

# THE HOUSING PUZZLE

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## ABSTRACT

*This paper is the keynote address, presented by Professor Bob Hargreaves at the 15<sup>th</sup> PRRES Conference in Sydney over 18-21 January 2009, on research opportunities in housing for property academics. The keynote address was sponsored by Estate Master.*

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## INTRODUCTION

Thanks to the organising committee for the invitation to talk to you about housing. I was thrilled to be invited, not realising at the time the extent of the challenge I face talking to my peers when there is so much expertise about housing sitting in the audience. The main theme of my presentation will be to identify research opportunities in housing. I am also planning to challenge some of you to use your unique position as academics to reach out beyond your next journal article or conference presentation, and contribute to the public debate about housing.

I think one of the reasons housing is the topic for this plenary session is a recognition by the organisers that housing is an increasingly important research topic for members of the Pacific Rim Real Estate Society (PRRES) community. A survey of articles contributed to the PRRES journal shows an increasing number of articles about housing. Over the 5 years, 2003 to 2007, the journal averaged 25 percent of articles about housing and housing related issues. I visited the PRRES website for my second survey and analysed conference papers from 1998 to 2008. The percentage of housing related papers at our conference averaged 23% over the 11 years surveyed. Subscribers to the Social Science Research Network (SSRN) electronic system will have noted many new papers about housing appearing, almost on a daily basis. Clearly, the rather extraordinary times we are living in has something to do with this.

A couple of events have put housing very much on the public radar over the last 5 years. First, the unprecedented run up in house prices in many countries and then the inevitable downside as the housing market corrected, as a result of the sub-prime mortgage crisis in the USA. The flow-on effects have resulted in the demise of a number of investment banks and the US government bail out of a several large financial institutions, including Fannie Mae & Freddie Mac. Of course, the financial crisis is no longer just about bad

mortgage loans in the USA. The interconnection of world financial systems means the property markets in many countries are now subjected to the credit rationing and a recalculation of risk. The ‘real economy’ is also now under threat with increasing layoffs in many industries, including building.

My initial interest in housing was triggered by a couple of classes I took when studying at the University of California, Berkeley. My Professor was Dr Wallace Smith who along with Professors Paul Wendt and Sherman Maisel formed a formidable real estate team at Berkeley. Many of the topics covered by Professor Smith in his lectures were later published in his two books about housing and urban development, (Smith, 1971 and Smith, 1975). On reflection, the most important lesson that I brought back from the US was a glimmering of understanding about the complexity of housing. The more obvious complexities of housing relate to what Rothenberg et al (1991) describe as housing “idiosyncrasies – spatial immobility, durability, heterogeneity and modifiability”.

So much for the past. What I am going to talk about today is the future and why housing offers many exciting opportunities for academic research. My talk will focus on the following:

- Why housing is an important area to research.
- Why housing lends itself to academic research.
- Possible forward looking research agendas.
- Bridging the town/gown gap.
- Our role as the critic and conscience of society.
- Conclusions.

## **WHY HOUSING IS AN IMPORTANT AREA TO RESEARCH**

It was James Graaskamp (1981) who said ‘someone rolled a rock to the entrance of a cave and created an enclosed space for his family.....This can be called the first real estate development’.

Everyone has a need for some type of shelter. Shelter is a basic human need and in an urban society if people aren’t home owners there is a very high probability they will be renters. Housing is usually the largest purchase most of us make, most of our savings are typically tied up in housing equity and most of our debts are mortgages secured against our homes.

It used to be said that when assessing investments, the family home should be excluded from calculations because we all need somewhere to live and it is risky leveraging investments on the back of housing equity. In recent times, many people ignored this advice and a whole industry of ‘property wealth seminars’ has sprung up advising

investors on how to accumulate large residential rental housing portfolios in a short space of time. Sadly most of the get rich quick schemes only worked when house prices were increasing. It is puzzling why so many intelligent people invested in these schemes. Perhaps the promoters capitalised on a basic human instinct, greed. Also, the inability of naive property investors to understand and quantify risk.

Articles about housing are frequently reported in both the electronic and print media. During the property boom, one New Zealand Sunday paper supposedly increased circulation by about 20 percent every time they featured a housing article. The recent property boom made many home owners feel a lot richer. For example, Quotable Value (2008) statistics show in New Zealand from 2002-2007 house prices doubled. Similar increases were seen in a number of other countries including Australia. These increases had a flow-on effect into consumer spending and lending institutions were happy to lend money for consumer items using a mortgage over the family home as security. Of course, the flip side of this is now as property prices retreat we feel poorer, spend less on consumer articles and obtaining credit is more difficult. The extent to which the media influences the behaviour of housing market participants is a housing puzzle worthy of further research.

Another interesting aspect of housing is that new houses have become larger and more elaborate over time. Statistics New Zealand (2006) show the average size of a new house increased by 37 percent from 1991 to 2006. In most western countries, this trend has emerged at a time when family sizes are decreasing. Certainly, more space is required if people work from home but generally large houses are associated more with being status symbols. There is nothing new in showing off wealth via housing; the French have been doing it for at least 500 years. Perhaps as the people become more constrained by high energy costs and worries about carbon emissions, there will be a return to smaller more energy efficient houses. Also, the social stigma currently attaching in some quarters to people who conspicuously over-use resources may manifest itself in decreasing demand for 'McMansion' type housing.

A large part of many national economies is directly related to housing. The building industry in most countries is dominated by new home builds and home renovations. Fluctuations in the rate of building new homes has flow-on effects into the supply chain providing new material for both construction and home fit out. In addition, real estate agents, valuers, lawyers, property managers, bankers, home inspection services and even property academics are all part of the wider housing industry.

Housing markets some times behave in surprising ways. Economics teaches us that the value of a house is the present worth of the discounted future income stream. However, some investors have ignored past real estate cycles and have been using capitalisation rates about half the borrowing interest rate on the assumption capital gains in the order of 10% per annum would continue indefinitely. The reality is that in many localities, property prices are now falling while rents remain static.

## WHY HOUSING LENDS ITSELF TO ACADEMIC RESEARCH

As academics, we generally feel more confident about our research if we have access to good data so we can present the results in a form backed up by sound statistical analysis. Housing data is typically in the public domain and of good quality, being collected by government agencies for a multiplicity of policy and planning reasons. Furthermore, housing related data bases usually report large numbers of property sales, new rent settings etc.

One of the important lessons emerging from the current world financial crisis is the need for researchers to build investment models using data with a long time series. With respect to the pricing of financial derivatives, Greenspan (2008) concluded two decades worth of data was insufficient to quantify long term risk. Most property researchers do not have the 100 years worth of housing data enjoyed by researchers in Amsterdam but they do have reasonably long housing data series.

The availability of large volumes of housing transactions combined with increasingly sophisticated data analysis software packages and the ability to combine data bases opens up opportunities for researchers to carry out high quality quantitative research. While automated mass appraisal has been around for the best part of 50 years, the current models are much more sophisticated and accurate than earlier models. The comparable sales approach now often includes a similarity matrix enabling automated selection and weighting of the most comparable sales. A 'blue sky' view of where things are headed may see houses in the Google Street View option able to be read by computerised optical character recognition systems. Such a development could potentially be used to select comparable sales based on their street view and location similarities. Google Street View can also be used by analysts to increase their understanding of the sales data by taking a virtual tour of neighbourhoods. Such a tour could help to identify the reasons why some house sales are outliers.

Qualitative based housing research will continue to play an important part in understanding the housing puzzle because rapid feedback from questionnaires is one obvious advantage of asking people directly why they act in certain ways.

Most western countries have adopted a mixed model for housing whereby the private sector provides housing for those who can afford to buy and the government sector concentrates on providing social housing (usually rental) for the not so well off. Both Australia and New Zealand provide contestable government funding for housing research. In Australia, this is mainly done via AHURI and in New Zealand via CHRANZ. I think it is fair to say both AHURI and CHRANZ have a bias towards social housing issues.

The universal nature of housing also opens up opportunities for academics to do cross cultural housing studies. These are the type of studies that the editors of international

academic journals prefer as they bring a global perspective and are likely to have more chance of being published. An example of this type of research was the Fisher and Jaffe (2003) study of home ownership rates in 106 countries, using United Nations data. The PRRES conference is a wonderful way of establishing the face to face links with academics from other countries that make it possible to do cross cultural research. Of course, we need to be sure we are comparing like with like across countries, since there are big variations in the size and quality of housing stocks. In addition, the property rights associated with housing vary quite widely across countries. For example, freehold tenure in Australasia gives the owner more rights than could be obtained in say Hong Kong where the government retains ownership of the land.

## **POSSIBLE RESEARCH AGENDAS**

### **Nimby studies**

Scanning the real estate literature shows many property academics have the skills to undertake NIMBY (not in my backyard) studies. In our increasing litigious societies, such studies are likely to become more common. NIMBY projects typically require the researchers to build hedonic models of a local property market and use a variety of ways of fitting the NIMBY variable into the equation. Typically, each project while unique in some respects is built on the shoulders of those who have done similar work before.

Examples of NIMBY studies considering the impact on local house values include;

- Cell phone towers
- Wind turbines
- Hydro dams
- Mining activities
- Overhead power wires (high voltage)
- Airport and aircraft noise
- Community or half way houses
- Rubbish tips and contaminated land
- Proximity to Atomic Power Plants

Becoming an expert in some or other aspect of 'nimbyism' often provides consultancy opportunities as an expert witness. In addition, it gives academics access to unique data sets that can be used as a basis for academic papers. However, unless the right to publish is written into the contract, the client may decide to suppress the results of the research.

Traditionally, NIMBY studies were developed using two dimensional property models but the next step is going to be three dimensional models. This is where geographic information systems (GIS) become an important part of the analyst's toolkit. The software driving many GIS systems is complex and currently not very user friendly. One piece of

advice from a colleague of mine was to work with someone who can drive the software, or be prepared to invest a lot of time learning to do so.

## **Policy studies**

The countries in the PRRES region generally have well established mixed model housing markets and policy studies often involve debates about the appropriate degree of intervention in the housing market. Possible on-going research questions include:

- Do government subsidies to first home buyers simply drive up the price of starter houses and represent a windfall gain to the vendors?
- Should government be selling off older rental housing and replacing it with new rental housing thereby increasing supply and driving prices down?
- Should governments intervene in times of housing market ‘busts’ to underpin the building industry and retain a skilled work force?
- Does the policy of giving state house tenants the right to stay in a particular house for as long as they wish result in over-investment in social housing? (This situation can occur if an elderly widow is living alone in a 4 bedroom house).
- What are the pros and cons of using housing vouchers as an alternative to income related rents? How would such a policy impact on the housing stock?
- Are government and first home buyers comfortable partners with shared equity housing schemes?
- Should we follow the United States and allow compulsory acquisition legislation to be amended so it can be used to benefit private sector developers?
- What are the likely impacts on house prices as we move to a much more regulated environment where banks require purchasers to have larger deposits and increased debt servicing capacity?

Currently, quite a lot of this work is being done by mainstream economists. While economists may have the econometric tools, they often lack an understanding of how housing markets work and this is where property academics can form an important part of the team. For example, housing vouchers are fine in theory but checks need to be put in place to ensure they do not result in overcrowding and poor health outcomes for children.

## **Real estate**

In comparison with the American Real Estate Society (ARES) conference, there have been very few PRRES research papers presented on the sales and marketing side of housing. The reality is real estate sales and marketing is a multi billion dollar industry in most PRRES countries.

Emerging issues in real estate include:

- Sales force remuneration systems –commission only, salary only, or retainer plus commission?
- How is the internet changing the role of the sales force? Will housing end up like internet car sales? Is it realistic to have ‘virtual’ open homes? Will the role of the real estate agent be reduced to simply that of a negotiator?
- Full services commission selling versus flat fee agencies?
- When does the auction method work best?
- Agent accountability: Self governing or independent authority?
- The use of real estate research as a marketing tool.
- Real estate franchising.
- Agency theory. Why do agents get higher prices on average for their own as compared to client’s homes?

The theory of agency is important in property transactions because unless the agency contract is well crafted, vendors may end up with less than optimum sale prices. For example, the seller employs an agent to sell their house and the seller pays a commission on successful completion of the sale. How does the seller ensure the agent will maximise the price when it is likely to be in the agents interest to close the deal at something less than the best price? Brower (2008) has shown how the New Zealand Government initially adopted a “hands off” approach to the sale of large parts of New Zealand’s high country. She produces strong evidence to show the use of agents failed to achieve good outcomes for the taxpayer.

## **Housing affordability**

Can we develop improved ways of defining housing affordability measures? Currently, the measures reported are somewhat simplistic; ranging from the two variable models with wages and house prices to three variable models of wages, house prices and interest rates. Affordability measures are typically reported on a regional or national basis.

Fisher, Pollakowski and Zabel (2007) have undertaken work in the US aimed at improving affordability measures. Their measures of locational affordability include job accessibility, quality of local schools and issues relating to crime rates. In this part of the world, it seems feasible to follow the US lead and extend the models to a local level to include transportation costs, the cost of private versus public schools, home maintenance costs and possibly crime statistics.

## **Building costs**

One of the puzzles about housing affordability is why housing construction costs are so high compared to the cost of other much more complex manufactured products. If houses are compared with cars or electronic equipment, it seems clear housing is lagging many years behind in the adoption of new manufacturing technologies. Part of the problem is houses are labour intensive, individually customised and typically constructed on site rather than in a factory. Larson et al (2004) have proposed a Lego block approach to the house of the future whereby homes would be built in a factory and assembled on site from around 20 pieces. They note the typical American home is currently built on site from over 40,000 individual pieces. They go on to propose an open source method of building, whereby standardised building codes would enable manufacturers to achieve economies of scale and the competition between manufacturers' would act to control prices.

Advances in robotics make it likely than in the future we will see increasing substitution of capital for labour and more use of off-site manufacturing. The USA already leads the world with factory produced 'mobile homes' that are typically quite immobile once placed on site. Another approach is to produce affordable houses in kitsets in low labour cost countries such as China. These houses are then flat packed into containers and shipped to markets in the West. To date, the market does not generally see factory-built houses as a substitute for customised houses built on site. However, the gap is closing as the quality of factory built housing improves. Once the gap is closed, the substitution effect means the benefits of low cost factory built houses may reduce the value of the existing housing stock and thereby improve affordability. As property academics, we have a role in researching affordable housing and sensitising the public to the options available to them. We also have a role in challenging some of the needless rules inhibiting the introduction more affordable factory built housing.

## **Futures markets**

The need for establishing futures markets in housing derivatives has been talked about for many years, but the reality is such markets have been hard to establish. To operate well, futures markets require price volatility so participants can bet on future price movements. If the market movement is steadily upwards, then speculators will be less willing to bet on a down market. The first such market was set up in the UK and failed due to lack of support and very thin trading volumes. The current model in the UK involves a large bank as market maker, but the trading volumes are still very low in comparison to the physical market. In the USA, Macro markets (2008) have established a futures market for housing

derivatives traded on the New York Stock Exchange. This market uses the Case Shiller repeat sales index methodology to establish prices. The good thing about futures markets is that they establish a public view of future trends in house prices. This enables renters to purchase a derivative product based on the actual housing market where they can gain some of the benefits of home ownership and decrease the risk of not being able to achieve physical home ownership at some point in the future. Academics have a major role to play in the development of the more timely and accurate ways of reporting movements in house prices. In this part of the world where sales volumes are generally smaller than the USA, the SPAR (sale price to assessment ratio) may be a better instrument than repeated sales, because rather than just using repeat sales, it can use all bona fide sales information ( Bourassa et al (2004), Shi et al (2008)).

## **Behavioural aspects**

The multi-dimensional aspects of housing means the academic literature on housing contains contributions from a variety of academic disciplines. At the PRRES conference, presenters predominantly consider housing from an economic viewpoint. This is understandable since most property academics typically have a background in valuation, property management or finance. All of these disciplines were originally derived from economics. Traditional economics assumes consumers act rationally with self interest as the prime objective.

However, an examination of the academic literature shows research on housing goes far wider than conventional economics and efficient markets where all consumers act rationally. To understand housing, researchers need to understand something about the people who live in the houses: their aspirations, motivations, life cycles and succession planning. Who better to understand people than sociologists and psychologists trained in this area?

In this regard, perhaps property academics need to spend more time collaborating with colleagues from the social sciences. Take the case of Robert Shiller the famous economist from Yale and author of “Irrational Exuberance” (Shiller, 2005). Famous because he correctly predicted the downturns in the share market in the late 1990s and more recently the slump in the housing market. Shiller has written about the herd-like behavioural aspects of people and property crediting some of the behavioural ideas to his wife, a psychologist. Shiller (2007) is quite a strong critic of the efficient market hypothesis that assumes the present price of a stock embodies all market information. If this were so, he questions why the stock market is so volatile and why there are bubbles in the housing market.

## **BRIDGING THE GAP BETWEEN THE IVORY TOWER AND THE 'REAL WORLD'**

Property academics working in the area of housing are very much in a position to bridge the town/gown gap. This can be done so there is a win/win situation. A win for the academic researcher and a win for the taxpayer looking for unbiased commentary. The majority of universities in the PRRES region are financed, to a large degree, by governments and hence the taxpayer. Property academics have a unique ability to connect with taxpayers, provided their research is seen as relevant. One obvious way to connect is via housing, since most taxpayers are interested in this topic.

The reward system in most universities is aimed at promoting academics who have demonstrated their ability to publish in high ranked, peer reviewed, international journals. This system is unlikely to change, at least in the foreseeable future. If anything, the trend is more to a "publish or perish" imperative. Having done all the hard work in publishing in a top journal, then there is a place for rewriting a version in lay terms. The requirement is a simple understandable version that property professionals can relate to. Such a version could fit into an industry professional journal. In fact, if we can't explain our research and its relevance in lay terms, then we do have problem.

An even shorter version may attract media attention. The benefits of making the extra effort to get research in front of the property professions and the general public is that it increases an academic's profile and has the potential to lead to industry contacts, research contracts and an exchange of ideas with people at the property 'coal face'.

## **OUR ROLE AS THE CRITIC AND CONSCIENCE OF SOCIETY**

One of the privileges of working in the university environment is academics are given freedom to do research and speak out on topics that might be contentious and unpopular with the 'establishment'. Jones, Galvin and Woodhouse (2000) noted in New Zealand, academic freedom is defined by the Education Amendment Act (1990) as: *'The freedom of academic staff and students, within the law, to question received wisdom, to put forward new ideas and to state controversial views.'*

Certainly, academic freedom means slightly different things in different countries and sometimes speaking out on housing issues can be tricky because it may involve criticising a government policy; the same government that provides research money for the university. Never the less, as property academics do we speak out enough to the public about housing issues? I suspect the answer is no. If I am right, then this is a pity. Academic contributions to housing policy debates may not always be welcomed by politicians, but they are respected because they bring an objective view to the table.

How many property academics spoke out about sub-prime mortgages and the potential train wreck to the housing market? Most of us saw the potential problems emerging, but did nothing about it. Similarly, some of the ‘dodgy’ property investment vehicles such as Blue Chip New Zealand where some investors were set up to fail.

Of course, putting your head above the walls of the ivory tower can be stressful as the promoters of ‘dodgy’ investment vehicles often employ professional public relations experts who are much more experienced than academics when dealing with the media. Receiving a phone call from an irate corporate CEO threatening to sue an academic for allegedly causing the company loss of business can be worrying experience. However, the media in general and the public at large look to academics to explain the complexities of markets, with housing being one of these markets.

## **SUMMARY AND CONCLUSIONS**

The widespread public interest in housing provides academics with a platform to do research aimed at fitting together pieces of the housing puzzle. Housing researchers typically have free access to extensive data bases about housing, assembled by governments for planning and to assist with a variety of policy settings. The mixed model of government and private sector involvement in housing markets lends itself to policy studies looking at the impact of government intervention on supply, prices, ownership outcomes and public health.

In the past, a number of prominent property academics have advanced their careers by becoming experts on NIMBY studies. In my view, opportunities in this area are likely to increase as the world becomes more urbanised and people become more litigious.

When comparing the PRPRJ with ARES publications, it is clear that research into the sales and marketing side of housing has been a relatively neglected topic in the PRRES community. This is a pity as the internet is likely to bring large structural changes to real estate.

Housing affordability is of major concern for home buyers, and property academics are well placed to build more sophisticated models measuring affordability. In New Zealand, affordability problems have resulted in a worrying trend to increased numbers of households being renters. The development of a futures markets for housing is one way of enabling renters to hedge against future increases in house prices.

I have advanced some ideas about how as property academics we can report our research at multiple levels to bridge the gap between academia, industry and the public. Public interest concerning the volatility of housing markets has placed property researchers firmly in the media spotlight. As academics, we need to capitalise on this position to ensure the ongoing viability of the property discipline in academia.

Finally, I have reminded you about our privileged position as the critic and conscience of society. A society which is often relatively naive when it comes to real estate investment issues and looks to academics to provide independent and unbiased commentary.

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