A Tale of Two Cities – patterns of population growth and change in Sydney and Melbourne

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INTRODUCTION

In 2007, KPMG demographer Bernard Salt attracted significant media attention when he claimed that if Melbourne continued to grow at the same rate it did over the period 2001-06, it would overtake Sydney as Australia's largest city by 2028. This claim was embraced by the then Victorian premier, John Brumby, and it reignited the decades old feud between the two cities as to who was bigger and better. Ironically, Salt (and Brumby) miss the point – talking about numbers may grab the headlines, but from a demographic and spatial perspective, Sydney and Melbourne are growing very differently. Over the period 2006-2011, Melbourne did record faster and higher growth than Sydney, but the spatial pattern of growth differed significantly between the two cities. The bulk of Melbourne's growth occurred on the urban fringe, and some areas recorded very high rates of population growth. In contrast, the fastest growing areas in Sydney tend to be in the established areas, particularly to the west of the CBD. While greenfield growth is occurring in Sydney, it is not at the rate and volume recorded in Melbourne. In addition, there are significant differences in the density mix of new dwellings, with far more high density dwellings constructed in Sydney.

This paper goes beyond the headline numbers to examine spatial patterns of population and housing change in Sydney and Melbourne. These aspects as far less understood and receive far less attention, yet they are important in understanding the nature of urban change and how this might inform decision making and policy implementation. This is true at both the metropolitan and local government level. The first part of this paper uses data from the Australian Bureau of Statistics to examine population trends over the period 2006-2011. This is followed by an analysis of dwelling data from the Census of Population and Housing, concentrating on the location of new dwellings and the prevalence of high density housing in the metropolitan context. The paper then draws upon other literature to discuss the possible influences on these population and housing outcomes. The role of metropolitan planning is particularly relevant to this discussion, particularly in light of specific policies to curb urban sprawl and increase housing densities in established area.

METHODOLOGY

Population statistics cited in this paper are primarily sourced from the Australian Bureau of Statistics (ABS), namely the Estimated Resident Population (ERP). This is the official population estimate produced by the ABS. At larger geographic scales it is produced quarterly, but on an annual basis estimates are produced for smaller levels of geography, such as the Local Government Area (LGA) – the primary geographic unit used in this analysis. There are 43 LGAs in the Sydney metropolitan area, and 31 in Melbourne – the sum of the LGAs in each city is used to define the metropolitan areas in this paper.

Every five years the ABS conducts the Census of Population and Housing – the most recent was conducted in 2011. This information, the subsequent Post Enumeration Survey and other information on overseas arrivals and departures are then used to "rebase" the ERP and revise the estimates back to the previous Census. Subsequent population estimates are then based on the previous Census eg the 2012 ERP is based on 2011 Census. The methodology used to rebase the 2011 Census ERP differed slightly from previous Censuses and has revealed some inconsistencies in the estimates produced, prompting the ABS to revise their population estimates back to 1991. The impact of these changes were considerable in NSW and Victoria. This is due to an initial overestimation of the 2006 population, which has subsequently been revised downward in the final recast estimates. This has had the impact of increasing both the volume and growth rate of the population between 2006 and 2011. However, though there were changes to the numbers, from a spatial perspective it did not

significantly change the "demographic story" of the last twenty years. These final rebased population estimates are used in this paper.

This paper also utilises dwelling data from the Census of Population and Housing. It has several advantages over building approvals data and property databases maintained by individual councils. The first is that it is not merely a count, but it includes other data such as the structure and household type. Secondly, it is available for small geographic areas which enables fine grained analysis. Building approvals data is just that – it records the approval but it does not always translate into a building completion or an increase in stock eg knock down and replace. It is particularly a problem for large projects for which significant finance is required – if the project fails to go ahead the approval then the approval is lodged but there is no dwelling built. Council property databases have the disadvantage of a lack of consistency - eg differences across councils, and they are generally designed for administrative use rather than the generation of statistical data.
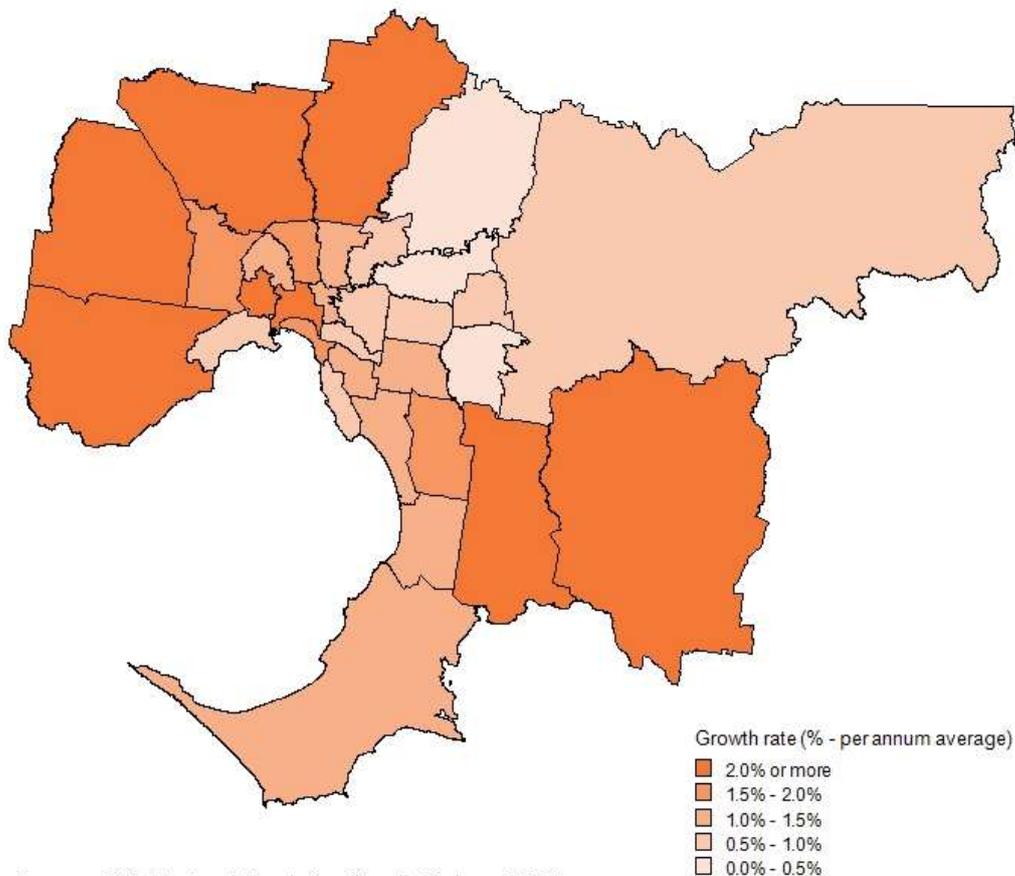
However, dwelling data from the Census is not without its disadvantages. The structure of the dwelling is recorded by the Census collector and there are some definitional ambiguities that may result in data issues. Firstly, there is some question about whether serviced apartments are treated as private or non-private dwellings. This is a problem in tourism and CBD areas, and depending on their treatment in data processing, it can result in statistical volatility. Secondly, there is an ambiguity in the definition of a separate house which can result in some statistical volatility, especially over time. By definition, separate houses need to be at least 50 centimetres from the neighbouring property to be recorded as such (ABS, 2011). In parts of outer suburbia, the construction of larger houses on small blocks means that often the entire block is built on, meaning that what are intended to be built as a separate dwelling may for statistical purposes be defined as a row, terrace or townhouse ie a medium density dwelling, or vice versa. For this reason, this paper concentrates on high density dwellings as there is a clear definition, but at any rate, analysis at the LGA level does diminish the impact of the definitional ambiguities.

PATTERNS OF GROWTH AND CHANGE IN SYDNEY AND MELBOURNE

Over the period 2006-2011, the volume of growth in Sydney and Melbourne was similar. Sydney grew by 352,790 persons (1.6% per annum), but Melbourne recorded stronger growth, amounting to 402,880 over the same period, or 2.1% per annum. By way of comparison, the growth rate for Australia over this period was 1.8% per annum (ABS, 2013). The reasons for this strong growth are largely attributable to increased net overseas migration (especially overseas students and skilled migrants on 457 visas), and increased fertility, particularly of older women in the inner city. Increased fertility and the subsequent increase in the number of births is also a legacy of increased overseas migration, as many migrants are young adults of child bearing age, hence increasing the pool of fertile aged women. In the case of Melbourne, Victoria also recorded a decline in net interstate migration loss (especially to Queensland). Interestingly, no LGAs in either city recorded population loss in this period.

Over the period 2006-2011 the strongest annual growth rates in Melbourne were recorded on the urban fringe (Figure 1), specifically Wyndham (7.7%) and Melton in the west (6.9%), Casey (3.5%) and Cardinia (5.5%) in the southeast, and Whittlesea (4.6%) in the north. These areas are growing as a result of new housing estates that offer affordable housing opportunities primarily for young couples and families – typically first home buyers. The rapidity of growth in these fringe areas of Melbourne creates significant planning challenges in terms of infrastructure servicing. The City of Melbourne also grew strongly (4.6% per annum) but the only other inner city LGA to record strong growth was Maribyrnong (2.8%). Growth here was attributable to dwelling growth on brownfield sites and some apartment construction in Footscray. The drivers of growth in inner Melbourne are significantly different as the housing stock is less affordable and mostly consists of high density apartments. These are attractive to young professionals and students (particularly from overseas) who seek rental accommodation close to employment and/or education institutions. Many high rise apartments in Melbourne, particularly along the top end of Swanston Street, were built specifically for the overseas student market, due to their proximity to both RMIT and the University of Melbourne.
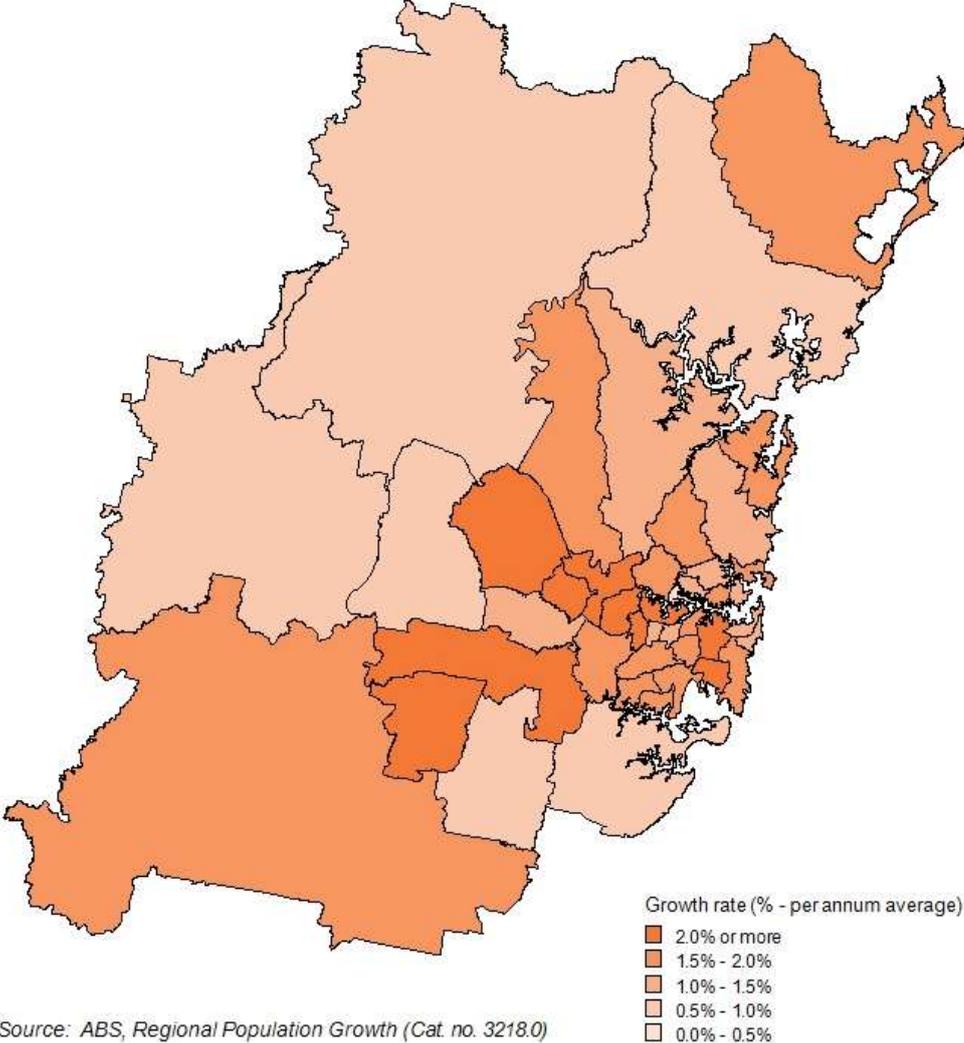
Figure 1: Population growth rate, LGAs in metropolitan Melbourne – 2006-2011

Growth rate (% - per annum average)
- 2.0% or more
- 1.5% - 2.0%
- 1.0% - 1.5%
- 0.5% - 1.0%
- 0.0% - 0.5%

Source: ABS, Regional Population Growth (Cat. no. 3218.0)

In contrast, LGAs in Sydney do not have the high growth rates recorded in outer Melbourne (Figure 2). However it would be wrong to suggest there is no greenfield growth occurring. Camden, located on the south west urban fringe, recorded one of the strongest annual growth rates (2.9%) in the Sydney metropolitan area between 2006 and 2011. The drivers of growth here are similar to outer Melbourne ie young couples and families seeking relatively affordable housing. But while there is no Wyndham or Melton in Sydney, there is a Blacktown. There are several development fronts in the northern part of the LGA eg Kellyville Ridge, but because it is such a large and diverse LGA (over 300,000 persons) the annual growth rate (2.3%) does not provide an indication of the volume of growth (33,450 persons between 2006 and 2011), which is similar to the volume of growth recorded in fast growing Melton over the same period.

Where Sydney does differ is the stronger growth in the established suburbs. Canada Bay, encompassing suburbs in the inner west such as Drummoyne, Five Dock and Concord, recorded the highest annual average growth rate in the Sydney metropolitan area over the period 2006-2011 (3.2%). Other LGAs in this part of Sydney also recorded strong growth – Auburn (2.8%), Parramatta (2.7%) and Strathfield (2.4%). Housing construction on brownfield sites is the driver of growth in this part of Sydney, epitomised by the Rhodes Peninsula in Canada Bay and Wentworth Point in Auburn. Rates of infill and other housing construction (small sites, conversions, knock down and replace) are also contributing to urban change in the established suburbs, though the impacts demographically are more subtle than the urban transformation that occurs on the fringe. Wiesel et al (2010) found that knock down and replace activity is significant in inner Sydney but perceptions of rapid demographic change do not necessarily bear out in reality, and need to be placed in the context of wider macro trends.

Figure 2: Population growth rate, LGAs in metropolitan Sydney – 2006-2011

Growth rate (% - per annum average)
- 2.0% or more
- 1.5% - 2.0%
- 1.0% - 1.5%
- 0.5% - 1.0%
- 0.0% - 0.5%

Source: ABS, Regional Population Growth (Cat. no. 3218.0)

WHERE ARE THE NEW DWELLINGS LOCATED?

The analysis of population change shows that there are significant differences in the way Sydney and Melbourne are growing. This section will examine dwelling growth over the period 1996-2011 to determine how this relates to population change, where new dwellings are located and how this has changed over time. This analysis uses dwelling counts from the Census of Population and Housing, and is subject to the data limitations described above. Although building approvals data has been used in other studies (Buxton and Tieman 2005), Census data considers actual dwellings on the ground rather than those being approved. Not all building approvals will turn into building completions, and this varies by location and type of development. For example, the Global Financial Crisis (GFC) resulted in some high rise developments being cancelled or postponed due to difficulties in obtaining finance to proceed with construction. Therefore, the building approval may appear in that data, but the inherent delays and postponement of large projects means that it does not translate to dwellings on the ground, and therefore may be a misleading indicator of dwelling growth.

Table 1: Location of new dwellings, by region – 1996-2011

	New dwellings (no.)			Proportion (%)		
	1996-2001	2001-2006	2006-2011	1996-2001	2001-2006	2006-2011
Sydney						
Inner	16,920	21,770	15,330	15.5	23.4	21.3
Middle	32,280	32,660	27,760	29.5	35.1	38.5
Outer	60,220	38,650	28,920	55.0	41.5	40.2
Melbourne						
Inner	19,270	23,220	22,820	17.5	18.3	15.8
Middle	43,060	34,510	39,580	39.1	27.3	27.4
Outer	47,850	68,810	82,040	43.4	54.4	56.8

*Source: ABS, Census of Population and Housing (derived) (1996-2011)*

Table 1 shows the location of new dwellings as measured by the difference in Census count, by classifying LGAs in broad regions – inner, middle and outer – based on their location in the metropolitan area. Though this is a crude way of measuring change, clear patterns can be determined and it provides an indication of the nature of urban change over time.

Between 1996 and 2001, Sydney and Melbourne showed a similar pattern of dwelling growth, with the highest proportions located in the outer LGAs. However this pattern changed significant after 2001, with the proportion of new dwellings in Sydney shifting to the inner and middle LGAs, but declining in outer LGAs. Between 1996 and 2001, 55% of new dwellings in Sydney were located in outer LGAs, but this figure declined to 40.2% between 2006 and 2011. At the same time, new additions to the dwelling stock across the metropolitan area were declining. Between 1996 and 2001, there were about 109,420 new dwellings in Sydney, but this declined to 72,010 between 2006 and 2011. The decline in the outer LGAs was more pronounced, from 60,220 between 1996 and 2001 to just 28,920 between 2006 and 2011 – a decline of more than 50%. In fact, the growth in new dwellings in middle LGAs between 2006 and 2011 almost eclipsed that in the outer LGAs – a further indication of the spatial shift in new dwelling activity in Sydney, and confirming that dwelling growth in Sydney's established areas are a significant contributor to urban change in the 21st century.

Much of this decline in new housing on the fringe, and the subsequent impact on patterns of population change is probably attributable to the decisions made by the NSW State government to restrict the supply of new dwelling lots on the urban fringe. Former premier Bob Carr's somewhat infamous words "Sydney is full" were starting to have demographic impacts (ABC Radio, 2000). Figure 3 shows that building approvals data indicated a slowdown in the number of new dwellings being constructed across the metropolitan area. This trend is somewhat surprising, because Sydney's population has continued to grow. In fact, in the second half of the 2000s, there was a clear mismatch between the volume of population growth (which was increasing), and the number of new residential dwellings approved (which was declining). As Australia's "global city" Sydney was still receiving overseas migrants and fertility rates were increasing. However NSW as a whole continued to record

large interstate migration losses to other States. This trend implies that shifts in household formation must have occurred in order to house the additional population growth.

Figure 3: Number of residential building approvals and volume of population growth, Sydney metropolitan area – 2001-02 to 2011-12
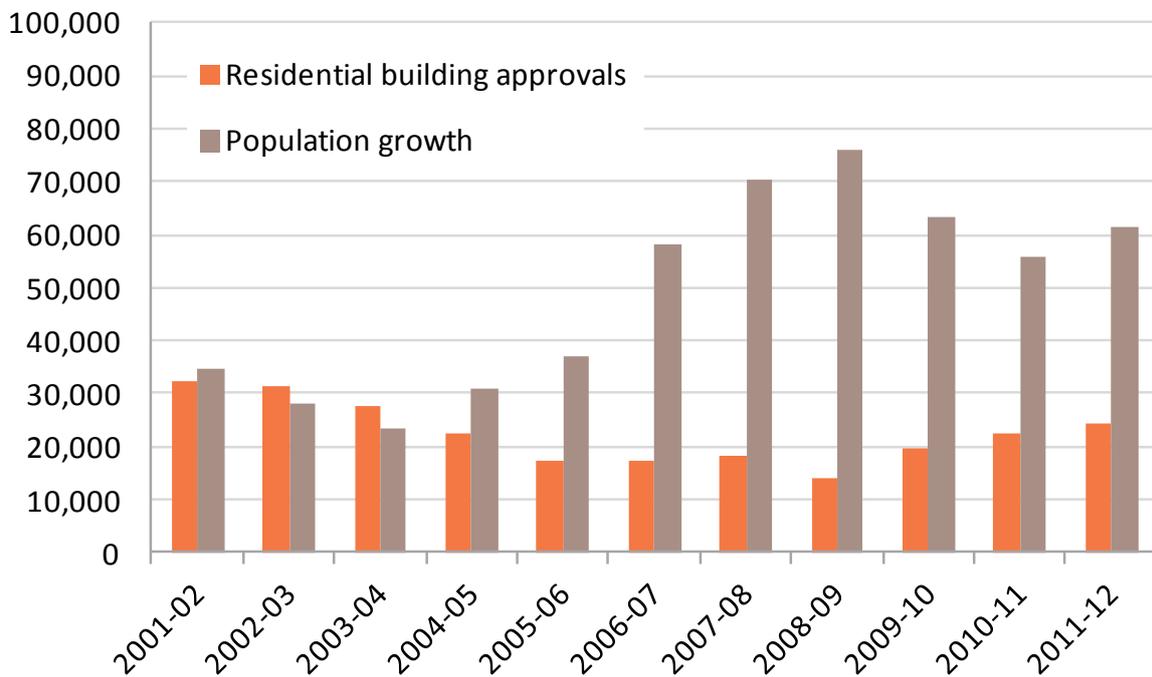
Sources: ABS, Building Approvals (Cat. No. 8731.0); Regional Population Growth (Cat. No. 3218.0).

In terms of housing, almost the opposite trend happened in Melbourne. Not only did the number of new dwellings across the metropolitan area increase in each intercensal period, but the proportion in outer LGAs increased over time, from 43.4% between 1996 and 2001 to 56.8% between 2006 and 2011. The number of new dwellings in outer LGAs almost doubled over this time period from 47,850 to just over 82,000. The proportion of new dwellings in inner LGAs did show a slight decline over time and there was a stronger decline in middle LGAs. This massive increase in new dwellings in outer LGAs obviously explains why places such as Wyndham have recorded very large rates of population growth in the period 2006-2011.

Some of these shifts in the geography of new dwellings may be explained by the expansion of the urban fringe into areas further away from the CBD, which may also involve a move from middle to outer LGAs. For instance, part of Knox LGA in eastern Melbourne was still experiencing some greenfields growth in the late 1990s and hence this would have been captured in the dwelling growth recorded between 1996 and 2001. The greenfield land supply in Knox is now exhausted and the development fronts in the south east are now focused on Casey and Cardinia. However the evidence clearly shows the difference between Sydney and Melbourne in terms of where new dwellings are located in the metropolitan area.

HIGH DENSITY HOUSING IN SYDNEY AND MELBOURNE

This section will explore the nature of high density housing in Sydney and Melbourne and how it differs in the two cities. Although densification can include medium density housing stock such as townhouses, villas and some apartments, they were excluded from this analysis due to some ambiguities in the definition, particularly in terms of how they differ from a separate house, as described above. Over time this ambiguity has produced some volatility in the numbers which makes analysis challenging. Hence, the somewhat clearer definition of high density (three storeys or more) has been used here.

Figures 4 and 5 show the proportion of high density dwellings by LGA in Sydney and Melbourne in 2011. High density dwellings are flats, units and apartments with three or more storeys. In both cities there is a concentration of high density dwellings in the CBD and surrounding LGAs, but this concentration is more distinct in Sydney. Sydney's dwelling stock is far more dense than Melbourne and it embraced apartment living early on. Many inner suburbs contain examples of apartment buildings dating back to the 1930s and the stock has increased steadily since. In 2001, one in seven (15.7%) of dwellings in Sydney were classified as high density, and by 2011 this proportion had increased to 20.7%. Unsurprisingly, the highest proportions were located in the City of Sydney (70.2%), followed by North Sydney (60.8%), Waverley (49.0%) and Woollahra (47.4%).

Figure 4: Proportion of high density dwellings, LGAs in metropolitan Sydney – 2011
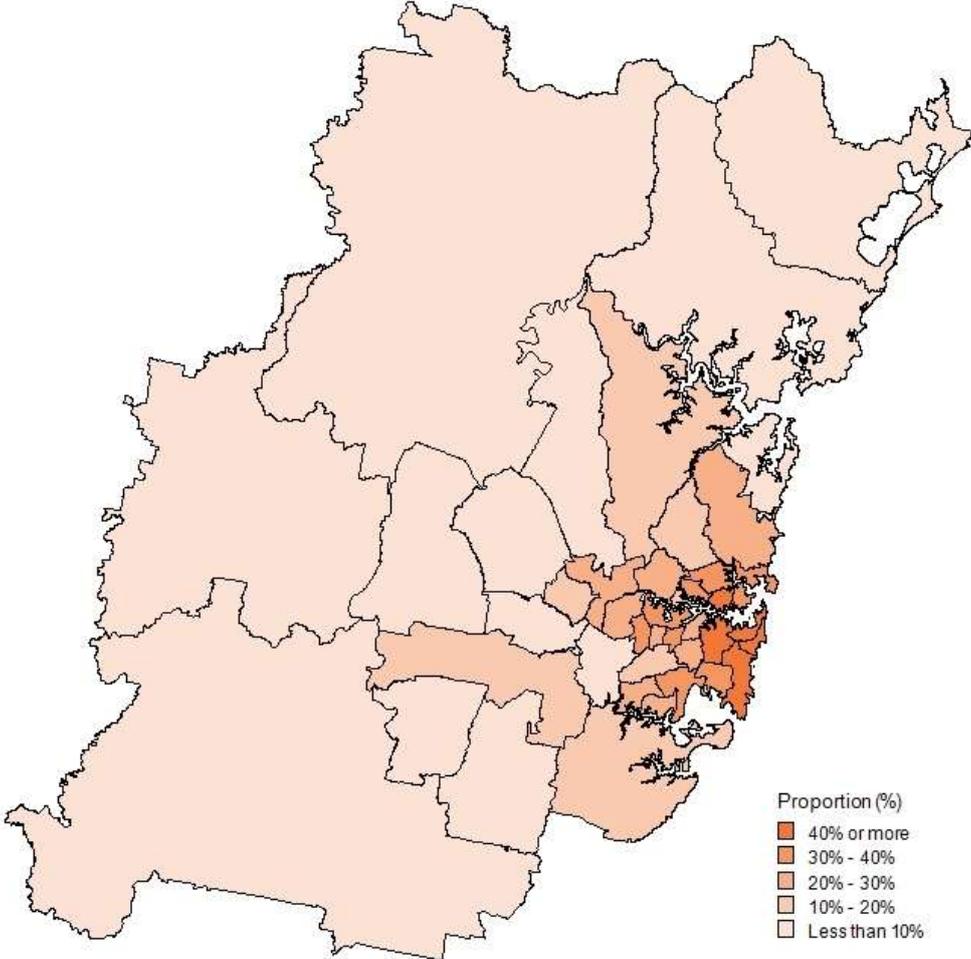
Source: ABS, Census of Population and Housing (2011)

Sydney's outer suburbs and peri-urban areas have very low proportions of high density dwellings, and in this respect these areas share much in common with other outer suburban areas of Australia's state capital cities. Wollondilly, on the south western outskirts, recorded the low proportion of high density dwellings, with virtually none amongst the stock. Less than 1% of the dwelling stock in Camden, Blue Mountains and Hawkesbury was recorded as high density. As described above, these outer LGAs have very different settlement patterns and housing markets to the established suburbs of Sydney. For instance, Camden has a significant amount of greenfield housing growth in new estates that are popular with young couples and families. This pattern is likely to continue into the future, as the NSW State Government has identified several locations in fringe areas that are being investigated for development potential (NSW Government, 2013).

In contrast, Melbourne has a much lower proportion of high density dwellings (see map below). In 2001, just 5.2% of dwellings were classified as high density, increasing to 7.2% in 2011. Like Sydney, the highest proportion of high density dwellings was recorded in the CBD – the City of Melbourne (73.4%), followed by Port Phillip (47.7%) and Stonnington (30.6%). Melbourne also has early examples of apartments, particularly in St Kilda (Port Phillip), but in the last decade or so the apartment boom has been spatially concentrated in the inner core. Aside from the LGAs mentioned above, only Yarra (26.2%) and Moonee Valley (10.9%) had more than 10% of dwellings in the high density category. The outer suburbs are dominated by low density urban sprawl with very low percentages of high density dwellings. In fact, 11 LGAs in Melbourne had less than 1% of their dwelling stock classified as high density, compared to just four in Sydney.

Figure 4: Proportion of high density dwellings, LGAs in metropolitan Melbourne – 2011
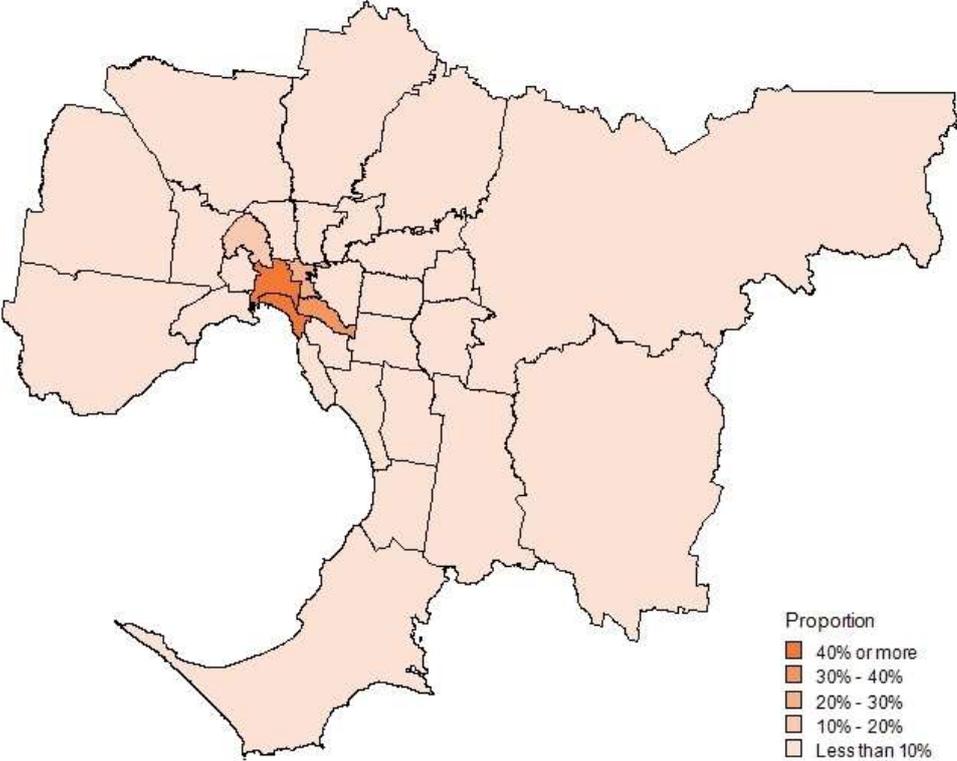
Source: ABS, Census of Population and Housing (2011)

CASE STUDY – AUBURN CITY COUNCIL

A defining characteristic of Sydney's housing scene is that high density living is not confined to the inner core, but extends a good 20 kilometres from the CBD, especially to the west. Sydney's fastest growing LGAs include those located in the Parramatta Road corridor (Parramatta, Auburn and Canada Bay) which have recorded strong growth of high rise apartments on brownfield sites and around railway stations. This section uses the example of Auburn City Council to show how the dwelling stock has changed over time.

Table 2: Dwelling structure, Auburn City Council – 1991-2011

	1991	1996	2001	2006	2011
Separate house	70.8	66.3	59.7	53.1	48.7
Medium density	21.1	23.1	26.6	23.4	23.1
High density	6.1	7.7	12.3	22.1	27.8
Other and not stated	2.0	2.9	1.5	1.4	0.4

Source: ABS, Census of Population and Housing, prepared and compile in profile.id (1991-2011)

In 1991 Auburn was a typical low density suburban area in western Sydney, where just 6% of the dwelling stock was classified as high density. Since that time Auburn has seen the construction of the athlete's village for the 2000 Sydney Olympic Games in the new suburb of Newington, dwellings that have since converted to private ownership. These include townhouses (generally considered medium density) but also a range of high rise apartments. There have also been strategic brownfield sites, such as Botanic Ridge in Lidcombe South, that have been redeveloped for housing.   Construction of high rise apartments around railway stations has also shifted the balance of dwellings towards the high density end. In 2001, 18% of dwelling in Auburn were high density and by 2011 this proportion had risen to 28%. In terms of volume, the growth has been more pronounced, from 982 in 1991 to 6,849 in 2011 – a seven fold increase. The opportunities for the increase in high density has been facilitated by the availability of brownfield sites, but Auburn's location in the Sydney metropolitan area – close to the major employment node at Parramatta, but also accessible to the CBD through strong transport links – also needs to be considered.

The proportion of high density dwellings is likely to increase in Auburn in future years as there is considerable capacity for growth. Population forecasts prepared by .id have identified several potential development sites in Wentworth Point and Sydney Olympic Park which, if constructed, will add to the stock of high density dwellings and continue to influence the housing profile of the region. Areas like Auburn are virtually unique in the Australian urban context in that high density dwellings are being constructed well away from the city centre. For instance, there is no equivalent LGA in the Melbourne metropolitan area.

DISCUSSION

It is clear from the analysis above that Sydney and Melbourne have different spatial patterns of growth. Furthermore, Sydney has a greater proportion of high density dwellings. There are a myriad of interrelated reasons influencing population and housing incomes, and it is beyond the scope of this paper to examine them all. Hence, this discussion will focus on metropolitan planning, the role of the market, cultural preferences and transportation technology.

The first avenue to explore is the role of metropolitan planning. In Australia, metropolitan wide planning dates back to the 1920s but it became more entrenched in the policy framework after WW2. Sydney had the *County of Cumberland Planning Scheme*, dating from 1948, while the Melbourne Metropolitan Board of Works implemented the *Melbourne Metropolitan Planning Scheme* in 1954. These metropolitan plans – or strategies – have been revised and undergone significant changes of direction in the last 60 years. Barton (2007) has assessed the success or otherwise of the various Sydney metropolitan strategies, and concludes that they generally conform to three themes – containment, urban corridors and urban consolidation. The same could generally be applied to Melbourne, as discussed by Goodman et al (2010). A major failing of the initial post war strategies was that they grossly underestimated the volume of population growth by failing to consider the baby boom and the scale of post war immigration – ironically a theme that resonates today.

Contemporary metropolitan strategies in Australia emphasise the need to contain urban sprawl and make better use of infrastructure and services in the existing urban area. The justification for this approach is that it is more cost effective than continually servicing new lots on the urban fringe, that it promotes sustainable outcomes and protects agricultural and environmentally sensitive lands. This approach, if successfully implemented, would have direct spatial impacts on the location of new housing in particular. Coincidentally the metropolitan strategies for both Sydney and Melbourne were revised at the time of writing. The NSW Department of Planning and Infrastructure have released a draft strategy for comment which does continue the key themes of urban containment, promotion of new development around existing centres and key public transport nodes. *Plan Melbourne* was released by the Victorian Department of Transport, Planning and Local Infrastructure in October 2013 with a submissions period open until the end of the year. This new strategy contains similar policy concepts.

The previous metropolitan strategies for Sydney and Melbourne both set broad spatial targets for the location of new housing, which were basically a split between greenfield and established areas. *The Metropolitan Plan for Sydney 2036* established a split of 70% of new housing in established areas, and 30% in greenfield areas. The equivalent figures in *Melbourne@5 million* were 53% and 47%. However the generality of these targets means that implementation can be measured in many ways. In fact, the draft metropolitan strategy for Sydney has moved away from designating a split between new housing in greenfield and established areas, to an approach which sets housing targets for planning subregions. *Plan Melbourne* takes a similar approach by creating five metropolitan sub-regions for which housing strategies will be developed. This makes implementation less prescriptive and potentially more complex to monitor, particularly if metropolitan strategies are revised and updated every few years. The analysis presented here has shown that since 1996, Sydney has a declining proportion of new dwellings in outer LGAs, but an increasing proportion in middle LGAs, but that in Melbourne growth in new dwellings is increasing in outer LGAs. This would suggest that the metropolitan strategy for Sydney is more successful in containing urban sprawl. However, as Gurran et al (2010) have explained, there are difficulties in measuring the success of otherwise of metropolitan strategies. Even the general nature and ambiguity of a term such as "greenfield areas" can be changed to suit different purposes. For instance, 57% of new dwellings in Melbourne were located in outer LGAs, which is above the target of 47%. But the definition of "greenfield" may not refer to the entire LGA, which would then reduce the proportion to meet the target identified in *Melbourne @5 million*. Regardless, it is clear that over time Melbourne's dwelling growth has shifted to the outer LGAs, despite minor increases and volatility in the inner and middle LGAs.

The role of the market, specifically neo-liberal approaches to planning, has been well documented. Buxton and Scheurer (2007) argue that development companies are influencing urban form in Melbourne, by providing narrow but distinct product ranges in both greenfield and inner areas. Goodman et al (2010) expand this idea further. Their survey of local government planners and development companies concluded that while metropolitan strategies establish a policy framework, there was general agreement that developers were more influential in determining the location and type of new housing. For instance, low density separate homes continue to be built on the urban fringe because developers know that this "product" will sell. It is deemed too risky to building more dense housing on the urban fringe as the "product" is largely untested in the Australian marketplace. The Global Financial Crisis has made finance more difficult to obtain and while this has certainly impacted on larger residential projects, it may also stifle opportunities for innovation. Land supply is also a function of the market, in terms of what is available for new housing. However its development is very much tied to developer/owner intentions, and what "product" will be offered to the market place. For example, Melbourne's Urban Development Program (2010) identifies significant tracts of land available for development in established areas, but the construction of high density housing has so far been spatially confined to the inner core. The draft metropolitan strategy for Sydney designates housing targets for planning subregions, but also indicates that new housing should be located where it is demanded, ie they are catering to market forces.

Furthermore, as suggested by McDonald and Frost (2010) it is culturally ingrained in Australian society to aspire to home ownership – preferably in a suburban setting. A recent report by Kelly et al (2011) also confirmed this sentiment through survey data. All things being equal, they found that people primarily aspired to owning a detached house in the suburbs and that owning an apartment had limited appeal. Of course in the real world housing related decisions are subject to a number of constraints such as cost and supply. Given the different growth patterns of new housing in Sydney and Melbourne it is not surprising that population outcomes differ, as people are constrained by what is available rather than what they want.

The role of transport technology should not be ignored, as both Sydney and Melbourne's historic growth has been largely influenced by the type of transport available. The growth of the railway network in the 19th century established the framework for the shape of the metropolitan area as it allowed people to move beyond the CBD and surrounds into suburban areas. The increase in car ownership since the 1950s has further shaped the urban area by allowing people to move away from the fixed rail network and other public transport infrastructure. It is in this era of car ownership that metropolitan strategies have operated, but over time there has been a shift from allowing the car to dominate the direction of urban growth, to recognising the problems it creates and finding ways to resolve these. However car ownership has become deeply entrenched in the Australian psyche to the extent that around half of dwellings in Australia in 2011 had more than one motor vehicle (ABS, 2012). Increasing transport mobility of the population also has the impact of severing the relationship between residence and employment, as it theoretically increases the number of locations from which people can chose to live. It is in this environment that cultural aspirations of home ownership on the urban fringe continue to be popular, despite ever increasing distances from key employment nodes in the metropolitan area. Though metropolitan strategies often contain statements about encouraging new housing around public transport infrastructure, the implementation is not always matched by a corresponding improvement in the service or extension of the network. In Melbourne for instance, there have only been minor extensions to the rail and tram networks since WW2, despite massive population growth and urban growth.

CONCLUSION

Sydney and Melbourne are Australia's two largest cities and they exhibit very different spatial patterns of growth. The evidence base presented here is very clear on this. Melbourne is dominated by very high rates of growth on the urban fringe, some of which are the fastest growing in Australia. Inner Melbourne on the whole displayed average growth between 2006 and 2011, except for the CBD area ie City of Melbourne. In contrast, Sydney's strong growth was largely found in the established urban area, particularly the CBD (City of Sydney) and the Parramatta Road corridor (Canada Bay, Auburn and Parramatta). Greenfield growth is occurring but not at the extremely high rates recorded in outer Melbourne. Only Camden, on the south west fringe, recorded above average growth, although the volume of growth recorded in Blacktown was high due to its size.

The location of new dwellings in Sydney and Melbourne conforms to this pattern. When split into middle, inner and outer metropolitan LGAs, distinctive patterns emerge. Since 1996, Sydney has seen a decline in the number of new dwellings added in each intercensal period, and the balance has shifted towards greater growth in the middle LGAs, and halved in the outer LGAs. The opposite has happened in Melbourne – each intercensal period since 1996 has shown an increase in the number of new dwellings added to the stock, and the location of these is increasing in outer LGAs. This obviously supports the patterns of population growth and change as described above.

The discussion presented here has examined several factors which might explain these contemporary patterns of population and housing change. These include the role of metropolitan planning, market forces, cultural factors and transport technology. The major difference has been in relation to outcomes that would be expected in light of the metropolitan strategies that seek to curb urban sprawl through various planning mechanisms. Sydney's higher growth rates in established areas are largely a legacy of the construction of medium and high density housing around transport nodes, something that is largely absent from the Melbourne housing scene, particularly as distance from the CBD

increases. The absence of prescriptive goals in terms of housing outcomes in the new metropolitan strategies potentially makes implementation harder to monitor, but there is still no denying the power of the evidence base. In terms of population and housing growth, it is not a race to be the biggest or best. Local planners are dealing with the implications of population and housing change every day. How we acknowledge the evidence base, its influences and how this understanding might be incorporated into decision making at the metropolitan and local planning level that will produce better urban outcomes.

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