worse because the interest rate tightening attracts greater capital inflows - as the Baltic States found out recently, and numerous Asian and Latin American economies experienced previously. Even for larger economies, like the US, if one accepts some variant of the argument, that excess savings from Asia contributed to capital inflows bidding up US asset prices in this decade, then it stands to reason that any counter-boom effect of interest rate increases would at least be partially offset by additional capital inflows.¹⁴ And if it is some global interest rate or amount of liquidity that is critical to the development of asset price booms (plausible, though by no means yet proven), then that certainly is out of the hands of domestic monetary policy setting by most if not all central banks.

¹² There are several ways to statistically identify an asset price boom. We present here results using the Bordo and Jeanne (2002) approach, but these results are robust to using the approaches of Goodhart and Hoffman (2009) and of Hume and Sentence (2009). They do generate different lists of booms and busts.

¹³ We have research work in progress looking at the impact of such tightening on the duration of booms, as well as controlling for other factors. Preliminary results support the results showing lack of effectiveness, but that is solely preliminary work.

¹⁴ Additionally, if real estate appreciation, and financial sector overvaluation more broadly, reflect an undesirable shift of resources from traded to non-traded sectors, interest rate policy that leads to currency appreciation would also seem to worsen matters rather than to help.

Alternative Tools for the Job: Just because we want there to be a policy response to a problem does not mean that the problem can be solved with the tools at hand. Again, if I have a hammer, it can be useful for all sorts of household tasks, but useless for repairing a leaky shower head – in fact, if I take the hammer to the shower head, I will probably make matters worse. I need a wrench to fix a pipe leak, and no amount of wishing will make a hammer a wrench. This is the essential reason why central bankers are now looking around for what has been called a ‘macroprudential instrument’, that is a tool suited to the job – and a tool additional to the one that we already have in our toolkit.

I support the main proposals that have been coming out of the FSB process, which focus on dynamic provisioning by banks. Basically, this means that banks and perhaps other financial institutions should be required to set aside more capital during asset price booms, instead of just lending more when collateral values and expectations rise. I am worried, however, that this may not be enough. One thing the ‘lean against the wind’ proponents have going for them is the emphasis on the macroeconomic aspect of booms and busts. One can have a financial cycle that is not evident in bank misbehavior, but still produces real estate bubbles and severe damage when they burst.

Remember, Spain had put in place this kind of dynamic provisioning for its major banks ahead of and during the boom of the last decade. The Spanish bank supervisors and regulators successfully kept those banks out of the worst of the trouble seen in other countries, even when the Spanish property market crashed. But the Spanish property market did inflate and then crash, and Spain has ended up with 18% unemployment nonetheless.

The macroprudential proposals in Bank of England (2009) go beyond the Spanish model in constructive ways, particularly by adding variable capital surcharges (over time and space) to lessen systemic risk build-up. I strongly support going beyond building up individual banks’ capital buffers. There is also room for financial stability boards to constructively intervene in this regard, as proposed for the EU and the US, though here I am a bit less convinced of their utility when they are left with too much discretion.¹⁵ The basic logic of the macroprudential approach on the banking side is sound, especially as enhanced by the Bank of England (2009)

¹⁵ I would rather see the structures of the financial system changed and constrained. Schinasi (2009) makes a similar caution about such efforts of discretionary systemic risk committees.

proposed systemic adjustments, given that historically the worst financial crises have come when asset price busts have led to banking system failures.

Still, I think there is room for a complementary policy approach to trying to prevent booms and busts from occurring. We should go after some of the problem directly, beyond the banking system itself. Therefore, I would like to suggest that we need another tool for the boom management toolkit to go with the macroprudential approach to date: an automatic stabilizer for housing prices. This is at present just a suggestion for consideration, that we have to broaden our focus (and toolkit), not a detailed proposal for a specific policy. The design of such a real estate oriented tool would have to vary from country to country, depending upon their respective housing and tax structures, and it would have to be adopted by the elected fiscal authorities.

Why real estate? There is good reason to separate bubbles into more and less destructive types.¹⁶ In particular, residential real estate bubbles are very different from equity price bubbles. Real estate bubbles tend to have much higher real economic costs than equity bubbles, perhaps because they involve illiquid collateral and local spillover effects. One way to estimate costs of a bubble bursting is to compare output following the bubble to what it would have been if it had stuck to pre-crash trend (see IMF (2009)). Figure 13 shows an example of this sort of analysis applied to the UK's last post-real estate boom recession starting in 1990Q1.

If one estimates this cost versus trend for each of the booms in the sample that we have, one can generate figure 14, which shows the average output path and the inter-quartile range following a boom. The average output loss after real estate booms cumulates to over 5% of GDP over five years, and 75% of cases lose at least 2% of output. If one performs the same exercise for equity price booms, as shown in figure 15, there is no output loss on average over five years, and only 25% of economies experience a loss of more than 4%, still not the mean of real estate related losses. Thinking back to the difference between the aftermath of the IT bubble in the late 1990s and the current crash which followed a lot of real estate booms, one can see the pattern intuitively.

¹⁶ Mishkin (2009) gives one such separation scheme, different from the one set out here.

Another reason to distinguish between real estate and equity price booms is what accompanies them. Equity price booms are often associated with the adoption of major new technologies, which even if sometimes overbuilt (railroads, fiber cable), have positive spillover effects on productivity as well as their direct contribution to growth.¹⁷ Pre-empting such booms would arguably have the effect of cutting off development and adoption of such technologies. Residential real estate, on the other hand, has no truly new technologies which could be cut off in a boom.¹⁸ An additional difference comes from the fact that it is difficult to discern when new technologies or industries are overpriced, but real estate has no new technologies and can more reasonably be benchmarked for reasonability prices. For all these reasons, there seems to be significantly less cost to trying to pre-empt real estate booms than equity booms.

So what could be done to limit or pre-empt real estate price booms? We should think in terms of automatic stabilizers - not least because economies that have had deeper automatic stabilizers have done better in responding to the crisis without increasing structural deficits, since they are contractionary during booms. We also should think in terms of automatic stabilizers because that means a rule rather than discretion, and thus would be more credible in deterring unrealistic price movements by home owners and speculators.¹⁹ Luckily there are already in place systems to make sure that every real estate transaction is recorded by law, and title and other fees that are already collected on those transactions. It is a matter of building upon those systems that are already in place, in every country, even if the specifics vary. There should be no new regulatory infrastructure needed.

This does get us overlapping a little bit with the realm of fiscal policy, so let me be perfectly clear: I am not talking specifically about the budget or tax plans of the current or any future UK government (or of any other country's government for that matter); I am not recommending changes in tax policy with an eye to changing redistribution or to any revenue changing effects, which are solely for an elected government to determine; I am speaking solely for myself alone as an economist looking at the boom-bust problem, and not for the Bank of England (which rightly takes no policy stance on specific fiscal measures, in any event).

¹⁷ See the discussions in DeLong (2002) and Mishkin and White (2002).

¹⁸ Changes in zoning and height restrictions could act to enable more residence on given land, like a new technology, but their adoption and persistence do not depend upon the boom.

¹⁹ Jeanne (2008) is the one other source for thoughts in this direction of which I am aware.

What I am proposing is something modest, without any large implications for tax revenue over the cycle, but I hope potentially powerful in dealing with asset price swings. Yet, if we can set up cyclical capital adjustments for banks, if we can contemplate a Tobin tax on financial transactions, we should be able to set up something in a similar spirit for real estate transactions which are already taxed and regulated. This should be in no way constraining on fiscal policy decisions over the medium-term. But it would mean having already existing title fees, capital gains taxes, stamp and transfer taxes, varying over time in line with price developments in the housing market more broadly. For those countries which have mortgage interest rate deductions on personal income taxes (like the US), parallel variation should be put place on the amount of deduction allowed. The point is to consider changing the incentives and leaning against the wind in the real estate market directly, rather than just at one remove via the banks, or taking on the economy as a whole via monetary policy.

One could be more ambitious and complicate matters by taking into account second houses, speculative purchases, the amount of time owned before sale, and so on. I would tend to stick with a simple blunt instrument targeted to lean against the wind in real estate prices in an automatic fashion. This reflects my general bias towards automaticity and transparency, but perhaps those with greater expertise in housing economics for a given country could be able to come up with a more clever design without undue distortion. One would have to be careful not to bias the system against new or existing housing, so stamp-type duties would have to be equalized in some sense versus transfers or capital gains. One could also contemplate changing rules on loan-to-value ratios, but this may not be the ideal instrument given the variation in borrowers and the need to deal with bank regulations to implement. We might also consider stabilizing commercial real estate as well as residential, but there is real separation between these markets in most countries, as well as reason to think that commercial real estate booms are somewhat less harmful and more susceptible to usual counter-cyclical measures.

It is worth recognizing that fundamental issues of housing supply and policy were still unresolved in economies where there were real estate booms (including but not just in the UK). Thus, there is no reason to think that some sort of automatic measure to stabilize housing prices would in any way interfere with any government's attempts to pursue

structural housing policy changes.²⁰ In fact, one might hope that reducing some of the volatility in housing affordability and some of the purely speculative incentives to own housing would allow housing policy to concentrate on the fundamentals more easily. The main point I wish to make is that we should start discussing going directly after the source of the costliest bubbles, that is real estate fluctuations, when the costs of so doing are small, rather than dealing with their transmission mechanisms or their effects ex post (and by so doing incurring larger costs to the real economy). This is a complement to the macroprudential agenda on the banking side, another tool for the kit I wish someone would design and produce.

Not everything is a monetary nail: Central banks should be held accountable for their roles in the global financial crisis of 2007-09, and even more so for their contributions to the emergence of the situation which led to the crisis. Nothing I say here is an attempt to shift blame or responsibility away from central banks – this is, however, an argument that the monetary policy regime of the period, inflation targeting and its close cousins, had little to do with the bad outcomes. As I have argued in several other places previously, we can put the primary blame instead for the boom-bust on central banks' failures, along with those of other parts of government, with regards to financial regulation and bank supervision.

The bottom-line for monetary policy coming out of the crisis is, if you have a financial problem, use financial policy tools to fix it. That applies to bubbles, which means monetary policy should not be targeting asset prices as well as inflation. This is of course what has always been the general guideline for economic policymaking, go after problems by as direct a means as possible. Which is why, in turn, it is so critical to realize that the direct role of monetary conditions (and tightening thereof) in the creation of asset price booms is minimal. The issue is not inability to judge what is a bubble, or denial that such bubbles can do harm to the economy. The issue instead is that attempting to deal pre-emptively with bubbles using monetary instruments will almost certainly fail.

Admittedly, there has been a tendency during the past fifteen years of the Great Moderation to oversell inflation targeting as perhaps the source of most good macroeconomic problems.

²⁰ See Barker (2008) and Muellbauer and Murphy (2008) for definitive discussions of the UK housing market, and the references therein. Some of these experts are addressing at present issues of tax policy and housing price volatility from a bottom up housing perspective, and I am just echoing the desirability of so doing from a top down macro view.

And this went along with an explosion of discussion in academic conferences and central bank sponsored research about transparency and central bank communication. Those of us in the little piece of the profession who do ‘applied’ monetary economics have spent far too much effort on that topic than we should have. But what we were really trying to do with inflation targeting in design, and one thing that I think the actual monetary regimes that were in place recently did achieve, was getting to be very clear about what monetary policy could and could not do. And monetary policy really cannot do anything about bubbles. Financial problems come from something else.²¹ Where else? Changes in technology (for equity bubbles) and in financial regulation and supervision (for both equity bubbles and real estate bubbles) are the key drivers. That is the reason for my suggesting a new line of discussion for stabilization policy in addition to the necessary macroprudential proposals for the financial system.

²¹ See for example Miles and Pillonca (2009) showing how some regulatory changes affected housing prices in the UK, or Cargill, et al (2000) or Hoshi and Kashyap (1999) on changing regulation’s impact on asset prices in Japan. Consider as well the huge impact of mortgage tax relief on housing prices in 1988 in the UK.

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Figure 1: Annual house price inflation versus real policy rate: 2004-2007

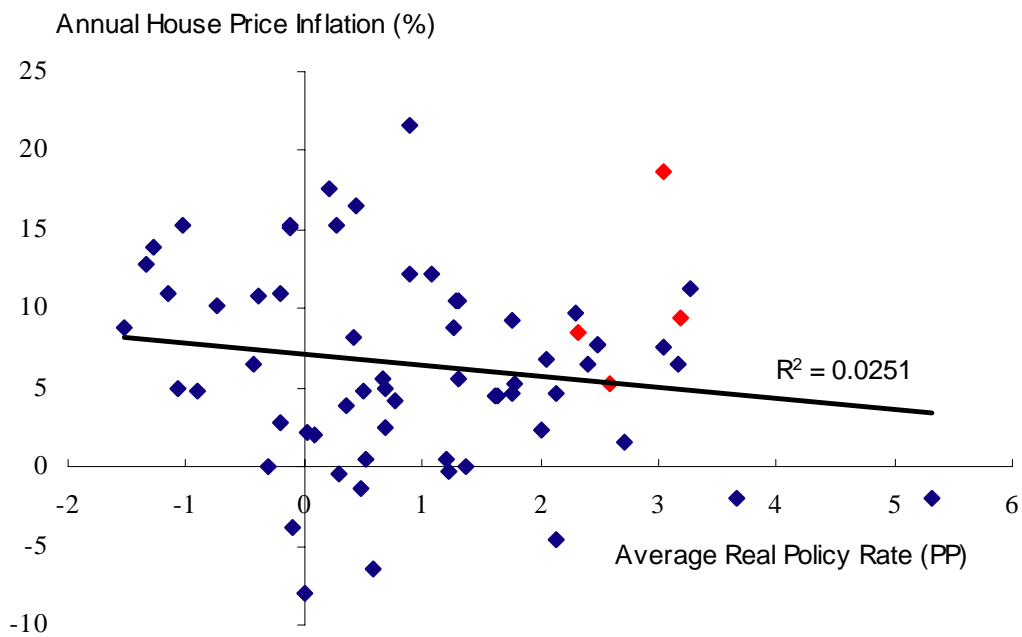
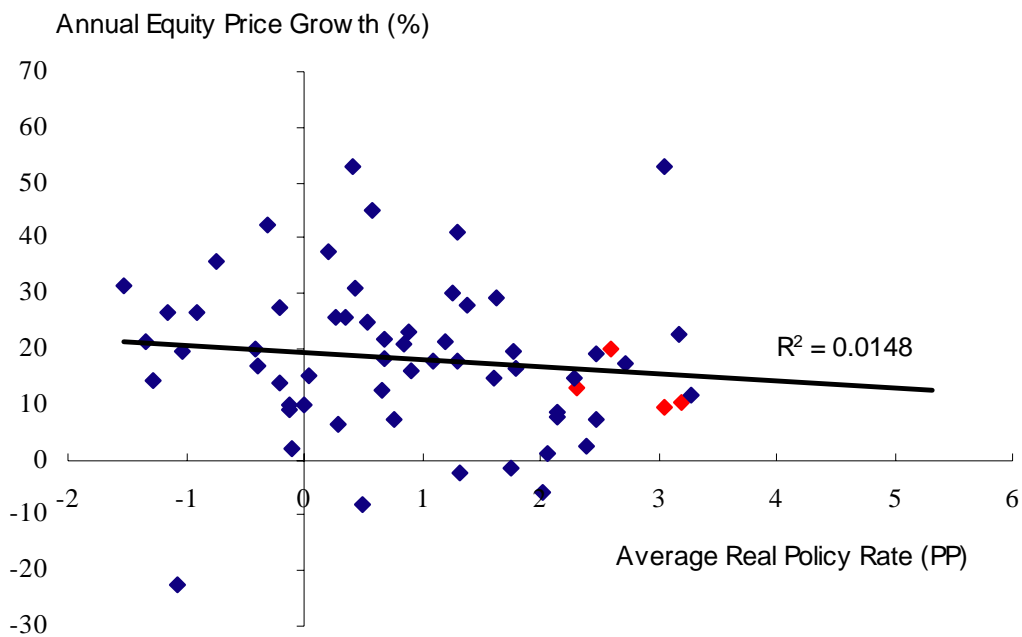


Figure 2: Annual equity price growth versus real policy rate: 2004-2007



Countries covered: Australia, Canada, China, Denmark, France, Finland, Germany, Greece, Iceland, Ireland, Italy, Japan, The Netherlands, Norway, Spain, Sweden, UK, US

Note: Red Dots indicate UK observations

Sources: Thompson Datastream and Bank Calculations

Figure 3: Annual house price inflation versus monetary ease: 2004-2007

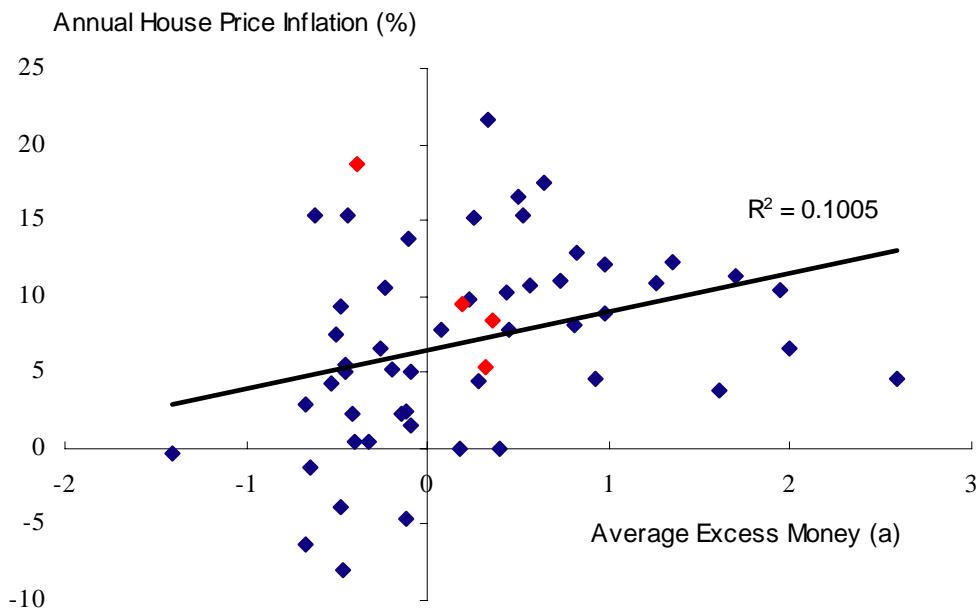
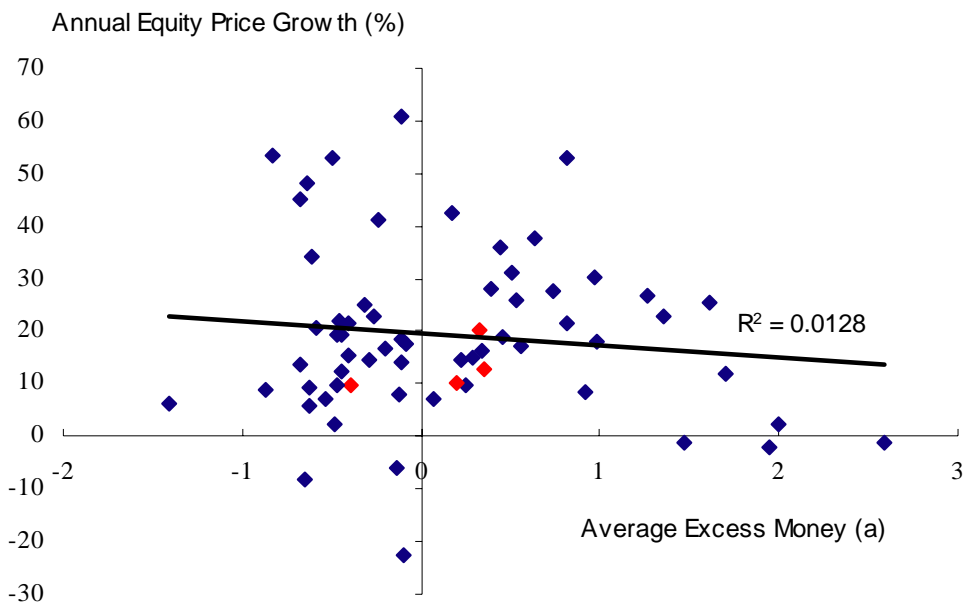


Figure 4: Annual equity price growth versus monetary ease: 2004-2007



(a) Annual (broad) money growth above average (of post 1981 broad money growth) scaled by standard deviation of money growth

Countries covered: Australia, Canada, China, Denmark, France, Finland, Germany, Greece, Iceland, Ireland, Italy, Japan, The Netherlands, Norway, Spain, Sweden, UK, US

Note: Red Dots indicate UK observations

Sources: Thompson Datastream and Bank Calculations

Figure 5: Annual M1 growth versus broad money growth: 2004-2007

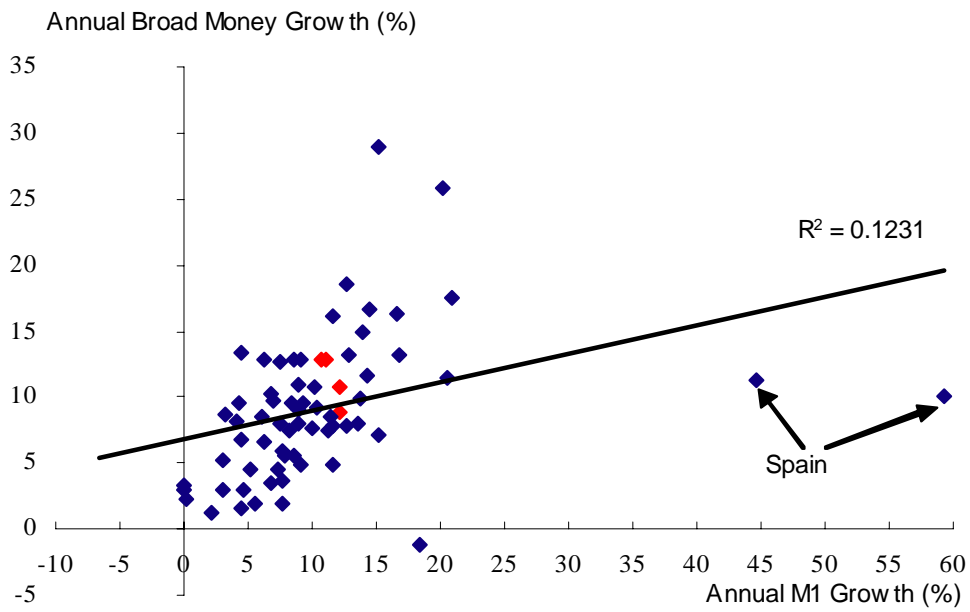
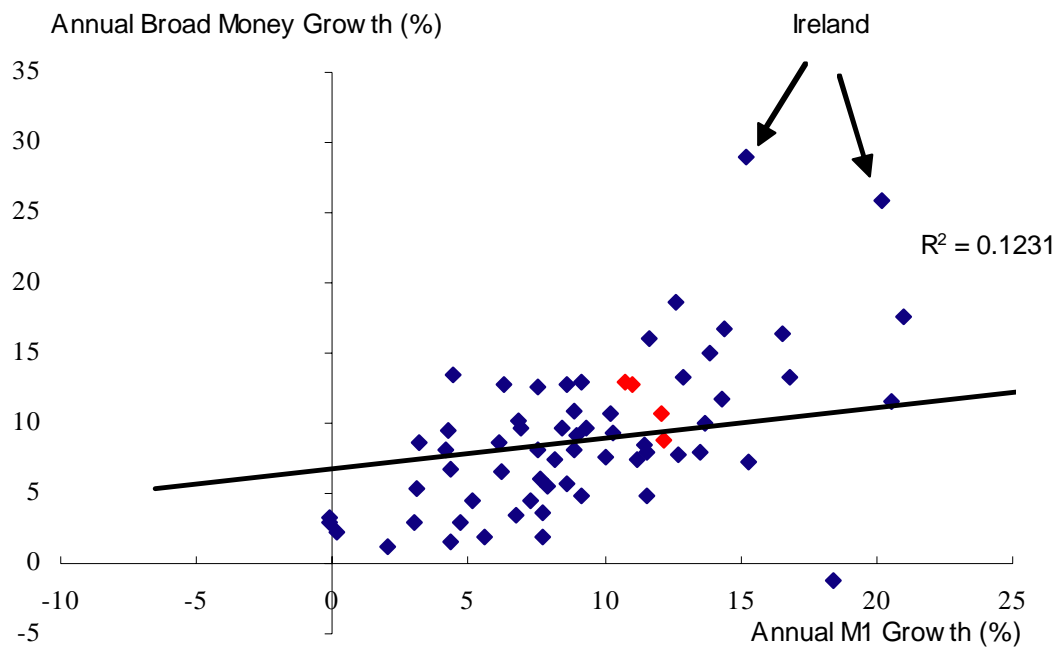


Figure 6: Annual M1 growth versus broad money growth minus Spain: 2004-2007



Countries covered: Australia, Canada, China, Denmark, France, Finland, Germany, Greece, Iceland, Ireland, Italy, Japan, The Netherlands, Norway, Spain, Sweden, UK, US

Note: Red Dots indicate UK observations

Sources: Thompson Datastream and Bank Calculations

Figure 7: Cumulative real estate price increase versus increase in real interest rates ^(a)

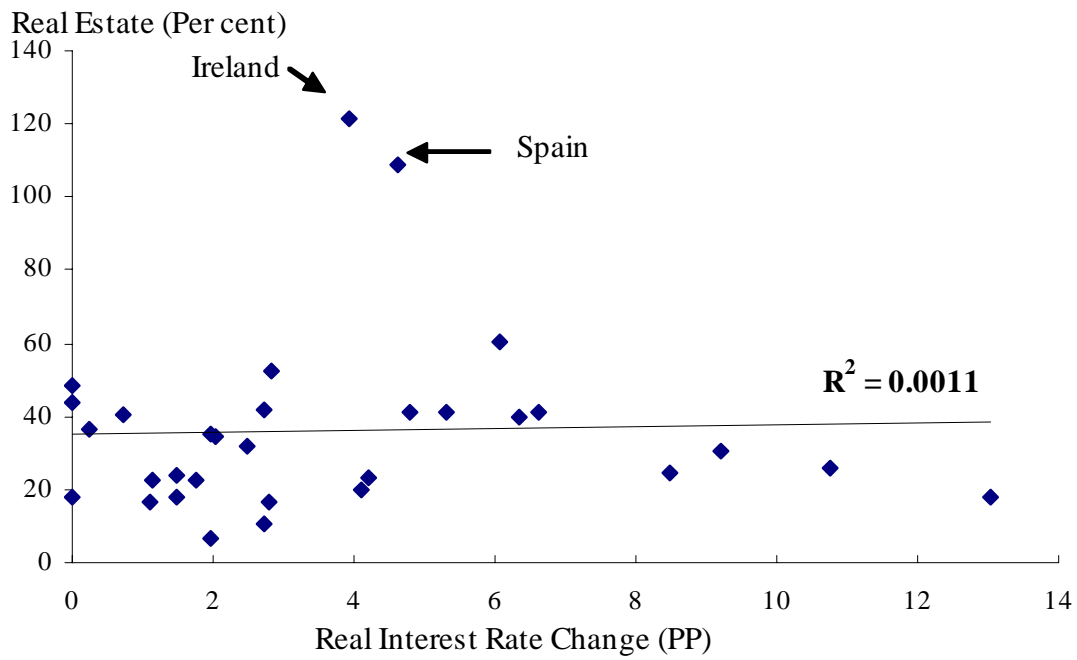
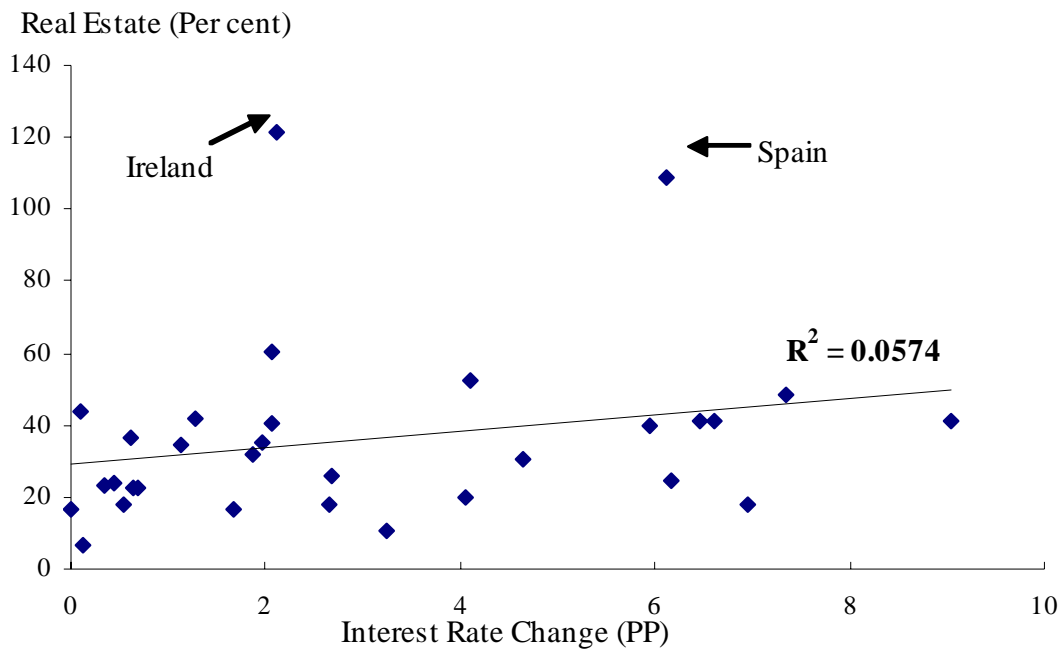


Figure 8: Cumulative real estate price increase versus increase in real interest rates ^(b)



Countries covered: Australia, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, The Netherlands, Norway, Spain, Sweden, Switzerland, UK, US

(a) Increase in ex-post real interest rate from trough in interest rates during identified boom to end quarter of boom.

(b) Increase in interest rate from trough in interest rates during identified boom to end quarter of boom.

Booms identified over post 1970 period using adapted methodology of Bordo & Jeanne.

Figure 9: Cumulative real estate price increase versus reversal of monetary ‘excess’^{(a)(b)}

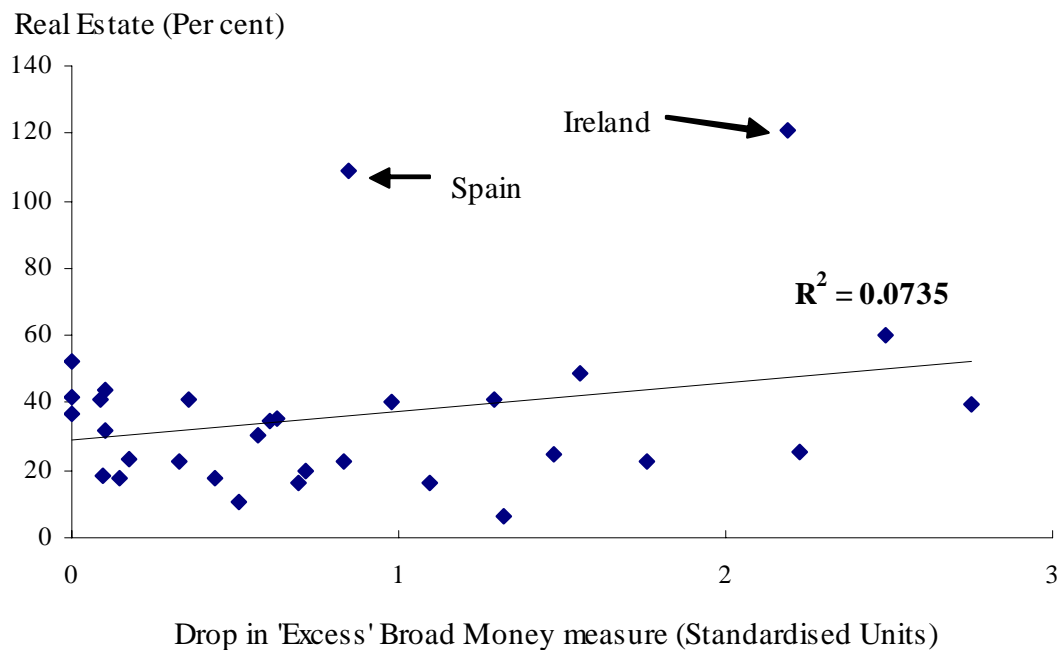
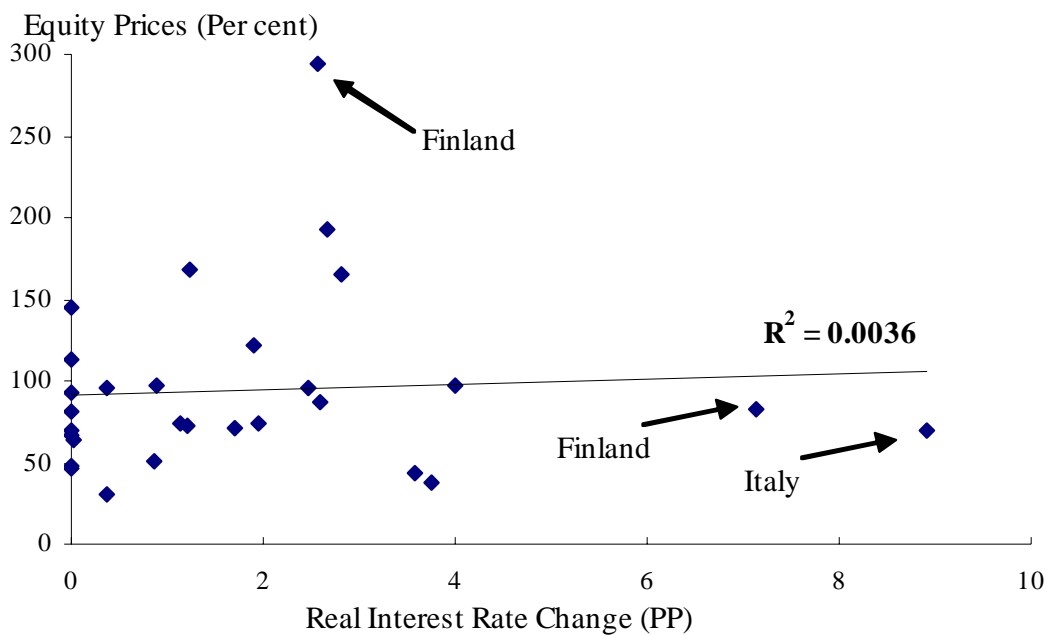


Figure 10: Cumulative equity price increase versus increase in real interest rates^(c)



Countries covered: Australia, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, The Netherlands, Norway, Spain, Sweden, Switzerland, UK, US

(a) Drop in excess broad money measure from their high during the identified boom period to the end quarter of the boom.

(b) Excess defined as: Annual (broad) money growth above average (of post 1971 broad money growth) scaled by standard deviation of money growth.

(c) Increase in ex-post real interest rates from their low during the identified boom period to the end quarter of the boom.

Booms identified over post 1970 period using adapted methodology of Bordo & Jeanne.

Figure 11: Cumulative equity price increase versus increase in real interest rates ^(a)

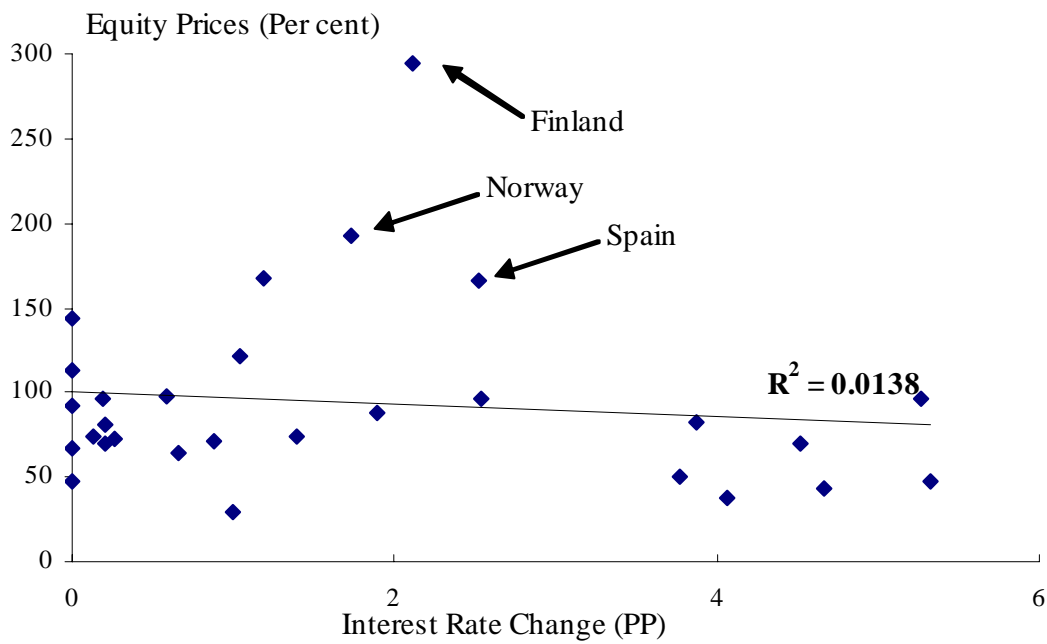
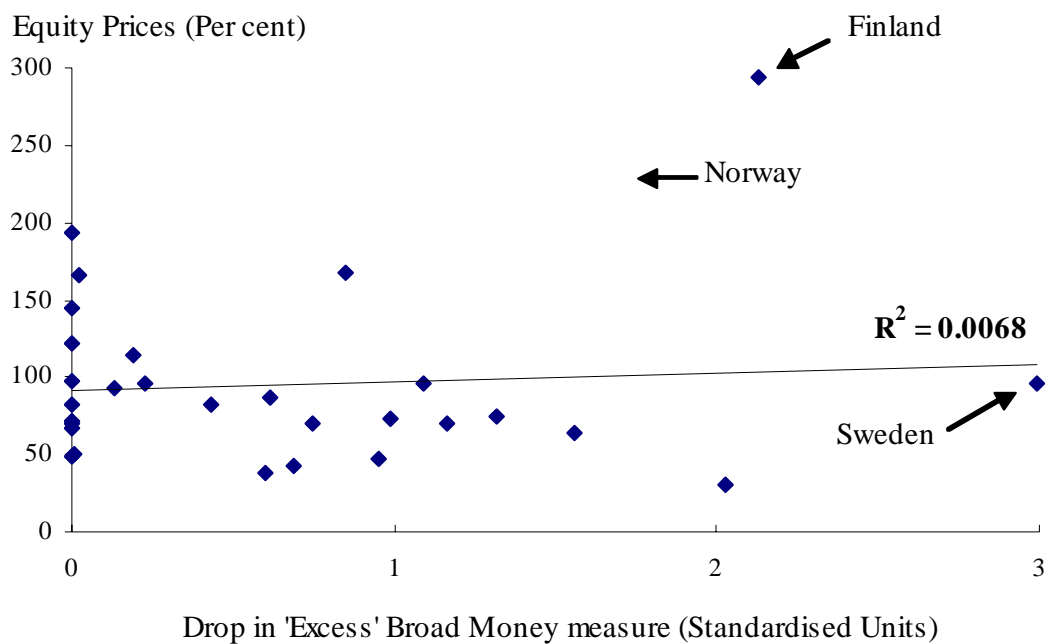


Figure 12: Cumulative equity price increase versus reversal of monetary 'excess' ^{(b)(c)}



Countries covered: Australia, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, The Netherlands, Norway, Spain, Sweden, Switzerland, UK, US

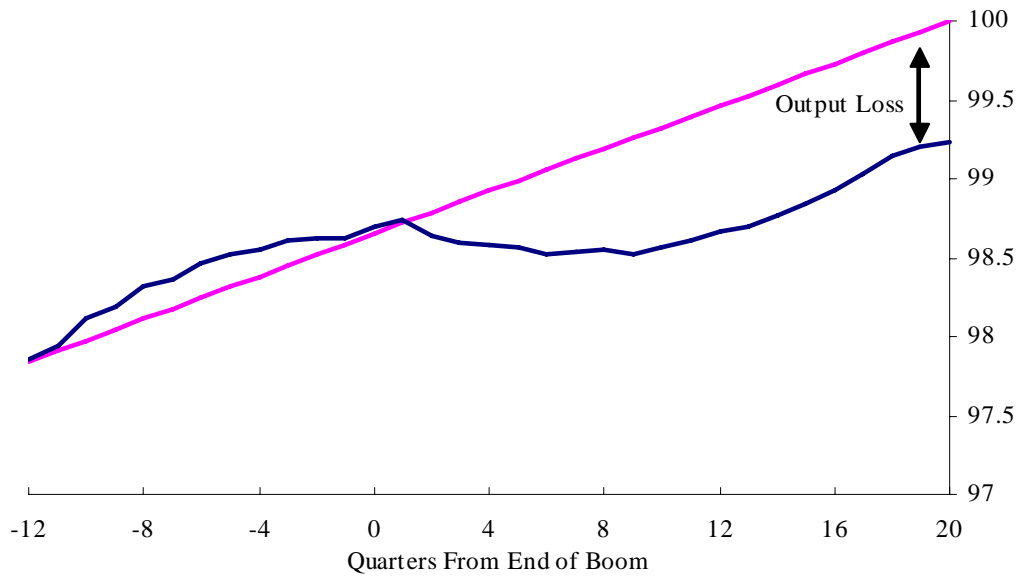
(a) Increase in ex-post real interest rates from their low during the identified boom period to the end quarter of the boom.

(b) Drop in excess broad money measure from their high during the identified boom period to the end quarter of the boom.

(c) Excess defined as: Annual (broad) money growth above average (of post 1971 broad money growth) scaled by standard deviation of money growth.

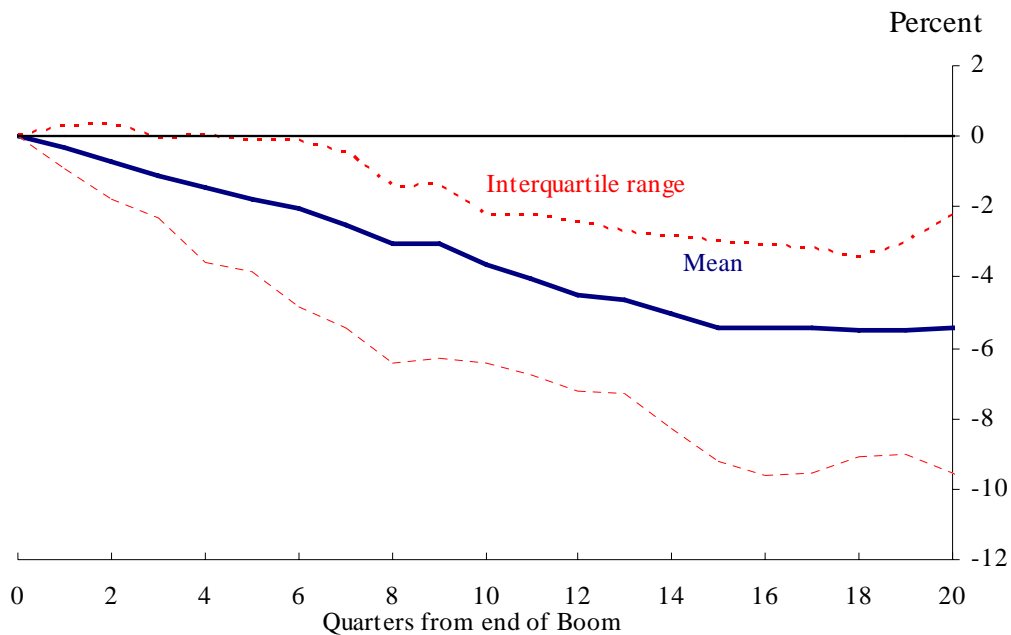
Booms identified over post 1970 period using adapted methodology of Bordo & Jeanne.

Figure 13: Example of computing the cost of a bust: UK real estate boom ending 1990 Q1



Note: The pre-boom ending trend is estimated up to quarter $t=-8$, and is extrapolated linearly thereafter. The pink line represents the trend and its extrapolation up to 5 years after the end of the real estate boom. Output=logarithm of real GDP; 100 equals trend in quarter 20. Adapted from IMF methodology.

Figure 14: Evolution of output following the end of housing price booms ^(a)

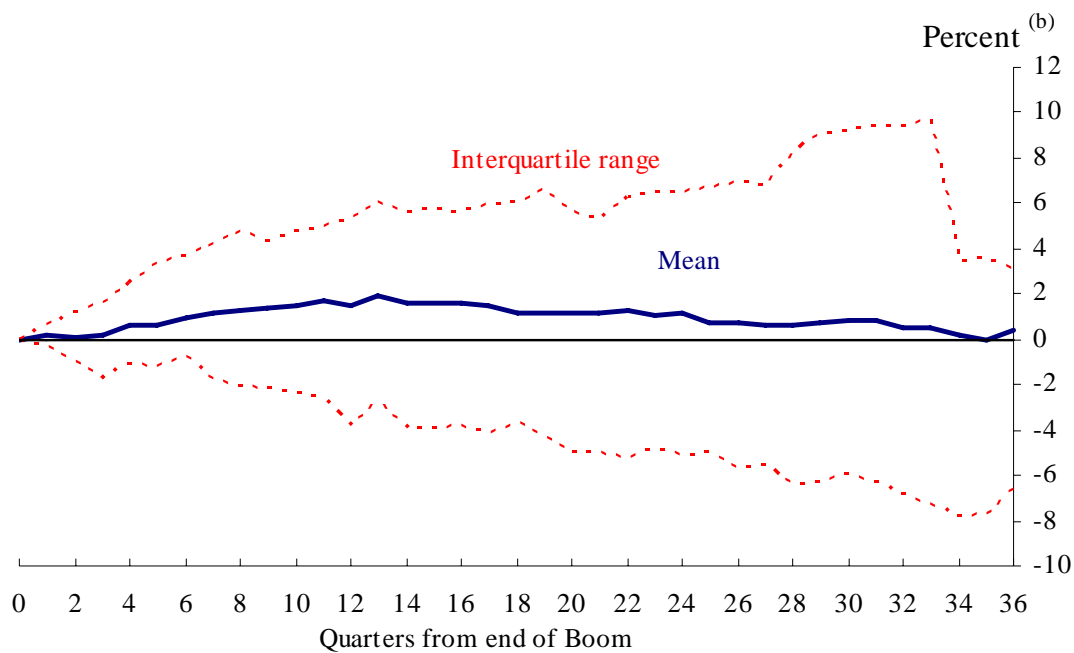


Countries covered: Australia, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, The Netherlands, Norway, Spain, Sweden, Switzerland, UK, US

(a) Booms identified since 1970 using adapted methodology of Bordo & Jeanne (2002)

(b) Percent of pre-boom ending trend; mean difference from quarter 0 dated to last quarter of the boom.

Figure 15: Evolution of output following the end of equity price booms ^(a)



Countries covered: Australia, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, The Netherlands, Norway, Spain, Sweden, Switzerland, UK, US

(a) Booms identified since 1970 using adapted methodology of Bordo & Jeanne (2002)

(b) Percent of pre-boom ending trend; mean difference from quarter 0 dated to last quarter of the boom.