**Research Matters**

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**Long run patterns of house prices in Melbourne:** The role of units and apartments

The March 2011 edition of Research Matters contained an article about the changing distribution of lower cost houses in Melbourne between 1976 and 2009. This analysis was based on research by the Spatial Analysis and Research (SAR) branch, which uses Valuer General unit-record sales data to explore the long run spatial patterns in housing prices in Melbourne. The article discussed how relatively lower cost house sales (those in the lowest quarter of prices) in Melbourne have tended to be increasingly located in outer and fringe areas.

The analysis in the March edition referred only to house sales. However, other dwelling types have a role in the housing market. Units and apartments (hereafter referred to as units) provide comparatively affordable housing opportunities, and increasingly may be the only lower cost housing option in inner and middle suburbs. However, this effect isn’t the same everywhere in Melbourne. This may be because there are so few unit sales; or because units are also comparatively expensive in some areas. There are also compositional differences between houses and units; and between different types of units.

A lower cost option

Units are generally lower in cost than houses. This was true in 1976, when the median unit price was $32,000 compared to $35,000; and was still true in 2009, when the median unit price was $375,000 compared to $419,950 for houses. The comparative affordability of units is particularly apparent in outer and growth suburbs. In fringe areas, 77 per cent of unit sales were in the lowest quarter of dwelling sales for Melbourne in 2009.

In inner and middle suburbs, there are increasingly stark differences between house sales and unit sales. In 2009, 20 per cent of units in inner Melbourne suburbs were in the lowest quartile of sales, compared to only 2 per cent of sales of houses. This is shown at Figure 1.

Fewer but increasing sale numbers

Except in some of Melbourne’s inner suburbs, there have historically been far fewer sales of units than of houses. This means that their overall effect on dwelling prices in some areas may not be substantial.

However, sales of units as a proportion of all dwelling sales have grown steadily in Melbourne since 1976. There has also been disproportionately more growth in sales at the lower end of the housing market than at the more expensive end. In 1976, 23 per cent of sales in the lowest price quartile in Melbourne were units. This had increased to 44 per cent in 2009.

In lower cost suburbs

Overall, the lowest cost dwelling sales in Melbourne are houses in the outer and growth areas. In 2009, 53 per cent of lowest quartile dwelling sales were houses in outer and growth areas. In many affordable fringe locations, the majority of sales are houses and there are few units sold. This makes sense since it is often the high underlying land value that leads to the construction of units in inner locations. In outer areas, land is cheaper and the more preferred housing type – separate houses – dominates.

Hoppers Crossing is an outer urban location where most (69 per cent) house sales were in the lowest quarter of Melbourne dwelling sales in 2009. Units were more affordable than houses: nearly all (92 per cent) those sold in the suburb were in the lowest Melbourne quartile. However, units made up only a very small portion of sales in Hoppers Crossing, with 89 out of 854 sales in 2009. This is illustrated at Figure 2.

In higher cost suburbs

The typically lower cost of units compared to houses is more important in higher cost submarkets. In some higher cost Melbourne suburbs, the only relatively low cost dwellings (those not in the highest quarter of the city’s sales) are units. Only 8 per cent of all dwelling sales in the inner Melbourne suburbs were in the lowest price quartile for Melbourne in 2009, of which essentially all (97 per cent) were units.

Brunswick is a gentrified suburb where most (63 per cent) house sales were in the highest priced 25 per cent of dwelling sales in Melbourne in 2009. In Brunswick, numbers of unit sales have increased substantially since 1976. Whereas house sales in Brunswick were nearly all in the top two price quartiles, unit sales had a more even distribution, with 20 per cent in the lowest quartile and 31 per cent in the second quartile for Melbourne. This is illustrated at Figure 3.

Apples and oranges: compositional differences

One of the reasons units tend to be lower in price is that they are compositionally different – for example, in terms of size - to houses. Compositional differences between types of units and apartments are also important. The nature of units has changed since 1976. New, larger apartments being constructed at the ‘luxury’ end of the market in some suburbs are very different to the older, smaller ‘flats’ common in those same suburbs. Large numbers of units in areas like Carlton are student-only or are only studio sized. This means that they are not necessarily accessible to, nor suitable for, the wider housing market.

Partly because of composition, units in some submarkets are also relatively high cost, although they tend to be marginally lower in cost than houses in the same locations. Camberwell provides an example. Unlike sales of houses in Camberwell, with nearly all (96 per cent) in the highest Melbourne quartile for dwellings, only around half (43 per cent) of unit sales were in the highest price quartile for Melbourne dwellings. However, most of the remainder (47 per cent) were in the second highest quartile. This is illustrated at Figure 4.

Population growth slows

The Australian population has increased strongly in the year to 30 June 2010, but well below the rates recorded in 2008-09. With an increase of 377,100 people, Australia’s Estimated Residential Population (ERP) reached 22.33 million at the end of June 2010. This is a growth rate of 1.7 per cent over the previous year. Victoria’s population grew by 1.8 per cent (99,300) people, resulting in an ERP of 5.55 million. This increase equates to just over 1,900 extra people a week in the State of Victoria – made up of net migration and natural increase. In absolute numbers, Victoria’s population increase is the highest in Australia after New South Wales (105,421 persons). Queensland (89,083 persons) ranks third.

Australians concentrate in their capital cities. At 30 June 2010, 14.3 million (or 64 per cent of people in Australia) lived in their state or territory capital city. Capital cities also receive most of the population growth – with the exception of Queensland, where a significant proportion of the growth occurred in the Sunshine and Gold Coasts. The most dominant state capital city is Melbourne which has 80 per cent of Victoria’s growth, followed by Perth (76.5 per cent of state growth) and Adelaide (75 per cent of state growth). Perth took the title of the capital city with the fastest growth (2.3 per cent), while Melbourne was the capital city with the largest growth (79,014 persons).

Among the top ten Local Government Areas (LGAs) with the largest growth in Australia were four Victorian LGAs. These were Wyndham (3rd), Whittlesea (5th), Casey (7th) and Melton (9th). All of these municipalities, designated growth areas, are located on the fringe of Melbourne and all had an increase in population between 7,000 and 13,000.

The above points are highlights from the 2011 edition of the *Victorian Population Bulletin* produced by Spatial Analysis and Research (SAR) from the Australian Bureau of Statistics bulletin *Regional Population Growth 2009-10* (Cat. No. 3218.0). The 2011 Bulletin is now available online on the SAR website.

Make sure you’re counted: Census 9 August 2011

The next Census of Population and Housing is just around the corner and while you may remember the last Census, you may be unaware of the reasons why it is such an important national activity. The data collected will help define what Australia will look like in the future - both on a community level and how we will look as a nation in coming years. Each level of government uses Census data to plan for the infrastructure and services we use every day; from hospitals and schools to public transport and roads. Furthermore, with strong population growth over the last five years, it will be particularly important this Census to find out just how this growth has been distributed across the state.

For more information on the Census go to: www.abs.gov.au/census or call 1800 420 182.

Victorian Coastal Atlas 2011

Many readers will be aware of the Melbourne and Regional Atlas products released in 2006, which presented a spatial view of physical, environmental, social, economic and cultural aspects of Melbourne and Regional Victoria. This year Spatial Analysis and Research (SAR) is embarking on another Atlas project which focuses on coastal issues in Victoria. The project is being led by SAR and informed by a project committee comprised of representatives from the Department of Sustainability and Environment and the Victorian Coastal Council. SAR is also liaising with other relevant departments and agencies such as the Department of Primary Industries and Parks Victoria.

Like its predecessors, the Coastal Atlas will focus on key issues, rather than simply compiling descriptive data. This approach has a number of benefits:

• it is issues-led rather than data-led and therefore has direct policy relevance

• it helps to build understanding around complex issues

• its visual presentation of spatial context provides information that is readily understood by a variety of audiences

• its interdisciplinary content enables discussion and analysis across policy areas

• it can be used to explore and analyse emerging issues.

Given current policy interest in coastal issues, the Coastal Atlas is expected to provide a timely overview of matters relating to:

• population growth and development along the coast

• natural resource management and threats to natural resources

• key planning decisions relating to coastal development

• risks and hazards (for example, fire, flood)

• environmental change (for example, coastal erosion, sea level, temperature)

• community-based perspectives, social disadvantage and vulnerability

• employment and industry.

A broad benefit of the Coastal Atlas would be to bring together relevant information in order to progress strategic policy conversations around coastal issues. The expected release date for the Atlas is late 2011.

Mapping the urban heat island effect in Melbourne

Like many other urban areas around the world, metropolitan Melbourne often experiences warmer temperatures than its surrounding rural areas. Many common construction materials in urban areas absorb and retain more heat than lesser developed rural areas, which results in measurable temperature differences between the country and the city. This urban warming, sometimes combined with influences from weather and other environmental conditions, is known as the urban heat island effect.

Urban heat islands are significant in many ways. They can negatively affect the health and welfare of urban residents by increasing the magnitude and duration of heat waves within cities, and depriving residents of the cool relief typically found in rural areas during the night. Urban residents may also require more energy to cool their homes, leading to higher costs from increased use of air conditioning and refrigeration. Urban heat islands may also affect local wind, humidity and rainfall patterns, and alter the temperature of storm water runoff resulting in changed local aquatic ecosystems.

Research indicates that the impacts of urban heat islands can be mitigated through selecting surface materials that can reduce the absorption and retention of heat, such as permeable concretes for roads and pavements. To build upon this field of research, Spatial Analysis and Research (SAR) is undertaking a project using information on the spatial patterns of urban heat islands (gathered from aerial remote sensing) and analysing its relationship to the materials used in the makeup of our urban areas. Aerial remote sensing has been used in other cities (such as Sydney and London) to detect patterns of heat and identify areas of significant heat or ‘hotspots’.

In Victoria, the state government operates two firescan aircraft as part of its bushfire response fire mapping operations. These aircrafts are mounted with thermal infra-red sensors used for flyover mapping of fires. The sensors can detect variations in temperature across rural and urban areas at a fine-grained level meaning they are ideal for mapping urban heat. In addition to their bushfire response role, for the last three years these planes have been deployed for test and validation survey work in mapping Melbourne’s urban heat island effect.

This SAR project, one of the first of its kind to be undertaken in Melbourne, aims to thermally map the metropolitan area and demonstrate the utility of remote sensing in detecting urban heat islands and their hotspots. In addition the collected data will feed into collaborative work with Victorian universities, where it will be used to assess the effectiveness of urban heat island mitigation strategies (such as green infrastructure systems), and develop decision-making guidelines on optimising the selection and implementation of green infrastructure.

The project is sponsored by the Department of Sustainability and Environment (DSE) through the Victorian Centre for Climate Change Adaptation Research.

What’s new online

**www.dpcd.vic.gov.au/research/urbanandregional**

Recent updates to the website include: *Residential Land Bulletin December Quarter 2010*; *Victorian Population Bulletin 2011*; and a number of videos dating from 1954 to 2005 which provide the viewer with a sense of the challenges and issues we have faced in the past and which we still face today in relation to the planning and growth of Melbourne and regional Victoria.

For further information on articles in Research Matters, please contact [**spatialanalysis.research@dpcd.vic.gov.au**](mailto:spatialanalysis.research@dpcd.vic.gov.au)

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1 Spring Street Melbourne Victoria 3000

Telephone (03) 9208 3000

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Editors: Kylie Birch and Nardia Smits.

Email: spatialanalysis.research@dpcd.vic.gov.au

Internet: www.dpcd.vic.gov.au/research/urbanandregional