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Disadvantaged places in urban Australia: analysing socio-economic diversity and housing market performance

authored by

Kath Hulse, Hal Pawson, Margaret Reynolds and Shanaka Herath

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at Swinburne University of Technology
at The University of New South Wales

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Authors	Hulse, Kath	Swinburne University of Technology
	Pawson, Hal	The University of New South Wales
	Reynolds, Margaret	Swinburne University of Technology
	Herath, Shanaka	The University of New South Wales
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ACRONYMS

ABS	Australian Bureau of Statistics
AHURI	Australian Housing and Urban Research Institute Limited
APM	Australian Property Monitors
ANU4	A socioeconomic index based upon linkages between education, occupation, and market income, developed by the Australian National University
ASGC	Australian Standard Geographical Classification
BCP	Basic Community Profile (ABS)
BME	Black and Minority Ethnic
CA	Cluster Analysis
CBD	Central Business District
CD	Collection District (smallest geography in ABS Census of Population and Housing 2001 and 2006)
CGNA	Committee for Geographical Names in Australia
DSS	Australian Government Department of Social Services (from September 2013)
FaHCSIA	Australian Government Department of Families, Housing, Community Services and Indigenous Affairs (to September 2013)
FUAs	Flats, Units and Apartments
GIS	Geographic Information System
IRSD	Index of Relative Socio-economic Disadvantage
ISCM	Intergovernmental Committee on Surveying and Mapping
LGA	Local Government Authority
NDC	New deal for Communities (UK Government regeneration program)
NE	Neighbourhood Effects thesis
OPD	Occupied private dwelling
PCA	Principal Components Analysis
SA1	Statistical Area Level 1 (smallest geography in ABS Census of Population and Housing 2011)
SD	Statistical Division (ABS)
SEIFA	Socio-Economic Indexes for Areas
SLA	Statistical Local Area (ABS)
SSC	State Suburb Code (used by ABS to approximate gazetted localities)

EXECUTIVE SUMMARY

Background

Spatial concentrations of socially and economically disadvantaged people, particularly in large cities, have been the subject of considerable policy debates in Australia over the past 30 years. A variety of terms have been used in these debates including: urban poverty, locational disadvantage, socio-economic disadvantage, social exclusion and concentrations of welfare dependency. There is ongoing debate on the main causes and consequences of such concentrations, the ways they can be conceptualised and measured, and the best courses of action for governments in addressing the 'problems' of such localities.

Against this policy backdrop, the Australian Housing and Urban Research Institute (AHURI) funded a research program 'Addressing concentrations of disadvantage' focused on Sydney, Melbourne and Brisbane, the three most populous cities in Australia, which centred on three broad and interrelated issues:

- How concentrations of social disadvantage have been conceptualised and how this relates to our broader understanding of the operation and impacts of housing and urban systems.
- The impacts of spatial disadvantage and the importance of housing and place in mediating the incidence and experience of residents of disadvantaged areas.
- How policy, practitioners and communities can respond to spatial disadvantage in 'best for people, best for place' terms.

The research program comprised inter-related research projects generating a series of linked publications.

The first output, a wide-ranging literature review (Pawson et al. 2012), discussed the various concepts applied to the analysis of spatially concentrated disadvantage. Focusing mainly on Australian evidence and discussions but also making links with international urban poverty/urban renewal debates, it reported that—although less intense than in some other countries—distinct spatial concentrations of social disadvantage persisted in Australia's major cities. However, the measurement and mapping of this phenomenon has until now remained limited. Equally, while it has already been demonstrated that such characteristics are not confined to public housing estates, the way that housing markets are associated with disadvantage in these localities remains little known or understood.

In this second publication from the research program, we seek to develop a detailed spatial analysis of the incidence and distribution of areas of concentrated urban disadvantage and to enhance understanding of Australian housing and urban systems. We report on detailed empirical research which enables an evidence-based understanding of the role of housing markets in this process that can underpin the formulation of housing and other public policies.

The research

This report presents the findings of research which:

- Identified, mapped and measured 'disadvantaged places' in Sydney, Melbourne and Brisbane.
- Developed a typology to classify 'disadvantaged areas' in the three cities in terms of their socio-economic characteristics.
- Analysed in detail the housing markets of disadvantaged areas—and contrasting types of disadvantaged areas—in terms of their structure, position and role in the wider metropolitan hierarchy over the decade 2001–11.

Additionally, the research reported here generated a population of localities in scope for subsequent primary fieldwork in selected areas of concentrated social disadvantage, which is the subject of a separate publication (see Cheshire et al. 2014).

While recognising that 'disadvantaged places' may be conceptualised in various ways (see Pawson et al. 2012), our analysis adopted a 'people-centred' approach under which a 'disadvantaged place' was defined as a locality containing a 'concentration' of residents subject to socio-economic disadvantage, the line of thinking which has generally underpinned policy-maker concerns in Australia. In terms of geographical scale, the analysis centred on 'suburbs', units with a typical population of 4–8000, places which have a socially understood meaning and to which Census and housing market data can be mapped, in ways that are not applicable to smaller spatial units.

Methodology for identification and classification of 'disadvantaged suburbs'

'Disadvantaged suburbs' were selected as being in scope for the project on the basis that at least 50 per cent of constituent ABS smallest spatial units (2006 Collection Districts) were in the lowest quintile of the national ABS Socio-Economic Index for Areas (SEIFA), Index of Relative Socio-Economic Disadvantage—hereafter IRSD ranking—but also incorporating rules to allow for the irregularity of suburb sizes and juxtapositions. Based on 16 Census variables including income, unemployment and disability, the IRSD is an ABS product developed to calibrate the socio-economic status of localities based on attributes of residents and is widely used by policy-makers, geographers and other academics for this purpose, notwithstanding some limitations discussed in the body of the report. It should be noted that, due to the timing of the work, the only option was to use 2006 IRSD rankings for this initial work.

Having identified, mapped and measured the extent of spatial congruity of the 'disadvantaged suburbs' in each city, we developed a new typology of Australian urban disadvantaged areas based on a cluster analysis of ABS Census-derived indicators aimed at differentiating areas under three main 'dimensions': social/residential mobility, lifestyle stage/family type and socio-economic trajectory. While most indicators used 2011 Census data, those calibrating change over time (trajectory variables) also drew on the 2001 Census. Four types of disadvantaged suburbs were identified in this process, which were subsequently mapped to show spatial contiguity (or clustering).

Methodology and data sources for housing market analysis

Mapping the four types of disadvantaged suburbs from the cluster analysis provided a spatial framework for a detailed housing market analysis. Comparing disadvantaged suburbs against city-wide values, and contrasting different types of disadvantaged suburb, this analysis covered housing market fundamentals, sales price and entry rent changes in 2001 and 2011, and the spatial distribution of disadvantaged places in the changing geography of the three metropolitan housing markets. The analysis drew not only on customised ABS Census data but also administratively-generated house sales and rental lettings records for these years obtained from state-level sources, as detailed in the main body of the report. To facilitate the analysis, these address level datasets were geo-coded for consistency with ABS 2006 suburb boundaries.

Key findings

Disadvantaged suburbs in Australia's three largest cities formed distinct spatial clusters or corridors, which were predominantly in middle and outer suburbs and peri-urban areas not inner urban areas (Chapter 2).

- → Across Sydney, Melbourne and Brisbane, 177 suburbs, or 10 per cent of all suburbs, were classed as 'disadvantaged' using the method described above based on the IRSD lowest quintile rankings. A variant analysis using a 'lowest decile' threshold showed that in each

city at least 30 per cent of ‘disadvantaged suburbs’ remained as such under this more rigorous definition.

- In 2011, 1.7 million people lived in these defined disadvantaged suburbs (16% of the total population of the three cities). It is important to emphasise, however, that not everyone in ‘disadvantaged suburbs’ lived in a household with ‘disadvantaged’ characteristics (ecological fallacy).
- Mapping disadvantaged suburbs indicated that most were physically contiguous. There were three clear agglomerations in the outer west, north west and south west of the Sydney metropolitan area and in the west, north and south east of Melbourne. In Brisbane such areas were located in two main groupings: in a ribbon stretching inland along the Brisbane River, and in the south of the metropolitan area.
- The extent of spatial contiguity was measured using an established summary measure of spatial clustering (Moran’s I) at the smallest spatial scale—CDs in the lowest quintile of the IRSD. This confirmed very substantial spatial clustering of disadvantaged CDs in the three cities, that is a disadvantaged CD was highly likely to be adjacent to a similarly disadvantaged CD.
- While disadvantaged suburbs were by definition places with relatively low socio- economic status, trends over time 2001–2011 were mixed. Whereas representation of low-income households rose disproportionately in such areas, both unemployment rates and early school leavers fell faster than elsewhere. Over this time period, therefore, there was no clear trend of ‘ongoing polarisation’ between such areas and remaining areas of respective ‘parent cities’ in terms of socio-economic factors.

There were four quite distinct types of disadvantaged suburb in Australia’s three largest cities based on the socio-economic characteristics of residents (Chapter 3).

1. Four distinct groups of disadvantaged suburbs were identified by a cluster analysis (not including two ‘outlier’ suburbs in Sydney), as summarised in Table 1.
2. Within the four-type classification, as shown in Table 1 above, the distribution of suburbs was very uneven, with Types 2 and 4 accounting for the vast majority of both places and people, with both these suburb types typically having high rates of in-movers from overseas.
3. Only in Sydney were all four typology categories represented indicating a more complex pattern of socio-economic disadvantage in that city. Type 1 areas were absent in Melbourne, while Type 2 areas were missing from Brisbane.
4. Mapping the four types of disadvantaged suburbs indicated that Type 3 areas exhibited the most spatially striking pattern—strongly associated with extreme peripheral areas of all three metropolitan areas while Type 1 suburbs were mainly a phenomenon of western and south western Sydney. Types 2 and 4 suburbs were located predominantly in middle and outer suburbs.

Table 1: Typology of disadvantaged suburbs: distinctive socio-economic features

Category	Distinguishing feature(s)	Disadvantaged suburbs in Sydney, Melbourne and Brisbane	
		% of suburbs	% of population
Type 1	High on young people and single parent households	8	3
Type 2	High on overseas movers, high on two parent families	41	55
Type 3	High on residential mobility (but low on overseas movers), high on older people and lone person households	15	8
Type 4	High on overseas movers, on reduced unemployment and on reduced incidence of persons in low-status employment	35	33
All		100	100

Note: does not sum to 100 per cent due to rounding

Disadvantaged suburbs were characterised by different housing tenure profiles and the extent and type of housing market change 2001–2011 (Chapter 4).

- While disadvantaged suburbs had a much greater percentage of rental dwellings in 2011 than the cities generally, owner occupiers remained in the majority in such areas in Sydney (54%) and Brisbane (51%) and particularly in Melbourne (62%).
- The 2001–2011 period saw disproportionate private rental growth in the disadvantaged suburbs of all three cities, greater than the national growth in this sector.
- While more strongly represented in disadvantaged suburbs than elsewhere in 2011, social rental accounted for only 13 per cent of all housing in such areas of Sydney, 6 per cent in Melbourne and 12 per cent in Brisbane.
- Combining tenure and location, Type 1 areas were strongly associated with outer suburban social housing, while Type 3 areas tended to contain disproportionate numbers of outright owners and private renters and were almost exclusively situated on remote city fringes. Type 4 areas were generally often closer to respective CBDs than Type 2 suburbs and were characterised by high and growing levels of private rental and higher density housing, suggesting rapid change in which investor landlord activity has been a key housing market driver.

While sales prices in disadvantaged suburbs remained lower than in other suburbs, they generally converged toward city-wide medians 2001–2011, most notably for Types 2 and 4 suburbs (Chapter 5).

- House price increases 2001–2011 in disadvantaged suburbs generally outpaced those of 'parent cities', especially in Melbourne and Brisbane, making it more difficult for new entrants to buy in these areas but benefiting existing property owners. However, house prices in disadvantaged suburbs remained substantially lower in 2011 than respective city-wide norms. Type 1 suburbs had sales prices far below city-wide norms and little dispersion around median prices. Detachment from mainstream markets was also apparent for Sydney's Type 3 suburbs (mainly located on the NSW 'Central Coast'), although less so for Melbourne or Brisbane. These areas offered more affordable options for low-income households but were remote from city centres.
- As revealed by 2001–2011 house sales market dynamics, the main apparent difference between Types 2 and 4 suburbs was in the stronger movement towards the city median of

the latter, as well as growing dispersion of sales prices around the median, indicating a more dynamic market in Type 4 areas.

Entry rents in disadvantaged suburbs were closer to city medians than property sales prices in both 2001 and 2011, indicating that households renting in these areas had less of an 'affordability discount' than purchasers (Chapter 5).

- The 2001–2011 period saw rent rises in disadvantaged areas which generally outpaced city-wide increases. While rents remained lower in disadvantaged areas in 2011 than the respective city-wide norms, the disadvantaged area 'affordability discount' for rents in these areas was substantially less than for house sales prices.
- Distinguishing between different disadvantaged area types, median rents in Type 1 suburbs were the furthest from city-wide medians in 2011, although not as far removed as for median sales prices. The pattern for median entry rents in Type 3 suburbs varied between cities. Both Types 2 and 4 suburbs had median entry rents relatively close to city medians in 2011 and there was convergence towards city medians 2001–2011 across the three cities.
- Whether buying or renting, there is a greater 'affordability discount' for attached/row houses or flats/apartments in disadvantaged suburbs than for detached houses.

The concentration of lower priced sales and entry rentals in disadvantaged suburbs appears higher in Sydney than in Melbourne or Brisbane (Chapter 5).

- Sydney had a generally greater concentration of 'affordable' (lower priced) sales and rental properties in its disadvantaged suburbs. While detached house rental properties were an exception to this rule, the overall picture was that lower priced accommodation was more concentrated within disadvantaged suburbs in Sydney in 2011 than in Melbourne or Brisbane.

Differences in the housing markets of the four types of disadvantaged suburbs provide some 'ground truthing' for the typology constructed based on socio-economic variables (Chapter 5).

- Transposing the findings of our housing market analysis onto the four types of disadvantaged suburbs (originally classified according to socio-economic variables—see above), the emergence of certain distinctive features provides the basis for labelling the suburb types in housing market terms as shown in Table 2 below.

Table 2: Housing market labels mapped onto socio-economically differentiated typology

Type	Label	Key housing market features
1	Isolate suburbs	Relatively high rates of social rental; median sales prices and market rents far below city-wide norms.
2	Lower price suburbs	Relatively affordable detached dwelling prices and distinct low rent market in one to two-bedroom rentals.
3	Marginal suburbs	Somewhat detached by distance from mainstream markets; high concentration of each city's lowest quartile sales and rents.
4	Dynamic improver suburbs	Sales prices and rent moving rapidly towards city-wide norms, especially in Melbourne and Brisbane; greatest dispersion of sales prices around the median in 2011.

Disadvantaged suburbs in Australia were characterised neither by high levels of population 'churn' or immobility (Chapter 6).

- Residential mobility rates in Australia's disadvantaged suburbs tend to be relatively low by comparison with city-wide rates, notwithstanding the generally higher rate of private rental

in these suburbs. Consistent with wider city trends, such rates generally declined in the period 2001–2011.

- There was no evidence of either high rates of 'churning' nor of being 'trapped' in disadvantaged suburbs, although there were considerable limitations in data available to assess detailed patterns of mobility.

Despite the general increase in sales prices and entry rents in (most types of) disadvantaged suburbs 2001–2011, there were some differences between the three cities in the evolving geography of low price/entry rent localities (Chapter 6).

- In Sydney, there is evidence that spatial concentrations of disadvantage have been subject to further outward movement on the urban periphery along already established corridors in the City's west and south west, as well as northward to the Central Coast.
- In Melbourne, some 2001 clusters of low price/rent suburbs became rapidly improving housing markets, most notably in the Type 4 suburbs which were nearest to the Central Business District. Alongside a general trend towards dispersal of lower price/rent suburbs to the urban periphery, some clusters of low price/entry rents suburbs have moved outwards towards the urban periphery in the city's outer south west, west, north west and south east, in areas of high population growth.
- In Brisbane there were also corridors of lower price/rent localities in which some inner suburbs (Type 4 areas) saw prices/rents moving substantially towards city norms; for example in the inner western corridor. At the same time, new low price/rent suburbs have emerged in the outer north and the islands, only some of which were classified as being disadvantaged using our original methodology.

Summary of main themes and implications for policy

Australia's major metropolitan centres retain distinct spatial concentrations of disadvantage, containing relatively large numbers of low-income, unemployed and otherwise vulnerable people. In the decade 2001–2011, although the incidence of low-income people has been growing in disadvantaged suburbs, their parent cities grew substantially and there does not appear to have been a continuing polarisation dynamic over this period. The broader economy matters in that unemployment rates and the incidence of early school leavers both fell disproportionately in these suburbs during this decade. At the same time, the incidence of low-income households rose more quickly in disadvantaged suburbs than elsewhere.

The implication is that while a strong economy assists in reducing unemployment, this appears to be necessary but not sufficient in addressing concentrations of socio-economic disadvantage in Australia's major cities.

While concentration of social disadvantage is often associated with relatively high levels of social housing, in only one type of disadvantaged suburbs (Type 1) is social housing dominant (14 of 177 disadvantaged suburbs are Type 1, of which 13 are in Sydney). Disadvantaged suburbs are, however, distinguished by the large and disproportionately expanding representation of private rental housing, reflecting both increased difficulties in accessing home ownership and a surge in investment in suburbs with lower sales prices relative to their cities but which can attract rents nearer to city medians. It appears that investors may be attracted to disadvantaged suburbs by a combination of lower capital costs with higher rental yields as well as anticipated capital gains.

The implication for policy is that, contrary to much conventional wisdom, social housing is not responsible for the vast majority of concentrated disadvantage. Social housing of the small-scale, dispersed kind may, on the contrary, be an important tool in opening up options for low-income people in places that are not disadvantaged. Of more importance to most disadvantaged areas is increased rental investment which contributes to 'improving housing markets' in disadvantaged suburbs (particularly in Type 4 and to a lesser extent in Type 2

suburbs). However, it appears that this is not classic gentrification with associated displacement of lower income residents; high levels of investor activity may result in both higher prices/rents and continuing concentration of low-income and vulnerable households at least in the short term.

Disadvantaged suburbs remained places where housing is relatively inexpensive in 2011, particularly for purchasers. However, the extent of the 'affordability discount' available in these areas varied significantly across the four area types, and generally declined over the past decade, as local housing provision became more diversified in many such places. Type 4 suburbs in particular were characterised by market dynamism; such 'dynamic improver suburbs' tend to be relatively well-located in relation to local centres and/or accessibility to central cities.

The implication for policy is that low income and vulnerable households may be vulnerable to displacement from well-located disadvantaged suburbs in future years. Policies to address this issue could include the targeted provision of affordable rental options in these areas, including well located, smaller scale social housing developments.

There is limited evidence of US or European style disadvantaged areas in Australian cities—that is places that remain as low price and low rent localities and from which people are unable to move. Type 1 'Isolate' suburbs may constitute a partial exception here. It appears that housing market dynamism driven by household growth (including overseas in-migration) in a period of continued economic growth has been creating more variable, changing and dispersed patterns of disadvantage in Australia's major metropolitan areas compared to some international experience. However, concentration of social disadvantage was pushed further towards city peripheries from 2001–2011, as lower income households sought to access affordable housing markets. Movement of low-income households towards the urban periphery poses challenges in terms of access to transport, jobs, facilities and services in low density, car-dependent cities.

A process of dispersal of disadvantage to the urban periphery raises broader issues about integration of housing, planning, transport, employment and other policies to address resulting problems, involving all three levels of government and, more fundamentally, planning strategies that encourage growth nodes (including jobs, public facilities and services, and cultural institutions) in outer suburban locations to counter the mono-centrism of Australia's largest cities.

Another way of characterising disadvantaged area housing market change over the past decade is to say that, far from becoming more polarised, there has been a degree of convergence between housing markets in such areas and 'parent cities', in particular for Types 2 and 4 suburbs. This is, however, much less true of places in Types 1 and 3 suburbs. There was also something of a contrast between Sydney, on the one hand, and Melbourne and Brisbane, on the other. In the former, the period 2001–2011 saw disadvantaged suburbs remaining much more entrenched as dominant providers of low price housing across the city. Sydney's is a more complex geography of disadvantage and a more polarised housing market than seen in Melbourne or Brisbane. All three cities face issues in terms of emerging areas of disadvantage on the outer periphery (in the growth zones ringing Melbourne; in the outer north of Brisbane and the islands; and in the Central Coast and far west of Sydney).

Strategies to address place-based disadvantage should recognise that, while disadvantaged places may appear similar based on SEIFA IRSD and other population-based ranking measures, such places differ not only socio-economically, but also in terms of housing market processes. The issues associated with Type 1 and Type 3 suburbs appear to be more immediate in terms of concentration of social disadvantage and disconnection from mainstream city housing markets. Types 2 and 4 suburbs provide more affordable housing for purchase and rental, thus playing an important role in city housing markets but may develop

concentrations of lower rent attached houses and flats/apartments. Different approaches will be required to enable these suburbs to remain diverse, vibrant places for residents.

Finally, and importantly, analysis of secondary data sets can tell us about where people with attributes associated with social disadvantage live and the operation of housing markets. It cannot reveal *why* people live, and remain, in certain places and the extent to which their decisions reflect preference and constraint. For example, are disadvantaged suburbs 'springboards' which are important in providing socio-economic opportunities for residents or 'sinks' from which it is increasingly difficult for residents to escape. It also says nothing about what it is like to live in 'disadvantaged places', which may well have high levels of social connectedness and community cohesion. Primary fieldwork for this project has investigated both of these aspects (Cheshire et al. 2014).

1 INTRODUCTION

1.1 This research

This report forms part of a research program on 'Addressing concentrations of disadvantage' in the context of urban Australia. Interest in this issue stems partly from the recent social policy focus on social inclusion (Silver 2010) and the recognition that such a condition may be exacerbated by factors specific to place (Vinson 2009). Especially with the advent of a new Australian Federal Government in 2013 it is possible that the policy relevance of 'spatially concentrated disadvantage' will shift more towards the implications for city productivity and 'welfare dependency'.

Research evidence demonstrates that, although polarisation may be less intense than in some other countries, Australian cities contain distinct spatial concentrations of social disadvantage—and that such areas are not confined to large public housing estates (Randolph & Holloway 2005). Concerns about geographic clusters of poverty also connect with a longer-established Australian urban policy debate on the concept and significance of 'place disadvantage', especially associated with the increasing concentration of low-income households in places remote from employment and services (e.g. Badcock 1994; Ryan & Whelan 2010; Saunders & Wong 2012).

Partly thanks to the currency of the 'neighbourhood effects' thesis (Galster et al. 2007), as more specifically defined below, the existence of spatially concentrated disadvantage has become increasingly accepted as a 'policy problem' (Hulse et al. 2011). While recognising that the specific evidence for neighbourhood effects remains slight in the Australian context (Pawson et al. 2012), policy-maker concern on this topic calls for research on both the spatial distribution of such areas across cities, and the nature and diversity of the places concerned (Pinnegar et al. 2011). Measuring, classifying and mapping disadvantaged areas thus becomes of paramount importance (Vinson 2007, 2009).

Against this policy backdrop, the overall 'Addressing concentrations of disadvantage' research centred on three broad and interrelated issues:

- How concentrations of social disadvantage have been conceptualised and how this relates to our broader understanding of the operation and impacts of housing and urban systems.
- The impacts of spatial disadvantage and the importance of housing and place in mediating the incidence and experience of residents of disadvantaged areas.
- How policy, practitioners and communities can respond to spatial disadvantage in 'best for people, best for place' terms.

Three research streams addressed these three issues. This report is part of a module which addresses the first. It seeks to progress an understanding of how concentrations of social disadvantage can be conceptualised and measured in the context of an enhanced understanding of Australian housing and urban systems.

The report, one of several outputs of the overall 'Addressing concentrations of disadvantage' project to be published by AHURI, draws on an extensive secondary data analysis. It provides a detailed empirical account of the geography of disadvantage in Australia's three largest cities (Sydney, Melbourne and Brisbane) through the development and deployment of a new Australian typology of disadvantaged suburbs. In addition to delineating these spatial and temporal factors, the research reported here also generated a diverse 'population' of 'disadvantaged areas' in scope for two components of primary fieldwork. Firstly, a major residents survey of four such areas of Sydney and, secondly, qualitative 'case study' fieldwork in six such localities in Sydney, Melbourne and Brisbane. Thus, the secondary data analysis was also crucial in underpinning the two other streams in the research program.

In focusing on the three capital cities named above, the research encompasses places where more than half of Australia's overall population reside. This geographic emphasis also reflects a view that the dynamics of disadvantage are likely to be very different in regional or non-urban contexts.

1.2 Australian urban policy context

Corresponding to our first research question, a wide-ranging policy, practice and literature review (Pawson et al. 2012) discussed the overlapping concepts of poverty, socio-economic disadvantage and social exclusion. That debate is revisited below—see Section 1.4. Our review also showed that while spatial concentrations of social disadvantage (or 'socially excluded people') have been the subject of considerable research in Australia over the past 30 years, there is continuing debate on their main causes and consequences, the ways they can be conceptualised and measured, and the best courses of action for governments in addressing the 'problems' of such localities (Saunders & Wong 2012).

The review highlighted that early work on socio-spatial disadvantage in urban Australia focused predominantly on the inner areas of our major cities (Kendig 1979), subsequent authors such as Maher et al. (1992), Badcock (1994) and Yates and Vipond (1990) considered the extent to which gentrification was forcing lower income groups to middle and outer-suburbs in search of affordable housing. More recent research has shown that while small pockets of inner city disadvantage remain, poverty has become increasingly concentrated in the middle-ring suburbs of our major cities (Randolph & Holloway 2005, 2007), that people living in the outer suburbs are increasingly vulnerable to 'transport poverty' (Dodson & Sipe 2008), and that disadvantage is also concentrated in some regional and rural locations (Vinson 2007). Since the review was published, studies by other researchers using 2011 Census data have indicated the emergence of new disadvantaged areas in some outer suburbs of major cities in respect of employment opportunities (Baum, Mitchell & Flanagan 2013).

The review also considered policy responses to spatial concentrations of social disadvantage. These include renovation and refurbishment of housing, reducing the number of public housing units through sale, mixed tenure redevelopment, improving street scapes and the general environment, community renewal projects and whole-of-neighbourhood renewal projects (Pawson et al. 2012, ch.5). It built on previous work funded by AHURI (Hulse et al. 2011) which investigated both people and place-based approaches to addressing concentrated disadvantage and considered evidence about their efficacy.

Important in underlying contemporary policy-maker thinking on the problematic nature of spatially concentrated disadvantage is the 'neighbourhood effects' (NE) thesis (Galster 2007). This posits that an individual's disadvantaged status may be compounded by living within a spatial concentration of other disadvantaged people. Thus, 'deprived people who live in deprived areas may have their life chances reduced compared to their counterparts in more socially mixed neighbourhoods … living in a neighbourhood which is predominantly poor is itself a source of disadvantage' (Atkinson & Kintrea 2001, pp.3–4).

While remaining contested in the academic realm (e.g. Cheshire 2007; Manley et al. 2012), the NE thesis has achieved growing recognition and acceptance among urban policy-makers both internationally and in Australia. Thus, a 2009 officially sponsored Australian report commented: 'It has been found that when social disadvantage becomes entrenched within a limited number of localities a disabling social climate can develop that is more than the sum of individual and household disadvantages and the prospect is of increased disadvantage being passed from one generation to the next' (Vinson 2009 p.5). While the evidence to support such a far reaching statement is largely missing in an Australian context, the notion that residence in Australian public housing damagingly stigmatises tenants is widely accepted (Palmer et al. 2004; Jacobs & Flanagan 2013; Morris 2013). This kind of thinking has been cited by

Australian governments in support of measures to 'de-concentrate' large public housing estates (Darcy 2012).

Crucially, as noted above social disadvantage is no longer concentrated in Australia's inner city areas. Nor is Australia's disadvantaged urban population primarily accommodated in large public housing estates.[1] Indeed, by comparison with the UK and some other European countries whose experience has informed much global thinking on urban spatial polarisation, Australia's cities are distinctive in the overwhelming predominance of private housing as well as in the relatively liberal 'assumed right to develop' planning regime which prevails.

Critical Perspectives papers drafted as part of the current research (Burke 2013; Hulse & Pinnegar 2013) have, likewise, highlighted that Australia lacks any equivalent to the 'war zones' of inner city public housing 'ghettoes' in the US with associated racial segregation (Massey 1990), nor the large 'sink' social housing estates of some UK cities (Power 1998). Rather, because the inner areas of Australia's major cities have been extensively gentrified through housing market processes over the last 25 years, and remaining inner city public housing estates (e.g. in Melbourne) are relatively small 'islands' in now advantaged areas (Hulse & Pinnegar 2013).

In addition, there are conceptual issues still in need of resolution in an Australian context. These include the most appropriate scale at which place-based disadvantage might be analysed and the importance of distinguishing between concentrations of disadvantaged residents and the ways that some places may disadvantage the people who live there, including capturing the dynamic nature of localities through an investigation of housing market processes. These themes have been expanded upon in two Critical Perspectives papers produced as part of this project (Burke 2013; Hulse & Pinnegar 2013).

1.3 Key questions and data sources

In addressing the overall agenda discussed above the specific questions this report seeks to tackle are as follows:

1. What is the spatial pattern of disadvantage across Australia's major capital cities?
2. How can we capture the heterogeneity of disadvantaged places in Australia?
3. To what extent are there similarities in the heterogeneity of disadvantaged places and spatial patterns of disadvantage across the three cities?
4. What are the housing market structures, conditions and dynamics of disadvantaged places?
5. What have been the recent housing market trajectories of disadvantaged places in relation to the overall citywide shifts seen in each urban area?
6. Can housing market conditions and trajectories be 'mapped onto' types of disadvantaged area, distinguished from one another in terms of socio-economic factors?

The analysis is based on quantitative research methods making substantial use of data from the 2001, 2006 and 2011 Australian Bureau of Statistics (ABS) Censuses—especially with respect to questions 1–3 above. Additionally, however, we also drew on numerous secondary housing market datasets and in this way stretched the report's coverage beyond the typical

[1] As argued by Darcy (2010, p.13), whether an area is designated as having a concentration of disadvantage is a matter of scale. Thus, at a local level, some public housing estates have a 'concentration' of disadvantaged people (since this is the basis for allocation to public housing). When a larger spatial scale is selected, such as a suburb, a concentration of disadvantage may cease to be apparent due to the large numbers of home owners and private renters. Thus the issues may be less about dispersal of disadvantaged people and more about assisting residents to connect with employment, education/training and local services and facilities.

Australian urban analytical focus which—when extending beyond Census data—is typically limited to single cities.

The key elements of the analytical methodology underpinning the findings in this report are explained in greater detail in the substantive chapters that follow.

1.4 Conceptualising 'disadvantage'

Before beginning to recount the research findings it is appropriate to clarify the way that 'disadvantaged place' has been interpreted for the purposes of this report. As noted above, this is a term that can be understood in different ways. Firstly, there is the conception that refers to the spatial concentration of disadvantaged people—that is those experiencing poverty, deprivation or exclusion. As a shorthand, this can be referred to as a 'people-based' approach. A number of Australian scholarly articles have used typology analysis in operationalising this conception (see Baum 2006; Baum et al. 2006; and Reynolds & Wulff 2005).

A second conception of 'disadvantaged area' is a place which (inherently) disadvantages its residents. Such place-based disadvantage may result from poor access to employment opportunities, public services and other amenities, or may reflect negative features of the local environment such as pollution. Though the issue of measurement of place disadvantage in terms of 'remoteness from services' is rarely addressed in Australia, some recent indices calculated by Dodson and Sipe (2007, 2008) incorporate the concept of transport disadvantage.

Thirdly, localities associated with a high incidence of social problems such as teenage pregnancy, domestic violence or other crime or substance abuse may be interpreted as a 'disadvantaged area'. Conceptualised as such (e.g. Vinson 2007), the spatial distribution of disadvantage is thus measured via indicators of 'social pathology'. However, a limitation of such an approach is the practical matter of spatial scale. Data items upon which such indices must rely are often available only at the postcode level or larger.[2] Because of their typically substantial size (see Table 3), such units cannot be comfortably equated with the 'neighbourhood' scale more ideally appropriate to social geography analyses. A postcode (typically containing some 15 000 people) may well encompass very diverse places. As a result what may be distinct but relatively small-scale 'concentrations of disadvantage' may be rendered invisible by an analysis at postcode level. The broader point is that only Census-based indicators can facilitate detailed spatial analysis at the local scale.

Partly for simplicity, and to take advantage of existing and respected metrics available at an appropriate spatial scale, our study opted for a 'people based' model as its central approach—loosely put, a geography of socio-economic disadvantage. Hence, as further discussed in Chapter 2, we have made use of the ABS Socio Economic Indexes for Areas, Index of Relative Socio-economic Disadvantage (IRSD) ranking. However, as reported more fully in that section, it is well appreciated that in an ideal world other approaches to 'poverty mapping' might have been utilised for this purpose.

1.5 Report structure

This report is structured as follows.

First, we explain our approach to identifying 'disadvantaged suburbs' before outlining the spatial distribution of disadvantaged suburbs across the three metropolitan areas (Chapter 2). Having identified disadvantaged suburbs in the three cities, we detail the development of our typology of disadvantaged suburbs and how these map spatially (Chapter 3). The report then discusses fundamentals of housing markets in disadvantaged suburbs (Chapter 4), provides a

[2] For example, in Vinson (2007), the data were available at postcode level for New South Wales, Victoria and the ACT; Statistical Local Area (SLA) for Queensland and South Australia and; Local Government Area for Western Australia and Tasmania.

detailed analysis of the ways in which housing market processes shape different types of disadvantaged suburbs across the three cities and over time (Chapters 5) and illustrates how these processes relate to broader restructuring of metropolitan housing markets 2001–2011 (Chapter 6). The report concludes with a reflection on the broad implications of the research findings as well as some of the limitations (Chapter 7).

2 IDENTIFYING AND MAPPING CONCENTRATIONS OF DISADVANTAGE IN AUSTRALIA'S MAJOR CITIES

2.1 Method for identifying disadvantaged areas

2.1.1 Population-based measures of disadvantage

In developing our geography of disadvantage in Sydney, Melbourne and Brisbane, the first task was to identify cohorts of disadvantaged suburbs in the three cities.[3] Here, as noted in Chapter 1, we employed the well-known ABS Index of Relative Socio-economic Disadvantage (IRSD); one of the four SEIFA indexes produced by the ABS to measure relative socio-economic advantage and disadvantage across Australia. The IRSD is a product developed by the ABS to rank areas using a selection of Census indicators and has been widely used for this purpose since 1990 (ABS 2006b). The IRSD values are based on 16 variables including incomes, unemployment, disability and language skills. The SEIFA IRSD designates 'disadvantage' values at the most local level of Census geography. These areas are subsequently ranked and temporal analysis can be undertaken by examining changes in the positions of areas within the rankings between Census years.

It was recognised that one drawback of reliance on SEIFA IRSD (hereafter IRSD) was the inclusion of public housing as a specific component of the index as well as the characteristics of residents of this housing, there is a risk that an IRSD-influenced geography of disadvantage could be inherently biased towards areas containing such estates. In practice, however, exploratory work focused on Sydney, using principal components analysis, established that this was not a major concern since a quasi-IRSD measure excluding public housing produced a geography of disadvantage only a little different to that generated by mapping the IRSD itself. Instead, IRSD values are largely influenced by household income, occupation and employment/unemployment.

Two other drawbacks to our approach were recognised. First, that certain relevant factors are absent from the IRSD. In particular, while it incorporates income, the IRSD contains little information on wealth (ABS 2006b). Neither does it reflect living costs—for example. as in the calibration of poverty 'after housing costs'. Second, and more broadly, it was understood that reliance on the IRSD—a population-based approach—meant that our identification of 'disadvantaged places' took no account of 'place disadvantage' in terms of the spatially rooted attributes of areas which may disadvantage local residents (e.g. remoteness from employment and services). In view of these considerations, variant analyses (to be reported separately) are being undertaken elsewhere in the study to compare resulting outcomes.

Reliance on the IRSD also necessitated the adoption of 2006 Census geography because the 2011 Census-based IRSD rankings were not available at the time of the analysis (2012). This had crucial practical implications in that using 2011 Census data in subsequent analysis, and making comparisons to 2001, required the customised configuration of the relevant datasets according to 2006 Census suburb boundaries, which is further discussed in Chapters 4 and 5.

2.1.2 The 'problem of spatial scale'

All analyses of spatial concentration of social disadvantage must tackle the problem of scale. In the context of cities, this could be a few streets, a neighbourhood, a suburb, a local government area or a sub-region. A key foundation for the quantitative analysis was the

[3] The city boundaries were ABS defined 2006 Capital City Statistical Divisions (SD). The 'Statistical Division' was designed to be a large, stable, general purpose spatial unit that would undergo only limited boundary change over a period of 15–20 years. SDs were defined on the basis of socio-economic data and, where possible, they contain whole local government areas. In consultation with planners, SDs were defined so that anticipated population growth and city development would occur within the boundary over at least this timeframe. According to the ABS, the Capital City SD, 'represents the city in a wider sense' (ABS 2006a, p.15).

decision to adopt the 'suburb' as the appropriate spatial scale to undertake the research.[4] This decision was based on two main factors:

- A geography that would have some inherent meaning to, for example, local residents and policy-makers, since the same geography was used for other components of the research including qualitative research in selected case study areas.
- Units for analysis that had sufficient population to enable sound quantitative analysis (unlike, e.g., the smallest spatial units in the ABS Census) but not too large whereby extensive internal diversity could 'dilute' any spatial concentrations of disadvantage (as with, e.g. postcodes or Local Government Areas).

Furthermore, as the analysis was to be primarily based on ABS Census data it was necessary to adopt a spatial unit that could be mapped to ABS Census data. The State Suburb (SSC), was chosen as the spatial unit for the analysis.[5] Such suburbs are built up from the smallest ABS spatial units.[6] As shown in Table 3, although the average population size of the SSCs does vary between the three cities, this variation is not as great as that for larger spatial units.

Table 3: Average populations of Census and administrative units of Sydney, Melbourne and Brisbane metropolitan areas, 2006

Average population of …	Sydney	Melbourne	Brisbane
Census Collection Districts (CDs)	612	580	586
Suburbs	5,086	7,277	4,194
Postcodes*	16,698	14,084	14,549
Statistical Local Areas	64,362	45,476	8,201
Local Government Areas	95,795	115,909	223,055

* Except postcodes 2011

Source: Authors' compilation using data from the ABS TableBuilder 2006.

Additionally, the analysis needed to accommodate the significantly contrasting Census and administrative geographies of the three cities. In particular, as shown in Table 3 above, the typical size of a suburb varies somewhat across the three metropolitan areas. In the 2006 Census, the smallest ABS spatial units for which data were available were Collection Districts (CDs), which were relatively standardised, although the average number of CDs per suburb varied substantially in 2006—from 7.2 in Brisbane, through 8.3 in Sydney to 11.5 in Melbourne.

2.1.3 Identifying disadvantaged CDs

Index of Relative Socio-economic Disadvantage (IRSD) values apply to the smallest Census areal units—CDs in the 2006 Census (SA1s in 2011)—but are also available in suburbs or larger units. It was decided that 'disadvantaged suburbs' would be defined as those containing at least 50 per cent 'disadvantaged' CDs so that concentrations of disadvantage within suburbs could be duly incorporated into the analysis. Therefore, the initial step was to identify 2006

[4] Suburb is a term widely used in Australia and includes inner suburbs including the Central Business District.

[5] 'State Suburbs (SSCs) are an ABS approximation of localities gazetted by the Geographical Place Name authority in each state and territory. Since 1996, these boundaries have been formalised for most areas of Australia through a program coordinated by the Committee for Geographical Names in Australasia (CGNA) under the umbrella of the Intergovernmental Committee on Surveying and Mapping (ISCM). SSCs are built from Statistical Area Level 1 (SA1) that, singly or in combination, form an approximation of Gazetted Localities (ABS 2011, p.14).

[6] ABS changed its Census geography between 2006 and 2011 which further complicated the analysis. Up to and including 2006, the smallest spatial units were Collection Districts (CDs) which were replaced in 2011 by Statistical Areas Level 1 (SA1s). There are more SA1s than CDs (54 805 SA1s in 2011 compared to 38 704 CDs in 2006). SA1s have on average a population of approximately 400 people and are more consistent in population size than CDs (ABS n.d.).

‘disadvantaged’ CDs in each metropolitan area, and to classify these according to whether situated in suburbs with 50 per cent or more such CDs.

The starting point for this exercise was to rank the 2006 IRSD scores for CDs, nationally across Australia. Focusing on the three cities, this enabled us to identify those Sydney, Melbourne and Brisbane CDs in the most disadvantaged echelon of the nation-wide ranking. After consideration, we adopted the quintile threshold (lowest 20% of IRSD rankings Australia-wide), partly because this focuses the research more specifically on ‘more disadvantaged’ areas and since IRSD rankings are typically used in deciles (hence a quartile threshold would have been less appropriate).

2.1.4 Aggregating disadvantaged CDs to suburbs

Having identified ‘disadvantaged CDs’ as described above, the next step was to assign each ‘disadvantaged CD’ to its respective suburb. This involved matching CDs and ABS suburbs (SSCs) for 2006. This matching was undertaken via a Geographic Information System (GIS) analysis. Initially, we applied a ‘disadvantaged population’ threshold to exclude any suburb where people in disadvantaged CDs numbered below 2000. The need for such a ‘lower population threshold’ arises from the fact that some officially recognised ‘suburbs’ are largely non-residential areas whose inclusion could have distorted the analysis.

2.1.5 Refining the methodology

Results of our initial analysis using the method outlined above were mapped and ‘groundtruthed’—that is considered within the context of researcher knowledge of the local context in Sydney, Melbourne and Brisbane. Partly prompted by resulting observations, it was decided to refine the approach to allow for two considerations. Firstly, the need to account for the physical contiguity of ‘separate suburbs’ which did not meet the population minimum threshold. And, secondly, the need to avoid excluding suburbs which, while falling short of the ‘50 per cent disadvantaged CDs’ minimum threshold, still contained substantial ‘disadvantaged’ populations (i.e. people living in disadvantaged CDs).

Subsequently, therefore, the following threshold rules were implemented:

1. Only suburbs containing at least 2000 people in disadvantaged CDs were included except in relation to suburbs with at least 1000 people if physically contiguous with other ‘disadvantaged suburbs’.
2. Suburbs containing at least 5000 people in ‘disadvantaged CDs’ were included even where the percentage of ‘disadvantaged CDs’ in the suburb fell short of 50 per cent.
3. Suburbs were included as ‘disadvantaged’ where at least 40 per cent of the population lived in 'disadvantaged CDs' and there was a population count of over 2000.

2.2 Analysis outputs

Application of the approach described above enabled identification of 177 disadvantaged suburbs—91 in Sydney, 50 in Melbourne and 36 in Brisbane (see Table 6). These encompassed a population of 1.54 million people. From this point onwards, the starting point for all the analyses is the 177 suburbs generated by the application of the revised minimum population threshold rules as stipulated above.

Table 4: Calibrating the 2006 geography of disadvantage in Sydney, Melbourne and Brisbane

	Sydney	Melbourne	Brisbane	All
Total number of CDs[1]	6,697	6,176	2,992	15,865
Number of disadvantaged CDs[2]	1,123	892	422	2,437
% of disadvantaged CDs	17	14	14	15
Number of suburbs[3]	815	492	418	1,725
Number of disadvantaged suburbs[4]	91	50	36	177
% of disadvantaged suburbs	11	10	9	10
Number of disadvantaged CDs in disadvantaged suburbs	807	684	259	1,750
% of disadvantaged CDs in disadvantaged suburbs	72	77	61	72
Population in disadvantaged suburbs (million)	0.74	0.59	0.21	1.54
Population in disadvantaged suburbs as % of total city population	18	17	12	16

Source: Based on 2006 Census analysis

Notes to table:

1. Collection Districts (CDs) without an IRSD score, that is industrial areas and areas with too few residents etc., were excluded from the 2006 analysis (53 CDs in Sydney, 149 CDs in Melbourne and 55 CDs in Brisbane were discarded for this reason).

2. The threshold for 'disadvantaged CDs' is areas with an IRSD score within the lowest quintile for all Austral.

3. As suburbs are not an ASGC standard geography, correspondences (concordances) were used to classify CDs into respective suburbs. Applicable correspondences were developed by the research team. For the ABS explanation of concordances see: http://www.abs.gov.au/websitedbs/D3310114.nsf/home/Converting+Data+to+the+ASGS#Anchor2.

4. Number of suburbs with 50 per cent or more CDs disadvantaged (also meeting the population thresholds and contiguity condition—see text).

Overall, across the three cities, there were almost 16 000 CDs in 2006, with 2437 (15%) of these lying within the lowest quintile of the national IRSD CD ranking. Notably, the city-specific figures all fall below 20 per cent, thus implying that the propensity for a CD to be 'disadvantaged' was somewhat lower in all three cities than the national propensity.

Importantly, the identified suburbs encompassed the majority of disadvantaged CDs in all three cities—72 per cent in Sydney, 77 per cent in Melbourne and 61 per cent in Brisbane in 2006. This suggests substantial spatial clustering of such localities into larger spatial units. That is, most 'disadvantaged CDs' were set within suburbs where they formed a majority (or otherwise encompassed a large population). Especially in Sydney and Melbourne, few such CDs were situated in areas isolated from other localities of this kind.

To investigate the intensity of disadvantage in the three cities, a variant analysis was undertaken using the IRSD lowest decile rather than lowest quintile. In all three cities, the number of disadvantaged suburbs identified remained substantial even when applying this more rigorous definition—see Table 5 below. The spatial implications of this variant analysis are shown in Figures 1–3.

Table 5: Variant analysis of disadvantaged suburbs: impact of applying IRSD decile threshold

	Number of disadvantaged suburbs resulting from use of the IRSD		
	Lowest decile	**Second lowest decile**	**Lowest quintile total**
Sydney	38	53	91
Melbourne	18	32	50
Brisbane	12	24	36
Total	68	109	177

Source: Based on 2006 Census analysis

2.3 Mapping the geography of disadvantage

The spatial distribution of 2006 'disadvantaged suburbs' across the three cities is shown in Figures 1–3. In all three cities, 2006 disadvantaged suburbs were located primarily in the middle and outer suburban areas, reflecting significant pre-2006 gentrification of inner city suburbs.

Importantly, mapping the 2006 disadvantaged suburbs reveals that they were also often spatially contiguous. Across all three cities only 25 (14%) of the 177 disadvantaged suburbs were non-contiguous with others similarly classified—see Table 6 below. In Sydney and Melbourne there were three clear agglomerations: in the outer west, north west and south west of the Sydney metropolitan area and in the west, north and south east of Melbourne. In Brisbane, such areas were located in two main groupings: in a ribbon stretching inland along the Brisbane River, and in the south of the metropolitan area.

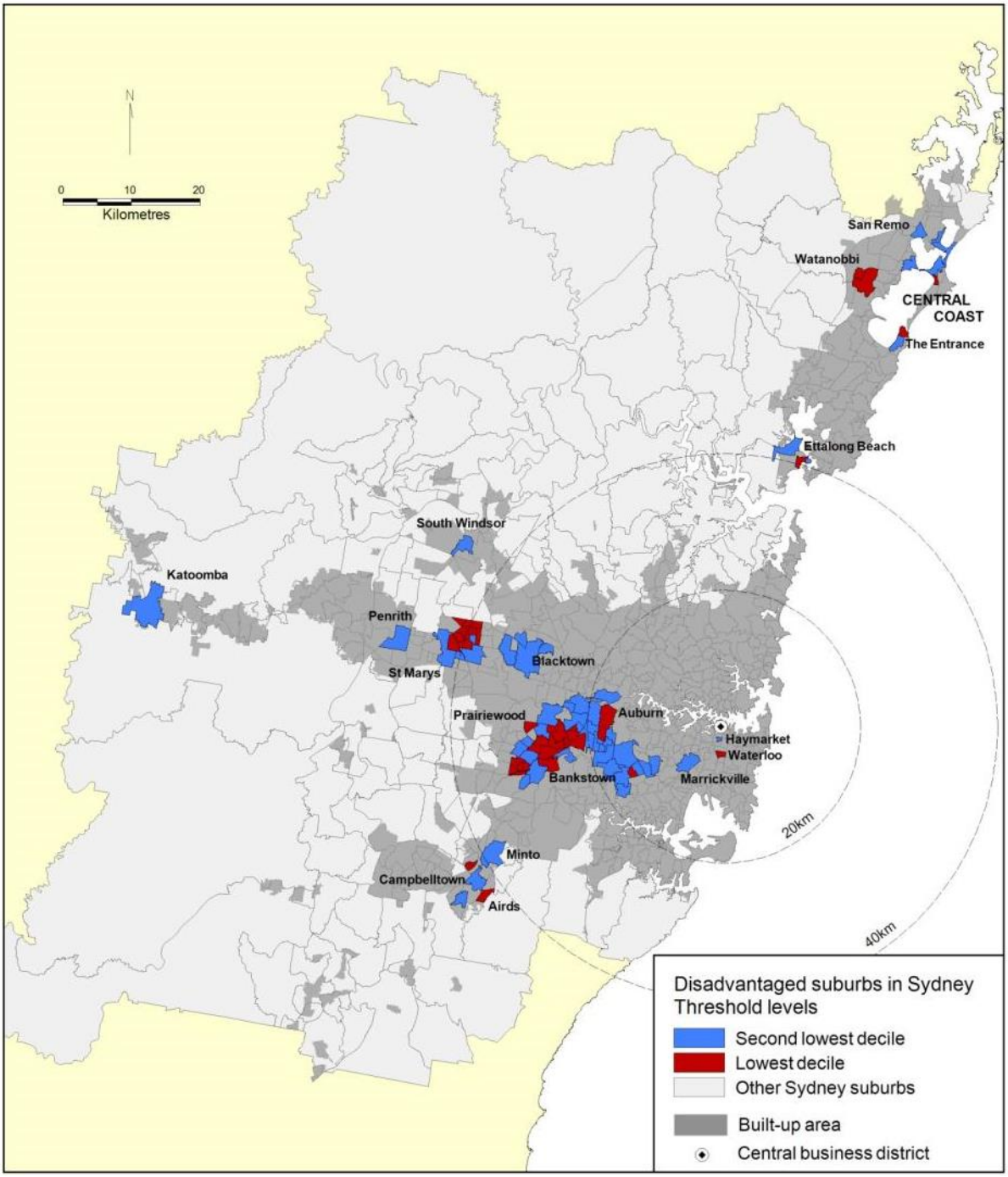
Table 6: Geographical propinquity of disadvantaged suburbs

City	Contiguous	Non-contiguous	Total
Sydney	76 (84%)	15 (16%)	91 (100%)
Melbourne	45 (90%)	5 (10%)	50 (100%)
Brisbane	31 (86%)	5 (14%)	36 (100%)
All	152 (86%)	25 (14%)	177 (100%)

Source: Relates to Figures 1–3.

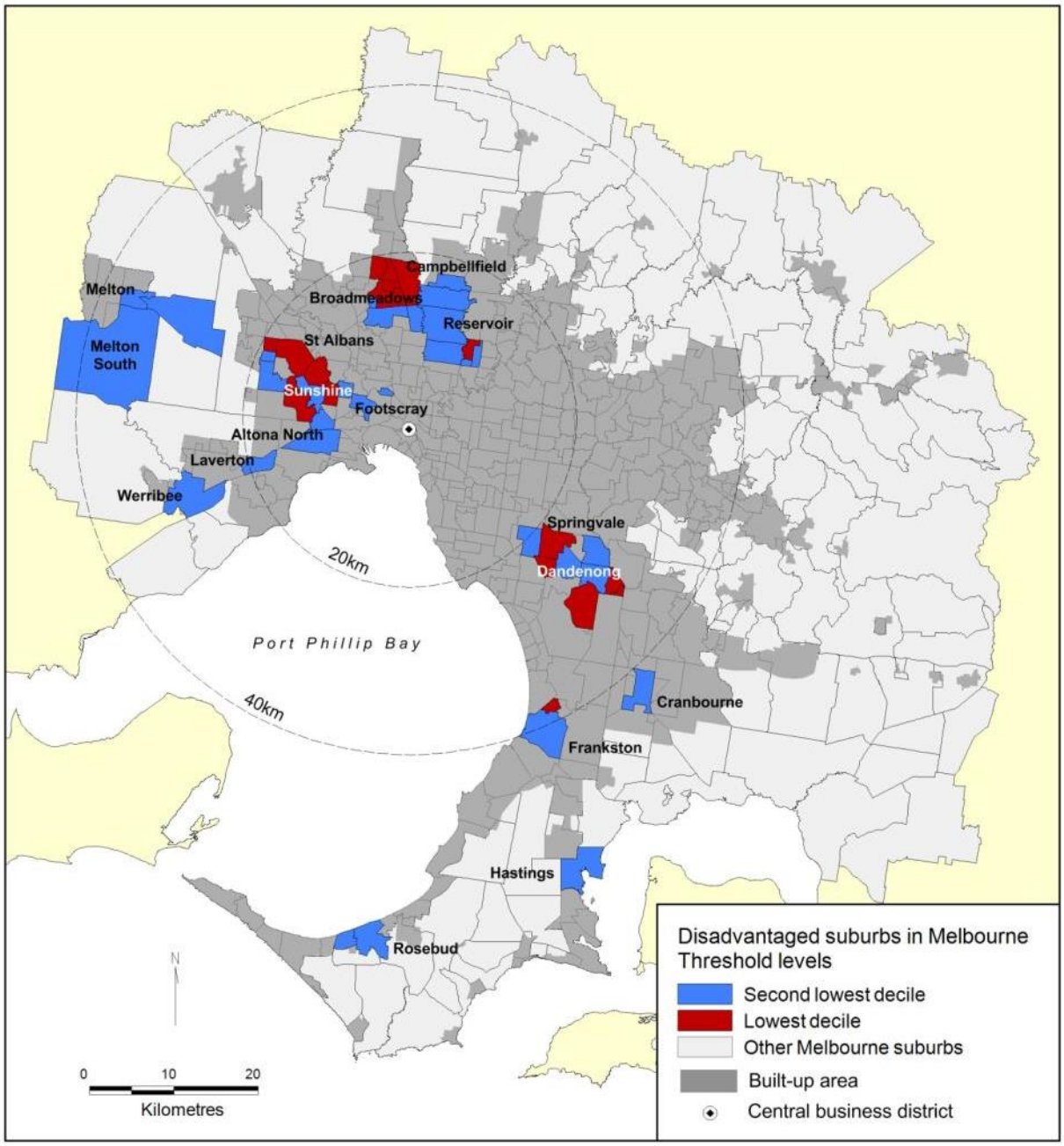
We return to the spatial and locational analysis of disadvantage in Chapter 3, in relation to the suburb typology analysis.

Figure 1: Disadvantaged suburbs in Sydney: lowest and second lowest decile threshold levels



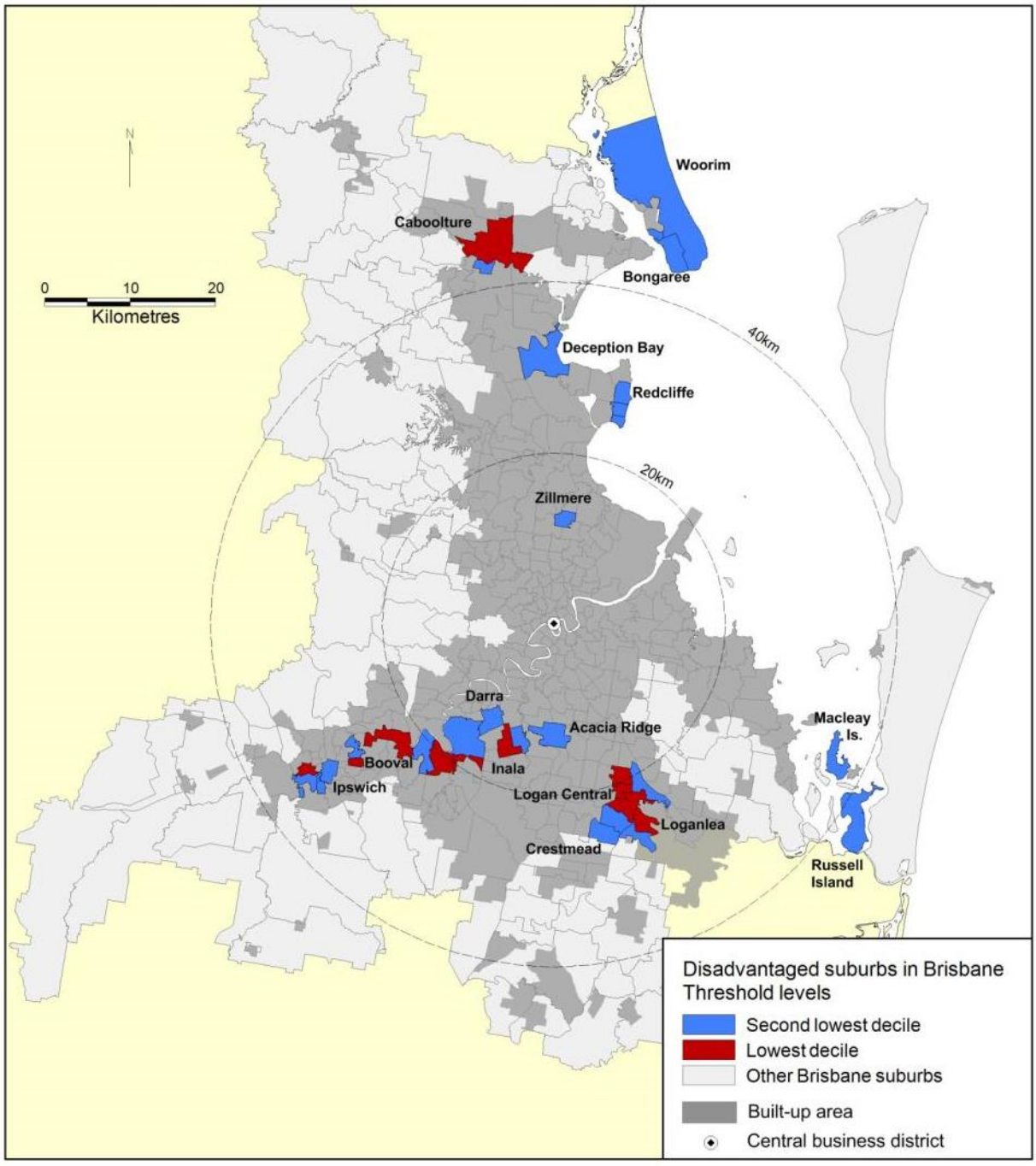
Source: Based on ABS 2006 SEIFA IRSD figures and ABS digital boundaries

Figure 2: Disadvantaged suburbs in Melbourne: lowest and second lowest decile threshold levels



Source: Based on ABS 2006 SEIFA IRSD figures and ABS digital boundaries

Figure 3: Disadvantaged suburbs in Brisbane: lowest and second lowest decile threshold levels



Source: Based on ABS 2006 SEIFA IRSD figures and ABS digital boundaries

In addition to mapping which shows spatial contiguity of disadvantaged areas, there are a number of statistical measures of the extent of spatial clustering.[7] Here we use the Moran's I (Moran 1950) metric which calibrates the degree of spatial clustering or dispersion (spatial autocorrelation) of areas/regions and their associated data. The measure was applied to the SEIFA IRSD scores for all CDs (whatever their index score) and for disadvantaged CDs in the

[7] One possibility is the Isolation Index (Massey & Denton 1988) which is more typically used to examine racial residential segregation using individual level data (people) rather than spatial units which form the key unit of analysis in this report. Here we use *Moran's I*, a commonly applied spatial statistics tool to evaluate the extent to which locations or regions with a certain characteristic cluster together in space.

lowest quintile (of all Australian index scores) in the three cities. The results are shown in Tables 7 and 8 below. In interpreting these results, and similar to the conventional correlation coefficient, the value ranges from +1 meaning perfect positive spatial autocorrelation, to 0 meaning a random pattern, to -1 indicating perfect negative spatial autocorrelation.

Table 7: Global Moran's I summary—all CDs city-wide

	Moran's index	Expected index	Variance	z-score	p-value
Sydney	0.474	-0.000148	0.000058	62.412	0.000
Melbourne	0.283	-0.000158	0.000060	36.611	0.000
Brisbane	0.210	-0.000328	0.000128	18.640	0.000

Sources: Authors' calculations

Table 8: Global Moran's I summary—sample of disadvantaged CDs

	Moran's index	Expected index	Variance	z-score	p-value
Sydney	0.513	-0.000148	0.000058	67.522	0.000
Melbourne	0.589	-0.000158	0.000060	76.161	0.000
Brisbane	0.461	-0.000328	0.000129	40.650	0.000

Sources: Authors' calculations

The positive results for the Moran's I for all CDs in the three cities (Column 1 of Table 7) demonstrate spatial clustering of CDs with like CDs (in terms of the SEFIA IRSD score) to a certain degree in all three cities. In other words, CDs with higher index scores tend to be contiguous with other such CDs and that those with lower index scores are located adjacent to other low index score CDs. The higher Moran's I for Sydney, however, confirms considerably greater socio-spatial polarisation in Sydney (spatial clustering of like CDs) relative to Melbourne and Brisbane. When we examine the sub-sample of disadvantaged CDs in Table 8, there is substantial spatial clustering of disadvantaged CDs with other similar CDs, as shown by the high Moran's I (Column 1), with relatively little difference between the three cities.

The findings suggest some differences between Sydney on the one hand and Melbourne and Brisbane on the other in terms of spatial clustering (i.e. interpreting the results in Tables 7 and 8 together). In Sydney, disadvantaged CDs are substantially spatially clustered and to the same extent as all other CDs. In Melbourne and Brisbane, disadvantaged CDs are also substantially spatially clustered but to a much greater extent than all CDs.

2.4 Chapter summary

Our identification and mapping of disadvantaged places is based on a population-based measure of disadvantage rather than place disadvantage or indication of social dysfunction. Aggregating Census data from smaller ABS spatial units, it has used State Suburbs (SSCs) as its spatial framework. Thus, disadvantaged suburbs have been classed as those containing at least 50 per cent of CDs in the lowest quintile of the national IRSD distribution, although some refinements to this classification were also incorporated to allow for the peculiarities of suburb geography in the three cities.

The 177 suburbs identified as 'disadvantaged' through the above approach accommodate about 16 per cent of the population of the three cities. For the most part, these are substantially clustered in middle and outer suburban locations. In at least some instances, this probably means that place of residence is, in itself, problematic because of remoteness from employment and/or services. However, although a population-based measure was used to

identify disadvantaged suburbs, not all people living in such suburbs have characteristics indicating disadvantage and neither does it imply that these are necessarily places that disadvantage people.

3 DEVELOPING A TYPOLOGY OF SOCIO-ECONOMIC DISADVANTAGE

A key part of the research was to develop a typology of disadvantaged suburbs in the Australian context, to investigate whether the 177 disadvantaged suburbs in the three cities have discernibly different profiles, roles and functions. This is important for local communities, councils, state and federal policy-makers and others to consider what types of interventions may be appropriate for different types of suburbs.

This chapter first steps back from the current research to contextualise our approach to typology development with reference to such work previously undertaken in Australia and elsewhere. It then summarises the development and application of our own typology within the contexts of the three capital cities, and sets out the spatial patterns revealed.

3.1 Contextualising our approach

Having identified a cohort of disadvantaged suburbs (see Chapter 2) the next step was to differentiate these by developing a typology. One option would have been to impose a deductive framework—employing prior knowledge to define a set of hypothesised 'ideal type' functional area categories (e.g. drawing classifications developed in previous studies). These area type categories would have been operationalised through the identification and use of relevant socio-economic/housing market indicators available at a suitable spatial scale. Instead, however, we opted for an inductive model—assembling relevant variables at the suburb level and subjecting this to statistical analysis in the expectation that this would reveal distinct 'clusters' or areas with common combinations of values on specific variables. Approaching the typologising task in this way could be termed 'letting the data speak'.

In looking to develop a classification of spatial units based on a multi-variate statistical analysis we were following a well-established tradition in urban geography research. In the Australian context, examples include the use of cluster analysis in studies of regional settlements by Beer and Maude (1995), Baum et al. (2006) and Baum (2006). In Baum et al. (2006), for instance, metropolitan centres were grouped in terms of shared socio-economic and demographic outcomes into a seven-fold classification. In the US context, cluster analysis has been applied to the large-scale classification of central cities (e.g. Hill et al. 1998) and metropolitan suburbs (Mikelbank 2004). Somewhat more targeted studies have also been undertaken—for example focused on 'inner ring suburbs' (Hanlon 2009).

Overseas studies more directly pertinent to our research include the work of Beatty et al. (2008) who sought to classify the 39 disadvantaged areas in England included in the 1998–2008 New Deal for Communities (NDC) regeneration program. Similarities with our research include both the remit of the exercise—places defined as socio-economically disadvantaged—and the scale of the analysis—with an average population of 4000, NDC spatial units were quite similar in size to ABS suburbs.

In the Beatty et al. (2008) study, 36 indicators drawn from household survey data and administrative record systems were subjected to a principal components analysis (PCA). Indicators included variables on education, employment, health, crime, housing and community. The five clusters emerging from this analysis were: (1) Low on human capital, high on fear of crime and relatively unstable; (2) Relatively stable, 'working class' with fewer entrenched problem; (3) London neighbourhoods; unstable population, least deprived; (4) Relatively thriving areas with higher BME (black and minority ethnic) populations outside London; (5) Low on human capital but relatively stable with low fear of crime.

Potentially of even greater relevance to the current research have been the UK studies which, in seeking to classify disadvantaged areas, have focused on the functional roles of neighbourhoods as revealed by residential mobility patterns. These include the work of Bailey

and Livingston (2007) which produced mobility-based typology categories—stability, connection, area change. Similarly, in the Robson et al. (2008), Robson (2009) study, rather than being based on socio-economic characteristics, area classification was informed by Census-derived residential mobility data, available in the UK at small spatial scales. Central here was an analysis of localities in terms of in-mover and out-mover flows, as regards the relative social status of the neighbourhoods from which and to which moves had occurred. The four distinct deprived neighbourhood types identified by Robson et al.—transit, escalator, improver and isolate—were of interest not simply in social research terms, but with respect to the informed targeting of potential policy responses.

Having contextualised our research in relation to existing studies, we now move to an account of how our study was undertaken. Next, we briefly introduce the cluster analysis methodology. We then explain the prior steps needed in preparation for this analysis. Summary tables of the final cluster analysis results are then presented and discussed.

3.2 Cluster analysis variables and summary of methodology

Cluster analysis (CA) is an exploratory data reduction technique that organises data into more meaningful and manageable groups within a large sample. Clusters (in this case localities) are defined in terms of the inter-relationship between variables. Hence, CA indicates that the members within an emerging cluster are similar to each other in certain respects. Since it cannot be known at the outset the number of clusters/types that will emerge, a two-stage sequence of analysis was undertaken using hierarchical cluster analysis and k-means cluster analysis.[8] A more detailed account of our methodology here is set out in Appexdix.

In applying the cluster analysis approach summarised above, we used an array of Census-based indicators of disadvantaged suburbs' socio-economic status and temporal change, structured under three headings or dimensions:

- social/residential mobility (Dimension A)
- lifecycle stage/family type (Dimension B)
- change over time in socio-economic status (Dimension C).

In adopting this framework the research team drew on advice from Professor George Galster, international advisor to the project and a globally renowned geographer with extensive experience in urban spatial analysis (e.g. Galster 2011, 2012).

The 14 variables chosen under the three dimensions are shown in Table 9 below. As demonstrated here, we chose to focus exclusively on socio-economic and demographic variables. While the contribution of housing market processes to creating and perpetuating concentrations of disadvantage is of prime interest within the study (see Chapter 1), it was decided to exclude housing variables from our CA model so that these could be analysed independently of the typology—see Chapters 4–6.

As shown in Table 9, differences between the 'all disadvantaged suburbs' values and comparable 'rest of city' statistics appear relatively small in most instances. However, as might be expected, the incidence of single parent households in the disadvantaged suburbs is almost double the comparator value. Change over time variables show a mixed picture. The incidence of low-income households rose relatively quickly in disadvantaged suburbs during the 2001–2011 period. Conversely, unemployment fell more substantially in disadvantaged suburbs than citywide, and this was also true for the incidence of persons having left education at high school year 10. Therefore, while the specific choice of time period may have contributed to the

[8] Hierarchical cluster analysis was completed using the Ward's method applying squared Euclidean distance as the distance measure. Having established the possible number of types, the CA was re-run using the computationally efficient k-means method. See Lai (2004) and Gilman et al. (2005) for use of this strategy in various contexts.

result, the overall picture cannot be characterised as demonstrating ‘ongoing polarisation’ between disadvantaged suburbs and the cities of which they form part.

Table 9: Summary of variables used in the cluster analysis

Dimension	Variable		Disadvantaged suburbs	Rest of cities**	Combined citywide totals**
	Type	Summary definition			
A—social/residential mobility	Household	% of households moved in previous five years	29.7	34.0	33.3
	Household	% of households moved in previous five years from overseas address	6.2	6.5	6.5
B—lifecycle stage/family type	People	% of population >65 and not in labour force	11.3	10.0	10.2
	People	% of population aged 0–12	17.6	16.4	16.6
	People	% of population aged 13–18	7.8	7.5	7.5
	People	% of population aged 19–24	8.8	8.6	8.7
	Household	Couples with dependent children %*	23.5	27.7	27.7
	Household	Single parents with dependent children %*	10.4	6.2	6.2
	Household	Lone person %*	22.2	20.9	20.9
C—Change over time in socio-economic status	People	% change in unemployment 2001–2011	-2.8	-0.6	-0.9
	People	% change in 25–44s left school at Year 10	-12.9	-7.9	-8.7
	People	% change in 15–24s not in education, employment or training	-2.1	-1.2	-1.5
	Household	% change in low-income households***	5.7	3.1	3.4
	People	% change in persons with low-status jobs****	-7.6	-7.4	-7.5

* As a proportion of all households

** Cumulative figures for Sydney/Melbourne/Brisbane combined

*** Proportion in approximately the bottom 40 per cent of the Australia-wide household income distribution

**** Scores of 35 or below in the occupational status scale—the Australian Socioeconomic Index 2006 (for 2011) and 'ANU4' (for 2001)

Source: Authors' calculations

While seeking to build on existing studies (see above) our approach was unfortunately constrained by data availability considerations on local level residential mobility. While ABS Census forms record actual 'former addresses' for respondents who have recently moved to their current residence, such data was coded (and therefore available for analysis) in 2011 only at the SA2 scale—units typically substantially larger than an average suburb. Hence, in analysing 'former address' data for recent in-movers to a particular suburb, previous residential locations could not be classified at the required (small area) geographic level. Unfortunately, therefore, rather than differentiating suburbs in terms of Robson-type socio-spatial mobility patterns, Dimension A indicators were necessarily limited to simpler and more familiar metrics—gross mobility rates and incidence of recent overseas migrant arrivals.

In the main, it was possible to generate suburb-level values for our chosen 14 indicators via ABS TableBuilder. In relation to Dimension C (change over time) variables, however, 2001 data needed to be obtained via customised purchase from ABS to supplement material sourced from ABS Basic Community Profile (BCP) databases.

While our identification of disadvantaged areas necessarily used 2006 ABS suburb geography (see above), our typology was informed by the latest 2011 Census data, as well as 2001 Census data for the Dimension C variables. This required the configuration of 2011 (and 2001) Census data according to 2006 Census boundaries through GIS.

3.3 Cluster analysis results

3.3.1 Overview of results

Initial hierarchical cluster analysis produced four suburb groupings. While two of these groupings were large, the other two were effectively 'outlier' categories with each containing only a single suburb—Haymarket and Waterloo (both in inner Sydney). These outlier suburbs were therefore unique among the 177 areas included in the analysis. Their uniqueness was associated with 'extreme values' as regards 'overseas migration churn' and socio-economic change over time (rapid gentrification), respectively. According to the recommended statistical procedure, these two outlier areas were removed from the analysis to eliminate their distorting effects.

The k-means cluster analysis was then repeated for the remaining 175 disadvantaged suburbs. As shown in Table 10 below, this produced a somewhat more balanced grouping of members within each category. Notably, however, the distribution is somewhat dominated by Types 2 and 4—especially in relation to population shares.

Table 10: Overview of cluster analysis outputs

		Suburb typology category					Total
		Type 1	Type 2	Type 3	Type 4	Outlier	
Suburbs	No.	14	73	26	62	2	177
	% of total	*8*	*41*	*15*	*35*	*1*	*100*
Population 2011	000s	51	923	128	550	16	1,668
	% of total	*3*	*55*	*8*	*33*	*1*	*100*

Source: Authors' calculations

As explored further below, typology category representation also varied substantially across the three cities. Before moving to that discussion, however, in order to consider the distinctiveness of each typology category, let us first consider the values of our individual typology variables within each typology category. These are detailed in Table 11.

Table 11: Summary of variables by typology category

Dimension	Variable		Disadvantaged suburbs					Combined citywide values**
	Type	Summary definition	Type 1	Type 2	Type 3	Type 4	All	
A—social/residential mobility	Household	% of households moved in previous five years	24.1	25.6	39.0	33.5	29.7	33.3
	Household	% of households moved in previous five years from overseas address	1.6	7.1	2.2	5.8	6.2	6.5
B—lifecycle stage/family type	People	% of population >65 and not in labour force	8.0	10.4	21.5	10.9	11.3	10.2
	People	% of population aged 0–12	24.8	18.1	13.4	17.5	17.6	16.6
	People	% of population aged 13–18	11.6	8.1	6.3	7.4	7.8	7.5
	People	% of population aged 19–24	8.6	9.0	6.0	8.9	8.8	8.7
	Household	Couples with dependent children %*	19.3	27.9	13.1	20.6	23.5	27.7
	Household	Single parents with dependent children %*	23.5	10.0	9.0	10.6	10.4	6.2
	Household	Lone person %*	17.8	18.1	35.2	24.7	22.2	20.9
C—Change over time in socio-economic status	People	% change in unemployment 2001–2011	-2.5	-2.3	-3.0	-3.3	-2.8	-0.9
	People	% change in 25–44s left school at Year 10	-12.1	-11.9	-14.2	-13.8	-12.9	-8.7
	People	% change in 15–24s not in education, employment or training	-2.3	-1.6	-2.7	-2.7	-2.1	-1.5
	Household	% change in low-income households***	8.2	8.2	3.4	2.8	5.7	3.4
	People	% change in persons with low-status jobs****	-2.8	-7.2	-6.2	-8.1	-7.6	-7.5

* As a proportion of all households

** Cumulative figures for Sydney/Melbourne/Brisbane combined

*** Proportion in approximately the bottom 40 per cent of the Australia-wide household income distribution

**** Scores of 35 or below in the occupational status scale—the Australian Socioeconomic Index 2006 (for 2011) and ‘ANU4’ (for 2001)

Source: Authors’ calculations

Drawing on Table 11 above, the socio-demographically distinctive features of each typology category can be summarised as follows:

- Typology category 1—High on young people and single parent households.
- Typology category 2—High on overseas movers and two parent families.
- Typology category 3—High on residential mobility but low on overseas movers; high on older people, with a high percentage of lone person households.
- Typology category 4—High on overseas movers, on reduced unemployment and on reduced incidence of low-status jobs.

3.3.2 Comparing and contrasting typology distributions across the three cities

As shown in Table 12 below, the distribution of typology categories contrasts substantially across the three cities. Only in Sydney are all four categories represented. This could be characterised as illustrating the greater complexity of the Sydney scenario. Moreover, while disadvantaged suburbs in both Melbourne and Brisbane are largely or wholly confined to two of the four types, the specific combinations differ markedly. In Melbourne, virtually all such areas are split between Types 2 and 4. In Brisbane, by contrast, with Type 2 absent, disadvantaged suburbs are almost entirely limited to Types 3 and 4. Possibly associated with housing market structures, Type 1 suburbs are almost wholly a Sydney phenomenon—see further discussion in Chapter 4.

Table 12: Summary of typology distribution by city

Suburb typology category	Sydney		Melbourne		Brisbane		All	
	No. of suburbs	*Pop. (000s)*	No. of suburbs	*Pop. (000s)*	No. of suburbs	*Pop. (000s)*	No. of suburbs	*Pop. (000s)*
Type 1	13	*49*	-	-	1	*2*	14	*51*
Type 2	48	*534*	25	*388*	-	-	73	*923*
Type 3	13	*68*	2	*17*	11	*43*	26	*128*
Type 4	15	*106*	23	*261*	24	*184*	62	*550*
Total	89	*757*	50	*666*	36	*229*	175*	*1,652*

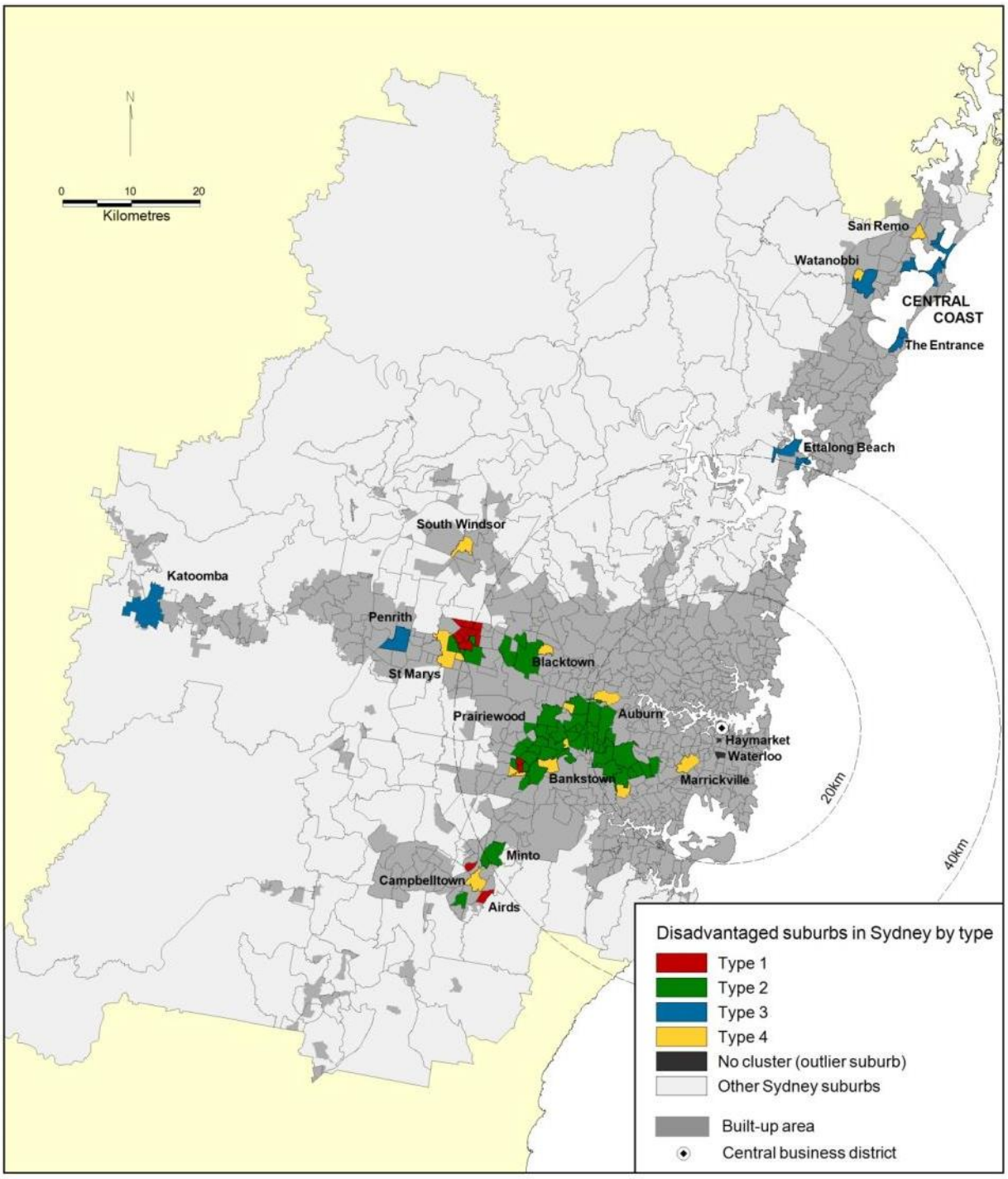
Source: Authors' calculations

Notes: * excluding 2 outlier suburbs

Spatial patterns of disadvantaged suburb types are shown in Figures 4–6 below. Again, these show a tendency toward clustering—that is spatial groupings of disadvantaged suburbs of each defined type. Although housing matters remain to be discussed in detail—see Chapters 4–6—the spatial distribution of disadvantaged suburb types suggests some possible links with housing geography. In particular, the pattern of Type 1 areas represented almost exclusively in Sydney match closely with the known location of large public housing estates in the city's western suburbs. However, perhaps the most striking spatial pattern, is the marked tendency for Type 3 areas to appear in peripheral locations (of all three cities), possibly suggesting an association with low priced housing. Type 4 suburbs, on the other hand, appear more scattered—especially in Sydney and Melbourne where—at least in some instances, they appear to map onto places relatively well-connected in terms of their transport links to central cities.

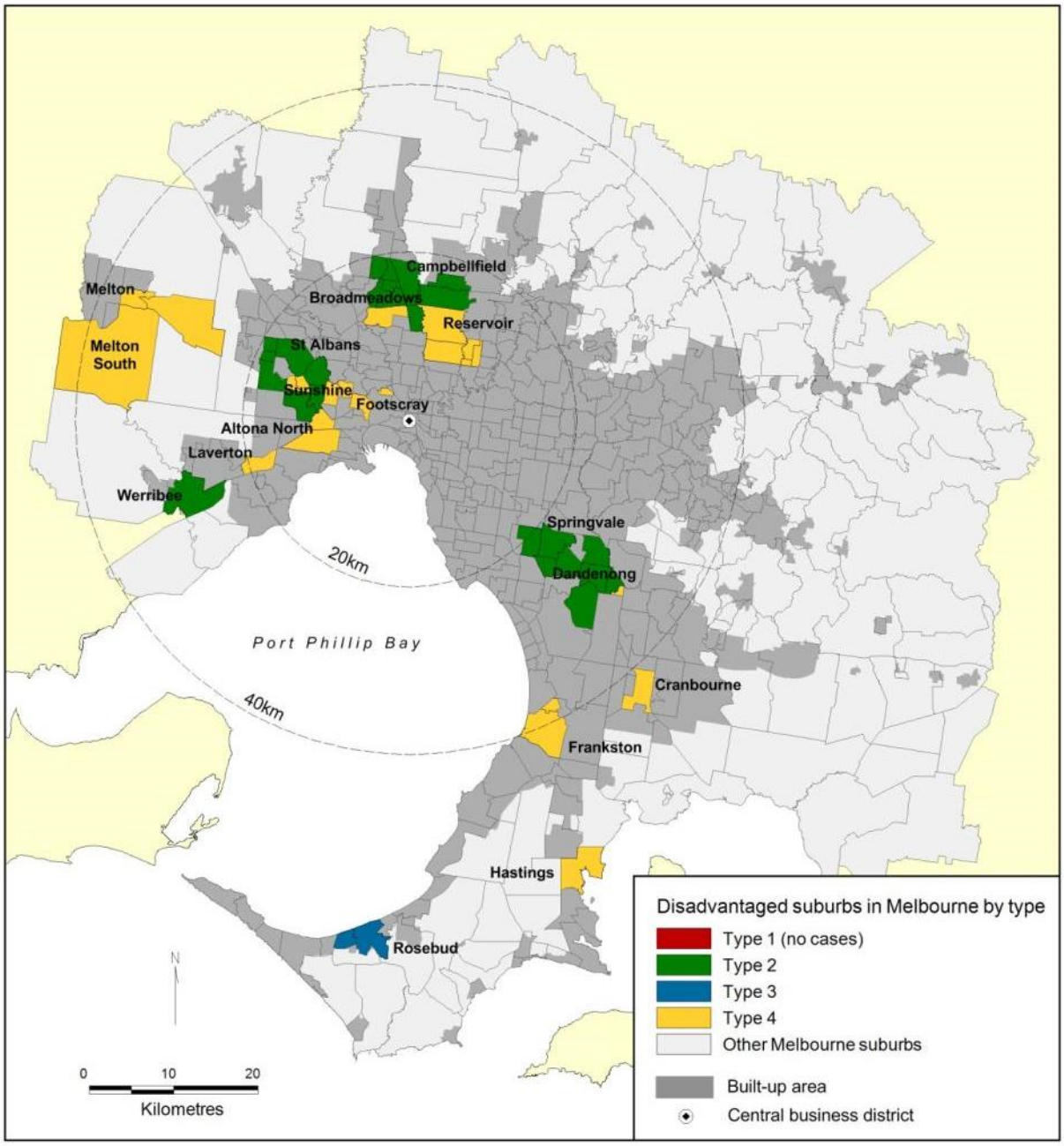
Further discussion on possible explanations for the typology classification results, and on the characterisation of the specific typology categories, is included at the end of Chapter 5 in the light of the housing market analysis set out in that chapter.

Figure 4: Disadvantaged suburbs in Sydney differentiated according to socio-economic variables (2001 and 2011)



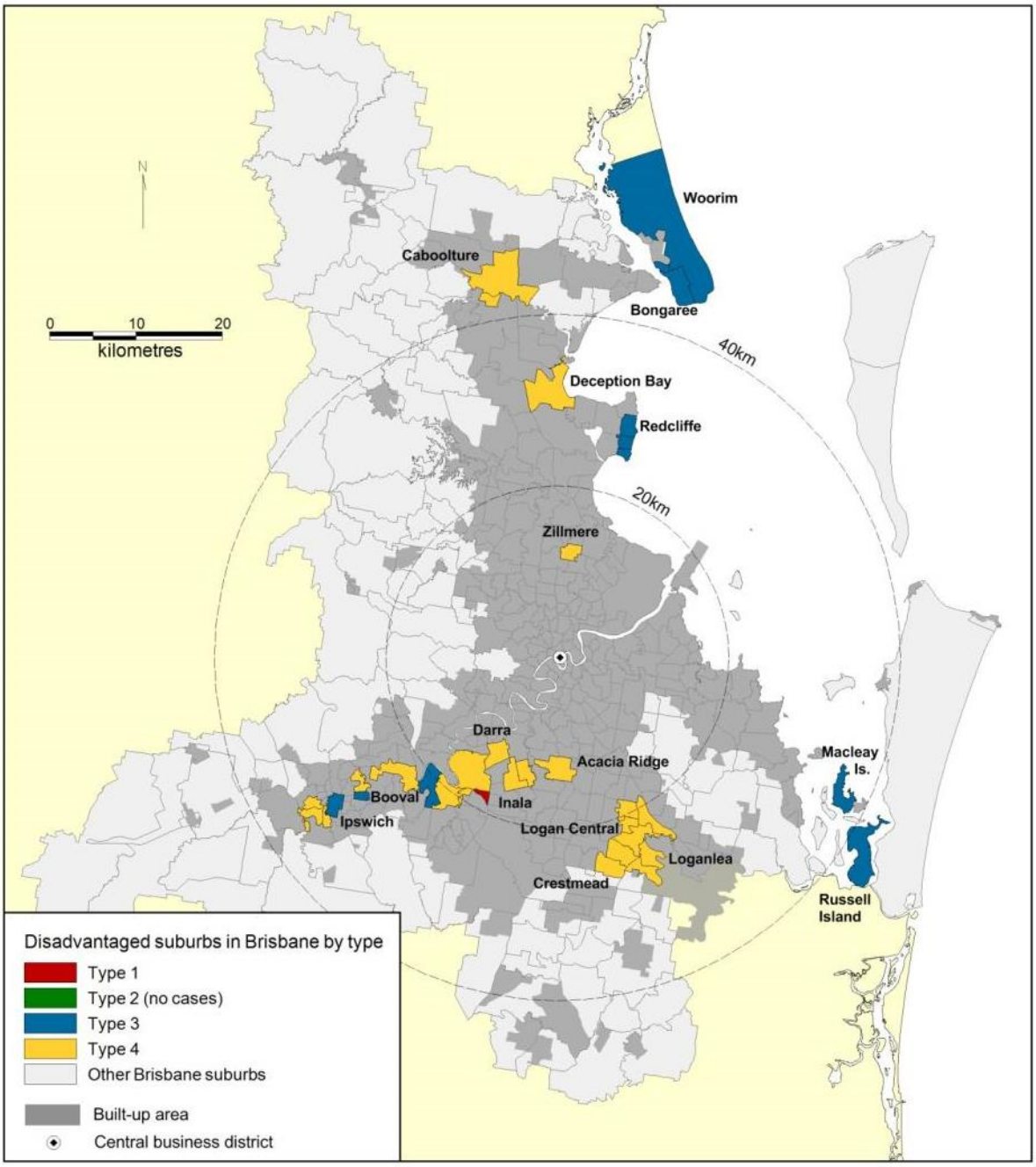
Source: Based on ABS Census of Population and Housing data, 2001, 2006 (boundaries) and 2011

Figure 5: Disadvantaged suburbs in Melbourne differentiated according to socio-economic variables (2001 and 2011)



Source: Based on ABS Census of Population and Housing data, 2001, 2006 (boundaries) and 2011

Figure 6: Disadvantaged suburbs in Brisbane differentiated according to socio-economic variables (2001 and 2011)



Source: Based on ABS Census of Population and Housing data, 2001, 2006 (boundaries) and 2011

3.4 Chapter summary

Using an inductive approach, the disadvantaged suburbs of Sydney, Melbourne and Brisbane (as identified in Chapter 2) were classified via a cluster analysis using Census data on socio-economic profile, demographic profile and socio-economic change over time. While the outcome of the analysis was four distinct types of 'disadvantaged place', only in Sydney were all four types found to be present. The resulting geography of disadvantaged area types suggests some linkages with housing market variables which we explore in the next three chapters.

4 FUNDAMENTALS OF HOUSING MARKETS IN 'DISADVANTAGED SUBURBS'

In this and subsequent chapters, we examine the role of housing markets in understanding the drivers and outcomes of patterns of socio-spatial disadvantage, identified through the development and deployment of the typology (reported in Chapters 2 and 3). The aim is to develop a broader understanding of socio-spatial disadvantage associated with the operation of housing and urban systems in Sydney, Melbourne and Brisbane.

Whether people can afford to buy or rent in particular suburbs, and whether they enter, stay or leave, determines the composition of resident households in an area and hence the concentration of social disadvantage using population-based measures. This is particularly so in the Australian housing system where 95 per cent of dwellings are traded in the private market and access and residential mobility is primarily determined by ability to pay along with household preferences. The other 5 per cent of dwellings are social housing and thus largely quarantined from market processes, with access and internal mobility instead determined by non-market factors.

This chapter looks at some of the fundamentals of housing markets 2001–2011 in terms of demand (household change); supply (change in the type and size of dwellings) and housing tenure (change in type of occupancy of dwellings by households). It proceeds as follows:

- A brief introduction to the approach and methods used in the housing market analysis of disadvantaged suburbs, which underpins this chapter.
- An introduction to the housing market context of disadvantaged suburbs in the three cities in respect of household demand, dwelling supply and housing tenure.

In the following chapters, the housing market analysis is extended to encompass prices/rents (Chapter 5) and household turnover, spatial analysis of housing market changes 2001–2011, and consideration of suburbs or groups of suburbs where our investigation suggests indicators of emerging concentrations of disadvantage in 2011 (Chapter 6).

4.1 Approach, methods and data

Housing markets are inherently dynamic and, in the case of Sydney, Melbourne and Brisbane, were affected by some common factors over the period 2001–2011 including sustained economic growth, somewhat moderated (negatively) by the Global Financial Crisis; fiscal policies; monetary policies (especially interest rates), migration policies; and specific federal housing policies such as the First Home Owners Grant.

Given the pattern of urban settlement in Australia in a few large centres at considerable distance from each other, the housing markets of Sydney, Melbourne and Brisbane are also subject to city-specific factors. These include city (un)employment rates; industrial restructuring; patterns of international and domestic in-migration; availability of, and access to, public transport; the spatial distribution of valued amenities, facilities and services; state planning, housing, and fiscal policies (e.g. stamp duty); and, importantly, topography.

The research approach was to:

- Analyse the housing markets of the 177 disadvantaged suburbs collectively and their role relative to their wider 'home' city.
- Analyse the housing markets of the four types of disadvantaged suburbs in the typology (previously identified), both relative to each other and the 'home' cities.

- To identify change over time for each of these for the period 2001–2011.[9]

This chapter uses data from the ABS Census of Population and Housing which was customised for the spatial analysis required.[10] Some key points to note are:

- Households (not people) are the key unit for housing market analysis. Household data are derived from Census records on 'occupied private dwellings' (OPDs), such that there is, by definition, one household per such dwelling.
- Data on dwelling type/size uses standard categories in the ABS Census for occupied private dwellings, viz:
    1. separate houses
    2. semi-detached, row, terrace or townhouses
    3. flats, units and apartments
    4. other dwellings.
- Housing tenure uses the conventional categories deployed in Australia, viz:
    1. outright owner
    2. purchaser
    3. private renter
    4. social renter.
- Spatial units matched to the ABS State Suburb (SSC) boundaries for 2006 to correspond with the typology were aggregated to enable analysis by:
    1. the four types of disadvantaged suburbs in each city
    2. the disadvantaged suburbs in each city relative to 'other suburbs'
    3. city by city analysis.
- Change over time was analysed at three points 2001, 2006 and 2011. To enable clarity of presentation, this chapter reports on change from 2001–2011.

4.2 Household growth

While the three cities experienced high rates of household growth 2001–2011, household growth in disadvantaged suburbs was generally less than for other suburbs as shown in Table 13 below. In consequence, the proportion of all city households living in the disadvantaged suburbs was either the same or less in each city in 2011 than in 2001. In 2011, 16 per cent of households in Melbourne and 12 per cent in Brisbane lived in their disadvantaged suburbs, a decreased percentage from 2001, while 17 per cent of Sydney households lived in its disadvantaged suburbs (much the same as in 2001).[11]

Possible explanations for the static percentage of households in Sydney's disadvantaged suburbs compared with Melbourne and Brisbane include a lower rate of household growth

[9] A limitation of the research was the necessity of selecting 2011, the date of the most recent Census. In that year, the housing market in Australia's major cities had 'paused' briefly after large increases in prices/rents through the 2000s to 2010 (and before further increases starting in late 2012). This stage in the housing market affected the volume of housing on the market (to buy or rent) and therefore the opportunity for households to move.

[10] Spatial unit comparability issues were overcome by obtaining Census variables at the Census Collection District (CD) level for 2001, and the Statistical Area Level 1 (SA1) level for 2011. These smaller spatial units were effectively aggregated to match the larger ABS 2006 State Suburb (SSC) boundaries: the spatial unit chosen for our analysis. Once aggregated to the SSC level, the associated data could be combined and analysed for the required areas. For more detail, see Appendix.

[11] Percentages given in the text of this report are rounded to whole numbers. The tables give percentages more accurately to one decimal point.

generally in the city; higher prices in the Sydney housing market (discussed in Chapter 5) that may have prevented residents from moving to other suburbs; and greater intensification of land use in these suburbs (more dwellings).

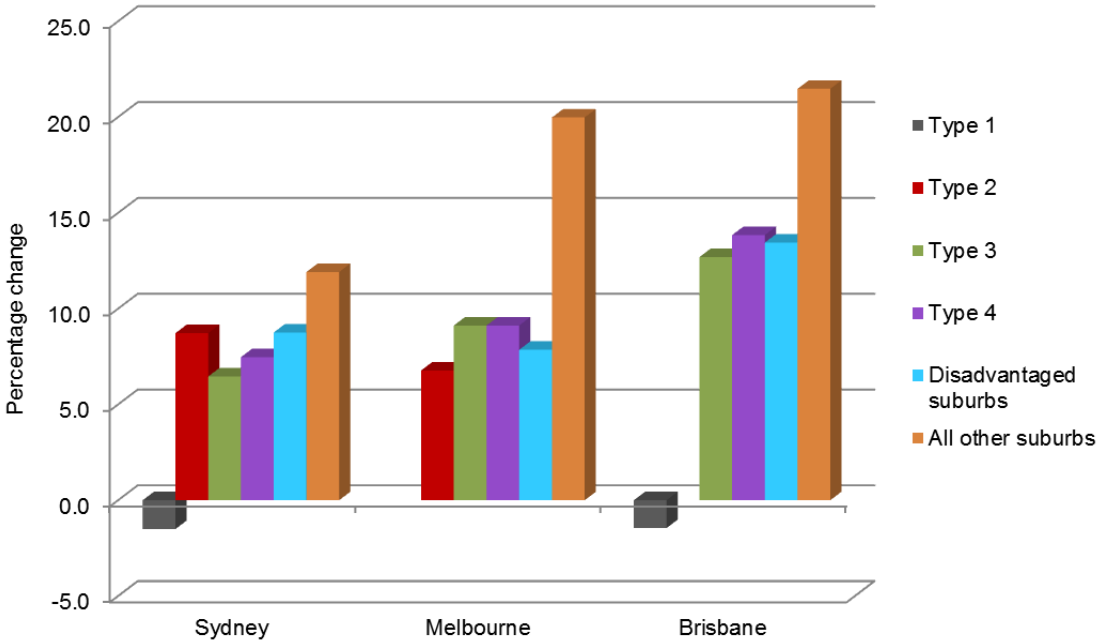
Table 13: Households and household growth, Sydney, Melbourne and Brisbane, 2001–2011

	Sydney	Melbourne	Brisbane
Population 2011			
City	4,391,673	3,939,414	1,958,669
Disadvantaged suburbs	799,182	639,733	229,105
Other suburbs	3,592,491	3,299,681	1,729,564
Households 2011			
City	1,521,399	1,410,199	694,401
Disadvantaged suburbs	262,180	224,809	80,847
Other suburbs	1,259,219	1,185,390	613,554
Household growth 2001–2011			
City	155,146	213,761	118,045
Disadvantaged suburbs	21,106	16,366	9,581
Other suburbs	134,040	197,395	108,464
% household growth 2001–2011			
City	11.4	17.9	20.5
Disadvantaged suburbs	8.8	7.9	13.4
Other suburbs	11.9	20.0	21.5

Source: Authors' calculations based on ABS Census of Population and Housing 2001; 2011

There was little difference in rates of household growth between the four types of disadvantaged suburbs in the cities 2001–2011, with the notable exception of Type 1 suburbs (Sydney and Brisbane) where there was negative household growth, as shown in Figure 7 below. This suggests that Type 1 suburbs were low value markets with little demand pressure for intensification that would bring about household growth and, in at least some of these suburbs, the dwelling stock would have contracted over the decade due to public housing demolitions.

Figure 7: Percentage change in households living in types of disadvantaged and all other suburbs, Sydney, Melbourne and Brisbane 2001–2011



Note: Disadvantaged suburbs in Sydney include the two outlier suburbs of Waterloo and Haymarket.
Source: Based on ABS Census of Population and Housing data, 2001 and 2011

Most households living in disadvantaged suburbs in the three cities in 2011 lived in Types 2 and 4 suburbs (52% in Type 2 suburbs and 35% in Type 4 suburbs). Types 1 and 3 suburbs appear to be small sub-markets with only 3 per cent of households in disadvantaged suburbs living in Type 1 (almost entirely a Sydney phenomenon) and 11 per cent of households living in Type 3 suburbs, in areas at the periphery of the cities (Chapter 3). This raises questions which are addressed in the subsequent analysis:

- What distinguishes the housing markets of Type 1 and Type 3 suburbs apart from location?
- What role do Types 2 and 4 suburbs play in the three city housing markets and are they different types of housing markets?

In brief, disadvantaged suburbs in the three cities experienced household growth from 2001–2011, although not to the extent of their 'parent cities'. This context is somewhat different from discussion of concentrations of social disadvantage in some European and US cities associated with lower household growth rates. Household growth occurred in the context of sustained economic growth in Australia over this period and associated high rates of in-migration, although clearly other factors applied in Type 1 suburbs where there was a small percentage decrease in households.

4.3 Dwelling type and size

Single detached dwellings predominate in disadvantaged suburbs, as in the three cities generally, with the percentage of such dwellings notably less in Sydney than in Melbourne or Brisbane, as shown in Table 14 below. Conversely, high rise living (defined as three or more storey flats, units and apartments) is not a significant feature of most of these areas. Even in Sydney, where such dwelling types were more common generally, high rise dwellings were somewhat less common than elsewhere in the city. While this reflects the middle and outer suburban locations where disadvantaged suburbs are predominately located, it contrasts with much of the international literature which equates disadvantaged areas with higher density urban forms (e.g. Pacione 2004). There was some increase in attached/townhouses and one

to two-storey apartment complexes in disadvantaged suburbs in all three cities, which reflected gradual intensification in housing stock 2001–2011.

Table 14: Dwelling type for disadvantaged suburbs and other suburbs, Sydney, Melbourne and Brisbane, 2001 and 2011

Dwelling type	Disadvantaged suburbs		Other suburbs		City	
	2001	2011	2001	2011	2001	2011
Sydney						
Separate house	65.8	60.3	64.3	61.0	64.5	60.9
Semi/attach/row/townhouse	11.2	13.8	11.3	12.5	11.3	12.8
FUA, one or two-storey block	9.5	9.3	5.5	5.4	6.2	6.1
FUA, three or more storey block	11.9	14.6	16.9	19.8	16.0	18.9
Melbourne						
Separate house	80.4	76.2	73.8	71.6	75.0	72.4
Semi/attach/row/townhouse	6.5	9.0	11.0	12.2	10.2	11.7
FUA, one or two-storey block	10.4	11.3	8.4	8.2	8.8	8.7
FUA, three or more storey block	1.2	2.2	5.2	7.1	4.5	6.3
Brisbane						
Separate house	81.5	79.1	80.8	78.3	80.9	78.4
Semi/attach/row/townhouse	8.2	10.9	6.3	8.4	6.5	8.7
FUA, one or two-storey block	7.0	6.2	5.6	5.6	5.8	5.6
FUA, three or more storey block	1.1	2.1	5.6	6.6	5.0	6.1

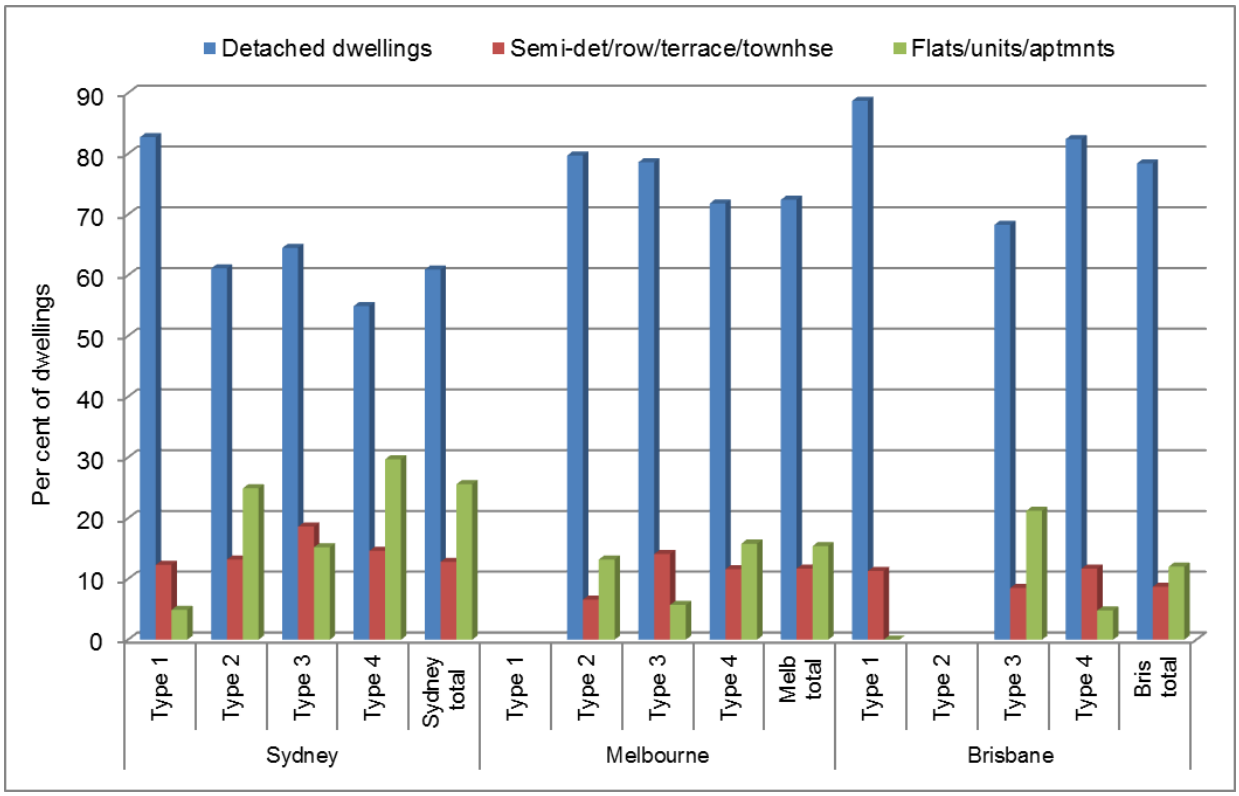
Note: 'FUAs = flats, units and apartments. Table includes only the three major dwelling types and hence the data do not sum to 100 per cent as the following dwelling types are excluded: FUA with bedrooms not stated, other dwelling all bedrooms; and dwelling structure not stated.

Source: Based on ABS Census of Population and Housing data, 2001 and 2011

There were some differences in the profile of dwellings in different types of disadvantaged suburbs in 2011, which in part reflected city-wide differences (Figure 8).

- Type 1 suburbs (Sydney and Brisbane only) had very high rates of detached dwellings, which were predominantly three and four-bedroom houses.
- Type 2 suburbs (Sydney and Melbourne only) had a dwelling mix which was very similar to the cities in which they are located.
- Type 3 suburbs were predominantly detached and semi/row/attached houses in Sydney and Melbourne, but Brisbane's Type 3 suburbs had a higher percentage of FUAs than the city generally.
- Type 4 suburbs were the most diverse in terms of dwelling types and had the highest percentage of FUAs in Sydney and Melbourne (although not in Brisbane) of any of the types of disadvantaged suburbs.

Figure 8: Dwelling type by type of disadvantaged suburb, Sydney, Melbourne and Brisbane, 2011



Note: 'FUAs = flats, units and apartments. Table includes only the three major dwelling types and hence the data do not sum to 100 per cent as the following dwelling types are excluded: FUA with bedrooms not stated, other dwelling all bedrooms; and dwelling structure not stated.

Source: Based on ABS Census of Population and Housing data, 2011

To sum up, disadvantaged suburbs and their 'home cities' had experienced a gradual decline in the percentage of detached dwellings, and an associated increase in other types of dwellings, in the decade to 2011, as was the case more generally in their home cities. Disadvantaged suburbs in Sydney had the highest percentage of flats/units/apartments (almost a quarter of all occupied private dwellings), with growth of three or more storey blocks rather than one to two storey blocks, indicating some redevelopment at greater density in these suburbs. In contrast, Melbourne and Brisbane had lower percentages of three or more storey flats, units and apartments in disadvantaged suburbs compared to other areas, suggesting that densification in disadvantaged suburbs has been primarily associated with smaller infill development.

4.4 Housing tenure

Australian indices of social disadvantage have often incorporated housing tenure as a key variable. Not only was this historically true of the IRSD (until 2011) but it has also been a factor in other deprivation measures (e.g. Saunders et al. 2007; Scutella et al. 2009). This typically relates to the local incidence of public (or social) housing. As shown in Table 15 below, disadvantaged suburbs in Australia in 2011 did have relatively high rates of rental housing. In the main, however, this involved private, rather than social, rental, reflecting the significantly large size of the private rental sector nationally. Social rental was more significant in disadvantaged suburbs of Sydney and Brisbane than in Melbourne. 'Other rental' arrangements (e.g. renting from relatives) were more relatively numerous in disadvantaged suburbs across all three cities (not illustrated in Table 15).

Table 15: Housing tenure by city and type of disadvantaged suburb, Sydney, Melbourne and Brisbane, 2001 and 2011

	% Outright owner households		% Home purchaser households		% Private renter households		% Social renter households	
	2001	**2011**	**2001**	**2011**	**2001**	**2011**	**2001**	**2011**
Type 1	19.6	16.9	21.0	21.6	8.9	13.4	45.9	42.0
Type 2	38.8	26.7	19.4	30.2	24.5	26.6	10.9	10.1
Type 3	42.9	32.9	16.8	23.3	27.5	30.5	6.7	7.1
Type 4	31.2	22.4	21.4	28.8	25.5	28.5	15.9	14.5
Disadv. suburbs	36.5	25.7	19.3	28.4	23.9	27.0	14.1	12.7
Other suburbs	41.7	31.3	26.0	36.2	22.9	24.8	3.9	3.6
Sydney total	**40.7**	**30.4**	**24.8**	**34.8**	**23.1**	**25.1**	**5.7**	**5.2**
Type 1	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*
Type 2	47.3	35.2	23.3	29.5	18.1	23.5	4.4	4.4
Type 3	53.6	41.3	20.3	25.0	15.6	21.1	2.6	2.8
Type 4	41.7	30.1	23.2	28.7	20.5	27.4	8.6	7.8
Disadv. suburbs	45.1	33.2	23.2	29.0	19.1	25.1	6.2	5.8
Other suburbs	42.8	32.6	30.3	38.0	19.0	22.9	2.7	2.4
Melbourne total	**43.2**	**32.7**	**29.1**	**36.6**	**19.0**	**23.3**	**3.3**	**3.0**
Type 1	17.1	12.7	15.0	15.3	8.5	22.7	54.1	41.8
Type 2	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*
Type 3	42.0	33.1	17.1	21.4	28.3	32.2	6.9	7.2
Type 4	27.0	20.0	26.5	30.0	24.6	30.4	16.4	13.1
Disadv. suburbs	30.5	23.0	24.2	27.9	25.4	30.7	14.4	11.9
Other suburbs	36.7	27.6	31.2	38.1	23.8	26.7	3.4	3.3
Brisbane total	**35.9**	**27.1**	**30.3**	**36.9**	**24.0**	**27.2**	**4.8**	**4.3**

Note: Disadvantaged suburbs in Sydney include the two outlier suburbs of Waterloo and Haymarket. Rows do not sum to 100 per cent as 'other rental' and 'not stated' have been excluded

Source: Based on ABS Census of Population and Housing data, 2001 and 2011

Conversely, in all three cities, disadvantaged suburbs had relatively low rates of home ownership. Purchasing (with a mortgage) was more prevalent than owning outright (no mortgage) in disadvantaged suburbs in Sydney and Brisbane but not Melbourne, where there was a higher rate of outright owners in disadvantaged suburbs in 2011, slightly above the city-wide norm. While higher rates of social and private rental are a key feature of disadvantaged suburbs, the ownership market is still critical particularly in Melbourne where 62 per cent of households in disadvantaged suburbs were owners/purchasers.

Examining housing tenure in the four types of disadvantaged suburbs in 2001 and 2011 in more detail (Table 15), and taking into account the geography (Figures 4–6), some interesting patterns emerge:

→ Type 1 suburbs are outer suburbs characterised by a high proportion of social renters (42% in both Sydney and Brisbane in 2011), with housing system processes thus subject to

administrative decisions more than market processes. There was some decrease in social rental and increase in private rental over the decade 2001–2011.

- Type 2 suburbs (Sydney and Melbourne only) are established suburbs with somewhat higher rates of private rental and a higher percentage of social rental than the cities in which they are located. The incidence of private rental increased from 2001–2011 (to a greater extent in Melbourne) while social rental remained fairly static. While home ownership rates were somewhat lower than city-wide rates in Sydney in 2011, in the case of Melbourne, outright ownership rates in disadvantaged suburbs remained higher than the city average in 2011, although they had declined markedly over the previous decade.
- Typically located on city fringes, Type 3 suburbs generally have higher rates of outright ownership and private rental than their respective city rates (although there are differences between cities). Rates of social rental were somewhat lower than in other disadvantaged suburb types.
- Type 4 suburbs are generally well located, established suburbs with lower home ownership rates and higher rates of private rental and social rental than their cities generally (although not the high rates of social rental of Type 1 suburbs). During the decade 2001–2011, rates of home purchase and private rental increased, outright ownership decreased substantially and social rental decreased slightly, reflecting city-wide trends.

In brief, disadvantaged suburbs have higher rates of rental than other suburbs, notably private rental, with social rental being significant in these suburbs in Sydney and Brisbane but not in Melbourne. Disadvantaged suburbs experienced a sharp decline in outright ownership, increase in home purchase, gradual increase in private rental, and slow decline in social rental 2001–2011, reflecting the ageing of the population as well as trends in their 'home' cities. Type 1 suburbs are most distinctive in terms of housing tenure due to the high rate of social rental while Type 3 suburbs have high rates of outright ownership. Type 2 and Type 4 suburbs are differentiated by higher rates of rental (and lower rates of home ownership) in the former, although the difference is modest.

4.5 Chapter summary

This chapter has examined the ways in which disadvantaged suburbs differed from other city suburbs in terms of some housing market fundamentals from 2001–2011.

Disadvantaged suburbs had lower rates of household growth than their cities 2001–2011, largely because they were established areas in which opportunities for household growth depended on gradual intensification of housing stock, a process that was most evident in some of Sydney's disadvantaged suburbs. Living in disadvantaged suburbs is not associated with high rise living as, even in Sydney where this type of housing is more prevalent, the percentage accommodated in this type of accommodation was less than the city-wide average (mean). Disadvantaged suburbs had higher rates of rental (all types) relative to other suburbs, particularly private rental which increased 2001–2011. While there were also higher rates of social rental in disadvantaged suburbs, this type of renting declined slightly, reflecting city-wide trends 2001–2011. Conversely, disadvantaged suburbs had relatively lower rates of home ownership than was the case generally in Sydney and Brisbane (not in Melbourne), although home ownership remained important (except for Type 1 suburbs), and changes in the profile of home owners (more home purchasers and fewer outright owners) appear to reflect city-wide changes in this period.

There appear to be some differences between the four types of disadvantaged suburbs in terms of housing market fundamentals. Type 1 suburbs and Type 3 suburbs are clearly distinguishable not only by geography (outer/peripheral location), but also by their role in the housing market.

- Type 1 suburbs (Sydney and Brisbane) had negative household growth and by far the highest levels of social rental of any of the disadvantaged suburb types, being centred on outer suburban public housing estates, and were therefore affected by decline in this tenure through strategies such as redevelopment and sales. They were characterised by very high rates of detached dwellings, predominantly three and four-bedroom houses, indicating scope for some densification through change in dwelling type and size.
- Type 3 suburbs are in locations at the periphery of the cities with some differences between cities in terms of housing stock. In 2011, they had higher rates of outright home ownership than their respective city rates and, in the case of Sydney and Brisbane (although not Melbourne), higher rates of private rental than the city-wide average.

Type 2 and Type 4 suburbs are established suburbs, often adjoining each other, and had experienced household growth and some intensification of dwelling stock 2001–2011. There are some differences between these suburb types in terms of housing market fundamentals:

- Type 2 suburbs had a dwelling stock profile similar to city-wide averages and had experienced a sharp decline in outright ownership 2001–2011 and had a lower rate of home purchase and higher rate of private rental than their 'home cities' in 2011, suggesting opportunities for those wishing to invest in these suburbs.
- Type 4 had a higher percentage of flats/units/apartments than Type 2 in Sydney and Melbourne, although not in Brisbane, suggesting intensification of land use at greater densities over the decade 2001–2011 in the two larger cities. They also had a greater housing tenure mix than Type 2 suburbs with higher rates of private rental, suggesting they were rapidly changing suburbs in which rental investment is a key driver of housing markets.

5 HOUSING MARKET PRICES: DWELLING SALES AND RENTS

We would expect disadvantaged suburbs to have lower prices for dwelling sales and rentals than other suburbs. Lower priced suburbs can play an important role in the housing markets of their cities in providing more affordable housing for lower income households to buy and rent. However, if property values are too low relative to other suburbs (or diverging too much from city-wide markets), it may be difficult for resident households—including first home buyers—to move to other areas. As a result, residents may be trapped in low priced markets and may experience associated negative economic and social consequences including barriers to moving nearer to education and employment opportunities. This chapter explores this issue and proceeds as follows:

- It outlines the research approach and key data sources.
- It examines changes in dwelling sales prices and entry rents in disadvantaged suburbs relative to 'parent cities', and in the four types of disadvantaged suburbs, 2001–2011.
- It explores the degree to which the most 'affordable' (lowest quartile) sales and entry rents are concentrated in disadvantaged suburbs and the extent of change between 2001 and 2011.

5.1 Dwelling prices and entry rents: approach, methods and data

The research approach was to investigate dwellings sales prices and entry rents in each type of disadvantaged suburb and disadvantaged suburbs generally in the context of their city housing markets, including comparison of two points in time, 2001 and 2011.

The methods used were to:

- Calculate median dwelling sales prices and median entry rents for disadvantaged suburbs and the level of real price changes relative to city-wide norms, 2001–2011.
- Calculate median sales prices and median entry rents in disadvantaged suburbs as a percentage of city medians, comparing 2001 and 2011, and within the context of broader spatial restructuring of metropolitan housing markets.
- Investigate dispersion of dwelling sale prices and entry rents around the median by type of disadvantaged suburb in each city, 2001 and 2011.
- Examine the extent to which city-wide lowest quartile sales and entry rents were concentrated in different types of disadvantaged suburbs to assess whether the degree of concentration increased or decreased between 2001 and 2011.

We saw in Chapter 4 (Table 15) that, in each of the three cities, a majority of properties in all types of disadvantaged suburbs were owner-occupied, albeit with the notable exception of Type 1 suburbs. Also apparent from that analysis is the disproportionate scale of rental investment in these suburbs which could also be expected to have inflated dwelling sales prices by way of additional demand. In this chapter we analyse median sale prices, referring to the mid-point of all sales of residential property in a suburb. The analysis focuses on the two main dwelling types in Australia: 'detached house' (comprising almost four in five dwellings nationally) and 'other dwelling' (attached, units, flats/apartments) which comprise distinct markets, although some degree of substitutability between them could be expected.

With the private rental market of increasing importance in disadvantaged suburbs in the three cities (see Chapter 4), this chapter also analyses median entry rents—that is the rents for the dwellings let in a particular year. Entry rent values are the weekly rent paid when the *beginning* of the tenancy is recorded and thus (in a rising market) median entry rentals are expected to be higher in most cases than all rentals. The analysis focuses on the two most common rental

dwelling types in Australian cities: three-bedroom detached dwellings and one to two bedroom other dwellings (i.e. attached, flats/units/apartments).

The following analysis is based on unit level records of property sales transactions and new lettings in the three cities in 2001[12] and 2011. These were drawn from a number of administrative data sources:

- House price data are collated by Valuer General offices in each state, in association with dwelling sale transactions records. For Melbourne, such (already cleaned) data were available from the Victorian Office of the Valuer General. Comparable data for Sydney and Brisbane were accessed via an intermediary, Australian Property Monitors (APM).
- Data on entry rents were obtained from state government rental bond authorities in each state. Here we drew on records established when a bond is registered for a new private rental letting. Unlike data on property sales, we were able to control for dwelling type and number of bedrooms.

To facilitate our analysis, house price sales and entry rent data were geocoded to street address and then allocated and aggregated to match ABS 2006 SSC boundaries. As a result, the data from these administrative sources were spatially comparable with the variables sourced from the ABS Census.

5.2 Dwelling sales prices and entry rents in disadvantaged suburbs, 2001–2011

Dwelling prices and entry rents are market prices at a point in time. They reflect many factors including the level and security of household incomes; investor activities; current housing finance lending conditions; the type and quality of dwellings; locational factors such as accessibility to jobs, transport and educational institutions; as well as 'intangibles' such as the reputation of an area. They are affected by macro factors, such as the state of the economy including employment rates and job vacancies, and micro factors such as household preferences and landlord behaviours.

In this section, we examine changes in median dwelling sales prices and entry rents in disadvantaged suburbs in the context of city-wide price/entry rent trends 2001–2011.

5.2.1 Changes in median dwelling prices in disadvantaged suburbs relative to city medians, 2001–2011

Consistent with official data (ABS 2013), our analysis of 2011 dwelling sales prices showed median prices higher in Sydney than in Melbourne or Brisbane, for both detached and other dwellings—see Tables 16 and17. This could be expected to have posed additional challenges for prospective purchasers on modest, and even moderate, incomes in Sydney.

In disadvantaged suburbs, however, the picture was slightly different. Although 2011 detached dwelling median prices in Sydney's disadvantaged suburbs were higher than in Melbourne or Brisbane, median prices for other dwellings were higher in these areas of Melbourne, while in Brisbane median prices for such properties were similar to Sydney (Tables 16 and 17).

- 2011 median prices for detached dwellings in disadvantaged suburbs were Sydney ($400 000); Melbourne ($385 000) and Brisbane ($298 000).
- 2011 median prices for other dwellings in disadvantaged suburbs were Melbourne ($325 000); Brisbane ($311 000) and Sydney ($310 000).

Dwelling prices increased in real terms in all three cities 2001–2011 although city-wide real percentage increases were greater in Brisbane and Melbourne than in Sydney (off a lower

[12] Data on new entry rents in Brisbane was for 2002 not 2001. Thus annual rates of increase in real sales prices and entry rents were calculated based on 9 not 10 years.

base). Within this context real price increases were greater in disadvantaged suburbs in Melbourne and Brisbane, where median prices of both detached and other dwellings increased at a greater rate (off a lower base) than across 'parent cities' 2001–2011, while in Sydney, the 10-year increase seen in disadvantaged suburbs for detached dwellings was similar to the city-wide norm (Tables 16 and 17).

There are several possible explanations for the slightly different patterns revealed in Sydney, on the one hand, and Melbourne and Brisbane, on the other.

- The rate of household growth was greater in Brisbane and Melbourne than in Sydney 2001–2011 (see Chapter 4).
- House price trends may reflect property market cycles in which different cities are at different points in the cycle. With considerable growth in Sydney prices already having taken place by 2001, it could be expected that its 2001–2011 trajectory would differ from the other two cities.
- There was greater spatial clustering of all types of CDs in Sydney (i.e. those with like IRSD rankings across the spectrum from very disadvantaged to not at all disadvantaged) than in the other two cities, as indicated by the Moran's I statistic discussed in Chapter 2 (Section 2.4).

Table 16: Change in median prices for detached dwellings in disadvantaged suburbs, Sydney, Melbourne and Brisbane, 2001–2011

	Median sale price (detached dwellings)		Change 2001–2011		
	2001 (in $2011)*	2011	Real price change (in $2011)	% change in real sale prices	Avg. annual change in real house price
Disadv. suburbs	$299,000	$400,000	$101,000	33.8	3.0
Other suburbs	$474,500	$640,000	$165,500	34.9	3.0
Sydney total	**$429,000**	**$574,000**	**$145,000**	**33.8**	**3.0**
Disadv. suburbs	$195,130	$385,000	$189,870	97.3	7.0
Other suburbs	$309,400	$520,000	$210,600	68.1	5.3
Melbourne total	**$282,100**	**$490,000**	**$207,900**	**73.7**	**5.7**
Disadv. suburbs	$125,970	$297,500	$171,530	136.2	9.0
Other suburbs	$234,000	$457,000	$223,000	95.3	6.9
Brisbane total	**$223,600**	**$440,000**	**$216,400**	**96.8**	**7.0**

* 2001 prices have been CPI adjusted (x 1.3) to 2011 dollar values using the Australian All-groups CPI figures (2011 average178.5/2001 average 134.0 = 1.3). This index was chosen to give a broad but consistent picture of dwelling sale price and rent level movements over the 10-year period. It provides an indication of what a household would have to spend in 2011 to obtain what was sold/rented in 2001. It is deliberately broad and not necessarily meant to measure how these costs have changed relative to other items.

Source: Derived from Valuer General property sale records (Melbourne) and APM supplied property sale records (Sydney and Brisbane), 2001 and 2011.

Table 17: Change in median prices for 'other' dwellings in disadvantaged suburbs, Sydney, Melbourne and Brisbane, 2001–2011

	Median sale price (other dwellings)		Change 2001–2011		
	2001 (in $2011)*	2011	Real price change (in $2011)	% change in real sale prices	Avg. annual change in real house price
Disadv. suburbs	$253,500	$310,000	$56,500	22.3	2.0
Other suburbs	$442,000	$508,000	$66,000	14.9	1.4
Sydney total	**$416,000**	**$474,000**	**$58,000**	**13.9**	**1.3**
Disadv. suburbs	$169,000	$325,000	$156,000	92.3	6.8
Other suburbs	$318,500	$455,000	$136,500	42.9	3.6
Melbourne total	**$299,000**	**$430,500**	**$131,500**	**44.0**	**3.7**
Disadv. suburbs**	$140,400	$311,000	$170,600	121.5	8.3
Other suburbs	$204,100	$385,000	$180,900	88.6	6.6
Brisbane total	**$198,900**	**$376,000**	**$177,100**	**89.0**	**6.6**

* 2001 prices have been CPI adjusted (X1.3) to 2011 dollar values using the Australian All-groups CPI figures (2011 average178.5/2001 average 134.0 = 1.3)

** The volume of sales in Brisbane's disadvantaged suburbs is relatively low (n=631 in 2001 and 724 in 2011)

Source: Derived from Valuer General property sale records (Melbourne) and APM supplied property sale records (Sydney and Brisbane), 2001 and 2011

In consequence of the trends described above, median prices in disadvantaged suburbs generally moved closer to city-wide norms 2001–2011, for both detached and other dwellings, the only exception relating to detached dwellings in Sydney which remained at a constant percentage of city median prices, as shown in Table 16. Median prices in Sydney's disadvantaged suburbs were generally further from those of other suburbs than in Melbourne and Brisbane, suggesting a more polarised and polarising, housing market than the other two cities.

There were some clear differences between median sales prices in the four types of disadvantaged suburbs relative to city medians, which are illustrated in Table 18 below.

- → Type 1 suburbs had the lowest median prices for houses relative to the city medians in 2001 and 2011.
- → Type 2 suburbs had median house prices about three-quarters of the respective city medians for detached dwellings, lower for other dwellings, but 2001–2011 saw some convergence towards the city-wide norms.
- → In their levels and trends relative to city-wide norms, Type 3 detached and other dwelling prices showed little consistency across the three cities.
- → Type 4 suburbs in Melbourne and Brisbane had median prices which moved much closer to city medians compared to Sydney 2001–2011.

Table 18: Median prices by dwelling type: proportion of city medians for types of disadvantaged suburbs, Sydney, Melbourne and Brisbane, 2001 and 2011

	Detached dwellings		Other dwellings	
	2001	**2011**	**2001**	**2011**
Type 1	45.5	44.4	*Insuff't sales*	*Insuff't sales*
Type 2	74.7	74.9	57.8	64.6
Type 3	62.1	56.6	60.3	59.4
Type 4	62.1	61.9	65.6	66.7
Disadv. suburbs	69.7	69.7	60.9	65.4
Other suburbs	110.6	111.5	106.3	107.2
Sydney total	**100.0**	**100.0**	**100.0**	**100.0**
Type 1	*n.a.*	*n.a.*	*n.a.*	*n.a.*
Type 2	69.1	76.9	53.4	72.5
Type 3	67.5	76.6	54.2	76.2
Type 4	73.3	81.7	60.9	79.9
Disadv. suburbs	69.2	78.6	56.5	75.5
Other suburbs	109.7	106.1	106.5	105.7
Melbourne total	**100.0**	**100.0**	**100.0**	**100.0**
Type 1	*34.9**	*53.6**	*Insuff't sales*	*Insuff't sales*
Type 2	*n.a.*	*n.a.*	*n.a.*	*n.a.*
Type 3	75.6	76.1	83.0	85.0
Type 4	52.3	64.8	41.2	79.8
Disadv. suburbs	56.3	67.6	70.6	82.7
Other suburbs	104.7	103.9	102.6	102.4
Brisbane total	**100.0**	**100.0**	**100.0**	**100.0**

* Very small number of sales (n=18 in 2001 and 24 in 2011)

Source: Derived from Valuer General property sale records (Melbourne) and APM supplied property sale records (Sydney and Brisbane), 2001 and 2011

5.2.2 Changes in median entry rents in disadvantaged suburbs relative to city medians, 2001–2011

Many of the disadvantaged suburbs selected through the methodology adopted in this project appear to have been 'improvers' in housing market terms (based on analysis of changes in median sales prices relative to city medians), particularly Types 2 and 4 suburbs, yet were still ranked as highly disadvantaged in 2011 using population-based measures. To understand why this might be the case, we next examine entry rents in disadvantaged suburbs, noting that these suburbs are characterised by higher levels of rented dwellings (particularly private rental) than their 'home' cities (Chapter 4).

Median entry rents in disadvantaged suburbs in Sydney were higher in 2011 than in Melbourne or Brisbane for both three-bedroom detached and one to two bedroom other dwellings (Tables 19 and 20), reflecting differences in median rents generally between the three cities; a somewhat different picture to that as regards sales prices as discussed above (Section 5.2.1).

Households on similar incomes (e.g. Centrelink payments) thus faced greater rental affordability problems in Sydney's disadvantaged suburbs than in the other two cities.

Table 19: Change in median entry rents for three-bedroom detached dwellings in disadvantaged suburbs relative to city medians, 2001 and 2011

	Median entry rent (three-bedroom detached)		Change 2001–2011		
	2001 (in $2011)*	2011	Real rent change (in $2011)	% change in real rent	Avg. annual change in real rent
Disadv. suburbs	$267	$365	$98	37.0	3.2
Other suburbs	$325	$435	$110	33.8	3.0
Sydney total	**$312**	**$400**	**$88**	**28.2**	**2.5**
Disadv. suburbs	$221	$300	$79	35.7	3.1
Other suburbs	$273	$350	$77	28.2	2.5
Melbourne total	**$260**	**$340**	**$80**	**30.8**	**2.7**
Disadv. suburbs	$215	$300	$85	39.9	3.8
Other suburbs	$260	$370	$110	42.3	4.0
Brisbane total	**$254**	**$350**	**$96**	**38.1**	**3.6**

* 2001 rents have been CPI adjusted (x 1.3) to 2011 dollar values using the Australian All-groups CPI figures (2011 average178.5/2001 average 134.0 = 1.3). For Brisbane, average annual change is calculated over a 9-year period (2002–2011).

Source: State rental bond authorities, Sydney (NSW Fair Trading); Melbourne (Residential Tenancies Bond Authority), Brisbane (Queensland Residential Tenancies Authority), 2001 and 2011 (2002 for Brisbane).

Table 20: Change in median entry rents for one to two bedroom other dwellings in disadvantaged suburbs relative to city medians, 2001 and 2011

	Median entry rent (one to two bedroom other)		Change 2001–2011		
	2001 (in $2011)*	2011	Real rent change (in $2011)	% change in real rent	Avg. annual change in real rent
Disadv. suburbs	$221	$320	$99	44.8	3.8
Other suburbs	$358	$450	$92	25.9	2.3
Sydney total	**$338**	**$430**	**$92**	**27.2**	**2.4**
Disadv. suburbs	$182	$270	$88	48.4	4.0
Other suburbs	$254	$350	$96	38.1	3.3
Melbourne total	**$234**	**$335**	**$101**	**43.2**	**3.7**
Disadv. suburbs	$163	$245	$82	50.8	4.7
Other suburbs	$221	$310	$89	40.3	3.8
Brisbane total	**$215**	**$300**	**$85**	**39.9**	**3.8**

* 2001 rents have been CPI adjusted (x 1.3) to 2011 dollar values using the Australian All-groups CPI figures (2011 average178.5/2001 average 134.0 = 1.3). For Brisbane, average annual change is calculated over a 9-year period (2002–2011).

Source: State rental bond authorities, Sydney (NSW Fair Trading); Melbourne (Residential Tenancies Bond Authority), Brisbane (Queensland Residential Tenancies Authority), 2001 and 2011 (2002 for Brisbane).

Generally speaking, real increases in median entry rents 2001–2011 were higher in disadvantaged suburbs than for the three cities, for both three-bedroom detached dwellings and one to two bedroom other dwellings (Tables 19–20). Further, real annual increases in entry rents were higher than real increases in sales prices in Sydney, whereas in Melbourne and Brisbane, real increases in entry rents were lower than for sales. These differences may reflect a number of factors including more households renting in Sydney as they were unable to purchase due to higher prices, and an increase in the supply of private rental in Melbourne and Brisbane (discussed in Chapter 4) moderating increases in entry rents notwithstanding household growth.

When we examine changes in median entry rents in the different types of disadvantaged suburbs in more detail, it appears that the highest real increases in median rents tended to be in Type 4 suburbs (Table 21). However, Type 2 suburbs also saw high real increases in rents, particularly for one to two bedroom other dwellings (Melbourne and Sydney only).

As a result, there was a general trend towards convergence of median entry rents between disadvantaged suburbs and city-wide norms 2001–2011 (Table 21), with the exception of Type 3 suburbs in Brisbane.

- Type 1 suburbs had the lowest median rent of all types of disadvantaged suburbs relative to city medians, with little change 2001–2011.
- Type 2 suburbs had median entry rents closer to city-wide norms for three-bedroom detached dwellings than for one to two bedroom other dwellings, although both had moved closer to city-wide norms by 2011.
- Type 3 suburbs had the second lowest median entry rents of all suburb types in the three cities in 2011 for both three-bedroom detached and one to two bedroom other dwelling, with some difference in relationship to city medians (Sydney and Brisbane).
- Type 4 suburbs' median rents consistently moved towards city median rents 2001–2011 across all three cities.

Table 21: Median entry rents by dwelling type and type of disadvantaged suburb, Sydney, Melbourne and Brisbane, 2001 and 2011

	Three-bedroom detached dwellings			One to two bedroom other dwellings		
	% of city median 2001	% of city median 2011	% change real rent 2001–11	% of city median 2001	% of city median 2011	% change real rent 2001–11
Type 1	75.0	75.0	28.2	46.2	55.8	53.8
Type 2	91.7	96.3	34.6	67.3	75.6	42.9
Type 3	81.3	81.3	28.2	53.8	59.9	41.5
Type 4	81.3	87.5	38.1	65.4	76.7	49.3
Disadv. suburbs	85.4	91.3	37.0	65.4	74.4	44.8
Other suburbs	104.2	108.8	33.8	105.8	104.7	25.9
Sydney total	**100.0**	**100.0**	**28.2**	**100.0**	**100.0**	**27.2**
Type 1	*n.a*	*n.a*	*n.a*	*n.a.*	*n.a.*	*n.a.*
Type 2	85.0	88.2	35.7	75.0	76.1	45.3
Type 3	77.5	83.8	41.4	72.2	74.6	47.9
Type 4	87.5	88.2	31.9	77.8	83.6	53.8
Disadv. suburbs	85.0	88.2	35.7	77.8	80.6	48.4
Other suburbs	105.0	102.9	28.2	108.3	104.5	38.1
Melbourne total	**100.0**	**100.0**	**30.8**	**100.0**	**100.0**	**43.2**
Type 1	*Insuff't bonds*	*Insuff't bonds*	*Insuff't bonds*	*Insuff't bonds*	*Insuff't bonds*	*Insuff't bonds*
Type 2	*n.a*	*n.a*	*n.a*	*n.a*	*n.a*	*n.a*
Type 3	89.7	84.3	29.7	84.8	78.3	29.1
Type 4	82.1	85.7	44.2	72.7	83.3	60.3
Disadv. suburbs	84.6	85.7	39.9	75.8	81.7	50.8
Other suburbs	102.6	105.7	42.3	103.0	103.3	40.3
Brisbane total	**100.0**	**100.0**	**38.1**	**100.0**	**100.0**	**39.9**

Source: State rental bond authorities, Sydney (NSW Fair Trading); Melbourne (Residential Tenancies Bond Authority), Brisbane (Queensland Residential Tenancies Authority), 2001 and 2011 (2002 for Brisbane)

These findings confirm that, as expected given the high percentage of social rental, Type 1 suburbs (Sydney) were disconnected from mainstream rental housing markets. Type 3 suburbs appear to differ between the cities with a more distinct lower rent market in such areas in Sydney than in Brisbane. Types 2 and 4 suburbs provided lower priced rentals for one to two bedroom other dwellings whereas there was only a small affordability 'discount' for renting three-bedroom detached dwellings in these suburbs, particularly in Sydney. Type 4 suburbs appear to differ from Type 2 suburbs in the extent of movement of entry rents towards city medians by 2011.

5.2.3 The combined effect of changes in sales prices and entry rents in disadvantaged suburbs relative to city medians

Convergence of dwelling prices and entry rents in disadvantaged suburbs towards city-wide norms is a two-edged sword, potentially offering greater flexibility to existing owner occupiers

and opportunities for gentrifiers, but limiting the options for potential purchasers and renters on low incomes.

- Home owners resident in disadvantaged suburbs are favoured by sales price convergence towards the city median. It means that they can move more easily to other areas if they choose. The implications appear to be that it became easier for owners in such areas to move elsewhere in Melbourne and Brisbane as compared to Sydney.
- For low-income aspirant home owners, house price convergence with city-wide norms implies increased difficulty in accessing entry level markets. In this context Sydney disadvantaged suburbs continued to offer relatively affordable housing for prospective buyers, whereas lower income aspirant purchasers in such areas of Melbourne and Brisbane faced greater pressure to look further afield by 2011.
- Households renting in disadvantaged suburbs faced real rent increases which generally exceeded those in other suburbs in the three cities 2001–2011, particularly for those renting one to two bedroom other dwellings.
- For households wishing to move to disadvantaged suburbs to rent more affordable housing, there is little discount on rents for three-bedroom detached dwellings in Type 2 and 4 suburbs compared to city medians. There is a greater affordability discount for one to two bedroom other dwellings in these suburbs, although median rents also moved closer to city-wide norms 2001–2011. Types 1 and 3 suburbs in Sydney continue to offer lower entry rentals compared to city medians, which could encourage low-income households to move to these city periphery areas but which would have to be weighed against higher transport and other costs associated with some of these locations.

Australian urban housing markets increasingly comprise investors as well as households who wish to buy or rent housing for their own use. For investors, already in the market, although real entry rents increased in disadvantaged suburbs at a greater rate than for other city suburbs, the rate of increase was generally less than for dwelling sales, that is, the rate of capital gain for investors was greater than real rent increases. Whether, their rental yield improved as a result of real increases in rents, therefore, depended on how long they had owned the property and what they paid for it. For those wishing to invest for the first time or add to their portfolios, rents for one to two bedroom other dwellings increased at a greater rate than for three-bedroom dwellings 2001–2011. This may in part explain the increase in one to two bedroom other dwellings in disadvantaged suburbs during the period, particularly in Types 2 and 4 suburbs. It appears that the effect of this activity added to demand and placed further upward pressure on prices.

5.3 Dispersion of sales prices and entry rents around the median, 2001 and 2011

Thus far, we have focused on median prices which are a useful summary indicator of the relative performance of housing markets. However, median prices do not enable any assessment of dispersion *around* the median, in other words, the spread of prices (they are simply the midpoint of sale prices or rents paid). In this section, we use box plots to examine and compare the level of spread of prices in the four types of disadvantaged suburbs, and for the two main types of dwellings, in the three cities in 2001 and 2011. This dispersion of prices equates to the range of price points at which a household can enter a particular market (home purchase or private rental).

In the following charts, the dark line through the middle of the box represents the median price for that type of dwelling in that suburb type. The bottom of the box indicates the 25th percentile; whereby 25 per cent of dwellings had a sale price or rent below that point, and the top of the box represents the 75th percentile, where 25 per cent of price points are above that value. The box, therefore, holds 50 per cent of all cases. The vertical lines that extend from the top and

bottom of the boxes indicate the highest and lowest price points that are not outliers (extreme values). Outliers are represented by circles and extreme outliers by asterisks. For visual clarity, each chart is capped and outliers only shown to a maximum of $1.1 million for sale prices and $750 for rents paid.

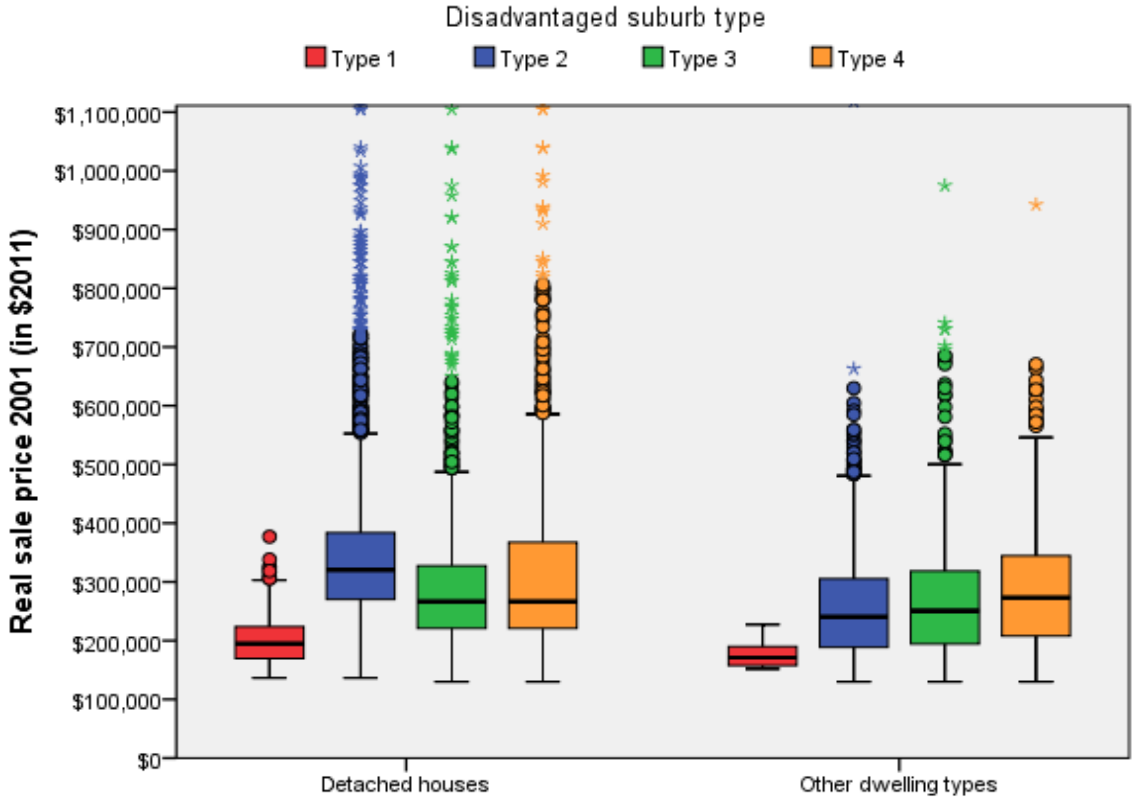
5.3.1 Dispersion of sales prices around the median by type of disadvantaged suburbs, 2001 and 2011, Sydney, Melbourne and Brisbane

Not only was there an increase in median dwelling sales prices in disadvantaged suburbs in the three cities, but also there were changes in the pattern of dispersion of sales prices around the median 2001–2011 which varied by type of disadvantaged suburb (Figures 9, 10 and 11):

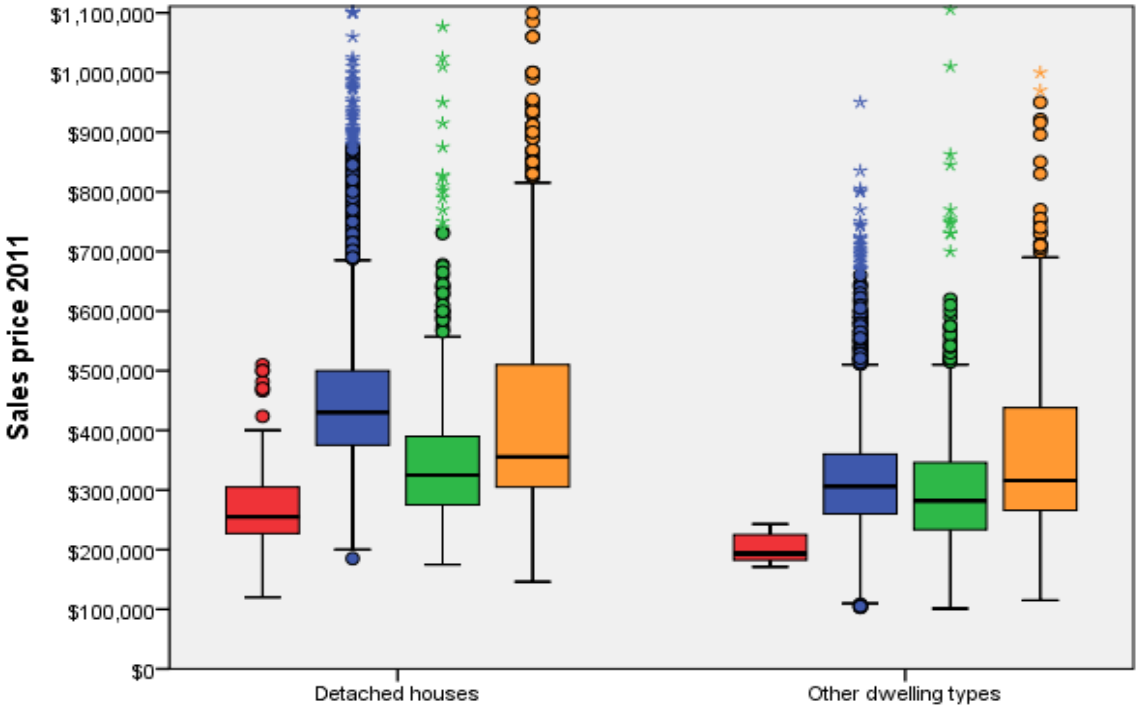
- There was little dispersion around the median for Type 1 suburbs (Sydney only) in either 2001 or 2011.
- Type 2 suburbs' sales prices became somewhat more dispersed around the median 2001–2011, particularly in Melbourne.
- Type 3 suburbs show different patterns across the three cities with a particular increase in dispersion around the median for other dwellings in Brisbane's disadvantaged suburbs, indicating some higher price dwellings in these areas, perhaps associated with coastal locations.
- Type 4 suburbs had the greatest dispersion of dwelling sales prices around the median by 2011, and greatest increase in such dispersion 2001–2011.

Figure 9: Dispersion of property sales prices by type of disadvantaged suburb and dwelling type, Sydney, 2001 and 2011

Sydney 2001



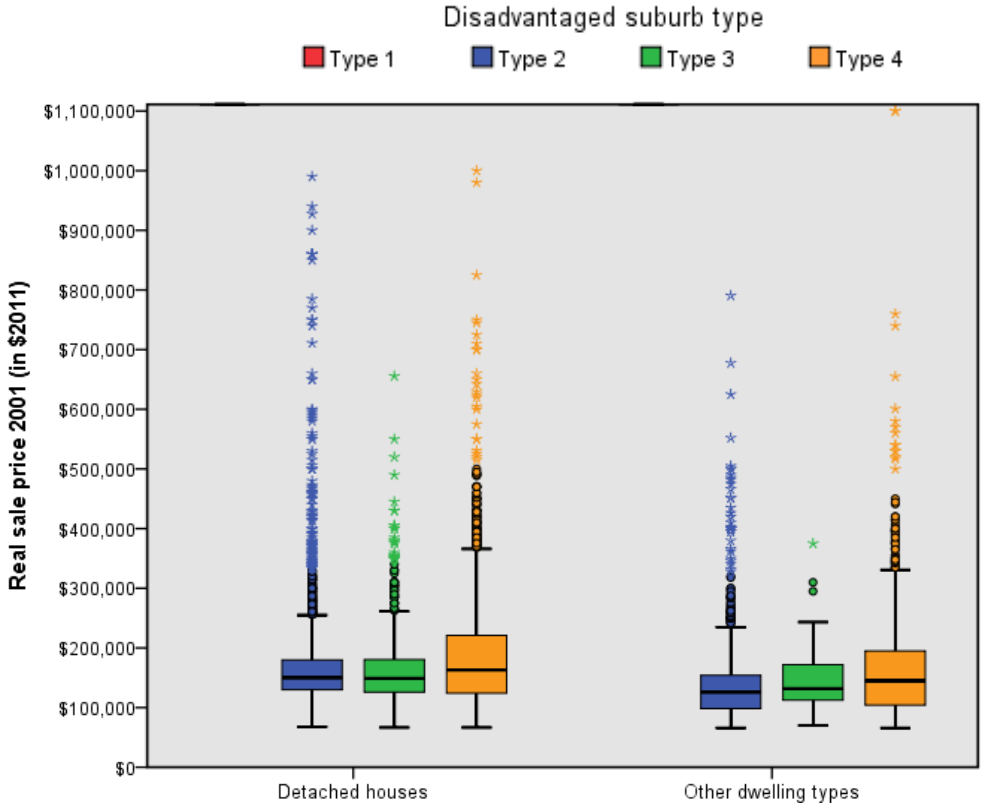
Sydney 2011



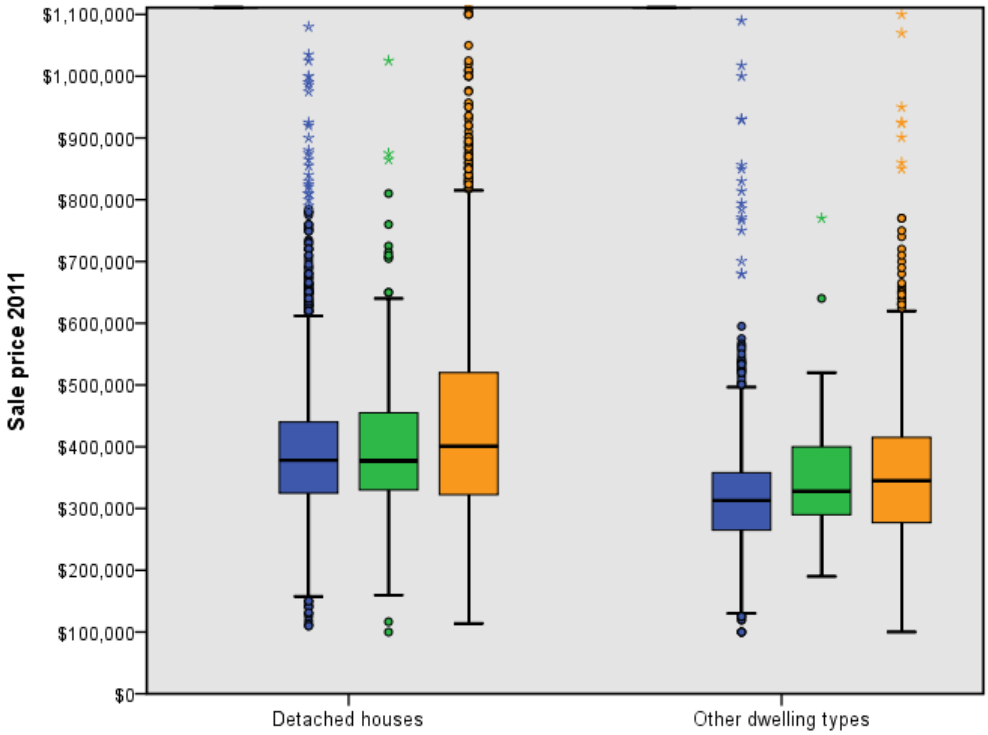
Source: Derived from APM supplied property sale records, 2001 and 2011

Figure 10: Dispersion of property sales prices by type of disadvantaged suburb and dwelling type, Melbourne, 2001 and 2011

Melbourne 2001*



Melbourne 2011*

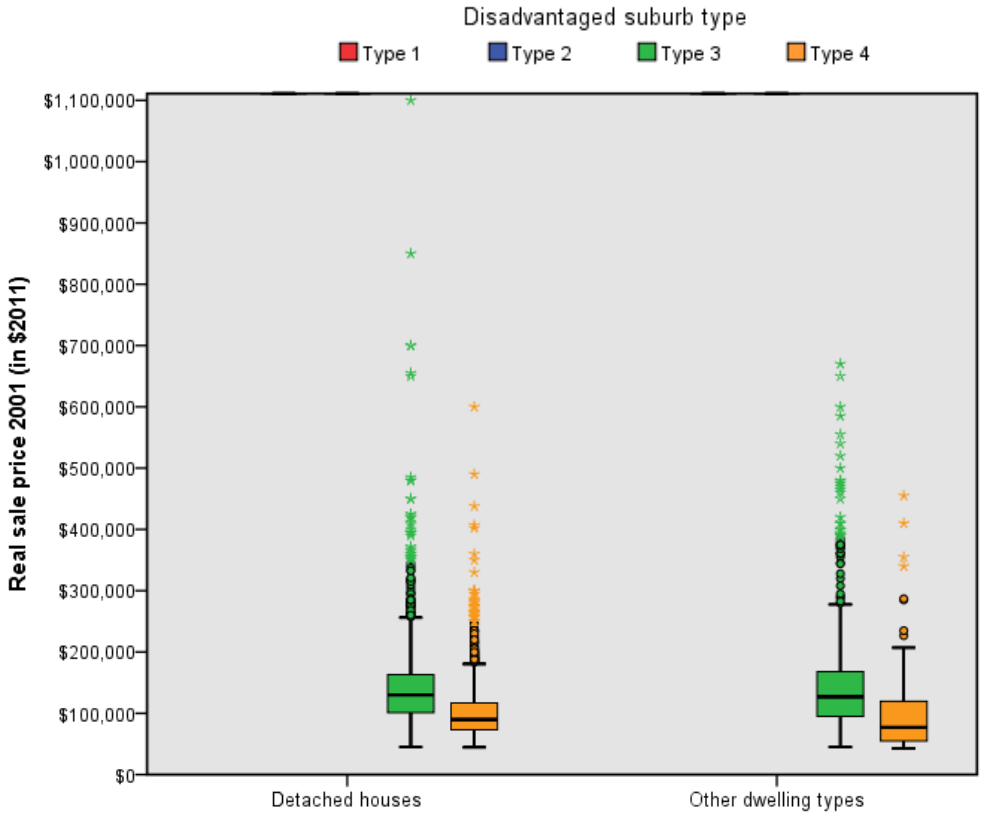


*Melbourne has no Type 1 suburbs

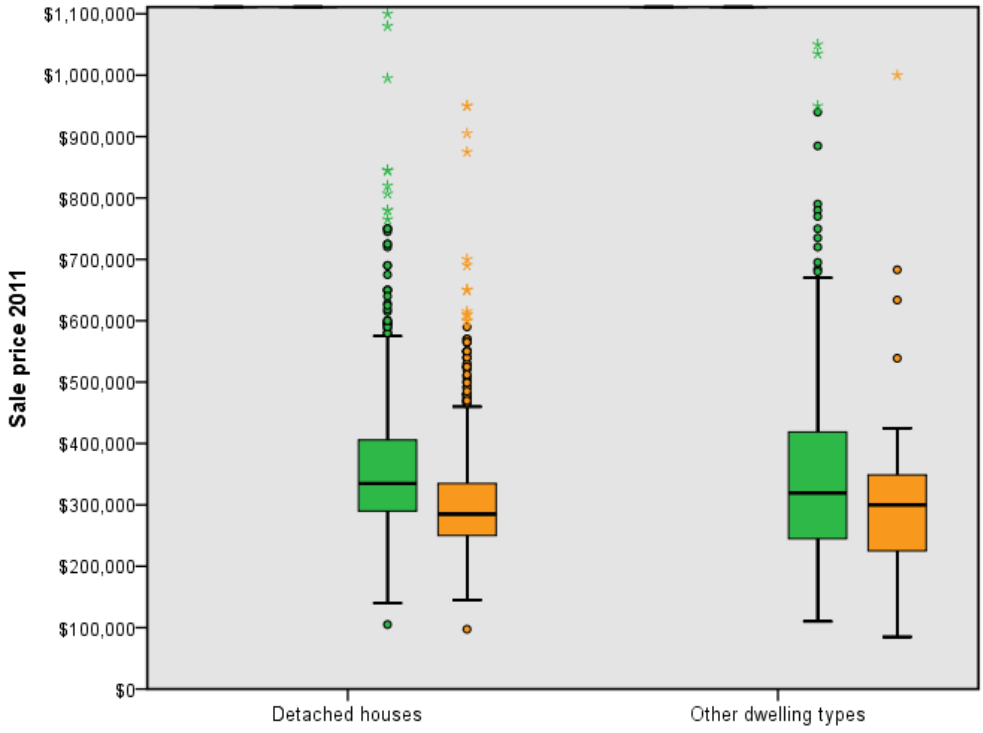
Source: Derived from Victorian Valuer General property sale records, 2001 and 2011

Figure 11: Dispersion of property sales prices by type of disadvantaged suburb and dwelling type, Brisbane, 2001 and 2011

Brisbane 2001*



Brisbane 2011*



*Brisbane has no Type 2 suburbs and too few property sales for analysis in its sole Type 1 suburb

Source: Derived from APM supplied property sale records, 2001 and 2011

A high degree of dispersion of sales prices around the median (a larger box in the above charts) can be a good indicator of a dynamic housing market undergoing change, which reflects increasing land prices but may also indicate some variation in housing type and quality within the suburb. Types 2 and 4 suburbs are differentiated not so much by their median prices, or real price increases, as discussed in Section 5.2.1 above, but the degree of dispersal around the median. Our analysis suggests that Type 4 suburbs are very much 'improving suburbs' in housing market terms, with an increasing range of price points, particularly for detached dwellings, compared to Type 2 suburbs.

5.3.2 Dispersion of entry rents around the median in disadvantaged suburbs, 2001 and 2011

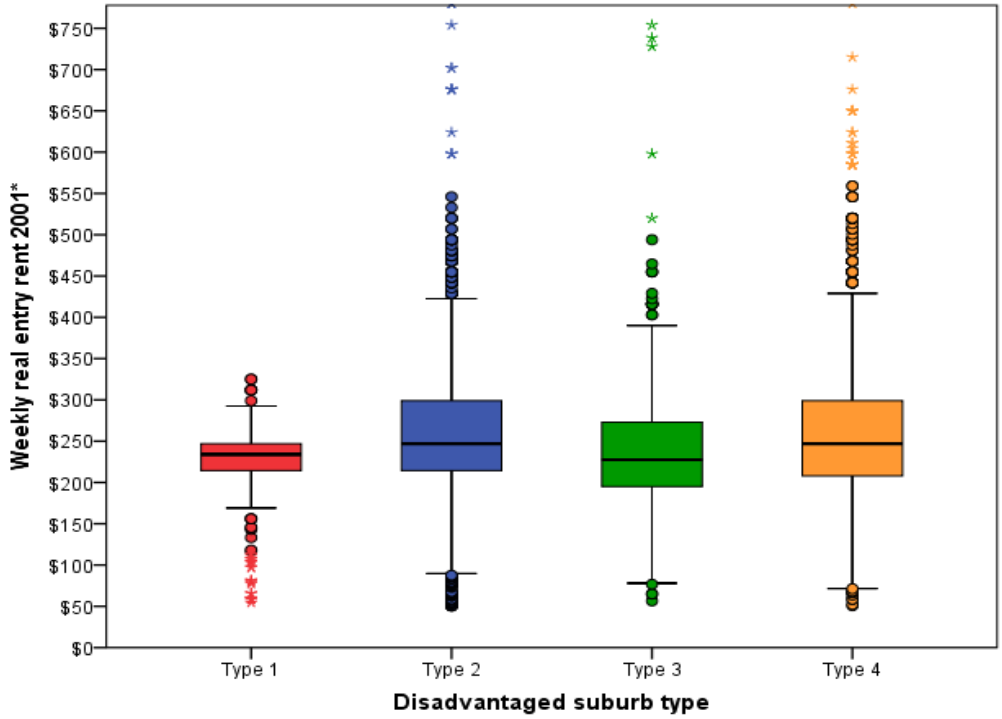
When we repeat the analysis of dispersion around the median by type of disadvantaged suburbs for entry rents in 2001 and 2011, we find some clear differences between the four types as well as some differences between cities (Figures 12, 13 and 14).

- Type 1 suburbs (only Sydney had sufficient data) had the least dispersion of entry rents around the median in 2001 and 2011 and the least change 2001–2011.
- Type 2 suburbs (Melbourne and Sydney) had some dispersion of entry rents around the median in 2001 and modest increase in dispersion by 2011.
- Type 3 suburbs' dispersion of entry rents varied somewhat between cities in 2001, but in all three cities there has been a marked increase in dispersion around the median by 2011.
- Type 4 suburbs were the most dispersed around the median in 2011 and had experienced a marked increase in dispersion around the median 2001–2011 (although not in Brisbane).

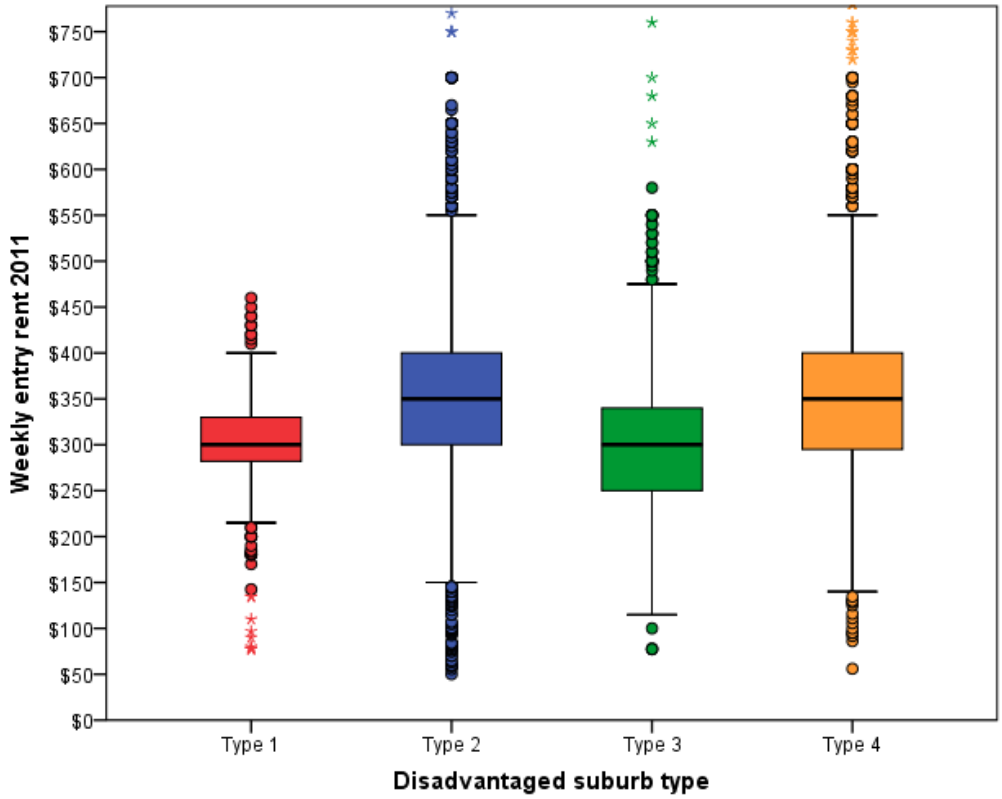
These findings suggest that Types 3 and 4 suburbs were the most dynamic 2001–2011 in terms of rental housing markets (perhaps indicating selective increase in demand at different quality points allied with some change in the type and quality of housing). Our analysis suggests that Type 4 suburbs have an increasing range of entry rents compared to Type 2 suburbs, perhaps suggesting some redevelopment at greater densities to give a greater range of entry rent points and some improvement in terms of the rental offering. More broadly, the evidence here—especially for Type 3 and Type 4 suburbs—indicates that entry rents in the private market in disadvantaged areas were not only increasing but had also become more dispersed in the decade to 2011.

Figure 12: Dispersion of entry rents (all dwellings) by type of disadvantaged suburb, Sydney, 2001 and 2011

Sydney 2001



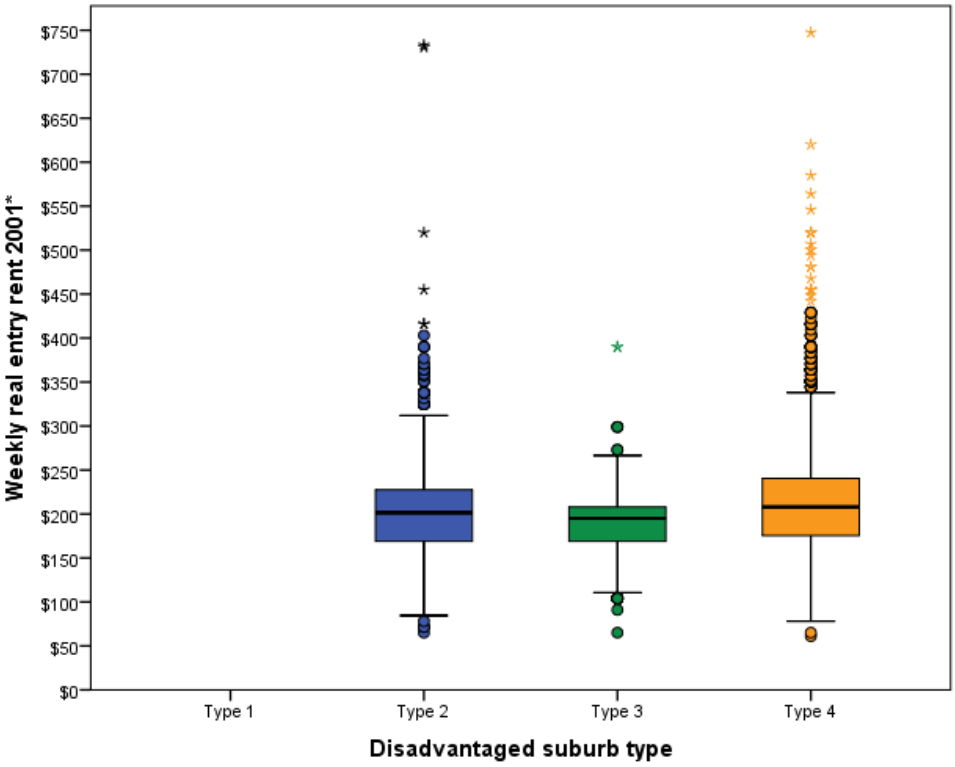
Sydney 2011



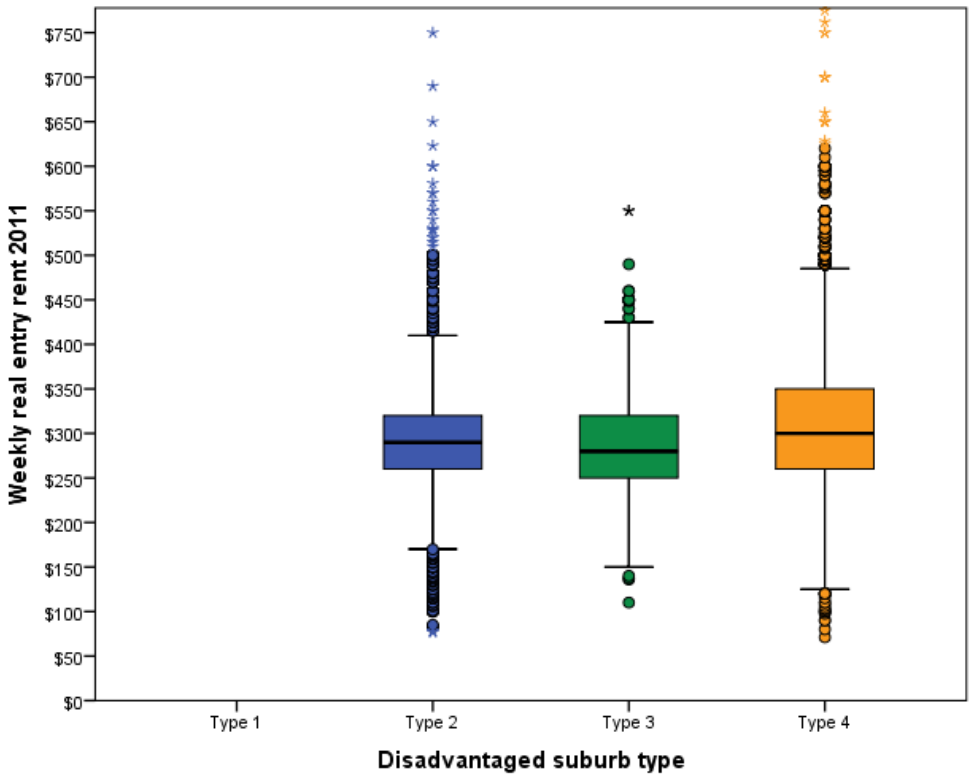
Source: Derived from NSW Fair Trading rental bond records, 2001 and 2011

Figure 13: Dispersion of entry rents (all dwellings) by type of disadvantaged suburb, Melbourne, 2001 and 2011

Melbourne 2001*



Melbourne 2011*

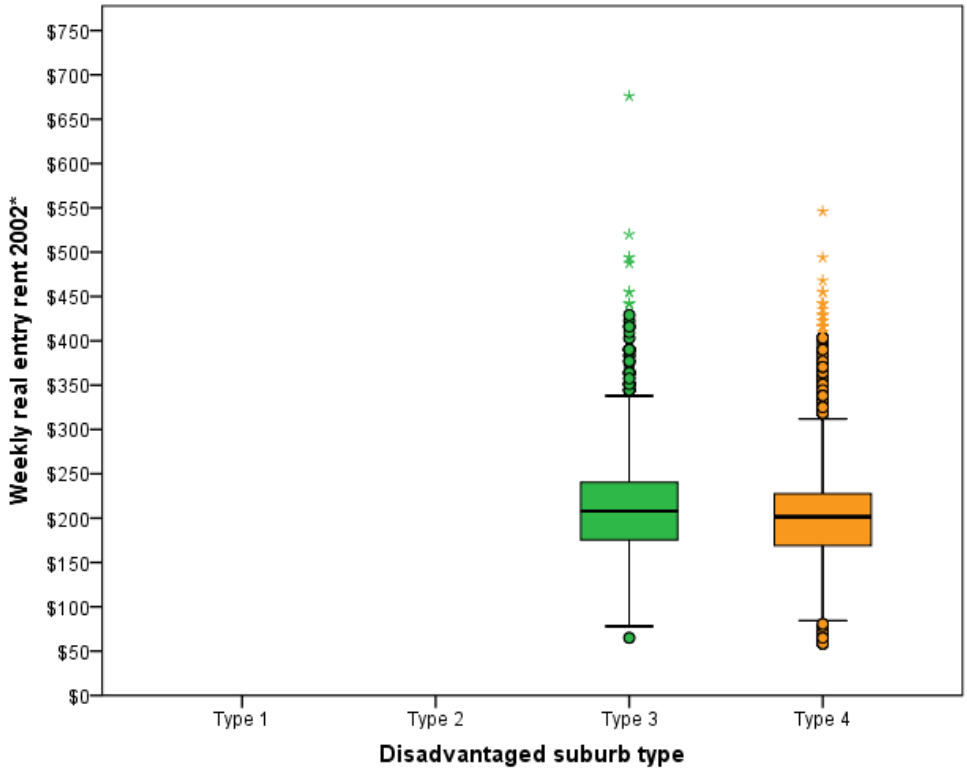


*Melbourne has no Type 1 suburbs

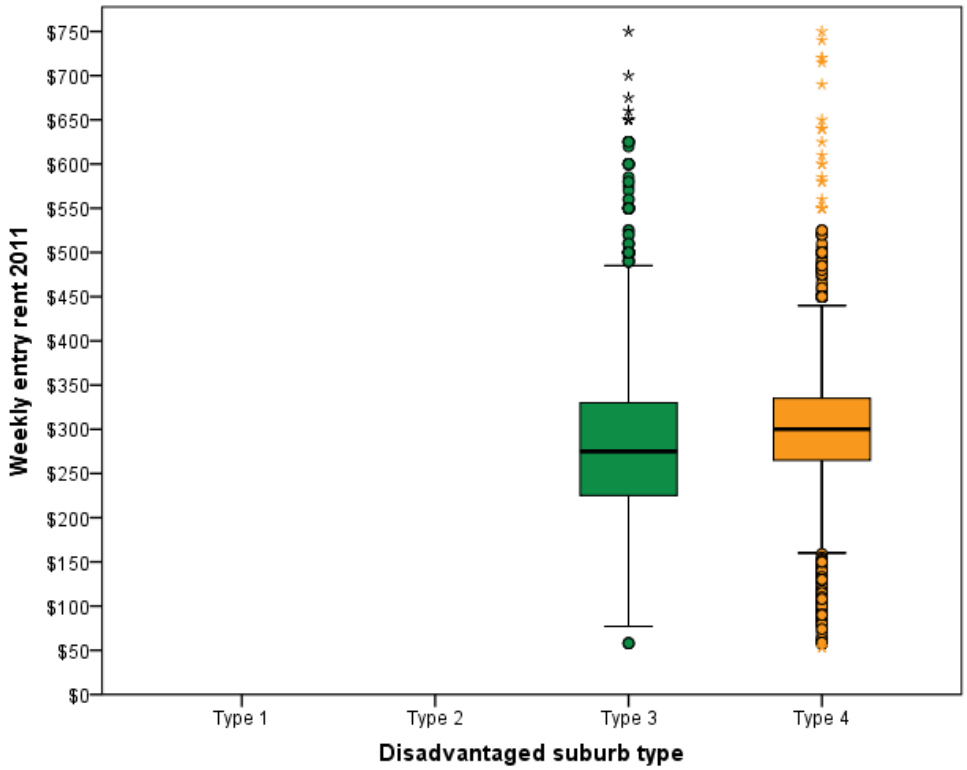
Source: Derived from Victorian Residential Tenancies Bond Authority, rental bond records, 2001 and 2011

Figure 14: Dispersion of entry rents (all dwellings) by type of disadvantaged suburb, Brisbane, 2002 and 2011

Brisbane 2002*



0035 Brisbane 2011*



* Brisbane has no Type 2 suburbs and too few bond lodgements for analysis in its sole Type 1 suburb

Source: Derived from Queensland Residential Tenancies Authority, rental bond records, 2002 and 2011

5.4 To what extent are lowest price and lowest entry rent dwellings concentrated in disadvantaged suburbs?

Thus far, we have analysed median sales prices and entry rents in disadvantaged suburbs in some detail. In this section, we focus on the lowest price segment, those in the lowest quartile (the bottom 25%) of city sales and entry rentals. We refer to these for convenience as 'affordable sales' and 'affordable rentals', although whether they are affordable to individual households clearly depends on their incomes.

5.4.1 Percentage of all city-wide affordable sales in disadvantaged suburbs 2001 and 2011

We first look at the extent to which *all* lowest quartile sales and entry rents in each city are concentrated in disadvantaged suburbs, enabling analysis of the role of these suburbs in city housing markets.

It is clear that the disadvantaged suburbs identified in this project play a critical role in providing affordable sales in each city as shown in Table 22 below.

- The percentage of *all* city affordable sales of detached dwellings in disadvantaged suburbs declined 2001–2011, which is congruent with the relative increase in sales prices in these areas discussed earlier in this chapter.
- The percentage of *all* city affordable sales of other dwellings in disadvantaged suburbs, however, had increased in Sydney and Brisbane but not in Melbourne by 2011.
- The percentage of city-wide affordable sales (both detached and other dwellings) in Sydney's disadvantaged suburbs was higher than for the other two cities in 2011, most notably in respect of 'other dwellings'. Half of all Sydney's affordable sales for such dwellings are in these suburbs.

Table 22: Percentage of city-wide lowest quartile sales in disadvantaged suburbs in the three cities, 2001 and 2011

	Detached dwellings		Other dwellings	
	2001	2011	2001	2011
Sydney disadvantaged suburbs	36.3	34.0	41.1	49.9
Melbourne disadvantaged suburbs	35.9	28.8	31.9	27.5
Brisbane disadvantaged suburbs	30.6	28.5	17.5	21.7

Source: Derived from Valuer General property sale records (Melbourne) and APM supplied property sale records (Sydney and Brisbane), 2001 and 2011

There are a number of possible reasons why affordable sales are more concentrated (and becoming more so) in Sydney's disadvantaged suburbs than the other two cities. These include Sydney's generally higher sales prices which limit choice for households on lower incomes, households buying other dwellings in disadvantaged suburbs as they are priced out of the detached house market, and the attraction of some of these suburbs in terms of accessibility to transport, jobs and, in some cases, culturally specific services and facilities. These factors are being explored in other quantitative and qualitative components of the research.

Turning to entry rents, we find that within each of the three cities, disadvantaged suburbs again play a substantial role in providing affordable dwellings for rental, particularly in respect of three-bedroom detached dwellings (Table 23).

- Affordable rentals for three-bedroom detached dwellings are more concentrated in disadvantaged suburbs than one to two bedroom other dwellings across the three cities.
- There has been a general decline in the incidence of city lowest quartile new rentals in disadvantaged suburbs 2001–2011, to a greater extent for one to two bedroom other dwellings than for three-bedroom detached dwellings.

Table 23: Percentage of city-wide most affordable (lowest quartile) new rentals in disadvantaged suburbs by dwelling type, three cities, 2001 and 2011

	Three-bedroom detached		One to two bedroom other	
	2001	**2011**	**2001**	**2011**
Sydney disadvantaged suburbs	42.1	40.0	43.8	39.3
Melbourne disadvantaged suburbs	48.1	44.3	35.3	28.9
Brisbane disadvantaged suburbs	40.2	40.8	23.8	13.9

Source: State rental bond authorities, Sydney (NSW Fair Trading); Melbourne (Residential Tenancies Bond Authority), Brisbane (Queensland Residential Tenancies Authority), 2001 and 2011 (2002 for Brisbane)

This suggests that disadvantaged suburbs had a fairly consistent role across the cities in the rental market for affordable detached dwellings but that there were some significant differences in respect of the concentration of affordable one to two bedroom 'other dwelling' rentals in 2011. Possible explanations for the latter include a higher incidence of affordable entry rents for other dwellings in Sydney's disadvantaged suburbs as a response to higher rentals in the city generally, and an increasing supply of affordable one to two bedroom dwellings in other suburbs of Melbourne and Brisbane due to factors such as the development of accommodation targeted at students and some low level densification in areas previously dominated by detached houses.

Overall, the findings add to evidence that Sydney's disadvantaged suburbs are, and have remained, more distinct lower price sub-markets for both property sales and rentals than such areas of Melbourne and Brisbane. The corollary is that affordable sales and rentals in Melbourne and Brisbane may have dispersed to suburbs which were not identified as disadvantaged due to the use of the 2006 IRSD to select the 'disadvantaged suburb' cohort in scope for this project (Chapter 2), with the possibility that disadvantage has been re-concentrating in new areas on the urban fringe of these cities in more recent years. This possibility is investigated in Chapter 6.

5.4.2 Affordable sales and entry rentals in different types of disadvantaged suburbs

We now look in more detail at the extent to which the housing markets of *different types of disadvantaged suburbs* were characterised by a concentration of affordable sales and entry rents 2001–2011. For this purpose we use a different measure of concentration of sales and entry rents: the percentage of sales *within* disadvantaged suburbs at or below the city-wide lowest quartile value. This enables a more detailed understanding of the role of affordable (lowest quartile) sales and entry rents in the housing markets of disadvantaged suburbs, and various types of disadvantaged suburbs, as shown in Tables 24 and 25 below. Overall, on this metric, Melbourne and Sydney's markets have more similarity to one another and differ substantially from Brisbane. As shown in Table 24, in the former two cities, the dominance of affordable detached house sales in disadvantaged areas is considerably less pronounced than is true of affordable 'other dwelling' sales. In Brisbane's disadvantaged suburbs, by comparison, the reverse is true—the proportion of all sales in disadvantaged suburbs involving lower priced ('affordable') detached dwellings is much higher than for other dwellings.

Table 24: Percentage of sales within disadvantaged suburbs that were affordable (lowest quartile) by city and type of disadvantaged suburb, 2001 and 2011

	Detached dwellings % of all sales 'affordable'		Other dwellings % of all sales 'affordable'	
	2001	**2011**	**2001**	**2011**
Sydney				
Type 1	98.7	98.2	100.0	100.0
Type 2	42.8	37.7	75.9	75.9
Type 3	67.6	77.9	71.9	79.0
Type 4	64.6	62.6	65.4	62.5
Disadvantaged suburbs	53.3	51.2	68.8	70.2
Melbourne				
Type 1	*n.a*	*n.a*	*n.a*	*n.a*
Type 2	55.2	49.9	78.7	65.5
Type 3	56.2	50.3	76.1	50.9
Type 4	47.6	42.5	60.1	47.6
Disadvantaged suburbs	52.0	46.4	69.8	55.3
Brisbane				
Type 1	100.0	100.0	*Insuff't sales*	*Insuff't sales*
Type 2	*n.a*	*n.a*	*n.a*	*n.a*
Type 3	48.4	58.6	41.0	54.5
Type 4	81.4	81.6	78.7	60.7
Disadvantaged suburbs	73.0	76.0	53.4	56.9

Source: Derived from Valuer General property sale records (Melbourne) and APM supplied property sale records (Sydney and Brisbane), 2001 and 2011

There are also some discernible differences between *types of disadvantaged suburb* as shown in Table 24:

- In Type 1 suburbs (Sydney and Brisbane) housing markets were comprised almost entirely of city lowest quartile sales for both houses and other dwellings in 2001 and 2011.
- In Type 2 suburbs (Sydney and Melbourne) there was a greater percentage of lowest quartile other dwelling sales than for detached dwellings. There was some decrease in the percentage of lowest quartile sales 2001–2011 which accords with previously discussed evidence of rising prices. Sydney's Type 2 suburbs appear to be a distinct sub-market for the city's lowest quartile sales for other dwellings.
- Type 3 suburbs, mainly located in Sydney and Brisbane, had a rising percentage of lowest quartile sales for both houses and other dwellings in both these cities. By 2011 four in five 'other dwelling' sales in Sydney's Type 3 disadvantaged suburbs were transacted at below lowest quartile price. Affordable sales were becoming increasingly dominant in the Type 3 areas of both these cities over the period: further evidence of distinct 'affordable' sub-markets in these places.
- Type 4 suburbs had quite different percentages of affordable sales for detached dwellings in 2011, with Brisbane having a high concentration and Melbourne much lower. The

incidence of affordable sales of one to two bedroom other dwellings in Type 4 areas was more consistent across the three cities. Seen within the context of the 2001–2011 trend for a slow decline in detached houses, the sharply declining concentration of affordable one to two bedroom other dwellings in Melbourne over the period strongly suggests that market diversification was proceeding in these areas.

Analysis of entry rents reveals a somewhat similar picture (Table 25), although it should be borne in mind that the greatest volume of bonds were lodged in Type 2 and Type 4 suburbs and there was a low volume of new bonds lodged in Type 3 and particularly Type 1 suburbs (Chapter 6). What is particularly striking here is that in all three cities the 2001–2011 period saw a general downward trend in the dominance of 'affordable rental' lettings. In Sydney, for example, across all disadvantaged areas the proportion of affordable three-bedroom detached lettings fell from 50 to 44 per cent, while the comparable reduction in one to two bedroom other dwellings was from 74 to 66 per cent. This could be read as suggesting a general tendency towards increasingly diversified rental provision in these areas with some investor behaviour indicating a move 'upmarket'.

Table 25: Percentage of all bonds lodged within the disadvantaged suburb types with affordable rents (in lowest city-wide quartile), by type of dwelling and city, 2001–2011

	Three-bedroom detached		One to two bedroom other	
	% of all rentals 'affordable' 2001	% of all rentals 'affordable' 2011	% of all rentals 'affordable' 2001	% of all rentals 'affordable' 2011
Sydney				
Type 1	90.9	90.9	100.0	97.7
Type 2	39.3	26.8	74.5	70.7
Type 3	65.6	72.8	95.3	97.3
Type 4	57.2	53.8	70.4	60.7
Disadvantaged suburbs	49.7	44.4	74.3	66.5
Melbourne				
Type 1	*n.a.*	*n.a.*	*n.a.*	*n.a.*
Type 2	67.2	57.7	79.2	74.9
Type 3	83.6	70.3	89.3	88.4
Type 4	55.2	51.3	62.0	50.4
Disadvantaged suburbs	62.4	55.4	70.7	60.9
Brisbane				
Type 1	*Insuff't bonds*	*Insuff't bonds*	*Insuff't bonds*	*Insuff't bonds*
Type 2	*n.a.*	*n.a.*	*n.a.*	*n.a.*
Type 3	37.1	50.8	36.7	43.7
Type 4	65.3	53.3	70.5	46.0
Disadvantaged suburbs	59.3	52.7	59.3	45.0

Source: State rental bond authorities, Sydney (NSW Fair Trading); Melbourne (Residential Tenancies Bond Authority), Brisbane (Queensland Residential Tenancies Authority), 2001 and 2011 (2002 for Brisbane)

As also shown in Table 25, analysis differentiated by disadvantaged area type demonstrates that:

- Type 1 suburbs were a distinct low rent market with almost all entry rents in the city lowest quartile.
- In Type 2 suburbs there was a similar and high concentration of affordable entry rents for other dwellings (Sydney and Melbourne), but Melbourne Type 2 suburbs had a much higher concentration of affordable rentals for three-bedroom detached dwellings than in Sydney. This may well reflect the gradual replacement of detached dwellings in Type 2 suburbs in Sydney by other dwellings (e.g. through knock-down and rebuild activity), and a more limited supply of affordable detached dwellings.
- Type 3 suburbs in Sydney had the second highest percentage of lowest quartile rentals (only Type 1 was more concentrated) and the percentage increased slightly from 2001–2011. The percentage of affordable rentals in Brisbane's Type 3 suburbs was substantially less, albeit it had increased from 2001–2011.
- Type 4 suburbs in all three cities had a similar incidence of lowest quartile rentals for three-bedroom detached dwellings in 2011 (51–54%), although with the incidence of lowest quartile rental one to two bedroom other dwellings again somewhat higher in Sydney than in Melbourne or Brisbane.

5.5 Chapter summary

This chapter has provided a detailed analysis of dwellings sales and entry rents in disadvantaged suburbs, and types of disadvantaged suburbs, across the three cities 2001–2011.

5.5.1 Disadvantaged suburbs and city housing markets

Disadvantaged suburbs play an important role in city housing markets in providing more affordable sales and rentals. Median sales prices in disadvantaged suburbs increased in real terms at a greater rate than city-wide 2001–2011, in the context of more general growth in city-wide sales prices during this period. There were higher rates of increase in disadvantaged suburbs in Melbourne and Brisbane than in Sydney, perhaps reflecting the increase in Sydney prices prior to 2001 as well as greater pressures associated with household growth in the two former cities (Chapter 4, Section 4.2). By 2011, median sales prices in disadvantaged suburbs had in general moved closer to city medians, although there were some differences between cities. Median entry rents, on the other hand, were generally closer to city medians in 2001 than median sales prices and, although entry rents increased in real terms less than sales prices 2001–2011, median rents were still significantly closer to city medians in 2011. The effect is that there was a greater 'affordability discount' for house purchasers in disadvantaged suburbs than for renters.

The markets for detached and other dwellings differ somewhat with median sale prices for detached dwellings in disadvantaged suburbs generally closer to respective city medians than for other dwellings; and median entry rents for three-bedroom detached dwellings being closer to city medians than for one to two bedroom other dwellings. In other words, there was a greater 'affordability discount' for both purchasers and renters of 'other dwellings' in disadvantaged suburbs than there was for detached houses.

There was a greater concentration of affordable sales in Sydney's disadvantaged suburbs than in the other two cities, particularly in respect of affordable other dwellings. There was also a significantly greater concentration of affordable rentals for one to two bedroom dwellings in Sydney's disadvantaged suburbs. On the other hand, the concentration of affordable entry rents for three-bedroom detached dwellings was quite consistent across the cities by 2011.

The implications appear to be that rising real prices for detached homes 2001–2011 meant that it had become increasingly difficult for prospective home owners to buy this type of accommodation in disadvantaged suburbs. The options for those wanting to live in these suburbs seem to have been buying 'other dwellings' (e.g. attached houses or flats)[13] or renting a detached dwelling if this was the household preference (40–44% of all rentals of affordable detached dwellings in the three cities are in disadvantaged suburbs). Alternatively, households could have chosen to buy or rent in areas further from city centres, as we see in Chapter 6.

5.5.2 Sales and entry rents in different types of disadvantaged suburbs

Analysis of property sales and entry rents in this chapter has shown some clear differences between the four types of disadvantaged suburbs.

- Type 1 suburbs had the lowest median sales prices and entry rentals and were furthest from city medians on both counts, with little dispersion around the respective medians in 2001 or 2011. Such housing markets comprised almost entirely city lowest quartile sales and entry rents. In housing market terms, they are *isolate suburbs*.
- Type 2 suburbs appear to provide more affordable entry points for sales of detached dwellings, despite above city average price increases 2001–2011. Entry rents, however, were close to city medians for three-bedroom detached dwellings, although less so for one to two bedroom other dwellings. There was some modest increase in dispersion of sale prices and rents around median values 2001–2011. These suburbs had distinct low rent markets for other dwellings and a particular concentration of lowest quartile one to two bedroom rentals for other dwellings in Sydney. In housing market terms, these areas are *lower price suburbs*.
- In housing market terms, Type 3 suburbs appeared to vary somewhat between cities. While median prices were three-quarters or more of the city medians in Brisbane and Melbourne they were significantly less in Sydney; for both detached and other dwellings. They had the second lowest median entry rents (of the four types of disadvantaged suburbs) for both types of dwellings. The decade to 2011 saw increased dispersion around the median for sales prices and entry rents in Brisbane's Type 3 suburbs, indicating housing market change. Nonetheless, these suburbs retained a relatively high concentration of city lowest quartile sales and rents, particularly in Sydney. As regards both their geographically remoteness from city centres and their housing market characteristics, these are *marginal suburbs*.
- Type 4 suburbs had median sales prices which had moved most rapidly towards city median prices in Melbourne and Brisbane, although less so in Sydney. They had the greatest dispersion of sales prices around the median by 2011, reinforcing a view of housing market diversification. Entry rents moved consistently towards city-wide medians 2001–2011. Nevertheless, these suburbs still had a high percentage of city 'affordable rentals' in 2011 which may explain why they remained highly disadvantaged in 2011 using population-based measures (see Chapter 2). In housing market terms, however, they are *dynamic improver suburbs*.

[13] Although this is mainly apparent in Sydney's disadvantaged suburbs which had 50 per cent of the city's affordable sales of this type of accommodation in 2011.

6 DISADVANTAGED SUBURBS IN THE CONTEXT OF HOUSING MARKET DYNAMICS IN AUSTRALIA'S MAJOR METROPOLITAN AREAS 2001–2011

Chapters 4–5 have focused on the housing market structures, conditions and dynamics of the 177 disadvantaged suburbs that were identified in Chapter 2 of the report. In this final tranche of our analysis, we look more broadly at the recent housing trajectories of these disadvantaged suburbs in relation to city-wide shifts in each of the three metropolitan areas. We return to a more explicitly spatial analysis to investigate the housing market dynamics of the disadvantaged suburbs in the context of broader changes in the metropolitan housing markets of Sydney, Melbourne and Brisbane 2001–2011. The chapter proceeds by:

- Outlining the research approach, methods and key data sources.
- Examining changes in household turnover in disadvantaged suburbs relative to city-wide changes, 2001–2011.
- Illustrating spatially the broader metropolitan context of the housing market changes in disadvantaged suburbs 2001–2011 discussed thus far.
- Identifying what appeared to be emerging areas of disadvantage in 2011.

6.1 Research approach, methods and data

The research approach was to locate the housing market changes in disadvantaged suburbs (discussed in Chapters 4 and 5) in the context of household mobility and broader changes in metropolitan housing markets 2001–2011.

In respect of household turnover, and focusing on households living in disadvantaged suburbs and other suburbs in 2001 and 2011, we calculated the percentage that had moved into their 'current' dwelling during the previous five years. We call this the five-year 'household turnover rate' (alternatively the five-year 'household mobility rate').[14] In addition, five-year mobility rates were calculated separately for each of the four major tenure groups (owners, purchasers, private renters and social renter households).

This approach enabled some assessment of household mobility in terms of in-movers and therefore 'household churn'. Unfortunately, there were no data available from the Census coded to a sufficiently fine grained spatial unit to investigate out-movers (even though such data were collected).

We analysed data on volume of sales and new lettings for 2001 and 2011, as follows:

- Data on the volume of sales were obtained from State Valuer Generals' property sales data; directly via the Victorian Office of the Valuer General, and for Sydney and Brisbane via Australian Property Monitors. Volumes were calculated on the basis of the spatial units used in this report; that is four types of disadvantaged suburbs, disadvantaged suburbs generally and by city, in 2001 and 2011.
- Data on new lettings were from rental bond authority datasets obtained at the unit record level for each city.[15] These data were used to calculate the volume of bonds in

[14] The analysis was based on data from the 2001 and 2011 Censuses from the question: 'Where did the person usually live five years ago?' This enabled identification of three broad categories: all household members had a different address five years prior to the Census night; some household members had a different address five years ago; and no household members had a different address five years ago. Only those households where ALL household members changed address were considered 'movers', providing a conservative estimate of turnover.

[15] With a property address included for Sydney and Melbourne and only a suburb name included for Brisbane. Data for Brisbane were for 2002 rather than 2001 as was the case for Sydney and Melbourne. Each record included a broad dwelling type (detached and other) and a count of bedrooms.

disadvantaged suburbs and other suburbs, as well as city-wide levels and for the two most common types of dwellings used elsewhere in this report, viz: three-bedroom detached dwellings and one to two bedroom other dwellings in 2001 and 2011.

A further step in the research was to consider changes in the housing markets of disadvantaged suburbs in the context of broader metropolitan housing market changes 2001–2011 through extending the analysis of dwelling prices and rents to all other areas which were 10 per cent or more below city median values in 2001 and 2011. This was done both for dwelling sales prices and entry rents. The analysis was based on all metropolitan suburbs (2006 SSCs) with median sales prices and entry rents (separately): more than 40 per cent; 30–39 per cent; 20–29 per cent; and 10–19 per cent below city medians. All other suburbs were classified as 9 per cent below city median or above, since we were less interested in that segment of the market. The resulting maps set changes in prices/entry rents in disadvantaged suburbs within the context of change in other city suburbs 2001–2011.

Finally, rather than focusing on previously identified 'disadvantaged suburbs'—as in the remainder of this report—we drew on our spatial analysis of changes in metropolitan housing markets and the quantitative data sets assembled for this report to identify areas that appeared *at risk of becoming* areas of disadvantage. This method was used to investigate what appeared to be a greater degree of dispersal of social disadvantage in Melbourne. The indicators used were:

- 2001–2011 suburb entry rent change compared with city-wide change: in particular, those suburbs where the median entry rent fell further below the city-wide median (used as an initial filter to select suburbs for subsequent analysis).
- 2001–2011 suburb median house sale price change compared with city-wide change.
- 2006–2011 change in the number of people living in IRSD lowest quintile areas within the suburb.

This explicit spatial analysis enabled identification of 'new' areas of emerging disadvantage with a focus on Melbourne which had the greatest dispersion of disadvantage to 'growth zones' on the city's edge (Chapter 5). Such areas will be of potential concern to policy-makers, particularly where they are contiguous.

6.2 Household turnover rates

Whether households move, and where they move from and to, contributes substantially to the concentration or dispersal of social disadvantage using population-based measures. House move decisions reflect many factors including individual household preferences and life circumstances, which are made in the context of housing market fundamentals (Chapter 4) and changes in the relative level of prices and entry rents in particular areas (Chapter 5).

6.2.1 Five-year household turnover rates

Household turnover rates in disadvantaged suburbs, defined as above, were lower than city-wide rates in each of the three cities in 2001 and 2011; and lower in 2011 than in 2001 although the differences were small. The greatest difference in household turnover rates between the disadvantaged suburbs and the city total was in Melbourne where rates of household turnover in disadvantaged suburbs were a relatively modest five percentage points lower than the city average in both 2001 and 2011 (Table 26). For disadvantaged suburbs the magnitude of turnover decline during the decade was generally comparable to the degree of city-level decline in each of the cities. It does not appear, therefore, that disadvantaged suburbs in Australia's major cities were associated with either very high rates of household churn or low rates.

Table 26: Five-year household turnover rates by disadvantage status of suburbs and housing tenure, Sydney, Melbourne and Brisbane, 2001 and 2011

	Five-year turnover rate									
	All households		Owner households		Purchaser households		Private renter households		Social renter households	
	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011
Sydney										
Disadv. subs	38.0	32.9	15.1	8.1	44.5	34.1	70.6	59.6	33.0	24.9
Other suburbs	42.6	37.3	18.9	11.9	51.1	38.6	77.5	69.8	33.6	27.3
City total	41.8	36.5	18.3	11.4	50.2	38.0	76.2	67.9	33.4	26.3
Melbourne										
Disadv. subs	33.7	31.9	13.1	7.4	41.1	34.0	71.4	64.1	36.6	23.2
Other suburbs	40.7	37.4	18.0	12.6	49.6	38.7	77.6	72.9	37.4	27.5
City total	39.5	36.5	17.1	11.7	48.5	38.1	76.5	71.4	37.2	26.1
Brisbane										
Disadv. subs	42.3	40.4	19.4	14.7	36.6	38.7	74.8	67.7	43.4	23.9
Other suburbs	47.0	43.2	20.3	14.4	52.1	42.6	81.0	75.1	44.7	34.7
City total	46.4	42.8	20.2	14.4	50.5	42.3	80.2	74.1	44.3	31.1

Source: Based on ABS Census of Population and Housing data, 2001 and 2011

Five-year mobility rates in disadvantaged suburbs and in the cities generally are clearly related to housing tenure, with a consistent pattern across the three cities (Table 26). As expected, outright owners have the lowest household turnover rates with social renters having the second lowest rates. Also in line with expectations, much the highest household turnover rates were among private renters, with purchasers having the second highest rate.

Household turnover generating market transactions were thus largely driven by the decisions of households to purchase or to rent privately, as well as the decisions of rental investors (to the extent that an investor decision to sell a tenanted property is usually a trigger for a tenant move).[16] Changes in tenure composition in different types of disadvantaged suburbs (as discussed in Chapter 4), in particular an increase in purchase with a mortgage and private rental, might be expected to increase five-year turnover rates. However, there is no evidence for this.

When we look at five-year turnover rates by type of disadvantaged suburbs (Figure 15), however, there are some clear differences between the four types.

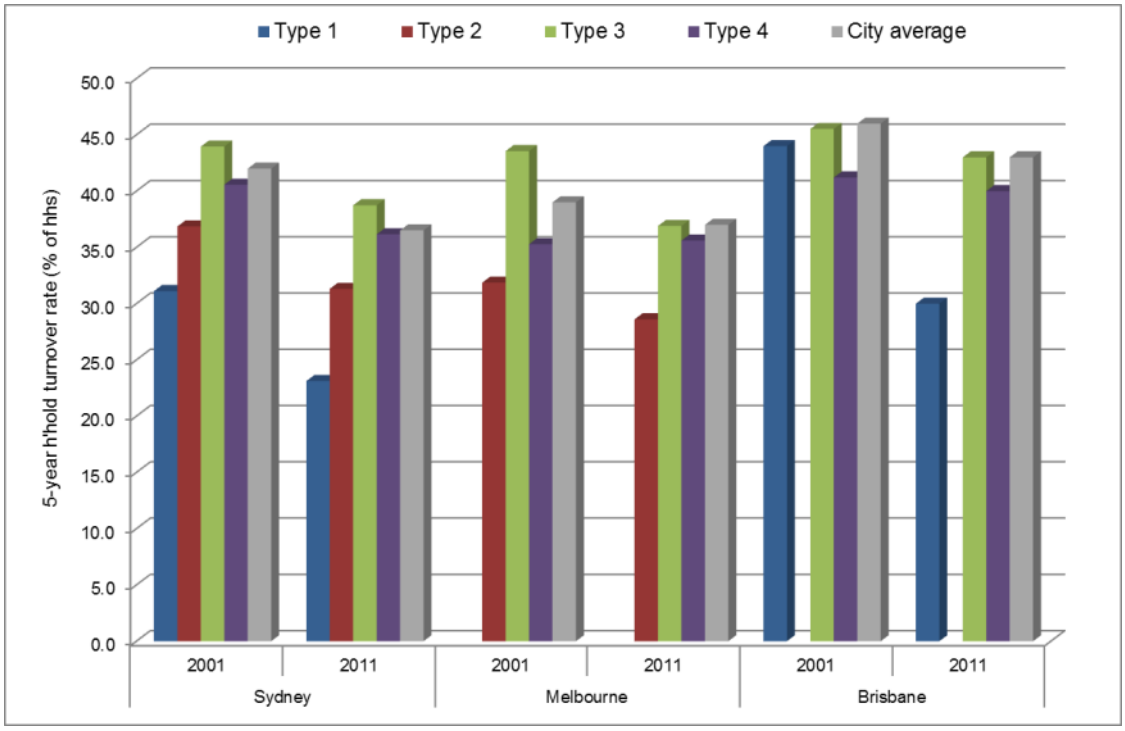
→ Type 1 suburbs (Sydney and Brisbane) had the lowest five-year turnover rates in both 2001 and 2011, and turnover was substantially lower in 2011 compared to 2001. These were suburbs with high rates of social rental in a period in which it became increasingly difficult for households to realise aspirations for moving into or out of social housing, due to

[16] It is very unusual in Australian cities for dwellings to be sold with the tenant in situ, unlike the practice in some other countries.

targeting to those with the most complex needs on one hand and the widening gap between social housing and market housing on the other.

- Type 2 suburbs (Sydney and Melbourne) had the second lowest five-year turnover rates, also declining substantially between 2001 and 2011. This is perhaps surprising in view of the large percentage increase in home purchasers and decline in outright owners, but may well reflect the difficulties encountered by potential in-movers due to rising prices and rents in these suburbs.
- Type 3 suburbs in each city had the highest household turnover rate in both 2001 and 2011. Household turnover in these suburbs was equal to, or greater than, household turnover rates at the city-wide level in both years. Turnover rates for outright owners in Type 3 suburbs were higher than for non-disadvantaged suburbs, indicating a movement of households buying in these suburbs without a mortgage. This may be due to a number of factors including lack of affordability in mainstream city markets, a desire to realise some of their equity from sale of a property in the mainstream city market, and lifestyle preferences such as a desire for a 'sea change' or 'tree change' (Burnley & Murphy 2004).
- Type 4 suburbs had higher turnover rates than Type 2 suburbs but lower than Type 3 areas. Type 4 suburbs in Melbourne were the only category in which there was a marginal *increase* in mobility rates between 2001 and 2011. This can be explained in part by an expansion of private rental which had the highest turnover rate of all housing tenures. An allied explanation is that these are 'improving' areas in housing market terms and attracted rental investors and 'gentrifiers' seeking capital gain.

Figure 15: Five-year household turnover by type of disadvantaged suburb, Sydney, Melbourne and Brisbane, 2001 and 2011



Source: Calculated from ABS Census of Population and Housing 2001, 2011

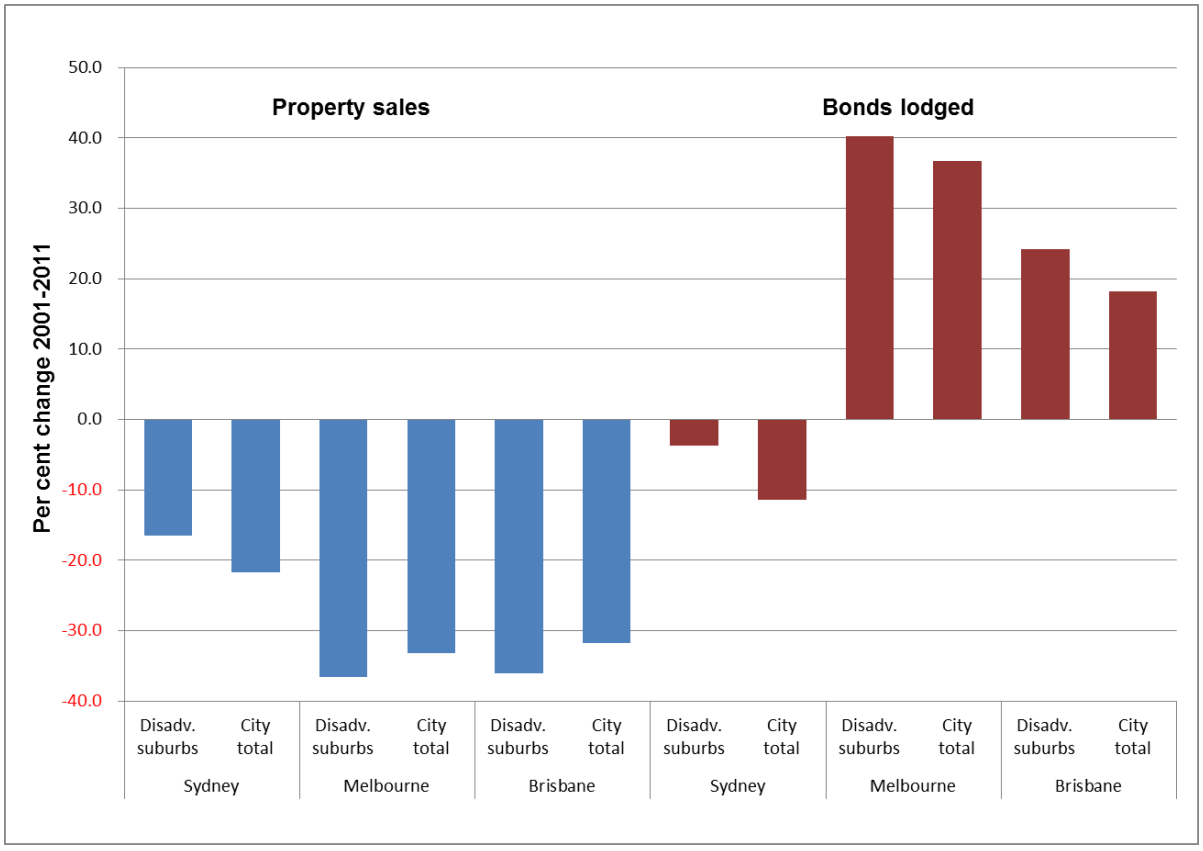
Thus there is little evidence that disadvantaged suburbs in the three metropolitan areas are characterised by high levels of household 'churn', indeed five-year turnover is generally lower than in the cities generally. It may well be that in addition to individual factors and housing system factors, that age and demography are also important (Robson 2009, p.10).

6.2.2 Volume of sales and new lettings in disadvantaged suburbs, 2001–2011

Differences in five-year household turnover are in part reflected in the volume of sales and new lettings in 2001 and 2011 (Figure 16). The volume of sales in disadvantaged suburbs was significantly less in all three cities in 2011 than in 2001 (down 17% in Sydney, 37% in Melbourne and 36% in Brisbane). This appears to reflect in large part city-wide market changes in the three cities.[17]

Unlike sales, there was no consistent pattern across the three cities in changes in the volume of new bonds lodged in disadvantaged suburbs in 2011 compared to 2001. In Sydney there was a small (4%) decrease in new bonds lodged in disadvantaged suburbs while in Melbourne 40 per cent more new bonds were lodged in such suburbs in 2011 compared to 2001, and in Brisbane 24 per cent more. While these figures may appear surprising, they could reflect in large part an increase in private rental housing 2001–2011 in Melbourne and Brisbane (as discussed in Chapter 4). It may well be persistently higher entry rentals in disadvantaged suburbs in Sydney discouraged renters from moving.[18]

Figure 16: Percentage change in the number of property sales and bonds lodged 2001–2011: Sydney, Melbourne and Brisbane, disadvantaged suburbs and city-wide levels



Sources: Derived from Valuer General property sale records (Melbourne) and APM supplied property sale records (Sydney and Brisbane), 2001 and 2011; OPD figures based on ABS Census of Population and Housing data 2001 and 2011; and state rental bond authorities, Sydney (NSW Fair Trading); Melbourne (Residential Tenancies Bond Authority), Brisbane (Queensland Residential Tenancies Authority), 2001 and 2011 (2002 for Brisbane)

[17] In Australia's major cities, dwelling sales prices rose in 2009 and 2010 in the aftermath of the Global Financial Crisis before plateauing or decreasing slightly. 2011 Census data were collected during this period of stable/lower house prices which appear to have discouraged vendors from selling their properties.

[18] It should be noted that it can be difficult to interpret figures on new bonds since there may be more than one bond per household, for example, in the case of sharer households, or potentially the same individual or households could lodge more than one bond in the same year. It is important also to note that Types 1 and 3 suburbs have a low volume of sales and new bonds relative to Types 2 and 4.

6.3 Mapping changes in relative median prices/entry rents at a metropolitan level

Given the generally low and recently reduced rates of household turnover in disadvantaged suburbs (see Table 26), how do the changes in sales prices/entry rents in these areas map spatially in view of the changing geography of metropolitan housing markets 2001–2011? As shown in Chapter 5, sales prices and entry rents in Type 1 and Type 3 areas suggested their disconnectedness from city housing markets in 2011, which is of potential concern given their location at some distance from CBDs. But was there a concordance between some of these suburbs and corridors of disadvantage emerging in 2011? In Type 2 and Type 4 suburbs (particularly the latter) median sales prices and rents generally moved closer to city medians 2001–2011, suggesting their growing integration with wider metropolitan markets.

In this section, we return to the spatial analysis (introduced in Chapter 3) by mapping median sales prices and entry rents for all suburbs, relative to city medians, in the three metropolitan areas in both 2001 and 2011. The results of this analysis are presented for median sales and entry rents relative to city medians for Sydney (Figures 17 and 18); Melbourne (Figures 19 and 20) and Brisbane (Figures 21 and 22). These maps refer to detached dwellings (the major dwelling type) for median sales[19] and all dwellings in respect of entry rents. The maps highlight in bold the location of the 177 disadvantaged suburbs in scope for this project (see Chapter 2).

Overall, these maps show that those disadvantaged suburbs nearest to the Central Business Districts (CBDs) of the cities had median sales prices and entry rents that moved closer to city medians, as a result of experiencing the greatest increases in real prices, as Australian cities moved towards a classic 'bid rent curve' for housing prices (Hulse et al. 2010). This reflects increased gentrification of inner suburban and some middle suburban areas, including 'second wave' gentrification (Bounds & Morris 2005) in which investors purchased in these suburbs but not with a view to living there. Some of the disadvantaged suburbs had median prices less than 10 per cent below city medians in 2011. There were, however, some distinct differences between the cities in terms of changes in median sales and entry rents by suburb which we discuss next.

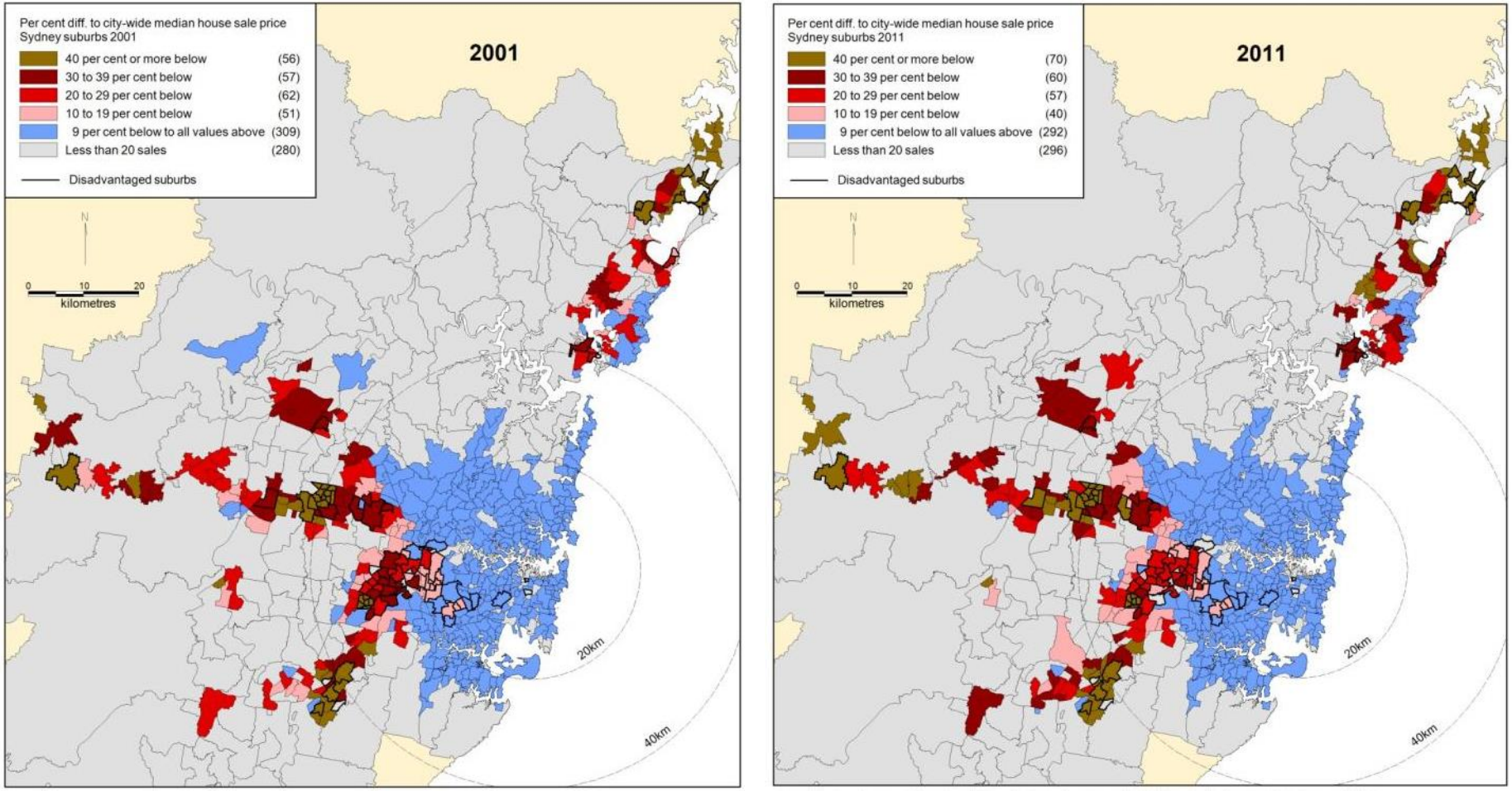
In Sydney, the overall picture is of a polarising market in respect of median sales prices for detached dwellings, although less so for entry rentals (Figures 17 and 18).

- There were somewhat more suburbs at least 30 per cent below the city median for detached house sale prices in 2011 (130) than in 2001 (113) (Figure 17). These were predominantly in three corridors to the west, south west and outer north of Sydney, a pattern which had generally solidified during 2001–2011. The maps suggest increasing concentration of low median price markets in contiguous Types 2 and 4 suburbs in these three corridors. The few disadvantaged suburbs in Sydney which were 9 per cent or less from the city median in 2001 or 2011 were located in inner and well located middle suburbs. Many of the suburbs with low median sales prices relative to the city are more than 40kms from the Sydney CBD, raising issues of place-based disadvantage (e.g. in transport access to good quality employment and services).
- In terms of the rental market, however, Sydney had fewer suburbs with median entry rents at least 30 per cent below the city median in 2011 (25) compared to 2001 (45) (Figure 18). Nevertheless, the same three corridors of concentration of lower median entry rents are clearly discernible as for sales. The main change over the decade appears to be for some suburbs in the south west corridor that had median rents 9 per cent or less than the city median in 2011. In part, this appears to be a matter of location, with demand 'spillover' from contiguous higher rent suburbs. This suggestion is based on the observation that median

[19] There is a much greater difference between sales prices for detached and other dwellings than for entry rents, such that we have focused in this chapter on mapping changes in suburb medians for sales of detached dwellings (the predominant dwelling type for sales) relative to city medians.

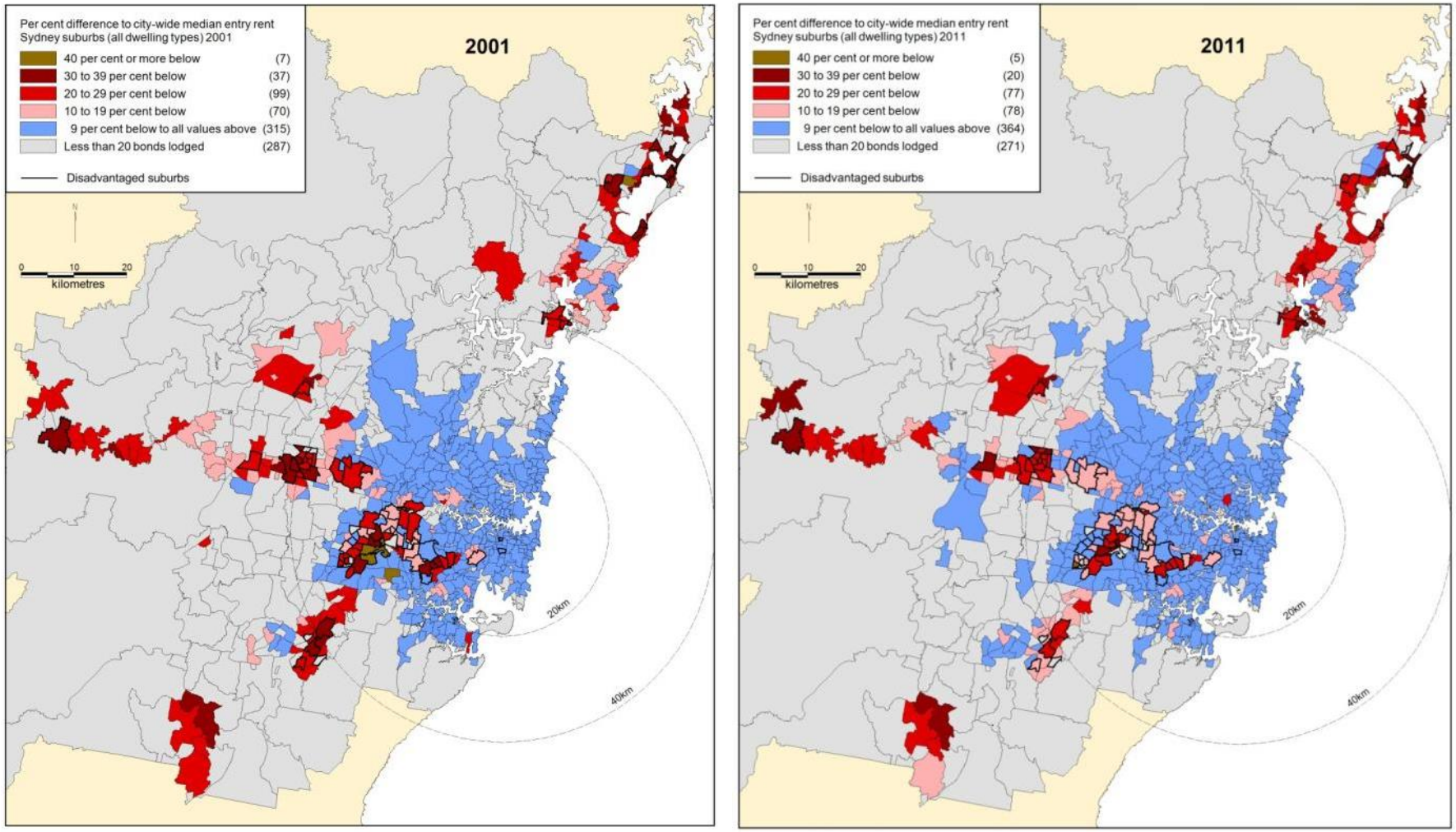
rents in some adjoining disadvantaged suburbs apparently closer to the CBD (e.g. a cluster around Fairfield) did not move as close to city-wide medians over the period.

Figure 17: Relationship between suburb median prices and the city median, Sydney, 2001 and 2011 (detached dwelling sales)



Source: Derived from APM supplied property sales records; digital boundaries from Australian Bureau of Statistics

Figure 18: Suburb median entry rents and the city median, Sydney (all dwelling types)



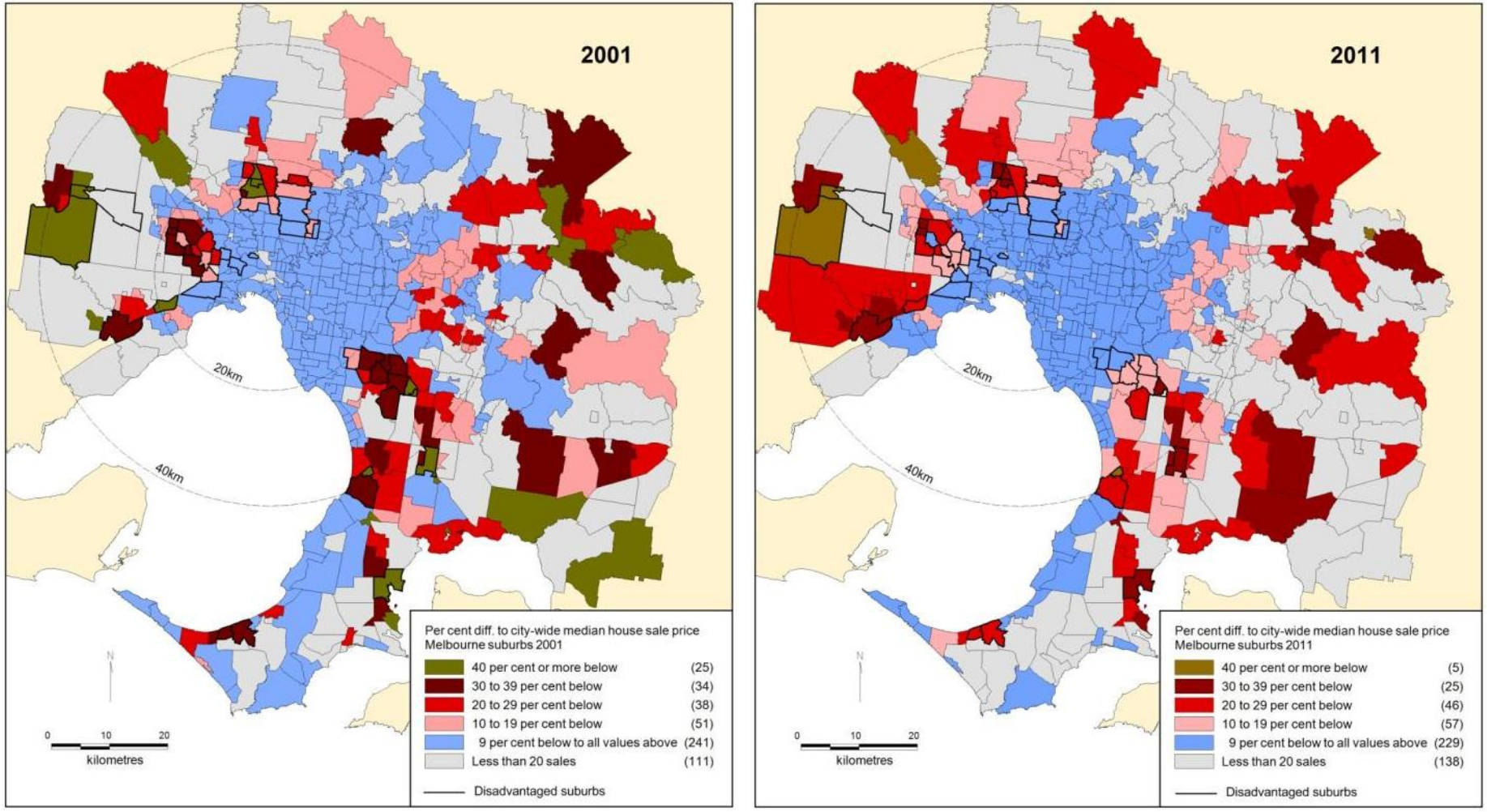
Source: Derived from NSW Fair Trading rental bond records (2001 and 2011); digital boundaries from Australian Bureau of Statistics

In Melbourne, a rather different pattern is apparent with considerable 'flattening' of housing markets with movement towards city medians for what were disadvantaged suburbs with lower median sales and entry rents in 2001.

- Across the metropolitan area, there were considerably fewer suburbs with median sales prices for detached dwellings at least 30 per cent below city medians in 2011 (30) than in 2001 (59). The implications for the disadvantaged suburbs are clear: many such suburbs which were located nearer to the CBD and adjoining higher median price suburbs had median prices 9 per cent or less below city medians by 2011; many of these are Type 4 disadvantaged suburbs. Suburbs with lowest median prices appeared to be dispersed to the urban periphery in 2011, rather than being concentrated in specific corridors as in Sydney.
- There were many fewer suburbs with entry rents 30 per cent or more below the median in 2011 (1) than in 2001 (10), indicating a much less differentiated rental market in Melbourne compared to Sydney. Median entry rents in disadvantaged suburbs had generally moved closer to the city median by 2011, with the exception of some such suburbs furthest from the CBD. In addition, there appear to be other suburbs with low median rent relative to the city at the urban periphery which were not identified as disadvantaged in the original analysis.

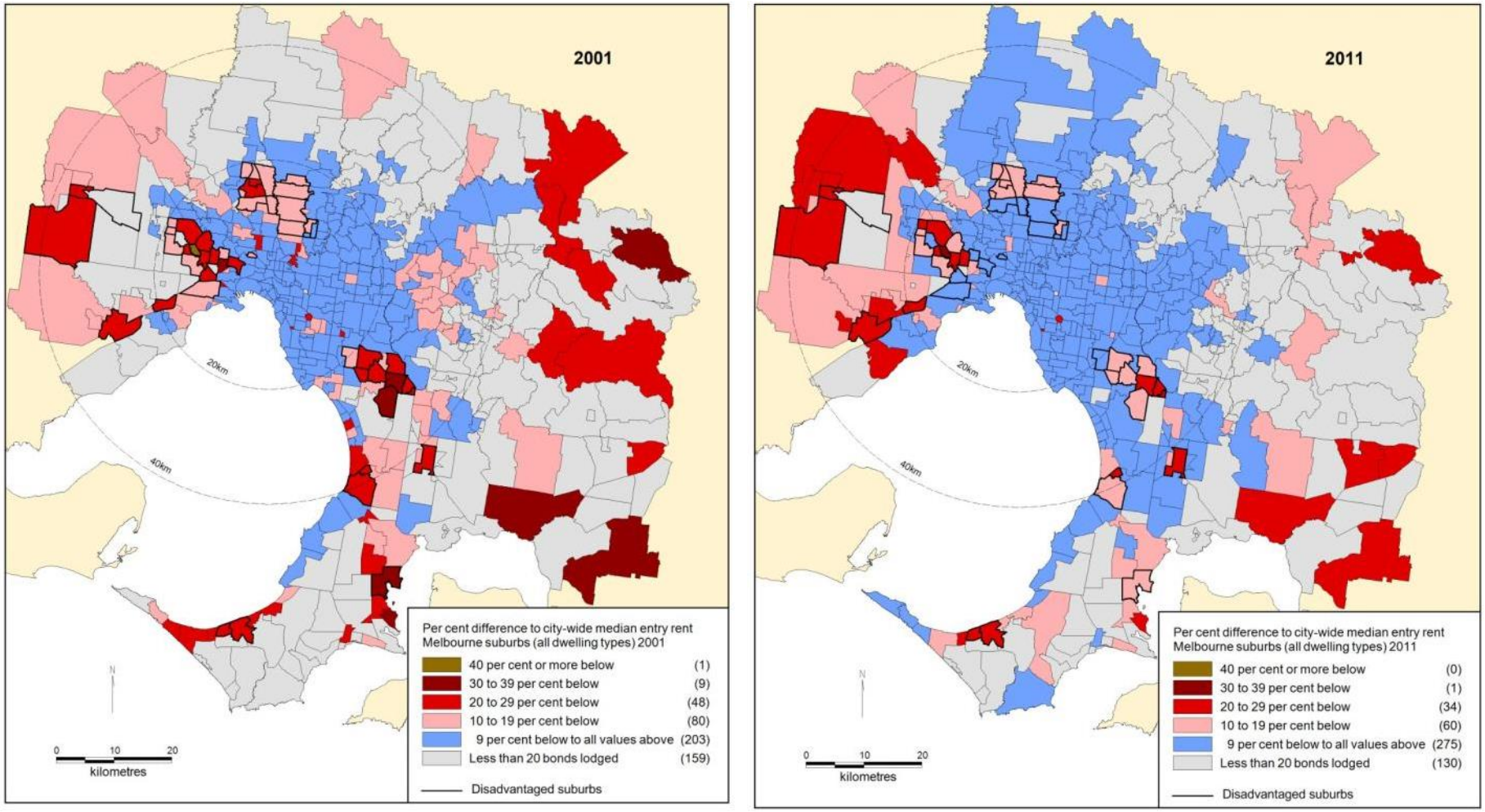
The spatial implication of these housing market changes for Melbourne appears to be the potential for dispersal rather than concentration of disadvantage to outer areas which are less well serviced by transport and facilities. Thus, the main policy challenges may revolve around place-based disadvantage rather than concentration of disadvantaged people in contiguous suburbs in specific corridors as in Sydney. We investigate this further in Section 6.4 below.

Figure 19: Relationship between suburb median prices and the city median, Melbourne, 2001 and 2011 (detached dwelling sales)



Source: Derived from Victorian Valuer General property sale records, 2001 and 2011; digital boundaries from Australian Bureau of Statistics

Figure 20: Suburb median entry rents and the city median, Melbourne (all dwelling types)



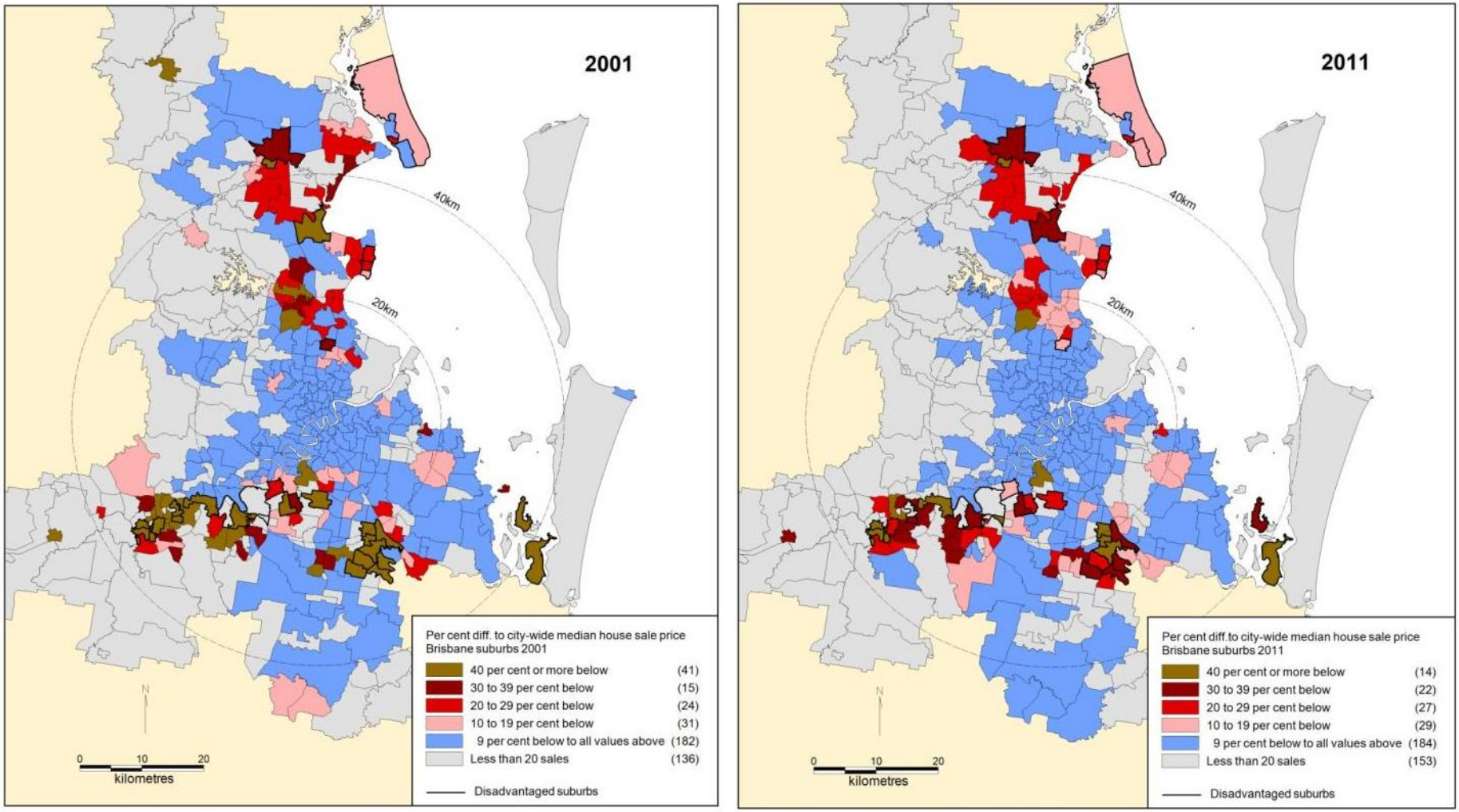
Source: Derived from Victorian Residential Tenancies Bond Authority records, 2001 and 2011; digital boundaries from Australian Bureau of Statistics

The spatial pattern of housing market change in Brisbane has elements of both concentration, particularly for lower priced sales of detached dwellings, and dispersal of lower price/rent other dwellings to the periphery.

- There were fewer suburbs with median sales prices at least 30 per cent below the city median (detached dwellings) in 2011 (36) compared to 2001 (56), indicating some 'flattening' of the housing market as prices rose markedly during the decade. In particular, median prices for some disadvantaged suburbs along the river to Ipswich and in Brisbane's south (around Logan) moved closer to city medians. On the other hand there were clear and defined concentrations of lower price suburbs in 2011 in the outer Ipswich corridor, outer northern suburbs and the islands.
- There were fewer suburbs with median entry rents at least 30 per cent below city medians in 2011 (7) than in 2001 (15) indicating a less differentiated rental market than in Sydney. It appears that low entry rents were less concentrated in specific areas than in Sydney, with some concentration remaining in the outer Ipswich corridor, the outer north and the islands. Some of the disadvantaged suburbs considered in this project have moved closer to the city median (although not to the extent of Melbourne).

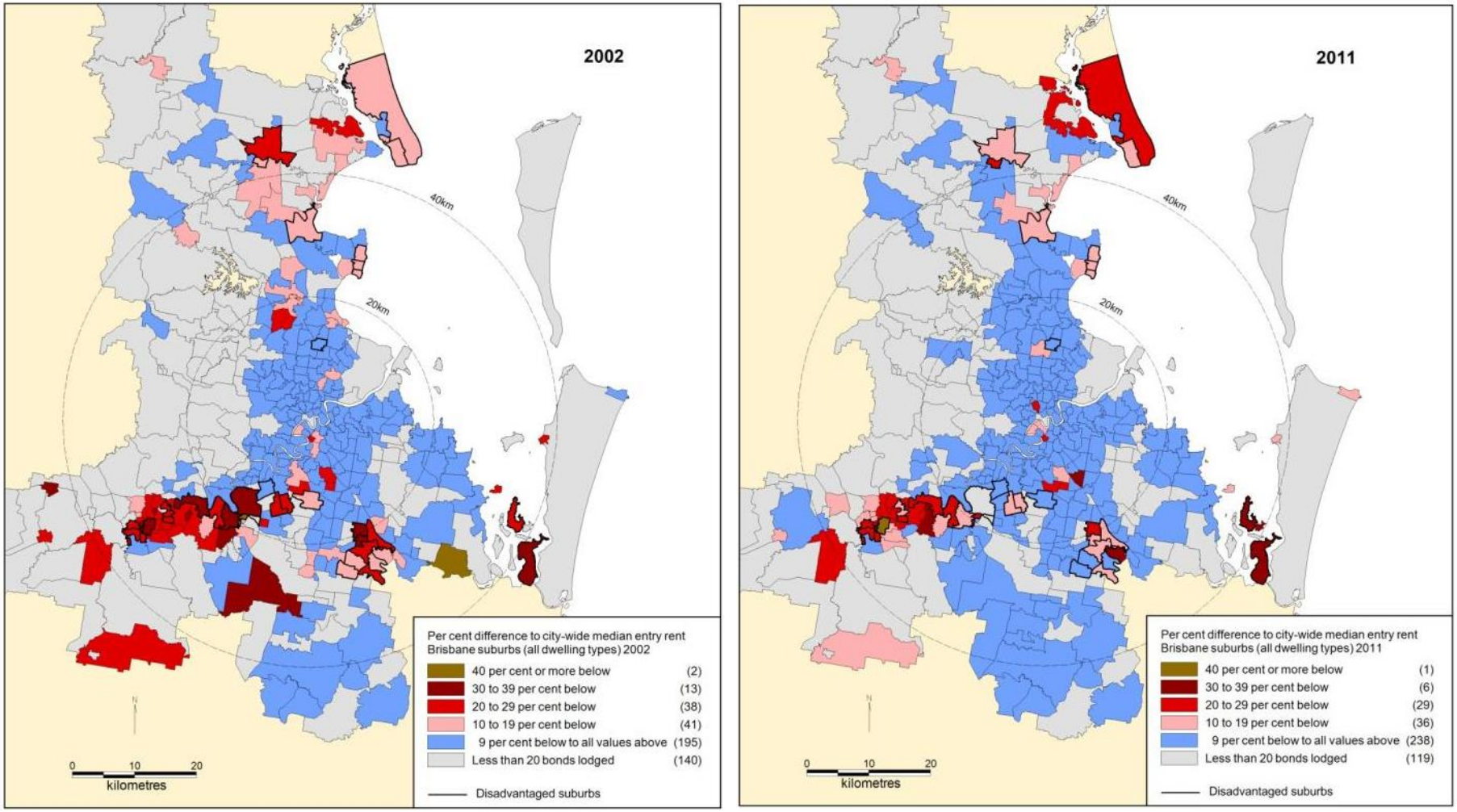
The housing market indicators suggest some continued concentration of disadvantage in Brisbane, although as in Melbourne, this is increasingly at the periphery of the city apart from the south Brisbane cluster which appears to have greater resemblance to Types 1 and 2 disadvantaged suburbs in Sydney.

Figure 21: Relationship between suburb median prices and the city median, Brisbane, 2001 and 2011 (detached dwelling sales)



Source: Derived from APM supplied property sales records; digital boundaries from Australian Bureau of Statistics

Figure 22: Suburb median entry rents and the city median, Brisbane (all dwelling types)



Source: Derived from Queensland Residential Tenancies Authority records, 2002 and 2011; digital boundaries from Australian Bureau of Statistics

To summarise this section on spatial analysis of disadvantaged suburbs in relation to changing housing markets in the three cities 2001–2011:

- All three cities have examples of low price/low rent suburbs at the urban periphery which raise issues of place-based disadvantage in terms of access to transport, jobs and services. In 2011, these included Types 1 and 3 suburbs already identified (and some Type 2 suburbs) together with what appear to be some adjoining suburbs which were not identified as disadvantaged in this project (some due to a relatively low population—see Chapter 2):
    1. The central coast, outer west and outer south western suburbs of Sydney.
    2. Suburbs at the periphery of Melbourne including the outer west, outer south west and outer south east.
    3. The outer western corridor and outer north of Brisbane and the islands.
- There appear to be substantial clusters of disadvantaged suburbs which are not at the urban periphery, many of which are Type 2 suburbs, with some Type 4s (particularly in Brisbane), which were lower price/rent markets in both 2001 and 2011. These may not experience place-based disadvantage but lower prices/rents may reflect lower amenity, quality or, in some cases, the reputation of the area, such as:
    1. The large cluster of Type 2 suburbs in south western Sydney.
    2. Clusters in the southern and western suburbs of Brisbane.
- Finally, there are suburbs that are still disadvantaged in terms of population-based measures but which can no longer be regarded as low price/low rent suburbs (including many Type 4 suburbs and some Type 2 ones):
    1. Some suburbs in the Sydney south west cluster further from the city than Fairfield.
    2. Parts of the north west, north and south eastern corridors of Melbourne nearest to the CBD.

In the final substantive section of this report, we examine whether housing market indicators suggest new, emerging areas of disadvantage beyond the disadvantaged suburbs identified in this report using the methodology outlined in Chapter 2.

6.4 Areas of emerging disadvantage in Melbourne, 2011

The spatial analysis in the previous section (Section 6.3) suggested that housing market dynamics in the Melbourne metropolitan area had been somewhat different in the general dispersal of lower price/entry rent housing generally to the urban fringe by 2011 rather than to specific corridors as in Sydney and Brisbane's Type 3 suburbs.

To investigate this further, additional Melbourne suburbs were selected in which the housing market appeared to be diverging from city medians, or were significantly less convergent towards city medians, in terms of sales prices/entry rents than the disadvantaged suburbs which have been the focus of analysis to this point. Additional indicators used in the analysis were high population growth 2006–2011 and the number (and percentage) of people living in spatial units which were ranked in the lowest quintile of the SEIFA IRSD in 2006 and 2011 (Table 27).

Table 27:Selected indicators that identify Melbourne suburbs at risk of becoming 'disadvantaged'

Suburb	Population growth	Median entry rent (all dwelling types)		Median sale price (detached dwellings)		Population in lowest IRSD quintile		Share of population in lowest IRSD quintile 2006^	Share of population in lowest IRSD quintile 2011^
	2006–11	Per cent of city level in 2011	Movement relative to city level 01–11*	Per cent of city level in 2011	Movement relative to city level 01–11*	2006 (CDs)	2011 (SA1s)		
Werribee	4.1	74.3	*-5.7*	64.3	2.1	9,124	13,687	25.0	35.9
Wyndham Vale	65.5	80.0	*-7.5*	63.3	4.7	0	2,100	0.0	12.2
Melton	4.1	71.4	*-8.6*	52.2	3.4	3,804	5,921	52.1	77.8
Melton South	10.1	71.4	*-6.1*	51.4	1.7	4,040	7,538	45.9	77.7
Kurunjang	37.3	77.1	*-5.4*	61.2	3.9	0	2,500	0.0	27.1
Roxburgh Park	13.4	97.1	*-5.4*	73.5	*-14.1*	448	8,400	2.6	43.9
Hampton Park	7.2	88.6	1.1	68.1	1.7	3,900	7,700	17.6	32.7
Hallam	5.3	91.4	7.4	73.5	1.1	690	2,370	7.1	23.3
Cranbourne West	18.3	88.6	6.1	64.9	*-4.2*	0	2,400	0.0	28.0
Cranbourne North	28.2	91.4	6.4	67.8	5.5	435	2,300	4.5	18.6

Sources: Derived from ABS Census of Population and Housing 2006, 2011; Victorian Residential Tenancies Bond Authority records 2001 and 2011, and Victorian Valuer General property sale records, 2001 and 2011

Notes: Suburbs in bold had already been identified as disadvantaged suburbs for this project. The dotted lines enable identification of growth zones or corridors.

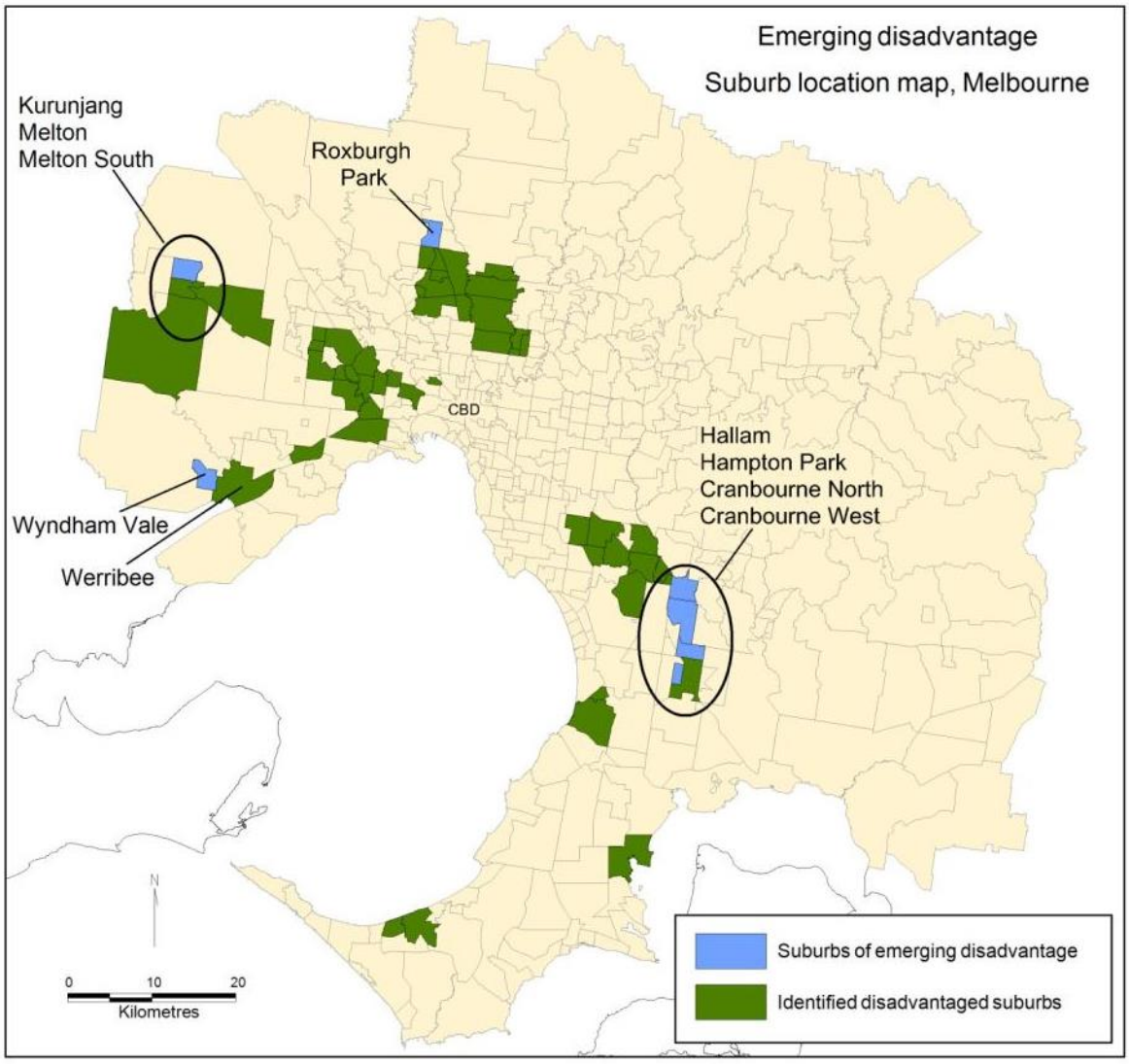
The population growth rate in metropolitan Melbourne 2006–2011 was 9.7 per cent.

* Movement relative to city level 2001–2011 shows the percentage point change either toward the city-wide median or away from the city-wide median between 2001 and 2011. The median entry rent in Werribee, for example, was around 74 per cent of the Melbourne median in 2011: this was a 5.7 percentage point drop from 2001 when it was at 80 per cent of the city median (74.3 + 5.7 = 80.0).

^ Share of population in lowest IRSD: should be used as a guide only due to the change in the smallest spatial unit used by the ABS in the Census from CDs in 2006 to the smaller SA1 units in 2011.

When suburbs identified in this analysis were mapped spatially, it appears that the effect of housing market change in Melbourne 2001–2011 has been to move corridors of disadvantage, identified using the methodology outlined in Chapter 2, further towards the outer fringe of Melbourne. This should be seen in the context of Melbourne having the highest household growth (in numbers of households) of the three cities (2001–2011). The effect has been not only to increase sale prices and entry rents in disadvantaged suburbs nearest to the CBD (predominantly Type 4 suburbs) but also to extend corridors of disadvantage in the outer south west, west, north west and south east of Melbourne, as shown in Figure 23. Many of the suburbs of emerging disadvantage are in local government areas which were some of the fastest growing (in terms of population) of all Australian metropolitan areas 2006–2011.

Figure 23: Suburbs of emerging disadvantage in Melbourne, location map



Source: Derived from Table 25, digital boundaries from Australian Bureau of Statistics

6.5 Chapter summary

Turnover rates in disadvantaged suburbs were generally less than in other suburbs and declined consistent with other suburbs 2001–2011, notwithstanding an increase in purchase and private rental in many disadvantaged suburbs (generally associated with higher turnover rates). It does not appear that disadvantaged suburbs in Australia are associated with either high rates of household churn or very low rates which might indicate that households are 'stuck' in their existing homes and unable to move elsewhere. However, this finding must be

qualified by the unusual circumstances that applied in 2011 when the housing markets in major cities had 'paused' after large increases in prices/rents through the 2000s to 2010 (and before further increases starting in late 2012). This affected the volume of housing on the market and therefore the potential for households to move.

Household growth in the cities 2001–2011 (discussed in Chapter 4) placed pressure on city housing markets and was reflected in increased sales prices and entry rents in most types of disadvantaged suburbs (discussed in Chapter 5). There appear, however, to be some differences between the three cities in the extent to which low price/entry rent suburbs remain relatively static or have shifted geographically.

- In Sydney, clusters of low price/rent suburbs, which were identified by our methodology as disadvantaged, remained lower price/entry rent markets in 2011, including a large cluster of Type 2 suburbs in the city's south west and Type 1 suburbs in the city's west. There is also evidence of outward movement in spatial concentrations of disadvantage on the urban periphery in already established corridors in the city's west and south west, as well as northward to the Central Coast.
- In Melbourne, some of the clusters of low price/rent suburbs in 2001 became rapidly improving housing markets, most notably in the Type 4 suburbs which were often contiguous with Type 2 suburbs but typically nearer the CBD. The general pattern appeared to be dispersal of lower price/rent suburbs to the urban periphery. More detailed analysis which brought together housing market and population-based indicators shows, however, some clusters of low price/entry rents suburbs have moved outwards towards the urban periphery in the city's outer south west, west, north west and south east, in areas of high population growth.
- Brisbane appears to have corridors of lower price/rent suburbs in which some of the inner suburbs (Type 4 areas) have prices/rents that have moved substantially towards city medians; for example in the inner western corridor. At the same time, new low price/rent suburbs have emerged in the outer north and the islands, only some of which were classified as being disadvantaged using our original methodology (in some cases, because they did not meet the revised population threshold).

7 CONCLUSIONS

This report has presented the findings from one project in a broader program of research into addressing concentrations of social disadvantage in Australia's three largest metropolitan centres. In particular, it sought to investigate how apparent concentrations of social disadvantage, using population-based measures, relate to our broader understanding of the operation and impacts of housing and urban systems.

7.1 The spatial pattern of disadvantage across Australia's major capital cities

Using the well-known and widely used ABS SEIFA Index of Relative Socio-Economic Disadvantage (IRSD) and focusing on places in the lowest quintile of the national distribution, generated a cohort of 177 disadvantaged suburbs in Sydney, Melbourne and Brisbane—some 10 per cent of all suburbs in the three cities and 18 per cent of their total population. While the imposition of the more rigorous 'IRSD lowest-decile' disadvantage threshold changes the picture, 68 suburbs of the three cities (4% of the total) remain defined as disadvantaged places under this methodology. While IRSD-type measures highlight socio-economic disadvantage in regional and rural Australia (due to lower incomes) (Vinson 2007), there were still concentrations in major metropolitan centres with generally higher incomes.

Disadvantaged suburbs identified in this way were clustered mainly in the middle and outer areas of the three cities. In Sydney and Melbourne there were three clear agglomerations: in the outer west, north west and south west of the Sydney metropolitan area and in the west, north and south east of Melbourne. In Brisbane, such areas were located in two main groupings: in a ribbon stretching inland along the Brisbane River, and in the south of the metropolitan area. This pattern is largely consistent with previous analyses highlighting the post-1970s suburbanisation of disadvantage in Australia's major cities.

7.2 Development of a new typology to capture similarities and heterogeneity of disadvantaged places across Australia

Classified according to a customised 'basket' of socio-economic indicators, including change over time variables, four distinct categories of disadvantaged area were discernible across the three cities. These typology categories were substantially contrasting in relation to factors such as their demographic profiles, the local incidence and character of residential mobility including overseas movers, and their recent economic trajectory. Also apparent, however, were contrasts in the nature and mix of disadvantaged places in the three cities. With all four typology categories represented only in Sydney, it appears that Sydney's geography of disadvantage was significantly more complex than that of the other two cities. Similarly, the higher city-wide Morans I score for Sydney indicates a more polarised pattern of socio-spatial disadvantage. Importantly, however, in none of the cities was the geography of disadvantage largely shaped by the distribution of public housing.

7.3 Housing market structures, conditions and dynamics of disadvantaged places

The proportion of households living in disadvantaged suburbs in the three cities declined (Melbourne and Brisbane) or was static (Sydney) from 2001–2011. This is because most disadvantaged suburbs were located in established areas and often comprised a high proportion of detached houses, such that household growth 2001–2011 depended on intensification of housing stock. In many such suburbs, there was evidence of such a process, although less so than for 'parent cities'. Living in disadvantaged suburbs was not associated with high rise living as, even in Sydney where this type of housing was more prevalent, the incidence of flatted blocks of more than three storeys in disadvantaged suburbs was below the city-wide average.

Disadvantaged suburbs tended to contain relatively high rates of (largely private) rented property and the number of private renter households had expanded disproportionately in these areas over the decade to 2011 relative to their 'home' cities. Social rental was a feature of some types of disadvantaged suburbs albeit declining over the decade. However, home ownership remained the majority tenure in disadvantaged suburbs collectively, suggesting that a simple argument about connection between home ownership and social advantage is misplaced.

Disadvantaged suburbs played an important role in city housing markets in providing more affordable sales and rentals. However, such areas generally offered a greater 'affordability discount' for property purchase prices than for rents: with rents generally closer to city medians than for property sales prices, which could reflect many factors including debt-financed rental investment and associated taxation benefits. Moreover, the 2001–2011 period saw some 'catch-up' as disadvantaged area price and rent increases outpaced those of respective 'parent cities', perhaps pricing in not only current amenity but also expectations about future property value appreciation trends. Similarly, all three cities saw a clear tendency for the diversification of rental housing markets in disadvantaged areas, with a falling proportion of lettings at 'affordable' prices. There was also a greater 'affordability discount' for households buying or renting flats, attached houses and the like rather than detached houses in disadvantaged suburbs.

These housing market factors appear to have encouraged rental investors to purchase in disadvantaged suburbs. In this respect, housing stock 'improvement' in disadvantaged suburbs cannot be explained only by traditional notions of gentrification in which 'pioneer' households move into lower price areas and improve the housing (Butler 1997). Rather, this process also involves 'second wave' gentrification in which private investors are significant players and where investor preferences may be a significant factor in moving private rental upmarket in these areas.

There were some differences between the cities in terms of the concentration of low price/entry rent housing in disadvantaged suburbs. In particular, compared with Melbourne and Brisbane, there was a greater concentration of lower priced sales and rentals in Sydney's disadvantaged suburbs. Such areas therefore appeared to play a particularly important role in Sydney as regards city-wide affordable housing provision.

Although identified using population-based measures, the four types of disadvantaged suburbs can be characterised in terms of housing market roles:

- *Isolate suburbs* (Type 1) had relatively high levels of social housing along with very low median sales prices and (private) rent levels. With little sign of 'improving' housing markets, such areas appear disconnected from mainstream city markets, potentially impeding residents' geographical mobility.
- *Lower price suburbs* (Type 2) provided more affordable entry points for purchasers although entry rents are generally high. Characteristic of such suburbs, especially in Sydney, were low rent submarkets for other dwellings (i.e. not detached).
- *Marginal suburbs* (Type 3) provide more affordable housing to buy, as well as relatively low rents, but they are far from city CBDs.
- *Dynamic improver suburbs* (Type 4) appeared to be rapidly changing suburbs, with increasing prices and entry rents, often because they are nearer (or otherwise more accessible) to CBDs. These suburbs had an increasing amount of private rental and still had a high percentage of city 'affordable rentals' in 2011, which may explain why they still ranked as highly disadvantaged in 2011 using population-based measures.

A summary of the four types of suburbs which included the main indicators discussed in this report is set out in Table 28 below.

Table 28: Summary of the four types of disadvantaged suburbs and their differences 2001–2011

Factor	Type 1	Type 2	Type 3	Type 4
Socio-demographic factors	High on young people and single parent households	High on overseas movers and two parent families	High on residential mobility but low on overseas movers; high on older people	High on overseas movers, somewhat high on reduction in unemployment and reduced incidence of low-status jobs
Household growth	Negative	Growth lower than other city suburbs	Growth lower than other city suburbs	Growth lower than other city suburbs
Housing stock	Predominantly larger, single detached dwellings	Stock mix as for city	Predominantly detached and semi/attached row houses (Brisbane more 'other dwellings')	Highest percentage of flats/units/apartments (not Brisbane)
Housing tenure	High rate of social rental, slowly declining with substitution by private rental	Higher rates of rental than cities, with private rental increasing and social rental static	Higher rates of outright ownership and private rental; lower rates of social rental and purchasing than cities	Most tenure diversity—higher rates of private rental and social rental higher than city (although social housing lower than Type 1)
Median sales prices as % of city medians 2001–2011	Furthest from city median 2011 Little change in distance from city median 2001–2011	Closer to city median for detached than for other dwellings in 2011 Some increase towards city medians 2001–2011	2nd furthest from city median 2011 (not Brisbane) Static relative to city medians 2001–2011 except Melbourne (move toward city median)	Closest to city median in 2011 Melbourne (all dwellings) and Sydney (other dwellings only) Big increase towards city median (Sydney static)
Median entry rents as a % of city medians 2001–2011	Furthest from city median Modest move to city median (other dwellings only)	Closest to city median 2011 for detached, less so for other dwellings Some move toward city medians 2001–2011	Moderately close to city medians except for other dwellings in Sydney Fairly static relative to city medians 2001–2011	Moderately close to city medians (detached) and closest for other dwellings in 2011 Consistent move towards city medians 2001–2011
Dispersion of sales around median 2001–2011	Little dispersion around median and little change 2001–2011	Greater dispersion around median in Melbourne with little change in Sydney, 2001–2011	Greater dispersion 2001–2011 particularly for other dwellings but little change for Sydney	Much greater dispersion around median although not in Brisbane

Factor	Type 1	Type 2	Type 3	Type 4
Dispersion of entry rents around the median 2001–2011	Lowest dispersion around the median and little change 2001–2011	Some dispersion around the median (particularly Sydney) and modest increase in dispersion 2001–2011	Inconsistent between cities. Second lowest dispersion around the median with little change 2001–2011 (Melbourne and Sydney); but big increase in dispersion 2001–2011 (Brisbane)	Greatest dispersion around the median and most change 2001–2011 (particularly Melbourne)
% of sales which were city lowest quartile sales 2001–2011	Highest concentration No change 2001–2011	Different patterns in Sydney and Melbourne and for dwelling types. Some decline in % affordable sales 2001-—-2011 across both cities.	Overall second highest concentration—particularly in Sydney Increase in % of affordable sales 2001–2011	Different patterns with higher concentration in Brisbane and Sydney than Melbourne Some decline in % of affordable sales 2001–2011
% of entry rents which were city lowest quartile entry rents 2001–2011	Highest concentration. Very little change 2001–2011	Some differences between cities. Melbourne higher concentration for detached dwellings. Some decline in % affordable entry rents 2001—-2011 (both cities)	Overall second highest concentration particularly for three-bedroom detached dwellings (less so in Brisbane) Some increase in % of affordable entry rents in Sydney and Brisbane 2001–2011	Reasonably similar across cities and dwelling types Some decline in % of affordable entry rents 2001–2011 across the three cities
Household five-year turnover	Lowest five-year household turnover—declined 2001–2011.	Second lowest five-year household turnover—declined substantially 2001–2011	Highest household turnover rate in 2001 and 2011—greater or equal to city-wide rates. Some decline 2001–2011	Second highest household turnover rate in 2011 (Melbourne highest)

7.4 Spatial understanding of disadvantaged suburbs in the context of city-wide changes 2001–2011

Household growth in the three cities 2001–2011 (discussed in Chapter 4) placed pressure on city housing markets and was reflected in increased sales prices and entry rents in most types of disadvantaged suburbs (discussed in Chapter 5). The way in which this played out differed somewhat between the cities (Chapter 6).

- In Sydney, clusters of low price/rent suburbs identified by our methodology as disadvantaged in 2001 generally remained that way in 2011, including a large cluster of Type 2 suburbs in the city's south west and Type 1 suburbs in the city's west. There was also evidence of an outward movement of disadvantaged population concentrations along already established corridors in Sydney's west and south west, as well as northward to the Central Coast.
- In Melbourne, some of the clusters of low price/rent suburbs in 2001 became rapidly improving housing markets, most notably among the often relatively well-located Type 4 suburbs. The general pattern appeared to be dispersal of lower price/rent suburbs to the urban periphery. More detailed analysis integrating housing market and population-based indicators indicates, however, that there remain corridors of disadvantaged suburbs that have moved outwards towards the metropolitan fringe in the city's outer south west, west, north west and south east, in areas of high population growth.
- Brisbane has corridors of lower price/rent suburbs in which some of the inner (Type 4) suburbs have prices/rents that have moved substantially towards city medians—for example, in the inner western corridor. At the same time, new low price/rent suburbs have emerged in the outer north and the islands, only some of which ranked as disadvantaged using our original methodology, in some cases, because they fell short of our population threshold.

These findings suggest that high growth, market-dominated cities such as Australia's major state capitals can see considerable housing market dynamism such that low price/rent areas may feature quite rapidly rising housing markets, particularly if they are well located relative to city CBDs. There is something of a paradox: 'improving housing markets' with sales prices and rents increasing above city-wide rates but a continuing low socio-economic profile of residents. A key explanatory factor appears to be high levels of rental investment activity in such suburbs resulting in continuing low socio-economic status of residents who are faced with paying higher rents than previously. At the same time, however, there appears to have been a continuation in the long-established movement of low-income population concentrations to suburbs further towards the urban fringe, to localities where residents face new challenges in terms of places poorly resourced in terms of accessible jobs, transport, facilities and services.

A process of dispersal of disadvantage to the urban periphery raises broader issues about integration of housing, planning, transport, employment and other policies to address resulting problems, involving all three levels of government and, more fundamentally, planning strategies that encourage growth nodes (including jobs, public facilities and services, and cultural institutions) in outer suburban locations to counter the mono-centrism of Australia's largest cities.

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APPENDIX: CLUSTER ANALYSIS METHODOLOGY

Cluster analysis principles

Cluster analysis (CA) is an exploratory data reduction technique that organises data into more meaningful and manageable groups within a large sample. CA is concerned with classification based on the full complement of inter-relationship between variables. The clusters are thus defined through an analysis of the data. The mechanism involves maximising the similarity of cases within each cluster while maximising the dissimilarity between groupings. Unlike other data reduction techniques such as discriminant analysis, CA does not require prior knowledge of membership of each cluster. As a result, CA has the ability to identify an appropriate number of inherent clusters within a sample.

CA classifies members into clusters although provides no explanation as to why the members are grouped around certain clusters. It only indicates that the members within a cluster are similar in some ways to each other. Interpretation of the nature of clusters and the structure and associations within data entails explaining unique characteristics within the clusters with or without further analysis.

Since it cannot be known at the outset the number of clusters/types that will emerge, a two-stage sequence of analysis is undertaken:

1. Hierarchical cluster analysis (HCA) is the most appropriate approach as a starting point. This guided us in identifying how many inherent clusters were present within the sample. Hierarchical cluster analysis was completed using the Ward's method applying squared Euclidean distance as the distance measure.
2. K-means cluster analysis with the selected optimal number of clusters to form exactly the same number of clusters with the greatest possible distinction. This enabled us to allocate every case in our sample to a particular cluster.

Matching 2006 Census boundaries to Census data for other years

Before discussing the cluster analysis variables in more detail it is important to clarify that, while the suburb geography used in our analysis was that of the 2006 Census, the data underlying our typology is for 2011 (and, in relation to change over time, 2001). This called for the configuration of 2011 (and 2001) Census data according to 2006 Census boundaries. In the absence of an ABS methodology for achieving this (ABS provides guidance on configuring 'older data' according to 'newer boundaries' but not the other way around), the process needed to be undertaken 'manually' using GIS.

The technique described above is facilitated by the relatively fine-grained nature of SA1 geography introduced by the ABS in 2011 (average population 400—typically somewhat smaller than the old CDs).[20] It involved applying a 2006 suburb geography overlay to the 2011 SA1 map of each city to identify the groupings of SA1s equating to 2006 suburbs. This enabled the collation of 2011 quasi-suburb SA1 groupings for which aggregated population/household numbers could be extracted from 2011 Census data—as downloaded using the ABS online product, TableBuilder. Because of non-coincidental boundaries, the mapping exercise required a degree of judgment and resulted in 2011 quasi-suburbs slightly larger or smaller than their 2006 equivalents. However, this was considered largely unproblematic given our general preference for

[20] There were 54 805 SA1s in 2011 compared to 38 704 CDs in 2006. SA1s have a more consistent population (average 400 people) than CDs which were designed to accommodate the workload of a single Census collector (ABS n.d. 1).

'% of total' (rather than raw numbers) in constructing variables for the cluster analysis (see Section 3.2—Table 9).

Having defined a full set of 2011 SA1 'correspondences' it was possible to extract from the downloaded 2011 data, the records for the identified SA1s in each city, enabling these records to be appropriately aggregated to the 2011 quasi-suburb geography. This method was also followed to generate the necessary 2001 Census figures for the 2001–2011 change over time analysis. The 2006 suburb geography was overlaid on the 2001 CD boundaries and in this instance, the vast majority of CDs fell entirely within the 2006 boundaries with only a very small number of non-coincidental instances. Another correspondence file was created (this time based on 2001 CDs to the 2006 disadvantaged suburbs) and the required 2001 Census data were sourced at the CD level from the Basic Community Profile and through a customised data request from the ABS.

Assembling cluster analysis variables

The hierarchical cluster analysis applied here used carefully chosen Census-based indicators of socio-economic status of disadvantaged suburbs (see details in Section 3.2—Table 9). These included indicators under three distinct headings: social/residential mobility (Dimension A), lifecycle stage/family type (Dimension B) and change over time in socio-economic status (Dimension C).

Unfortunately, in one important respect relating to Dimension A, Census data anticipated as being 'plugged into' this analysis proved unavailable. Here, drawing inspiration from a 'housing market typology' of disadvantaged areas in England (Robson et al. 2008), it had been anticipated that we would classify suburbs in relation to residential mobility patterns. Theoretically such patterns could provide important insights into the operation of disadvantaged area housing markets. Robson and colleagues, for example, employed such (Census-based) analysis in contrasting 'escalator' neighbourhoods with 'isolates'. The former were disadvantaged neighbourhoods through which households moved in an 'onward and upward' progression, while the latter were similarly deprived localities in which inter-area residential mobility mainly involved moves to and from other places of similar socio-economic status.

In seeking to emulate the above approach we initially devised indicators for in and out migration (Dim A) for each suburb as follows:

- Number of households moving out of their home area to a 'higher status' (i.e. 'not disadvantaged') suburb in the 2006–2011 period as a percentage of all households in the home suburb in 2006.
- Number of 2011 households who moved into each suburb from other disadvantaged areas as a percentage of all in movers into the suburb 2006–2011.
- Both of the above indicators by highest level of formal education.

In practice, however, dialogue with ABS revealed that data required to inform such indicators is unavailable at the required spatial scale. While Census forms record actual 'former addresses' for those who have recently moved to their current residence, such data is coded (and therefore available for analysis) only at Statistical Local Area (SLA) scale. Hence, in analysing 'former address' data in relation to recent in-movers to a particular suburb, previous residential locations cannot be classified at the required (small area) geographic level. Given the typically large size of SLAs (see Table 3) and the resulting scope for internal socio-economic diversity, such areas cannot be meaningfully used to inform an analysis along the lines envisaged.

In response to this reality, the residential mobility indicators selected under Dimension A needed to be much simpler and less ambitious than originally anticipated. Instead of differentiating types of mobility, these were reduced to two ‘churn rate’ measures (see Section 3.2—Table 9).

Dimension B indicators were relatively straight forward to compile using 2011 Census data from the online ABS product TableBuilder 2011.

Data related to Dimension C, that is, area trajectory on socio-economic status, were obtained for 2011 as well as for 2001. While most of the required 2011 data were available from TableBuilder 2011, it proved necessary for some of the required 2001 data to be obtained via customised purchase from the ABS so as to supplement material available through the ABS Basic Community Profile (BCP) databases.

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Australian Housing and Urban Research Institute
Level 1, 114 Flinders Street, Melbourne Victoria 3000
Phone +61 3 9660 2300 Fax +61 3 9663 5488
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