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Does innovation in residential mortgage products explain rising house prices? No.

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Abstract

Like many consumer products, household mortgages have experienced significant innovation in recent decades, with mortgages becoming cheaper, more accessible, and with more features. Many observers have expected that this would increase demand for houses, contributing to a rise in house prices. We investigate this relation, both in terms the extent and timing of innovation in residential mortgage products, and then we critically assess whether there is a link with Melbourne Metropolitan house prices (post 1980). Our conclusion is surprising: we find no apparent evidence of a relationship between residential mortgage innovation and house prices.

Introduction

Many drivers of house price growth have been suggested since the 1980s. These include demand-side drivers like population growth and relatively low interest rates as well as supply-side factors including the lack of housing stock and rising construction costs. It has also been suggested that mortgage market innovation has played a role in bringing about a change in the character of the housing market.

The Australian Bureau of Statistics (ABS 2010), for example, suggests that the increase in the rate of *owner-occupiers with mortgages* is partly explained by financial innovation. This view is can be seen to be consistent with a statement by Guy Debelle¹ (emphasis added):

“Through the late 1990s and first half of the 2000s, there was considerable product innovation in the Australian mortgage market. Lenders sought to cater for a wider range of potential borrowers and found new ways to assess their borrowing capacity. Some of this innovation has resulted in an easing in lending standards and an increase in risk for both borrowers and lenders, but its **overwhelming effect has been to widen the range of households who can access finance**”

¹ Assistant Governor (Financial Markets) RBA- <http://www.rba.gov.au/speeches/2010/sp-ag-300310.html>
Accessed 21st October 2014

It is interesting to note that while the Reserve Bank of Australia² has occasionally aired concerns about the potential for speculative demand to amplify the property cycle, it has not thus far, unlike many of its international counterparts including New Zealand, Canada, and Singapore³, promoted the use of macro-prudential policies of the sort that would aggressively constrain financial innovation. Nevertheless, financial innovations (such as low doc loans) remain popular targets to explain crises in housing affordability.

In this article we investigate whether there is a link between mortgage product innovation and house prices. Using data for the Melbourne Metropolitan area we assess whether house price growth, in particular changes in the pattern of growth, is associated with mortgage product innovation. The results of our analysis lead us to conclude that mortgage innovation is not a driver of house price growth.

We begin by defining mortgage innovation in the Australian market. We then provide an overview of the phases of price growth in the Melbourne metropolitan housing market. In the last section we critically assess the inter-relationship between innovations and house prices.

Mortgage Product Innovation

Tracing innovation in the mortgage market presents two challenges. The first is to be able to appropriately define mortgage product innovation. The second is that no database currently exists that catalogues mortgage innovation.

In addressing the first challenge we adopt a three-part definition of innovation that has gained some acceptance within the industry (Ellis et al 2005):

1. Flexibility in the timing of loan repayments and access to additional credit,
2. Households having an enhanced ability to access funds, and
3. Tailoring of products for specific purposes such as investments

We considered any mortgage product change that corresponds to at least one of the above criteria to be an innovation. Some of these innovations have been more prominent in public discussion than others. This includes the changes to the loan-to-value ratios (LVRs) and the introduction of

² <http://www.rba.gov.au/monetary-policy/rba-board-minutes/2014/02092014.html>

³ For example, the Reserve Bank of New Zealand's measures prohibiting banks from issuing more than 10 percent of new residential loans to customers who have an LVR of more than 80 percent.

low-document loans. Historically LVRs were restricted to be no more than 80 percent. This upper limit has been relaxed to the extent that in the lead up to the Global Financial Crisis, loans were being advanced up to 100 percent or more of the purchase price.

The last criterion, tailoring of mortgage investment products, has been a particularly contentious innovation of late, as it is claimed that investor purchasers are thereby increasingly able to crowd out owner-occupiers, particularly first home buyers. The degree to which this is occurring is not clear as there is a noticeable lack of research in this area, including testing whether these buyer types perceive property features the same way.

An overarching finding was that two non-product change innovations – the growth of securitization, and the arrival of mortgage brokers into the mortgage market – were highly significant in changing the way in which the market operated, facilitating a more vibrant and efficient industry.

In addressing the challenge of a lack of information of mortgage innovations in Australia we:

1. Reviewed media releases from financial agencies focusing on the RBA, APRA and ASIC.
2. Reviewed academic literature.
3. Conducted interviews with key industry representatives.

The results from our interviews and analysis are presented in Table 1. A brief review of our interviewing approach is provided in our accompanying article (de Silva *et al* 2015)

Three important principles in table 1 are evident.

1. Innovations were often developed for particular consumers. For example, low doc loans are reportedly developed in 1997 for Asian-based customers not wanting to divulge their financial position.
2. The time between the initial idea or concept for a new mortgage product and the product's eventual availability to the general consumer can be decades. This seems to indicate that the deregulation and ensuing competition was/is necessary for innovations to blossom (refer to Table 1, "pre-1980" innovations). This means that many innovations are supply-constrained (by regulation) rather than demand constrained by pricing or income.

3. Securitisation (1979, 1997/9) was necessary for ensuring growth in competition, particularly for the non-bank sector.

Phases of dwelling price growth.

Melbourne metropolitan dwelling prices, like all Australian capital cities, have significantly increased in the last three decades. Many factors have been cited in driving this price growth. Table 2 provides a list of some of the more common factors often cited by market analysts.

Table 2: Factors commonly cited as driving price growth

Demand	Supply	Other
Increase in Population Growth	Increase in construction costs	First home buyer grants
Lowering of Interest rates	Low supply of land	Negative Gearing
	Restrictive planning controls	Macroeconomic factors including inflation, gross disposable income and employment.

Sources: Abelson *et al* (2005), Otto (2007) complemented by non-academic mainstream media.

The degree to which each factor has influenced Melbourne Metropolitan house prices is likely to have changed over the last three decades. For example, construction cost increases are likely concentrated in recent decades. Furthermore, it is likely that the influence of some of these factors would vary by submarket, by location or by price segments. For instance low income suburbs will be more affected by first-home-buyer grants.

In considering the impact of innovation we first consider the different price phases. Table 3 together with Figure 1 provides a summary of the Melbourne metropolitan housing market. Seven distinct price phases were identified using an econometric structural break test as a guide (Zeileis *et al*, 2002 & Zeileis *et al* 2003). Two interesting observations of the phases are: that the price growth of the early 80s is on par with the 1997-2003 price growth (in nominal terms) and that prices appear to be relatively more volatile following the GFC.

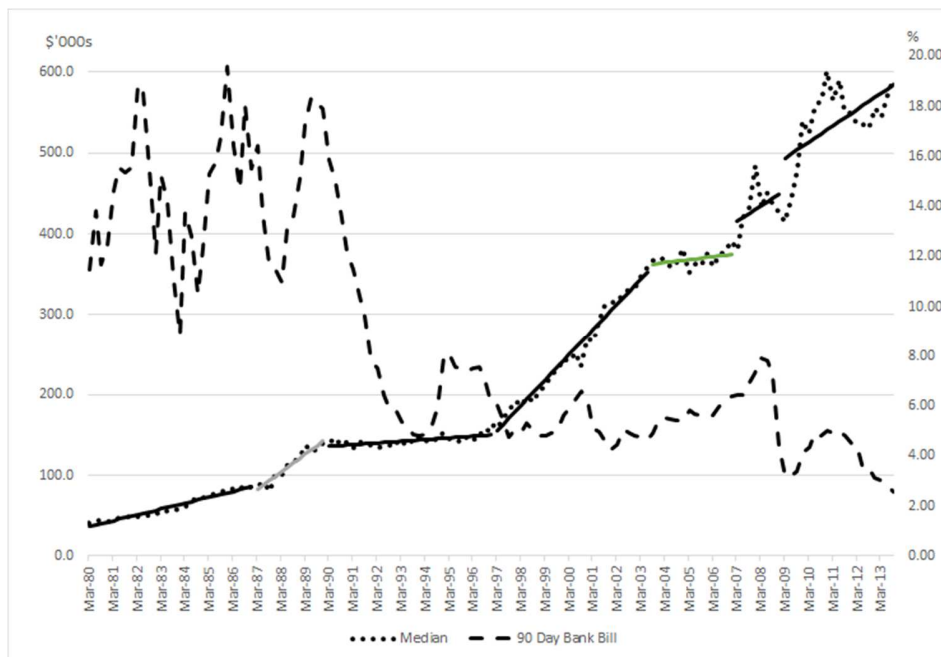
Table 3: Phases of House Price Growth

Phase Number and Span	Phase descriptor	Average
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1: 1980 -1986	High Growth	12.4
2: 1987-1989	Very High Growth	21.6
3: 1990-1996	Low Growth	1.5
4: 1997 -2003(Q2)	High Growth	13.3
5: 2003 (Q3) -2006	Low Growth	1.0
6: 2007-2008	Moderate Growth	4.8
7: 2009 - present	Moderate Growth	4.1

Authors calculations based on generalised econometric structural break tests (Zeileis *et al*, 2002 & Zeileis *et al* 2003)

Figure 1: House Price Growth Phases and Lending rates



Source: REIA (Melbourne Medians) ; RBA(90 day bank bill) and authors' calculations.

Innovation and House price growth.

To determine whether there is an association between innovation and house price growth we need to consider several non-trivial factors, including the complex and evolving state of the housing market and the broader economy. This challenge is further intensified by the fact that there is little (if any) data over

time that provides a means of formally measuring the introduction and adoption of innovative products, either in aggregate or separately. As noted previously, many of these innovations were targeted at particular consumers such as foreign investors that would predominantly engage in specific segments of the market.

The lack of consistent product innovation data combined with the distinct phases of the house price data lead us to assess the relationship between price growth and innovations discursively rather than using formal econometric analysis.

First, consider the three periods of high growth in contrast to two periods of low growth. High growth is phases one, two and four and low-growth is phases three and five. Our investigations show that innovation leading up to the first growth phase was sparse, but significant. Three key innovations occurred: the advent of the mortgage broking industry; securitization, and; mortgages with LVRs of 100%. Through phases one and two, significant deregulation occurred promoting increased competition with the entry of new players and the relaxing of bank regulation. Consistent with Geradi *et al* (2010) we suggest that these changes were deemed by central authorities to be necessary to maintain financial stability.

Importantly the low growth phase witnessed major changes including the privatisation of the CBA as well as the birth of new mortgage originators like Aussie Home loans. This was complemented by growth in foreign banks entering into the Australian mortgage market.

In the fourth (high growth) phase we observe that much of the product innovation we have today had already occurred. What is also important about this period is that the degree to which these were adopted seems to have grown. According to RBA/APRA (APRA, 2007) indicated that the popularity of low-doc loans, interest rate discounting as well as high LVR mortgages had noticeably grown. Further, securities were sold overseas for the first time during this period. It is also interesting to note that the popularity of these products grew when house price appreciation was in its second lowest growth phase 2003(Q3)-2006.

Conclusion

Our analysis shows that innovation (and competition) evolved throughout the different housing price growth phases. We therefore conclude there is no strong or even suggestive evidence that innovations

have influenced house price growth. This view is further supported if macroeconomic conditions are taken into consideration. For example the low growth phase beginning in 1990 is preceded by record high lending rates. The high growth phase beginning in 1997 is characterised by (relatively) low employment, inflation, lending rates and strong GDP and population growth.

It is important to acknowledge international research into this area has suggested that housing market efficiency has improved as a result of the deregulation and the ensuing increase in competition (Scanlon 2008). Although we did not conduct efficiency tests we believe it is reasonable to expect that the same can be said for the Australian market.

It is also important to recognise that there are certain idiosyncratic features of the Melbourne metropolitan market. Nevertheless, we believe that our results are generalisable across Australian capital cities, although this may not extend to international counterparts, due to interactions with other policies in relation to tax treatment, education funding, social security, and so on. In particular we have noted that many central authorities have used macro-prudential policies to curb residential property price growth. We further note that this has been seen to be successful by many commentators.

In summary, we began by noting that the approach to recent Australian prudential practice has been different from many of our international counterparts in that consumers have not been restricted from specific loan products. Given that;

- We find there is no discernable link between mortgage innovations and house price growth.
- There are limits to the effectiveness of regulation⁴.
- Regulations can become counter-productive⁵

We find no justification for Australian policy makers and regulators to change their current approach.

⁴ <http://www.rba.gov.au/speeches/2010/sp-ag-300310.html#f1> (accessed October 22nd 2014)

⁵ “As financial systems become more complex, detailed rules and standards have become more burdensome and ineffective, if not counterproductive. If we wish to foster financial innovation, we must be careful not to impose rules that will inhibit it.” Greenspan (p48, 1997)

References

- Abelson, P., Joyeux, R., Milonvich G. and Chung, D. (2005), Explaining House Prices in Australia: 1970–2003. *Economic Record*, 81: S96–S103. doi: 10.1111/j.1475-4932.2005.00243.x
- ABS (2010). Measures of Australia's Progress: Housing catalogue no. 1370. Australian Bureau of Statistics. Canberra.
- APRA (2007) [Submission - Joint RBA and APRA Inquiry into Home Lending Practices and Processes](http://www.apra.gov.au/Submissions/Documents/RBA-APRS-sub-inquiry-into-lending-prac-10-aug-07.pdf)(07.02) <http://www.apra.gov.au/Submissions/Documents/RBA-APRS-sub-inquiry-into-lending-prac-10-aug-07.pdf>
- De Silva, A., J. Boymal. S.Thomas (2015) “ The Residential Mortgage (De)regulation - Innovation nexus” *Unpublished –available upon request*
- Ellis, L, S. Black and L. Smith (2005) Housing Finance in Australia, Bank of international settlements. Working paper series <http://www.bis.org/publ/wgpapers/cgfs26ellis.pdf> (Accessed May 2014)
- Gerardi, K., H. Rosen and P. Willen, 2010 The impact of deregulation and financial innovation on consumers: The case of the mortgage market, *The Journal of Finance* 55:1 333-360
- Greenspan, A. (1997). Fostering financial innovation: the role of government. *The Future of Money in the Information Age*, *The Cato Institute, Washington DC*, 45-51.
- Otto, G. (2007), The Growth of House Prices in Australian Capital Cities: What Do Economic Fundamentals Explain?. *Australian Economic Review*, 40: 225–238. doi: 10.1111/j.1467-8462.2007.00453.x
- Scanlon, K, J. Lunde and C. Whitehead 2008 Mortgage Product Innovation in Advanced Economics, More Choice, More Risk, *International Journal of Housing Policy* 8:2, 109-131
- Williams, D. M. (2009). House prices and financial liberalisation in Australia. MPRA working paper
- Zeileis, Achim, Fr. Leisch, K. Hornik and C. Kleiber (2002). strucchange: An R Package for Testing for Structural Change in Linear Regression Models. *Journal of Statistical Software*, 7(2), 1-38.
URL <http://www.jstatsoft.org/v07/i02/>
- Zeileis, Achim, C. Kleiber, W. Kraemer and K. Hornik (2003). Testing and Dating of Structural Changes in Practice. *Computational Statistics & Data Analysis*, 44, 109-123.

Table 1

Phase Number and Span	Phase descriptor	Innovation (Mortgage Market)
Pre 1980	N/A*	1965 Founding of Housing Loans Insurance Corporation (Intention to offer loans with less than 25% deposit) 1972 Mortgage Broking Industry started 1979 Mortgage Back Security Created (up to 100%) loan, this was a peculiarly a Non-bank product
1: 1980 - 1986	High Growth	1980 Interest Rate ceilings on trading a savings bank deposits are dismantled from this time 1981 Campbell enquiry tables it final report 1982 Treasury Bond tender system is approved; Savings banks are allowed to accept deposits of up \$100K from trading or profit making bodies; Minimum terms on trading bank fixed deposits are significantly reduced 1983 Commonwealth announces it will allow the entry of ten new (domestically and foreign owned) banks; Martin Committee of review is announced 1984 Campbell report is endorsed; All remaining controls on bank deposits are removed; The Australian stock exchanges and the securities industry are deregulated. 1985 16 foreign banks are invited to establish operations in Australia; the first one begins in the last quarter; EFTPOS is introduced 1986 Interest rate ceilings are removed on owner-occupier home-loans; First award based superannuation schemes are established
2: 1987- 1989	Very High Growth	1988 Housing asset held by banks are given a 50% risk weighting as part of the introduction of consolidated risk-weighted capital requirements. Redraw Facilities emerge. Entry of new players,
3: 1990- 1996	Low Growth	1990 Six pillars policy is announced banning mergers between the largest six players.; Pyramid Building Society collapses 1991 Privatisation of Commonwealth Bank of Australia begins 1992 Authorised foreign banks are permitted to operate in Australia; Limits on number of new banks that can be established are removed; Australian Payment Clearing Association is established (APCA); First home loan originator emerge: Aussie Home Loans 1996 Banks remove 1% difference between investor and owner occupier home loans.
4: 1997 -	High	1997 More market consolidation St George merges with Westpac

2003(Q2)	Growth	<p>1997-99 Low Doc Loans(partly aimed at Asian clients who did not want to reveal their financial information to Australian lenders)</p> <p>1997-99. Australian Mortgage securities issued overseas.</p> <p>1998 Lenders introduced home-equity loans, redraw facilities and reverse mortgages, all of which allowed households to borrow against the equity they have built up in their homes. Lenders also introduced interest-only loans and shared-equity loans, which made it easier for households, particularly first home buyers, to purchase their home. Loan products that better meet the needs of certain types of borrowers, such as those with irregular income streams or those who do not meet the standard lending criteria, were also introduced.</p> <p>2002 The Financial Services Reform Act (FSRA) 2001 comes into effect, introducing a single licensing regime for financial advice and dealings in relation to financial product. Crucially, the legislation was only applicable to financial planners selling mortgage products, and not to mortgage brokers; Mortgage and Finance Association of Australia (MFAA) first puts forward the idea of national regulation for mortgage brokers</p> <p>2003 ASIC report identifies a lack of barriers to entry for mortgage brokers and a range of associated issues . The same report claims that broker numbers have boomed 'over the past decade.</p>
5: 2003 (Q3) - 2006	Low Growth	<p>2006 RBA publishes findings showing how residential lending standards have significantly changed from pre 2000s. In addition, RBA also notes that interest rate margins for major banks has dropped from 450 to 120 basis points, (new) borrowers also receiving up to 60 basis points reduction. Low doc loans now comprising 10% of market for new loans (compared to 1/2% pre 2000s)/High LVR loans have more than doubled to 16% since 2000. Regulation of the activities of mortgage brokers 'just around the corner' according to industry group, the Financial Planning Association (FPA).</p>
6: 2007-2008	Moderate Growth	<p>2008 Online platforms emerge</p>
7. 2009 - present	Moderate Growth	<p>2010 Mortgage Broker Legislation finally comes into effect, meaning that all Australian brokers are to apply for an Australian credit licence (ACL) from July 1, with all practitioners to be registered by Dec 31, 2010.</p> <p>2013 The number of brokers down from 13,800 pre-GFC to 12,000. This is in part due to industry consolidation that followed on from the change of law in 2010.</p>

Primary Sources include Interviews, Williams (2009), RBA, ASIC publications including speeches etc. * House price data was not available prior to 1980