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A Report to the New South Wales  
Federation of Housing Associations

# MAKING BETTER ECONOMIC CASES FOR HOUSING POLICIES

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## **Making Better Economic Cases for Housing Policies**

A Report for the New South Wales Federation of Housing Associations

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# Executive summary

This report was commissioned by the NSW Federation of Housing Associations with assistance from the Greater Sydney Commission. The purpose was to articulate the nexus between metropolitan housing arrangements and economic development, and to identify future directions for Sydney's housing policy framework with respect to this nexus.

**The report argues for a new housing 'story'**, one that considers which housing arrangements will best sustain metropolitan economic development for the long term. This new story must recognise that supporting housing policies is about more than social justice. Housing outcomes, including costs, location, dwelling type and tenure, have many effects on the economy, which are not adequately acknowledged in current policy debates.

## What are the limits to current housing stories?

**Housing needs have outstripped the provision of adequate, affordable housing for a wide segment of Sydney's population**, indicating at least some points of housing policy failure. These issues have developed over at least two decades, but the corrosive effect across the housing system, and society and the economy more broadly, is now becoming acute. The key constraints identified in policy frameworks of the last two decades and in current policy debates were:

- The affordable housing lobby has typically relied on the housing requirements to meet social needs objectives: a traditional 'merit good' case for housing investment. Similarly, housing policy has increasingly narrowed in focus to homelessness and acute needs. This has left governments without a clear system-wide understanding of housing processes, and underdeveloped capacities to deal with dysfunctional housing market outcomes.
- The government capacity to manage housing markets to support economic growth has also been hampered by finances and conflicting policy. Budget-strapped state agencies usually have limited evidence of housing effects on the economy, and limited modelling capacity. These agencies, along with the developer lobby, instead rely on broad theoretical arguments to assess real housing cases.
- Infrastructure planning rarely integrates housing investment alongside other urban infrastructure (typically transport). This is despite a clear overlap between investment in these arenas, for creating urban places that accommodate a diverse and productive population. A functional housing system is often taken to be an outcome of infrastructure investment, rather than an integral part of that infrastructure investment.

## What links between housing and the economy are known?

**The need for an economic perspective on housing outcomes in Australian cities has never been greater.** The growth of Australia's metropolitan economies has been a major competitive success story, home to innovative industries and growing skilled labour forces. But at the same time, rising real costs of housing are now undermining the appeal of these cities as places to start new lives, businesses, ideas and educational careers.

The challenge in articulating the nexus between housing outcomes and the economy, is that there are multiple, inter-related links. Broadly, five key links were identified, through a review of literature and policy documents and face-to-face interviews with key stakeholders.

- 1. Housing and development:** Housing is designed, planned, financed, built, sold, rented, maintained and improved. These activities comprise around 10-15 percent of jobs in metropolitan areas, with estimated employment multipliers of 2.2-2.4. While only part of the story, this link – housing as an economic *process* – is perhaps the most well recognised. However, even here, there was a need for better appreciation of how housing policy and investment can increase the sector's resilience against economic cycles.
- 2. Housing and consumption:** Housing is a necessity, so the price elasticity of demand is low, as consumers try to keep renting/buying even as prices rise. This pattern of housing consumption has implications for other consumption – and so the economy. Where higher housing costs outpace income growth, the lower residual household income available to save and consume can distort spending in other parts of the economy.

For home-owners, debt taken to purchase homes and expected housing capital gain are key household financial characteristics, influencing asset accumulation and debt exposure. Increased housing values during economic upswings translate to higher spending – lengthening the cycle. This then retracts sharply when economic growth turns, accelerating contraction. Debt exposure during downturns can also hurt macro-financial stability.

- 3. Housing and human capital:** Housing creates shelter and comfort, and spaces to learn and work. Neighbourhoods shape access to public and private services, social standing, social interactions and social capital. Access from housing to locations where households work, study, shop and relax has major significance for household costs and opportunities. Compromising on housing, like compromising on health or education, means our population is not able to engage in society or be as productive in our economy as possible.

Further, the wellbeing, educational performance and human capital development of children – which has inter-generational economic implications – can be adversely affected by:

- affordability reducing the standard of homes and available income for other support;
- poor physical quality of homes reducing health; and
- insecure living arrangements disrupting educational and social development.

- 4. Housing and labour markets:** Housing location and affordability have a direct effect on connecting the right person to the right job: the 'thickness' of the labour market. Rental housing has long facilitated labour mobility to help cities grow, but the extent to which renting is relatively expensive, insecure or poorly located, and so constitutes a housing compromise, will translate to workers exiting a labour market.

High or rising housing costs have mixed impacts on homeowners' connection to the labour market. It can lead to labour exiting a market like with renters, particularly for women with non-work commitments. But it can conversely induce households to remain in the labour market beyond conventional retirement ages, raising productivity.

Disconnected parts of a metropolitan area also decrease the effective labour supply. Emergent patterns of spatial segregation in housing markets by price point pose particular problems with job access for less affluent households, younger women in particular. This has the potential to adversely impact particular industries with a high reliance on low-income workers.

- 5. Housing and business activity:** The evidence of housing influences on business capital and innovation is markedly weaker than other links. However there are some key connections.

Increased quality and variety of housing and neighbourhoods will attract clusters of highly skilled workers in growing managerial, professional and entrepreneurial sectors. Housing also affects the formation and growth of small businesses, with housing equity and debt related influencing investment activity, and neighbourhood context playing an important for home-based firms.

## What directions are needed for the new housing story?

- Housing systems will not function like simple supply-demand equilibrium markets.** Markets work better, and are less prone to speculative processes, where there are large and rapid supply responses to price changes. Housing's durable, complex nature shapes the *fundamental* features of housing markets and is often absent from current narratives.

First, supply is inelastic: it takes complex supply chains to construct homes. This means it is sluggish in responding to price changes, and it is lowest in fast growing metropolitan areas. While efforts to increase supply and elasticity are worthy, 'leave it to the market' supply strategies will often be least effective where new supply is most needed.

Second, housing – as a good – varies significantly, meeting different demand requirements. Housing is also an inherently spatial system, so housing types, prices and tenures have geographies that reflect history as well as current real estate economics. This means matching demand and supply is a major challenge for market mechanisms, and market failures are likely.
- Housing is an essential economic infrastructure.** The social welfare approach to housing policy is too narrow a basis on which to manage metropolitan areas for economic growth.

Productivity impacts are already recognised in infrastructure decision making. Transport investment, for example, use metrics like the 'value of saved travel time'. These metrics equally apply to the productivity gains from employment or housing densification. Housing investments also play a part in shaping the gains claimed by transport investment, and housing and transport costs also jointly determine the true cost of a given housing outcome.

This all highlights the need for infrastructure investment in homes and transport to be viewed simultaneously. There is a strong case for the economic development strategy of a growing metropolitan area to integrate with an infrastructure investment plan that includes housing investments. This will facilitate that growth at minimum cost to firms and to the public.
- Housing systems operate at multiple scales.** First, any new policy narrative needs a metropolitan-wide focus, as this is the scale at which housing and labour markets should function and, crucially, interface. Daily travel and short residential moves (for jobs) are key forms of economic linkage. Delineating or containing labour or housing markets will reduce the likelihood of potential productivity gains of large agglomerations being realised.

Second, it is important to understand that, while connected across a metropolitan area, many economic links to the housing system operate at smaller scales. Identifying connections to neighbourhoods, households and individuals, nested within the metropolis, is also required. This means a greater appreciation of the demand and supply – and so economic impacts – of housing and neighbourhood quality, diversity, density, location and connection. Different spatial manifestations of a functional housing system will have different economic dividends.
- Robust evidence and advanced modelling capabilities are crucial.** World class cities need good governance to remain at the leading edge for the long term. The housing provider sector

needs to build stronger economic arguments into its policy positions and embrace a system-wide view of its roles and impacts. And government needs to listen with an informed ear to better understand how metropolitan housing systems work and how they shape economic growth and productivity in practice, not just in theory. *Prodotypes* (like *archetypes*) are one way to estimate the quality and value of housing stock. This would allow estimates to be linked to particular kinds of development for different groups across a city. An econometric model of effects at the metropolitan scale is also advocated.

## What evidence is needed to support a new housing story?

Given the need for robust empirical evidence to underpin any housing story, the report identified key questions that need to be answered if housing policy is to support economic growth.

- What are the housing effects on productivity arising from residential density increases?
- How are proposed increases in population and employment densities likely to increase productivity? Modelling should recognise that increased densities come out of combined transport and housing investment.
- What is the effect of separately estimating productivity effects arising from higher housing densities around each focal point in Sydney's 'three cities'?
- What are the effects on productivity from consumption changes due to rising prices/rents?
- What are the consumption, employment and productivity effects of excess housing payments in the metropolitan area? In assessing this, housing and travel costs must be jointly modelled.
- How would Sydney spend and save differently if current *scarcity rents* and *supernormal profits* for housing/landowners were reduced back to 2010 levels?
- What are the implications for state governments and economies of a further 5, 10 or 20 percent annual rise in housing prices in major cities?
- What are the future effects of delayed home ownership by current 25-35 year-old households? This includes comparing future savings and spending with current 45-55 year-old households.
- What are the economic benefits of the proposed '30-minute' city for the metro population and for the poorest third of workers?
- What are the effects of supply side changes to the housing market?
- What would the effect be on the Sydney economy of balancing the market by specified stock additions over a two- or five-year period (recognising that housing demands will rise each year with positive net immigration)?
- A 'balanced' market implies supply and demand at or near equilibrium, and real house price increases close to zero. Can we estimate how much housing would be produced if a negligible price increase rate was realised? How would it compare with likely demand?
- What would be the saving on state borrowing or revenue raising from a programme of housing units provided through inclusionary zoning? What are the effects on the average households if all new schemes in Sydney had a 10, 20 or 30 percent inclusionary zoning requirement?

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# 1. Introduction: The origins and aims of this study

## Chapter overview

This chapter sets out the approach of the study and its core aims, which are to improve the 'economic narrative' for housing policies by:

- improving the economic arguments made by housing providers, planners and enablers for housing policies/investments; and
- suggesting where Australian governments, in finance and housing-related ministries, need to move away from predominantly theory-based economic assessments of housing policies to incorporate better evidence and modelling of housing outcome impacts on economic growth and productivity.

## Key points

- For the most part, the affordable housing lobby has typically relied on estimates of housing requirements to meet social needs objectives, i.e. traditional 'merit good' cases for housing investments and policies.
- State agencies dealing with budget issues usually have limited evidence of housing effects on the economy, and have limited capacity to model housing effects in the economy. They rely heavily on theoretical arguments in assessing real housing cases.
- Two decades of narrowing housing policy to focus on homelessness and acute needs has left governments without a clear system-wide understanding of housing processes and outcomes and, critically, relatively unclear capacities to deal with dysfunctional housing market outcomes.
- The governance and policy capacities to manage housing market outcomes in ways that support fast metropolitan economic growth are weak in major cities, and are hampered by major policy settings on housing, infrastructure, planning and finance derived over the last two decades.
- Approaches to assessing the economic effects of housing system outcomes in Greater Sydney and Melbourne are no longer effective in managing contemporary metropolitan housing markets with fast growing housing demands, significant house price and wealth effects, and housing market outcomes that are widely understood to be limiting household wellbeing and metropolitan economic growth. There is a pervasive complacency in managing the economic effects of rising real house prices (as well as the financial stability and social impacts).
- As a result, metropolitan Australia needs a new housing-economy policy narrative to underpin housing policies, which supports rather than erodes metropolitan economic competitiveness.

## Aims of the study

This study has been commissioned by the New South Wales Federation of Housing Associations (**NSWFHA**), with a mission to promote affordable housing in Greater Sydney and NSW, with assistance from the Greater Sydney Commission (GSC).

The core aims of the study are to improve **both** the economic cases made by housing providers, planners and enablers for investment in 'affordable housing', **and** the understanding, modelling and evaluation of housing market interventions and investments by Australian governments. These aims have been stimulated by the widespread difficulties of paying for housing experienced by Australians across much of the income distribution in pressured metropolitan housing markets.

The focus of the report is on market provision in both the rental and home-ownership sectors. The extent of the housing sector pressures now apparent in Greater Sydney and Melbourne requires a system-wide perspective on metropolitan housing provision. A narrow focus on non-profit and public housing misses most of the adverse economic consequences of housing shortages induced by economic growth. The focus of the research is therefore to indicate the likely range of economic impacts arising from housing investment within metropolitan areas, and to highlight effects to be further examined by econometric modelling.

## Improving stories and policy cases

The study aims arise from a recognition that past cases for affordable housing have been focussed on social sector provision, and have largely relied on social needs arguments. These 'merit good' cases for housing emphasise the number of lower income households in housing need, and argue the social consequences of not meeting these needs. Social policy cases, with added emphasis on the impacts of housing-led job creation when macroeconomic stabilisation programmes are in play, are the core 'stories' of the housing provider sector.

There have been occasional periods when 'needs-multiplier' issues have resulted in substantially increased housing investment policies (for example, during the federal Rudd government, and in the Baird and Berejiklian administrations in NSW; also see Ferrer & Manickam 2016). However, housing 'needs' stories now generate weak policy responses despite sharply rising needs estimates, homelessness and queues for non-market housing. Typically, 'merit good cases' have been sidelined by central agency 'market' narratives dismissing the economic relevance of improving housing outcomes. Treasuries typically lean towards an efficient market view of housing and make little explicit recognition of productivity or growth effects from housing investment. As a consequence, they regard housing policy expenditures as primarily re-distributional spending or 'displacement'. In these contexts, it is intuition or a historically formed 'business-as-usual' policy narrative that shapes housing policy commitments, rather than mutually understood or evidenced impacts of housing outcomes on metropolitan social and economic outcomes. Much as in Canada and the UK, Metropolitan Australia needs a new housing-economy policy narrative to underpin housing policies that support, rather than erode, metropolitan economic competitiveness.

Across Australian states, housing investment over the past quarter century has lost out to education, health and infrastructure in the politics of public spending. The same is true for most countries in the Organisation of Economic Cooperation & Development (**OECD**). Even in periods of economic stimulus, housing has fallen behind other infrastructure as the favoured sector for

government-led investment. As policy resources and interest have contracted, housing policy debate has increasingly narrowed in focus to an essential concern for the homeless and the very poorest.

This argued reduction in housing sector governance has coincided with a new era of housing system outcomes and new patterns of housing 'problems'. In this millennium intensifying housing market pressures, growing and diversifying housing demands, increasingly sluggish supply systems, and increasing openness of local markets to global flows of labour and finance have fashioned a 'new normal' of rising real house prices and rents, a growing significance of generational housing wealth, and major shifts in the housing experiences of younger Australians. The potential for new policy tools to support policy outcomes in market contexts, including inclusionary zoning and the evolving roles for non-profits, have also become apparent.

The challenges for housing policy in Australian cities have shifted and grown, just as housing policy and recognition of housing as a key metropolitan infrastructure system has shrunk. Addressing the consequences of a long neglect of public and non-profit housing in Australia undoubtedly remains a crucial social policy priority. However, it is the failure to effectively manage housing market outcomes, especially long runs of significant real house price appreciation, that has growing relevance both to less affluent Australians, and to the effective functioning of the economy as a whole.

The real housing market difficulties of millions of Australians, many aged under 40, now sit uncomfortably with the assumption of efficient housing market models embraced by key policymakers. As argued below, unmanaged metropolitan housing markets are a continuing threat to Australian productivity growth. But how should new housing market policy strategies and instruments evolve to deal with the mismatches between what Australians expect, the economy require, and markets presently deliver? World class cities require world class policy information, modelling and analysis to minimise the extent and impact of rising congestion costs that inevitably accompany concentrated economic growth. Importantly, these congestion costs include housing outcomes.

Part of Australia's present problem is that public resources and governance often focus on the wrong stories, which are too narrow in scope, and have an inadequate conception of how the housing system functions and how housing outcomes play into the economy. In consequence, there is a missing narrative – an evidence-driven 'economic story' for housing. The housing policy stories of providers and governments are not only misaligned with each other, but are out of joint with how housing markets now function for Australians. Arguably, they relate to an era of policy settings and instruments that has now passed its sell-by date. Little wonder that the big goals Australian states and cities seek for economic competitiveness, environmental sustainability, and social justice now seem to be compromised by housing system outcomes.

In pressured world cities such as London, New York, and San Francisco, there is an emerging awareness of the economic consequences of housing shortages on the local economy. This is also increasingly true in smaller, fast growing metropolitan areas such as Auckland, Vancouver, Oslo and Edinburgh. Cities are now increasingly anxious to measure and model the impact of housing outcomes on their economies. As they highlight adverse 'economic consequences' of pressured housing outcomes – an argument also being embraced by business coalitions and social providers – they now recognise the imperative for both an evidenced investment case, and a narrative for housing that connects with key government policymakers.

The challenge of identifying the economic effects of housing policies and outcomes is an important task for social providers and housing investment lobbies. In short, they must learn more about how the economy works and is impacted by housing outcomes. However, this challenge also faces economic policymakers at state and federal levels. If systematic empirical analysis and formal modelling of housing systems at metropolitan/state scales within does not exist within government then this will lead to a weak position to evaluate emerging housing cases except on a theoretical, first principles basis. The broad weight of housing economics evidence in advanced economies (Maclennan 2012) is that housing markets are key allocation systems, but they have inherent features that fashion externalities, market failures and supply inelasticities. These may require policy action, and in periods of persistent pressures may drive the economy to rewards driven by shortages ('scarcity rents') rather than effort and innovation. If households are not to be slaves to the market, the market must be made to serve better the interests of households. Arguably, the 'Economics 101' version of housing markets is as unhelpful to good policymaking as is the narrow application of the 'merit good' argument.

There are sufficient examples of dysfunctional economic consequences of housing market outcomes in fast growing metropolitan areas, not least the growing problem of housing affordability, to suggest the need for a more refined government view. For example, few disinterested observers would argue that the growth in house prices in the Greater Sydney market since 2014 constitutes a desirable outcome for the economy, or reflects the functioning of an efficient, flexible market system with optimal policy interventions. Lord Keynes – who always recognised the limits of knowledge in policymaking and the 'animal spirits' in market processes – observed that when circumstances changed, he was inclined to change his mind. Minds must change in both housing and government sectors and new, applied, well-modelled, economic stories must now prevail in policymaking.

This argument for a more nuanced, better modelled understanding of housing outcomes within government decision-taking applies not just at the metropolitan and state level. It also applies to national fiscal and monetary policymaking. Australia is not alone in experiencing above average expansion and productivity growth within existing metropolitan areas, for that is the nature of much modern economic growth. The capital cities contribute disproportionately to GDP and growth, with recent estimates suggesting the Greater Sydney and Melbourne metropolitan economies make up around two-fifths of the Australian economy. These metropolitan areas are major 'meso'-chunks of the macro economy, and hugely important in shaping the settings for fiscal and monetary policies at the federal level.

The approach of macro-policy, until very recently, has not involved modelling metropolitan effects (there is no formal macro to 'meso-metro' modelling in Australia). Nor has it been concerned with specific asset prices such as house prices, as it was assumed they reflected individual rational choices. The OECD and the International Monetary Fund (IMF) suggest a different take is required, as they increasingly issue warnings about over-heated national/capital house prices for the UK, Norway, Canada and Australia. In short, housing market outcomes – in this instance metropolitan price increases – may have potentially negative impacts on macro-growth and stability. Government economists, just like social lobbyists, should take applied housing economics more seriously, and link national and local housing system scales more effectively. Federal government needs a housing story that is less conceptually reductionist, and more empirically robust, than the present policy narrative.

Rethinking the role of housing outcomes in the economy, and of affordable housing programmes in shaping these outcomes, is an urgent challenge not just for housing lobbies and affordable housing

planners, but for all orders of government. Recent research for the Australian Housing and Urban Research Institute (**AHURI**) highlighted how, at local scales in Victoria and Western Australia, there is often little clear understanding of housing-economy effects in decision-taking for housing, planning and economic development policies (Maclennan et al. 2015). There is also no coherent conversation on housing-economy interactions across siloed government sectors. Housing policy needs a new economically-informed, cross-sectoral conversation within and across different orders of government.

Some commentators may see these issues as marginal changes in the framing of housing policy (adapting the present housing and economic stories). Others may perceive an emerging major shift in housing policy paradigms that, whilst recognising the sustained shift towards market-driven solutions in advanced economies, also requires a rethinking of fundamental roles. These include the role of owning and renting, the taxation of scarcity rents, the strategic role of local governments in leading private investment, the re-integration of housing and transport within infrastructure planning, and partnerships across multiple orders of government (with housing deals). These may be the futures we face. That connected set of changes constitute a paradigm shift in housing policymaking. Our instinct is that the housing policy approaches that replaced older 'welfare-state' perspectives (e.g. deregulation, shrinkage of policy scope and scale, and incautious home-ownership growth) have now run their course, after four decades of driving change. There is a shifting emphasis to not just being served by markets, but in setting planning and policy parameters to make housing markets work for individuals and the economy. Governments may have been slow to act, but the housing affordability crises in areas of growth, productivity, inequality and environmental outcomes are edging us towards a new approach.

Either way, framing a new conversation between the housing sector and government is a necessary first step towards better housing policy outcomes. To do this, we start from the basic observation that housing is an important sector of modern economies. It is a weighty economic sector typically absorbing 20-25 percent of household expenditures, and impacting 10-15 percent of direct employment through the construction, repair, finance, sales and management sectors. Housing investment has a well-established multiplier effect, and housing wealth has come to comprise more than half of non-pension assets. Associated mortgages are now the largest debt held by (increasingly indebted) households. While the functioning and outcomes of this large economic sector has had too little consideration in understanding metropolitan economic dynamics, this report sets out in detail why, and how, this now needs to change.

## Structure of the report

The report includes six substantive chapters.

- **Chapter 2** outlines economically-oriented definitions of housing, the broad economic features of housing systems, and the basic principles and rationales for housing market interventions.
- **Chapter 3** considers how the capabilities of Australian housing sectors and policy bureaucracies to fashion housing system 'stories' has evolved, as new system-wide housing investment challenges have emerged for states, metropolitan areas and affordable housing providers.
- A conceptual framework for capturing housing economic effects and making affordable housing investment decisions is then outlined in **Chapter 4**.

- The broad ‘story’ of housing market changes in Greater Sydney over the last decade is then outlined in **Chapter 5**, to set the scene for examining evidence of housing system effects.
- These effects are then considered in **Chapter 6** and **Chapter 7**, which deal respectively with micro-economics based research and bigger modelling exercises and estimates.
- A set of possible actions for the NSWFA and the NSW and Australian Governments is presented by way of conclusions in **Chapter 8**.

Readers should also note that this report is written for a number of different interest groups, and the subject matter can be quite technical in nature. To facilitate reading of the report, each chapter starts with a statement of the key purpose and aims of the chapter, and key conclusions are summarised in bullet points. In broad terms, readers familiar with housing economic issues and less interested in the political economy of decision-taking can safely skip to Chapter 5. Economists in government might start at Chapter 3.

The first part of the report, until the end of Chapter 4, builds the case as to why a wider scan of housing effects on the economy is needed in understanding cases for housing policies and resources. To give that argument real foundations, it is essential that readers have a good grasp of what housing economics tells us about housing systems, and why Economics 101 obstructs the telling of the housing-economy interactions that may matter. Much of that discussion is conceptual and has been compressed here, but leaving it out would allow those who dumb-down the economics of housing system functioning, and who throw out the policy ‘babies’ with the ‘bathwater’ of reductionist assumptions, to keep doing so. The second part of the report, Chapters 5-8, looks at housing outcomes in Greater Sydney and micro-economic empirical estimates of productivity consequences of housing in large cities, and identifies the big questions to answer and model in the Greater Sydney context.

### **A note on methodology**

The methodology for producing the report involved two main research strategies. First, we conducted a detailed review of local and international policy and academic literature on housing markets and housing economics. Second, we undertook interviews with representatives from:

- State government departments covering portfolios such as treasury, infrastructure, social services, community development, planning, and environment;
- Community housing providers; and
- Local councils.

Given the sensitive nature of some of the issues discussed, a number of participants requested anonymity. For consistency, we have therefore opted not to provide a more detailed list of interviewees.

## 2. The building blocks of a new economic story: Housing economics

### Chapter overview

Effective management of housing markets in metropolitan economies requires informed economic argumentation by the housing sector and technically improved assessment of market and policy outcomes by governments. They both require a housing-economy narrative based on a realistic view of how housing markets operate. This chapter presents an economic definition of housing and identifies fundamental features of housing and housing markets that need to underpin this new policy narrative. Readers familiar with housing economics can skip to the next chapter.

### Key points

- The different conceptions of housing used in ‘needs analysis’ and macroeconomic housing modelling are too aggregative to reveal economic effects. Housing works with other goods and services to shape a wide set of household consumption and investment activities. Housing is a stock of complex, durable, locationally fixed capital.
- From an economics perspective, ‘housing’ is both:
  - an activity (verb/adverb): housing is designed, planned, financed, built, sold, rented, maintained and improved. These activities comprise around 10-15 percent of jobs in metropolitan areas with estimated employment multipliers of 2.2-2.4. It is these aspects of housing that interest governments in its aggregate demand and stability effects; and
  - a physical structure and place (noun): physical attributes of homes create shelter and comfort, and spaces to learn and work at home. Neighbourhoods shape access to public and private services, social standing, social interactions and social capital as well as a context for children to learn and develop. Access from housing to locations where households work, study, shop and relax has major significance for household costs and opportunities.
- Paying for multiple attributes typically absorbs 20 to 30 percent of household incomes. Housing costs have a major effect on the residual income available to households to save and consume, as:
  - housing is a necessity so the price elasticity of demand is low, as consumers try to keep renting/buying as prices rise. But housing consumption tends to increase at least as fast as income (income elasticities of demand exceed 1); and
  - for home-owners, debt taken to purchase their home and expected housing capital gain are all key household financial characteristics influencing savings, housing asset accumulation and debt exposure effects.

- The durable, complex nature of housing also shapes three *fundamental* features of housing market functioning:
  - markets work better, and less prone to speculative processes, where there are large and rapid output responses to price changes. The multi-attribute, durable nature of housing necessitates complex supply chains to construct homes. The **supply of housing is inherently price inelastic** (i.e. is sluggish in responding to house price changes) and is lowest in fast growing metropolitan areas: so 'leave it to the market' supply strategies are likely to be least effective where they are most needed;
  - **housing variety** is evident across metropolitan areas, meeting different demand group requirements, and in consequence matching demand and supply is a major challenge for market mechanisms. Given the diversities, complexities and dynamics involved it is likely that market failures will prevail within the system; and
  - **housing is inherently a spatial system**, so that housing types, prices and tenures have systematic geographies that reflect history as well as current residential real estate economics.
- Housing markets play important spatial selection roles within cities so that socio-economic geographies (or segregations) of residents emerge, related to income, age, ethnicity and lifestyle choices. Increased spatial segregation of richer and poorer households has been typical of cities like Greater Sydney over the last two decades. So, housing markets often have both a path dependency and shape new (or emergent) socio-economic structures.
- Individual homes and housing neighbourhoods are connected to different localities in the city, such as through labour markets, in ways that give structure to the city. In consequence, it is important to assess both how housing attribute outcomes and housing processes impact on key economic outcomes. This is not just for individual households but also for neighbourhoods, wider communities, metropolitan areas, regions and the national economy.
- The inelastic supply system, spillover effects and market failures are all intervention logics for housing market policies.
- Housing outcomes can shape costs, capabilities and connections within metropolitan economies, and therefore have important implications not just for inequalities, incomes and instability, but also competitiveness and productivity. It seems almost perverse not to consider these growth effects in a well-managed market economy. So how can it be done?

## Shaping new housing stories

If housing advocates are to convince central agencies of the benefits from housing policies, they not only have to produce credible evidence, but also pay attention to the way stories are told within economics ministries. Economics is a form of rhetoric (McCloskey 1998). What matters for policy stories to succeed in changing resource allocations is that the narrative not only has substance, but that it has a form and language policymakers will understand and adopt. Equally, for policy decisions to be credible, it is essential that the framework for analysis (the underlying theory, empirical measures, models constructed) is consistent with the markets or commodities being



analysed. In other words, state housing policy actions must have a basis in applied housing economics, and not simply microeconomic theory.<sup>1</sup>

This chapter of the report outlines some ideas about how to describe and model housing markets, their economic outcomes, and economic consequences. It stresses how the fundamental characteristics of housing means that 'Economics 101' does not provide a basis for housing advocacy or analysis. An informed housing economics perspective that takes account of the real nature of housing and the functioning of housing systems is required.

To make this report accessible to housing professionals, this chapter sets a brief overview of these fundamentals in non-technical terms, and refers to some key publications that make more detailed arguments in these areas. An economically-oriented definition of housing is set out, based on Maclennan and Miao (2015), and a brief, non-technical, discussion on the complexity of housing as a commodity and the implications for housing system functioning is presented, based on Maclennan (2012). These involve fundamental economic ideas that must underpin housing policy exchanges.

## Housing: An economically operational definition

In the past neither macroeconomic analysis of housing nor 'merit' good cases in social and planning policies have paid much attention to what housing is and does. In economic models, housing enters the analysis as a relatively undifferentiated stock of housing. As in other areas of infrastructure policy such macro-stock models have limited relevance when economic outcomes will depend on what housing is produced, where it is built and for whom. The emphasis, in social policy has been on aggregate numbers of homes 'needed' by an aggregated waiting list of 'deserving cases'. More sophisticated needs analysis may extend to housing types and broad locations required to meet demands and needs for categories of clients (elderly and disabled needs) or kinds of places. Definitions of housing, with social policy purposes in mind, such as by Mallett (2004), reveal the weakness of these aggregate 'numbers' from a social perspective.

Here, because the aim is to clarify the economic impacts of housing systems a 'modernised' and economically oriented definition is used that builds a better understanding of how housing outcomes might impact the economy. In a recent review of meanings of 'housing' Maclennan and Miao (2015) noted that from an economic perspective that the term housing is both a verb/adverb and as a noun.

*As a Verb/adverb (the housing activity):* Activity aspects of housing are what have been at the core of past economic cases for housing. As a complex, durable structure, there are a range of economic activities involved in creating, maintaining, exchanging and using these structures. Housing must be designed, planned, financed, built, sold, rented, maintained and improved. It is these activities that government's target when they implement stabilization policies via the housing

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<sup>1</sup> The Shaping Futures group of housing providers, cities and agencies, convened by the University of Glasgow, has recently examined how the housing sector in Canada, the UK and Australia can improve its economic evidence and policy rhetoric, by spelling out the economic consequences of housing outcomes. However, as the project progressed, it became clear in talking to finance officials at local and national levels in all three countries that part of the difficulty of communicating the housing economics case is that an oversimplified understanding of housing systems prevails in many housing policy assessments within governments.

sector so that by raising or maintaining employment levels there will be consequent multiplier effects on local economies. Estimates of housing construction multipliers are commonly in the region of 2.0 to 2.4 in relation to income employment and gross value added. In broad terms, these occupations can comprise around 10-15 percent of jobs in metropolitan areas and in periods of peak housing market activity engage close to 20 percent of the workforce. The nature and efficiency/sectoral productivity of these processes are also significant considerations in developing the local economy, not least with the housing construction sector ranking relatively low in industry sector studies of labour productivity. The economic effects of the growing concentration of construction sector workers in some (outer) home-owner suburbs of Melbourne and Greater Sydney, where building workers may comprise 15-20 percent of residents, is potentially problematic as the employment base has never been touched by a significant downturn in construction labour demands.

*As a noun (the house):* Housing is not a simple commodity such as apples or oranges. It has multiple attributes or characteristics that also vary from property to property and place to place. This complexity is not dealt with simply by quality adjusting price statistics or mapping variety but, in a series of steps, also impacts the functional properties of housing markets. Key considerations are that:

- Housing is a physical entity that consists of a designed physical structure of connected and sheltered spaces and systems, constructed of materials and components (pipes, wires etc.) using capital (including developer's ingenuity as well as equipment), materials, labour (from designers to bricklayers) and land or existing property.
- Houses, once built, are durable capital goods (and assets).
- Houses are, usually, locationally fixed.
- When the physical structure of a house is bought, or rented, then the consumer 'purchases' the accessibility of the dwelling relative to a range of metropolitan sites that the household will use and 'acquires' the characteristics of the neighbourhood context.

At any time, there is a marked variety of housing products within a metropolitan area, as houses differ in their characteristics or attributes. Individuals and households have different resource constraints but also quite different lifestyle and housing preferences. Households then select, as far as their resource constraints and market information allows, the best set of dwelling characteristics (house) that they combine with other consumer durables, services and their own time to produce flows of different housing services. The housing attributes/services that shape household wellbeing include:

- Privacy and space for living, impacted by housing size, type, design and quality (*shelter and comfort*)
- The time and cost of connections that household members make to travel to connect the different, often widespread, locations at which they pursue different consumption and production (*activities such as work, school, shopping and leisure*)
- Home based electronic/internet connectivity is becoming an increasingly important housing attribute for both household consumption and production (*working at home*)

- The immediate neighbourhood context of the private amenities, public services, physical environments and social networks that revolve around the dwelling as well as strong and weak connections with neighbours (*accessibility, social capital, peer group effects*)
- Paying for all these attributes to produce complex 'housing services' typically absorbs 20 to 30 percent of household incomes; housing costs have a major effect on residual incomes available to households to save and consume (*household consumption and inequalities*); for home - owners both the extent and form of their debt taken to purchase their home and the past and expected housing capital gain in their dwelling are all key household financial characteristics associated with the scale and stability of their net assets (*influencing savings, housing asset accumulation, debt exposure effects*)
- Housing tenure also matters as it influences who gains from price increases, rights of security and control over the use of the dwelling (*security, asset accumulation*) a key economic system within the economy.

Economics research has been good at establishing the existence of the complexity of housing as a good. Hedonic house price studies have been used to identify the economic significance of different, distinctive attributes of housing (Malpezzi 2003). Typically, the physical characteristics of dwelling design, size, layout and internal amenities that provide shelter have been at the forefront of housing policy assessments of housing needs. However, regarding housing policy as primarily about providing adequate shelter is not enough. The key role of houses and households in place policies and the impacts of neighbourhoods on outcomes, for children and teenagers for instance, is now well recognized (see Manley et al. 2013). The home is increasingly becoming a wired hub for household activities that spread well beyond the neighbourhood into the global. Faster and better internet, embedded in the physical structures of the home, will place the household in a home surrounded by a world of accessible information and the connectedness to global social and economic networks. Increasingly the home will become a place to learn and work as well as rest and play. Connections over time, as well as space, matter for households in their housing choices. Memories play a key role in reshaping house into home. Expectations about future house prices play a key role in housing decisions as home-ownership has come to constitute the major source of both wealth and debt (mortgages) for majorities in many advanced economies. Connectivity, as much as shelter and location, should lie at the core of the meaning of housing.

This definition highlights the ways in which housing activities and the outcomes for different housing attributes (distance from employment opportunities, degree of overcrowding, neighbourhood connection) can play into individual wellbeing but also metropolitan economic performance. At the same time, this flags up the empirical challenges of capturing these multiple housing effects. The durable, complex nature of the commodity also has important implications for the likely real functioning of housing markets.

## **Housing attributes and activities: Implications for system functioning**

The concept of housing as a complex commodity, outlined above, has been at the heart of housing economics for four decades or more (Quigley 2002, Maclennan 1982). It requires policy analysts to have a careful disaggregated view of the metropolitan housing market, for instance, in interpreting price measures and in identifying the geographic and sectoral market structures within the overall area. Moreover, the inherent complexity, durability and geographic fixity also require analysts to consider how these fundamentals are likely to impact how the market functions and not just how

its outcomes are described. There needs to be attention to different product (supply) groups, consumer (demand) groups and the complex search, bidding and transaction processes that arise from these complexities (Maclennan 2012).

We identified, above, three fundamental aspects of housing that shape the ways housing markets behave and that potentially limit their ability to deliver key public policy goals without some form of intervention. These key features are, Durability/Geographic Fixity, Product Variety and Place/and Space effects and they make the issues discussed below fundamental, inherent features of housing markets.

### **Fundamental 1: Supply inelasticity**

Markets work better, and are less prone to speculative processes, where there are large and rapid output responses to price changes. The multi-attribute, durable nature of housing is that it is complex to build and renew. There is a large literature (Malpezzi & Maclennan 2001) that suggests **the supply of housing is inherently price inelastic** (i.e. is sluggish in responding to house price changes, so that price changes induce little short-run housing output). More recent research confirms that supply elasticities appear to be lowest in large and fast growing metropolitan areas (and this is discussed further in chapter 4 below); so 'leave it to the market' supply strategies are likely to be least effective where they are most needed.

Inelastic supply may be a feature of markets without any inherent market failures and these two ideas should not be conceptually confused. However, market failures and policy failures may both exacerbate inelasticities and land use regulations may contribute to inelasticity (but should not be demonised without quality research standardizing for other possible causes of supply sluggishness). Where income and population growth drive housing demands, inelastic supply leads to rising house prices (in the systems terms, the market price-quantity adjustment feedback link is weak). In the stripped down, well-functioning markets of Economics 101 (note the reductionist assumptions made in such models basically assume away the fundamental features of housing noted above so that the housing baby is thrown out with a bathwater of simplifying assumptions) rising prices reduce demand. The evidence of housing economics research is that once house prices start to rise they may fuel short term demand increases as individuals bring forward purchase plans to avoid being rationed out; sustained price rises may induce individual rental investors, attracted by rising capital and rent returns, compete with potential owners and, finally, pure speculators (these animal spirits again) may enter the market simply to hold housing as an asset. Well balanced markets with modest pressure levels may avoid such price dynamics; fast growing metropolitan areas do not and in consequence the simple equilibrating price effects of Economics 101 may take decades to occur.

Real house price rises arising from increasing scarcities may clear the market but they mean that the returns to existing land and housing owners exceed normal rates of return. Where owners command a price that lies well above a former price that they would have been prepared to sell at then they are said to be making 'economic or scarcity rents'. The rise in 'scarcity rents' has been a key feature of most of our housing markets since the 1980s (Maclennan & Miao 2017). The implications of these rises for the now universally acknowledged 'housing affordability' crisis and for inequality and productivity are extremely important. Real house prices and 'scarcity rents' come out of typical housing market processes and they need to be a major consideration in shaping future housing policies.

## **Fundamental 2: Variety**

Housing varies so much across metropolitan areas, meeting different demand group requirements, that aggregate demand estimates, needs numbers and average metropolitan price changes reveal little about how, and how well, a housing system is functioning. Hedonic house price studies, that take account of the multiple features of a home (Malpezzi 2003), are widely used in research on housing choices and prices. However, there is little evidence in Greater Sydney, and indeed other major metropolitan areas, of economists and city planners either using such approaches or paying much regard to the functional structure of metropolitan markets and the diversity of consumer and product groups involved. Planners seem to be somewhat ahead of economics discussion of the Greater Sydney housing system in recognizing that the metropolis comprises sets of housing 'product groups' that need to be matched to sets of 'consumer groups'. That matching process, because of product variety, becomes one of the main challenges for market mechanisms. A second key challenge is how mobility by consumers and investment by providers remake matches in the system as the scale and structure of demand changes over time and as new product groups emerge. Given the diversities and complexities involved, as well as the inherently lagged supply side responses, it is likely that market failures will prevail within the system. The notion that the housing market will work as a near perfectly competitive allocation mechanism disregards the evidence of housing economics. It seems that neither planning nor economic policy analysis at metropolitan or state levels start from key stylised facts from housing economics research.

## **Fundamental 3: Multiple spatial scales in the metropolitan region**

In the paragraphs above there was discussion of the important locational and placed characteristics of housing choices and the geographic structures of the market. A third fundamental to stress is that housing is inherently a spatial system, so that housing types and their associated prices and tenures are not randomly spread across metropolitan region but have systematic geographies that reflect history as well as current residential real estate economics. Housing markets, given these product patterns, then play important spatial selection roles within cities so that socio-economic geographies of residents, related to income, age, ethnicity and lifestyle choices, emerge. Increased spatial segregation of richer and poorer households has been typical of cities like Greater Sydney over the last two decades. So, housing markets often have both a path dependency and shape new (or emergent) socio-economic structures. And these emergent tendencies can produce difficulties in effective system functioning or in social outcomes that may require attention. For instance, the extent to which Greater Sydney becomes a more socially-ethnically divided city 2030 will depend on the housing market processes and pressures that are already in play unless there are policy interventions to shift them (if they are regarded as problematic).

Individual homes and housing neighbourhoods, referring to the economic definition of housing, are then connected to different localities in the city, through labour markets for instance, in ways that give structure to the city. In consequence, it is important to assess both how housing attribute outcomes and housing processes impact on key economic outcomes not just for individual households but also neighbourhoods, wider communities, metropolitan areas, regions and the national economy. There will be multiple 'economic connection' stories to tell at each of these nested levels. It is likely that the new housing narratives and policies will matter most at metropolitan-regional macroeconomy scales but, arguably, that at present it is the least well understood nexus, both by the housing and economic policy communities.

The recognition of these Fundamentals, *inelastic supply-variety-spatial system*, suggests a 'housing story' of many strands and multiple levels, with potentially diverse sources and types of evidence is needed for housing and economic policymaking. It takes us beyond reductionist thinking about housing as aggregative categories produced by well-functioning economic systems and to thinking about the effective management, for economic as well as social purposes, of a key, integrative set of housing linked systems that operate at different geographic (and by implication government) scales. The economic story for housing must be written in ways that capture as many of these effects at different scales as is possible and, importantly, it must have layers of narrative that speak to different orders of government (or system management).

Paying attention to these real 'noun' and 'verb' dimensions of housing systems, that might be legitimately assumed away in some higher order, reductionist analysis of market systems, is likely to be important at the metropolitan scale. The assumption that these markets operate entirely efficiently flies in the face of housing economics research and may mean sub-optimal system outcomes. But what are these systems functioning difficulties likely to be? What is housing market policy for?

## From housing systems to housing policies

Housing outcomes will influence the wellbeing of households and their ability to develop productive capabilities, it will set them in the context of supportive and accessible neighbourhoods and their decisions will shape the broad residential structures of cities and their connections to labour market opportunities, for example. Of course, housing and land prices will play significant roles in the consumption, savings and asset decisions of households. Clearly the housing processes of planning, designing, financing, building, repairing, and selling/letting homes are significant economic activities that are driven by housing demands and needs that have potentially significant economic effects. But how do the fundamental aspects of housing shape the agenda for housing policies?

### Limits of price/market systems: Intervention logics

In the longer term as the market system moves forward demand volumes and structures may change but the critical concern is that the market also produces a set of price signals to potential suppliers and investors. Social housing systems signals emerge from changing queues, turnover and vacancies. Price signals and responses to them are the key to well-functioning markets (as emphasized by those who argue against regulations in the housing system).

Where households are unable to attain some minimum level of housing quality as a result of their incomes, or spend so much on housing that their residual income is unable to meet other essential household needs (recognizing the societal judgements involved in 'minimum level', 'essential household needs') housing policy essentially deals with questions of how to best redistribute resources to lower income households to attain adequate housing or make housing 'affordable' (given other requirements). The key decisions then involve deciding 'affordability' criteria and selecting the means to deliver it (below market rent public or social housing, or via income related supports or 'vouchers'. These are critical policy issues and settings for Australian housing policy and they have been widely researched. They are not the primary focus here, though some studies (such as Ong et al. 2017) emphasise how subsidy system design may influence work participation and productivity.

The focus of this report is not on the inadequacy of incomes but on the functional character of housing markets that need policy attention and that challenge the 'leave it to the market' non-policy advocates. There are two inherent characteristics of housing that raise key questions about the efficacy of price signalling-information systems in housing markets. The first is what economists label '**market failures**'. These arise when the information or institutions to make well informed trades do not exist. For instance, in areas that might need upgrading investment by individual owners, a single owner may be willing to restore the exterior appearance of their home but only if the whole street is intending to improve. In simple markets, the individual has no way of knowing the real investment intentions of neighbours. Some other form of coordination or information flow is required. Such market failures may be commonplace in relation to densification on low-density inner-suburban lots. There may also be significant market failures, in information, facing developers who may be uncertain of where competitors may build, where jobs may be located and where public infrastructure and services may be provided. In these respects, metropolitan 'planning' may be important in making land and housing markets function efficiently and in ensuring the effective use of expensive infrastructure. The second, related, limit to market functioning is that individuals make decisions about how using their homes, such as how they look or are used (noisily or safely, for instance). That is, an individual's decisions may have an impact, positive or negative, on the wellbeing of others. These effects are called '**externalities**' and are usually unpriced or unpriceable (how would you charge a passing pedestrian for the enjoyment they have taken from the design of your home, your curtains or your blooming roses). Equally dense residential environments may facilitate employment density and contribute to 'externality' related agglomeration economies. Mixed communities could provide important synergies in creating human capital and making diverse skills available at different parts of a metropolitan area in ways that induce more positive externalities than simple market segregation of different income groups.

Where governments consider housing, policies based on 'economic principles', that is without recourse to empirical evidence and modelling, there can be a tendency to a reductionist, simplifying approach that assumes away both market failures and externality effects. The evidence of housing economics research is that such an assumption would be unjustified and that a quite diverse set of such effects exist in most housing systems (see van Ham et al. (2013) and Manley et al. (2013) for extensive review and analysis of neighbourhood and housing effects in metropolitan housing systems). Housing markets will not efficiently price and allocate homes when externalities and information failures prevail. Other intervention mechanisms to deliver desired policy outcomes, ranging from forming clubs, taxes and regulations may be required.

### **Housing system fundamentals: Summary**

This section has provided a short summary of fundamental features of housing that shape how the housing system/market functions and emphasizes distinctive economic features of housing systems that are ignored in Economics 101 but which public policy economists should recognize. The key issues are that:

- Housing is a complex consumption good with multiple attributes having a wide range of economic and other effects; both paying for housing and the outcomes achieved will influence the future growth and productivity of the economy.
- Housing is essential economic infrastructure.
- Housing is also a key locationally fixed asset/investment good for many households; it is also, via mortgages, a major source of their indebtedness (with the price and availability of

mortgages a key demand influence); the very significant growth of net housing wealth has important implications for cyclical stability, intergenerational wealth redistribution, social mobility and patterns of wealth.

- The processes of planning, financing, building, exchanging, and repairing homes have significant expenditure and employment implications; what are these sector impacts, cyclical patterns and multipliers?
- The process of housing construction is inherently sticky; there are likely market failures in coordinating decisions that link buildings to services, infrastructure provision and employment and service locations for likely residents that require spatial 'planning' of private and public investment, there may be lags in infrastructure provision, shortages of building materials and labour as well as distortionary effects from land use regulations
- Housing consumption, asset and employment outcomes have implications not just for individuals; they may have emergent, transformative effects on the functioning of metropolitan, and rural, regions and, in turn, these sets of major markets may impact national economic patterns (making places matters: it is a non-consideration in the spaceless world of macroeconomics models).
- Multi-level impacts of housing outcomes, in which there may be two-way flows between local, national and global effects have implications for well-constructed econometric housing models and policies that simultaneously involve different orders of government and require cross-governmental policy coordination

The nature of housing is that it will impact economies not just through direct employment effects and multiplier consequences and on the influence of housing market instabilities in reinforcing the amplitude of business cycles but also by having significant effects on the productivity of households and businesses. How have these essential features been built into housing policy cases or do they need refashioning in a new economic story? Even if housing lobbies make better articulated cases about these economic effects, will policymakers, in housing policy/spending functions, have housing economic models, evidence and capabilities to address these revised policy arguments? In our interviews for this project we found that housing perspectives and policy interests are divided, and simplified, across different departments and agencies within state governments and that there is, in neither NSW or Victoria, a coherent perspective on the functioning of housing markets. In consequence, it is difficult to identify coherent 'housing market policies' for Greater Sydney and Melbourne. Recent research in New Zealand (see Chapter 4 below) confirms that Auckland, like Greater Sydney and Melbourne, has a key role in its national economy and productivity levels well above national averages. However, the evidence is that since 2010 productivity growth in Auckland has lagged the national average as housing and land prices have soared. Could the same now be happening in Greater Sydney?



## 3. New stories: Better outcomes?

### Chapter overview

Shaping a better housing-economy story requires substance but also some commonality of language. The ‘social needs’ and economic policy narratives for housing are both too aggregative and restrictive in coverage to reveal the complex web of housing-economy relationships. Tracking economy effects from housing outcomes can be difficult because housing impacts so many areas of household activity and public policy, some effects take time to manifest impacts and some may leak out of local jurisdictions into wider areas without beneficial fiscal effects. There are signs that NFPs, with increasingly sophisticated leaders and board members, and other providers are developing better understood and evidenced accounts of how their actions impact the metropolitan economy. Although government departments are open to the idea of taking more account of housing in the economy they are currently short of resources to develop evidence and modelling and a great deal of policy work is sparsely evidenced and seldom convincingly modelled. In constructing new economic stories for housing, that most parties agree are required, there is a growing view that both infrastructure and housing investment strategies and policies would be informed by regarding housing as essential economic infrastructure.

### Key points

- Given the ‘weight’ of housing in the economy and in shaping key goals related to competitiveness it is remarkable that housing system outcomes are not an even greater economic concern for governments in Australia. The absence of well-informed policy narratives and systems for governing the housing market in Greater Sydney and Melbourne is surprising.
- There is growing public debate over the ways in which various federal and state policy settings have exacerbated housing affordability issues and contributed to two decades of falling home-ownership rates for the under 35s. The Australian Treasurer noted, in March 2017, housing system problems will not be resolved by doing “business as usual”.
- Housing providers, especially the larger NFPs as well as the private sector, recognise that a new narrative of housing-economy relationships is needed and much of that concern is also shared by the business sectors.
- There is a policy ‘innovation inversion’ emerging as new investor understandings have not yet been matched by equally innovative government actions. Instead, state governments have generally prioritised ‘business as usual’ approaches, with relatively minor policy changes, to address the difficulties that are eroding Australia's urban competitiveness.
- In making new economic narratives for housing policy it is only for the homeless and poorest (workless) households that there is any real cost-benefit analysis of policy actions, and it is largely driven by costs savings on other programmes required in the absence of more or better homes for these groups. However, little of that spending will have an impact on recipient productivity. Equivalent estimates are thin on the ground for cost-benefit assessments of housing actions that benefit working lower and middle-income households.

- At the federal and state level, policy makers are some distance away from effective economic productivity measures for the housing system – and this for metropolitan areas that are reaching the size of European countries in their population and economic weight.
- Productivity impacts are recognised for the infrastructure sector, though macroeconomic evidence is no longer regarded as definitive. The productivity claims for infrastructure are driven from transport investments and often arise from the value of saved travel time or the productivity gains from increased employment densification. Housing investments play a part in shaping the gains claimed by transport investment. Housing needs similar claims to be argued and estimated not just for public housing, as in Victoria, but for system-wide housing in all sectors.
- There is a growing argument that housing is essential infrastructure. That argument needs to be extended beyond public housing, again as now applies in Victoria, but to overall housing provision as essential economic infrastructure for the metropolitan area to grow with lower congestion cost and crowding effects. Housing investment needs not to be just seen through the same productivity lens as transport, but there is a strong case for investment in homes and transport to be viewed simultaneously. It is housing, transport and other infrastructures and services that jointly create the neighbourhoods that meet residential demands. Housing and transport costs jointly determine the affordability of household housing and activity choices. Extracting gains from planning and transport decisions is usually achieved through housing investments.
- There is a strong prima facie case for the economic narrative and delivery strategy for a growing metropolitan area to have an infrastructure investment plan that will include housing investments that will facilitate growth at minimum cost to firms and the public.
- How can we capture these effects to go from prima facie to more definitive economic cases?

## Major challenges in policy advocacy

The previous chapter emphasised the ‘weight’ of housing in the economy and the importance of the system in shaping key goals such as competitiveness, environmental sustainability and social wellbeing. It is in many ways remarkable that housing system policy is not the major concern of most governments in Australia. This issue is pursued further below, but even if the system were well designed housing policy cases would remain difficult to make. The ‘merit’ cases, for the most severely disadvantaged households, the homeless and the most vulnerable, are in many ways the easiest ‘technical cases to make’ (Rowley et al. 2017). The harsh outcomes for the unserved are all too obvious; the moral imperatives are clearer and the estimated budgetary savings on other programmes (such as health, education and policing) that would be incurred in the absence of housing/homelessness action usually significant. Housing to help these groups is rarely going to be justified by productivity effects but by fairness and effective public spending concerns.

For many other groups the costs of poor housing outcomes may be much less visible and economic benefits from wider system action may require some more subtle analysis and estimation. They may be spread over multiple sectors (for instance housing investment may have simultaneous positive effects on housing, education and crime reduction, see below) but the benefits may never be aggregated in policy design (Infrastructure Victoria is currently undertaking

innovative work to identify the wider benefits of investment in public housing). Effects may be spread over a wide range of government sector portfolios, they may be small, they may take time to emerge (the education benefits of better housing for toddlers will not be definitively identifiable until four or five governments have come and gone) and they may spillover into adjacent jurisdictions without any fiscal flow back to help finance investment. Whilst reducing market failures and promoting positive externalities may have significant overall effects of housing investment they may have little impact on policy unless governments along with the housing sector, are committed to understanding the links from housing to productivity.

The housing sector within any Australian state also deals with, at least, two orders of government. Federal government retreated from the housing policy sector for much of this millennium, reconnected with housing policies significantly during the Rudd administration, retreated again during the Abbott government and is now articulating clearer policy interest but with modest policy changes to date. States have often curtailed their own housing spending over the same period, arguing that they have a much more limited fiscal base for housing policy. Interestingly, however, NSW has developed stronger policies through the current administration, and Victoria has also recently launched more positive policy commitments. Housing policy advocates at the federal level must engage (*inter alia*) with monetary policy measures, tax proposals and reforms, stabilisation and employment measures, sector policies for energy, carbon reduction, infrastructure and cities policies to articulate cases to raise housing policy investment. And similar policy fragmentation issues arise at the state level, between housing supply and affordability issues related to land zoning, planning strategies, state budgets and infrastructure - which tend to lie within the purview of planning and infrastructure ministries – and social housing provision, which has been devolved to family, community and social services ministries, as in both NSW and Victoria.

Two outcomes of these broad policy arrangements impact the development of an economic story for housing. The first is that in relation to major policy goals, current federal and state policy settings have not performed strongly. The emerging difficulties in housing affordability, across 60 percent of the income distribution in Greater Sydney, and falling home-ownership rates for the under 35s have developed over at least two decades of federal and state approaches to policy. The present difficulty has long, complex and multiple origins. To quote Scott Morrison (2017) the system problems will not be resolved in housing by doing “business as usual”.

The second is that the administrative arrangements that have fashioned this crisis in metropolitan housing supply and affordability are not necessarily well-designed to understand or react to the emerging difficulties. In the interviews, both not-for-profit (**NFP**) and private sector housing providers, had a well-advanced set of ideas about their economic impact and how housing could contribute to a more productive city. The business sector share that view and parts of the property sector were also concerned with post-2015 market outcomes. In the remainder of this chapter the case-making approaches of the housing lobby are considered and then ‘story’ assessment within government discussed.

## Making the housing case, strengthening stories

Commentators on modern public policy invariably make the case for whole-of-government, cross departmental and even cross government actions to address complex challenges and deliver better outcomes. Our interview experiences served as a useful reminder that, although collaborations can occur, they are difficult to achieve consistently, as government departments may sometimes be loath to collaborate. Interviews and discussions with federal and state policy officials in the project

indicated an open-mindedness to discuss housing market issues and policies and a more evident barrier to change was the absence of an evidence base, from both lobbyists and the bureaucracy, on which to develop cases for change (this is discussed further below).

### **Difficult cases to make**

As noted, housing lobbies in Australia, at state and federal levels, still typically rely on the 'housing/household needs/demands' approach. But there are significant signs of change in how cases are made. Approaches to estimating local housing needs are improving (Rowley et al. 2017), though this may have more impact upon planning/land release than public investment in housing. A key feature of the last decade, in both Melbourne and Greater Sydney, has been the sustained under-estimation of growth in population and household numbers. By implication, with slower growing affordable rental supply, policy settings have inevitably led to tight housing markets and rising rents and house prices. A basic economic forecasting model of the metropolitan housing market, or the wider metropolitan economy, does not exist for either Greater Sydney or Melbourne metropolitan areas (there are forecasting models for population growth and housing supply expectations). Greater investment by state/metropolitan planning authorities in the intellectual infrastructure for 'economically informed' land use and housing planning is required to support informed debate. It is also worthwhile noting that traditional demand/needs assessment approaches assume that demands/needs are driven by housing consumption needs. They do not allow for any speculative behaviour. In housing markets with sustained house price increases, such as Melbourne and Greater Sydney, two kinds of speculative behaviour will raise demand for housing (and induce rising needs further down the housing rent/price spectrum). First, there will be demands to hold housing simply as an asset. Secondly, existing households will hold onto larger houses when their housing stock demand for investment reasons exceeds the required consumption stock (that is, older, contracting households don't trade down).

### **Providers and lobbies understanding economic roles**

Non-state housing bodies, such as the larger NFPs and their Federations, are now sustained campaigners for the development and use of such needs/demand models. Interviews for this project revealed that the sophisticated leaders and board members of such organisations are increasingly critical of the strategic information emanating from state bodies. There is a growing recognition on the part of officials and wider market players that non-profits cannot now all be dismissed as small, idiosyncratic providers and that the board members and leaders of non-profits, many of whom have held senior business and government positions, want to see well-argued strategic cases not just by themselves and their sector but by government too. It was clear from interviews in NSW and Victoria that non-profits want a new housing narrative with informed economic content. As the NFPs raise their 'game' in providing informed economic content it will encourage bureaucracies to do so too.

These issues were discussed with 14 NFP leaders and board members from NSW, Victoria and Queensland. The NFPs interviewed are already building upon their traditional 'merit needs' stories (that have emphasised how NFPs can supplement or supplant public housing in innovative and effective ways of meeting core and special housing needs). They are now addressing other core challenges for housing policies. Non-profits have previously under-explored their capacities, beyond their important and growing roles in place-making, to help address problems of market failures and externalities in contexts where market information issues, risk and uncertainty prevents effective market action. There has been some use, but usually only in renewal areas, of their

capacities to work across different households and providers within localised areas to internalize externalities. They have developed significant capacities as place-makers that integrate not just different housing tenures (renting and low-cost ownership) but also make links to programmes for jobs, education, health and community services. Further there are potential roles for NFP providers, with long term investment intentions and explicit community support objectives, to use 'scarcity rents' in hot housing markets for lasting societal purposes. Looking further afield, their roles in inclusionary zoning in UK cities is obvious and important.

NFPs increasingly see themselves as housing market agents who are not just engaged in efficient and innovative caring for poorer households (meeting traditional housing needs) but of removing market failures and helping to capture 'scarcity rents' for those who cannot afford to own without support. The present market-wide 'affordability' crisis has fashioned this evolution in sector perspective. When social provision remains within the public sector, innovation will be driven within the bureaucracy. That is, the public system sets its own pace to change roles, systems and policy stories.

In Greater Sydney, some non-profits are considering patterns of metropolitan economic development in their decision taking. They are aware, in planning new developments, of being forced out of central locations by rising land values. One provider actively scans local labour markets within Greater Sydney trying to identify where they should develop so that they will maximise the probability of having employed tenants; they have a tenant wellbeing goal and want to see good work outcomes for tenants. In the private sector developers have regard to labour market outcomes when saleability is an issue, but this concern can become redundant when excess demands and shortages prevail. Homes will sell even if they are remote from jobs. The effective connection of housing and labour markets may be distorted in booms. In renewal areas in central Sydney some older NFPs undertake supportive programme that seek to break down stigma and address discrimination. They told us that they believe they save lower wage residents long commutes to city employment, promote spending in local markets and provide accessible locations for late night workers in the CBD.

There are signs of a growing innovation inversion in housing policy in metropolitan areas with the housing sector outstripping the required capacity in state government policy teams. With the intensifying affordability crisis, states must respond quickly and innovatively to new cases being made for new approaches.

Aside from improving basic needs estimates, the non-profit sector has been trying to improve the technical cases it makes. For instance, interviews revealed a growing number of non-profits using social impact analysis measures. These approaches are in their infancy. The Australian Social Values bank measures 60 indicators. The economic meaning of the measures involved often requires clarification but their use signals a new emphasis on looking at housing (and related) action outcomes and the use of consistent outcome measures within and across NFPs. In time aggregation of these outcome across different NFPs will give the sector a system-wide voice. In relation to making policy cases there needs to be an alignment of some measures with the priorities of housing and other Ministries.

There has also been a steady pressure from the Australian housing sector over the last few years to raise the economic content of policy cases and project and policy evaluations. Best practice in policy advocacy within the housing sector has grown beyond simple job impact/multiplier effects of investment programmes to a much broader questioning of economic impacts. Aside from the present research and modelling work for the GSC, the interviews did not reveal any significant

economic impact research for the whole metropolitan market ongoing within the two state governments examined. Infrastructure Victoria's interesting research on the economic effects of housing investment is presently confined solely to evaluating public housing investments.

### **Economic arguments by other sectors**

The arguably slower than possible response time of housing policy bureaucracies to the growing economic sophistication of housing providers has generated a different line of argument in making housing cases. Maclennan et al. (2015), in setting out a framework to capture productivity effects of housing outcomes and investments, suggested that the housing sector should learn from the ways other sectors make cases when competing for public funds. We reviewed recent relevant literature for NSW and Victoria. Health sector and, to a lesser extent, education lobbies present their arguments for funding as typical merit good cases (the treatments and services we deserve and provide for all) with supplementary economic arguments. But these bids differ greatly from housing: health bids talk about outcomes across the whole population (the societal health affordability problem) and not just for the poor and they pick up on productivity effects. The science-evidence based paradigm of medicine puts emphasis on evidence for policy. Health economics, justifying cases, is widely established in applied economics in the university sector and is well staffed within governments, often with specialized health economics research units. Education bids lean towards the health approach.

Housing bids are comparatively weak in their evidence base, though improving as the weight of quality AHURI research grows. It is only really in relation to homelessness provision that a well-evidenced cost-benefit analysis has been made (and accepted): this argument is largely driven by cost savings on the public programmes consequent to homelessness actions. There is, arguably, no other area of housing policy that has well evidenced estimates of other programme cost savings and wider productivity effects from action. For example, the interviews for this project did not uncover any estimates of the likely benefits from programmes promoting affordable housing for the working poor in Greater Sydney and Melbourne.

In relation to public capital expenditure budgets, infrastructure (transport) lobbies make strong productivity and growth cases as well as claiming social and environmental gains from programmes. Estimates of effects on productivity and growth as well as employment may be made and infrastructure cases are presented as economic-growth cases and these cases are generally accepted though they are often conceptually and empirically weak (see Maclennan et al. 2015). Thus, resource allocation debates have leant towards supporting infrastructure rather than housing in this millennium. Housing cases have been 'outbid' by infrastructure programmers that offer similar employment, multiplier and stabilisation effects in the short run but more growth (productivity) for the long term. Usually housing offers no growth arguments that are accepted in cost benefit analyses typically required by state government assurance agencies. And much of what housing advocates have argued for is not for the 'system' nor the societal-wide 'affordability problem' but for the poor. Housing policy lobbies, with few exceptions, de-emphasise the significance of outcomes for local, regional and national economies. They focus on narrow outcomes in specific parts of the housing system. What does government do with such approaches?

## Housing ministries

The 'housing' role, as it refers to social housing, homelessness and housing the vulnerable, is usually delivered from social, family and community affairs ministries. These ministries have increasingly focused on the (deserving) issues of homelessness and the poorest but abandoned any commitment to housing system wide perspectives and policies (with planning ministries more likely to be involved with wider 'housing affordability' issues than other departments). Ironically, then, as housing has become more important in metropolitan economies, governments have become less well-equipped to understand the system. It is not obvious, for instance, which part of the state bureaucracy has lead policy responsibility for identifying the impacts of house price inflation rates at high levels. This is a relevant question for Greater Sydney where house prices rose by 20 percent in 2016. Who had primary policy responsibility for managing emerging wider 'affordability' problems over the last decade? The poverty/welfare story is important in housing (and has economic dimensions), but it is not enough.

A previous study in Victoria and Western Australia of the municipal and state understandings of the economic effects of housing outcomes and the role that housing in economic development strategies concluded that there was a weak understanding/recognition of effects (MacLennan et al. 2015). The study reported a limited interaction and policy conversation between housing officials (social policy backgrounds), economic development strategists (economic/business backgrounds) and planners. Interviews for this project suggest that these divisions by department and discipline may exist also in NSW and in Victoria. There is an opportunity to foster cross-departmental conversation regarding the role of housing in economic policies.

In NSW, the focus of the Department of Family and Community Services (**FACS**) has been on the vulnerable, homeless and poorest households and individuals. In Victoria policy emphasis is currently on public housing sector plus mixed owner occupation, rental and NFP provider support, but the programme size is small in relation to scope of the problem. There are some similarities of approach in NSW but rather than emphasising the public housing sector there is an emerging priority on improving rental sector affordability for households in or close to the second income quintile. The 60k households on the social sector waiting lists sit alongside an estimated shortage of 300k units in the affordable rental sector. There is no specific emphasis on 'key workers' and there is one line of thinking that as the public sector already pays the wages of key public service workers then it ought not to then have to further subsidise housing costs for these groups. This housing policy stance makes major assumptions about the adequacy of public sector wage rates and does not recognise the shortages of essential private sector workers, perceived by business interests and local, central city housing providers. One provider close to the CBD said they played a key role in providing homes for workers (working downtown) in 24-hour emergency services as public transit systems only operated over three quarters of each day. Without highlighting 'essential workers', a housing policy designed to support the economy would at least give explicit consideration to how any new housing provision aligned with low and middle-income labour shortages.

As in so many other jurisdictions, housing investment packages are seldom subjected to anything close to an overall cost-benefit analysis (in contrast to health and education sector proposals). In housing, planning and infrastructure portfolios in Greater Sydney the key identifier of 'successful' projects have been uplifts in land value. Aside from the technical inadequacy of this measure (where housing shortages that increase rising land values do not reflect a rise in the productivity of the use of land and housing but simply rising scarcity rents that do not constitute any signal about

economic efficiency) this seems an odd basis for programmes designed to assist housing affordability. Infrastructure Victoria's emerging work on cost-benefit for public housing investment is economically sound but, as noted above, essentially ignores the rest of the system where the bulk of affordability problems lie.

## Telling housing stories to finance and economic assurance ministries

It is important for the housing lobbies to recognise that there are multiple locations of economic capacities within governments and their agencies and they have different functions and interests. The housing sector needs to understand these different sectors and to engage with the right groups for particular issues. There are also important differences in roles between federal and state governments, reflecting the policy autonomies (assignment of functions and taxes) allocated to different orders of government.

In most national governments, there will be economics capacity within spending ministries associated with housing policy interests and it is important to have 'first engagement' with these sector specialists and, increasingly, with economists working on social security and welfare reform issues that are Australian Government responsibilities (see, for example, the Productivity Commission's proposals for reforming pricing and subsidy issues within the social housing sectors). In many countries, monetary policy expertise relevant to housing lies not in the Treasury but in an 'independent central bank'. Often the central bank is more inclined to publish technical papers and commentaries on housing in the national economy than other government departments (this is true of the Reserve Bank of Australia (RBA), the Bank of Canada and the Bank of England). Clearly monetary policy decisions impact housing markets (through different transmission channels) and the question immediately arises as to how central banks understand national-regional systems of housing markets. In the last year, the IMF and the RBA have asked questions about the stability of the Greater Sydney and Melbourne markets and expressed concern about price booms and bubbles and potential market 'busts' (RBA 2017, Shapiro 2017). Housing markets beset by persistent shortages and rising rents and prices can become targets for price reinforcing speculative investment and take on a potentially damaging dynamic. The RBA has not imposed the ad hoc deposit and lending measures that have caused difficulties in less pressured markets in Canada when monetary regulations tightened to cool the price booms in Vancouver and Toronto. But the housing sector needs to know whether there is any coherent national to metropolitan housing market modelling that informs RBA monetary policy decisions. Housing lobbying should not miss out the central bank if it is to make wider growth and productivity claims. Arguably, as discussed further below, the deregulation of housing finance markets (welcome for so many other reasons) has exacerbated the instability of metropolitan housing markets. When cities expand, the supply of housing finance is no longer constrained by regional or national savings but by flows within global capital markets.

The significance of such national and global influences is the 'stuff' of macroeconomic policy. Treasury (and Finance) departments have (at least) three key roles that have increasingly attracted the attention of housing lobbying efforts. They are keepers of the government's 'logic' on how fiscal, sectoral and monetary policy impacts employment, income, stability, growth and distributions of income and wealth. That role involves developing economic expertise, collecting evidence and modelling economic shocks, trends, cycles and policy proposals. The second role follows directly, and is concerned with developing the macroeconomic policy settings for the economy. They are also, in a third role, responsible for budgetary policies (taxing and spending) that determine how tax/spending decisions will impact the housing sector and this will involve economic evaluation of



housing policy spending proposals. The housing sector story must align with, or positively improve upon, the 'technical research and evidence' that the Treasury produces and impact either the big picture story for the economy and/or more detailed allocation to departmental programmes.

Clearly, cases for thinking differently about housing in the economy must be aimed at Treasury researchers and econometric modellers but policy change won't occur unless senior advisers also accept the logic clearly.

Treasuries, and not just in Australia, have had a quarter century of most often regarding 'housing needs' stories as redistributive/ displacement and viewed supporting them as essentially 'political' in character. Most national treasuries and central banks will have econometrically based forecasting models in which housing investment spending plays a role. However, usually, there is no recognition of the disequilibrium nature of housing markets and the key spatial dimension or regional variety of housing markets. With Greater Sydney and Melbourne as such large chunks of the Australian economy and housing outcomes shaping their progress, this absence of a macro-meso link greatly limits the capacity of federal and state officials to realistically model housing market effects across the nation. A single macro-model is arguably too reductionist to inform the key federal decisions that need to be made in housing, infrastructure and macro policies. Further, models usually allow no growth effects from housing investment (in contrast to other infrastructure investment, see below). Although employment and multiplier effects are recognised in macro-modelling there is no identification of productivity and growth effects from housing expenditures. Hence policy proposals for budgetary purposes support for 'affordable housing' (somehow defined) is simply seen as a distributional shift to meet merit good goals with no growth and capacity effects for the economy. There is little recognition of externality and market failure effects. It seems that there is little in the functioning of real housing systems that is explicitly recognised in the modelling and decision taking of finance and treasury ministries for housing. How do these budgetary/ monetary policymaker stories differ between national and state governments? How do they square with what is known about how systems operate and the outcomes they produce?

During this research, there was an open and constructive exchange with Australian Treasury officials and it is clear that well researched and evidenced proposals will merit attention. At the NSW Treasury, it was clear that there was no single, static view about the housing system and its outcomes. The core basic beliefs/model of state and metropolitan competitiveness is quite complex and it recognises feedback effects from inequalities and environment effects. They regard housing issues in Greater Sydney as traditionally having been driven by a land use planning-spatial design approach rather than socio-economic roles, impacts and outcomes. They recognise the quality and variety of housing in the metropolitan area matter but they want to see better arguments and evidence to support policy change. They have become more concerned about housing system outcomes since 2015 and the growing Greater Sydney policy conversation on housing's role in the economy and shaping productivity effects is a very recent one. Most housing investment proposals/ discussions have been sector or place specific, rather than system wide in conception and evaluation. They also note that different agencies and departments used different spatial frames for actions. For example, the NSW Government has given the GSC a housing affordability role that embraces the system as a whole and that includes diversity, affordability, quality, variety and tenure. They recognised that more work is needed to consider who is being housed, what the housing future looks like and how it relates to emerging economic opportunities. They understood the need to get past 'demography only numbers' and to understand economic impacts on the structure of demands. The Committee for Sydney was perceived to be beginning to represent the wider

business interest in better, more affordable housing outcomes. Housing and health interactions were recognised in policymaking.

It was apparent that the NSW Treasury were aware of many of the important housing policy questions pertaining to the metropolitan economy. Work on key policy issues however appears to be restricted at present by a lack of local analysis and locally based econometric modelling (for example the importance of agglomeration economies seems to be very stylised and not based on local evidence). Most modelling of key policy decisions for Greater Sydney was run on externally sourced computable general equilibrium models for the state. The research team felt there would be clear advantages broadening this approach and establishing a common set of assumptions and approach to a computable general equilibrium model that can deliver assessments of housing market policies.

This approach would lead to a preferred position for housing as for assessments of other forms of economic infrastructure whereby housing discussions centre on high-value areas such as; the simulated effects of rent and house price rises; the saved costs on other programmes from housing policies and of the positive outcomes from housing productivity effects. The housing sector must remake and tell its productivity story and identify its roles in reducing market failures and consequently work towards a more collaborative, informed housing-economy decision process with governments.

There is an existing skillset within national/state policymaking to reconstruct an understanding of how housing fits into economic processes and how to evaluate housing programmes effectively. The interviews undertaken suggest that Treasury views on dysfunctional housing outcomes and how to resolve them are shifting. However, that position won't change quickly, despite the daily reports on the 'housing affordability crisis', unless the housing sector makes better cases and leads Treasuries to engage with key housing issues. The housing sector must remake and tell its productivity story and identify its roles in reducing market failures and consequently work towards a more collaborative, informed housing-economy decision process with governments.

Where do we start?

## **A new story: Housing as essential economic infrastructure**

### **A new emphasis for housing**

Maclennan et al. (2015) argued four points that suggested a different emphasis was required for housing policy bids. They noted, first, that infrastructure was regarded by governments as having important productivity roles. This emphasised the importance of housing making 'productivity' cases. Secondly, they noted that increasingly successful evidencing of infrastructure strategies and policies was moving from old, challenged macroeconomic evidence to the metropolitan scale, with downwards links to micro-effects and upwards arguments to macro-effects articulated. This highlights the metropolitan scale in housing policy and planning, not least to link to infrastructure actions. Thirdly, they commented that productivity effects in infrastructure programmes were largely driven by transport investments and that the effect claimed for transport actions, (increasing residential and employment densities and saved values of travel time), produced the 'big number' productivity effects. This approach is quite clear in existing Infrastructure NSW strategies where four-fifths of the investment budget is allocated to transport on productivity grounds and around 5 percent to health, educational and cultural investments that have 'social impacts with consequent economic effects'. Finally, they noted that with inelastic supply side responses at the heart of

current housing market difficulties, an emphasis on housing as essential, economic infrastructure would be well founded. By implication, this suggests that infrastructure and planning are the natural 'locations' for housing investment programmes within state governments rather than social services.

### **Changing approaches and evidence in infrastructure**

AHURI responded to these observations by shaping a research programme on social housing as infrastructure. That approach is too limited, as the economic effects from housing as infrastructure largely arise in the wider market sectors. That said, arguing for housing as essential infrastructure starts to change these processes as it leads to easier connections to the economic impacts of housing sector outcomes. In making this shift of emphasis housing sector advocates should also be aware of how infrastructure has made its cases and is now facing new presentation challenges.

Making the case for infrastructure has differed from housing and had an easier acceptance within government. In the late 1980s and early 1990s a series of major economic reports argued that infrastructure investment strongly, and unambiguously, raised economic growth in advanced economies (Aschauer 1989a; 1989b). Subsequently studies using improved econometric methods and new data have overturned professional beliefs in such strong macro effects. Despite that, the conventional wisdoms of the 1990s still clearly influence national policy statements (despite the absence of macro evidence). However, in recent years convincing estimates of the growth effects of infrastructure investment, where estimates in relation to specific locations and infrastructure sectors have been made at regional-metropolitan scales.

Within metropolitan strategies, including many of those developed for the UK City Deal investment plans, transport infrastructure investments tend to rise to the top of priority lists. That may reflect the fact that the techniques being used favour transport investment because it can frequently produce the 'killer number' of value of saved travel time from new projects. For other sectors, such as infrastructure for health, education and community infrastructure there is more general statement that these programmes improve wellbeing and capabilities and that, in turn, raises productivity but little detailed evidence is presented. Housing needs to establish both 'killer numbers' and evidenced detailed outcome effects.

There are also apparent changes within infrastructure prioritisation practices that argue for including housing as infrastructure. The first is that the criteria for assessing the effectiveness of infrastructure projects has often been 'siloes' and categories of investment such as roads, schools, hospitals have been considered separately. It usually had limited evidence on the likely growth effects from investments. Now, discussion in infrastructure planning is concerned both with the synergies between sectoral investments and economic as well as social and environmental outcomes. In short, there is a realisation that infrastructure strategies in metropolitan areas are increasingly about creating particular kinds of places (or linked assemblages of physical structures), that support the achievement of major policy outcomes, and then connecting them effectively. If that approach becomes widespread then housing investments (as spatially fixed capital investments) should be simultaneously considered (i.e. the road and the school and the homes are assessed together). The 'productivity' of a housing investment will be critically dependent on the mix of other infrastructures within which is located and connected to. An overall 'infrastructure' story cannot be written without an understanding of how the housing market is changing within the metropolitan area. We also note that effective capture of gains, from infrastructure and planning decisions, potentially usable for affordable housing, is usually better done in such integrated place based ventures.

Housing, if it is to benefit from inclusion within infrastructure portfolios, needs to be assessed/viewed in relation to transport. This is for two complementary reasons. First, as the substitutions of travel costs and housing costs play such a key role in household budgets, the true cost and spatial distribution of the affordability effects of housing shortages cannot be revealed unless both household expenditures on housing and transports are summed and viewed together (Dodson & Sipe 2008; Coulombel 2017). Secondly, transport's 'killer number', saved travel time, often arises not just from changed travel systems but associated residential investments. Transport sector gains are then partly attributable to housing. Equally, we argue below, that a 'killer number' for housing is the 'excess housing payment burden' arising from housing shortages, but estimates of that number need to focus on housing and transport costs in relation to incomes.

Telling the story of housing as infrastructure may also improve overall infrastructure planning in Australia. The Government of Victoria have approved inclusion of public housing within Infrastructure Victoria's infrastructure plan and the issue is a live one in other Australian states. The evidence we assemble below can readily be fitted into a case for housing as essential infrastructure. The next chapter reviews the Greater Sydney housing market story of the last decade and Chapter 5 then establishes what evidence can be adduced to suggest adverse or positive economic effects from housing outcomes.

## 4. Capturing the economic effects of housing on the metropolitan economy

### Chapter overview

There is growing recognition that housing needs a new economic story that frames housing as economic infrastructure, and incorporates productivity effects as well as impacts on metropolitan income and economic stability. The new narrative needs to be focussed at the metropolitan scale, as this is the scale at which housing and labour markets crucially interface. Downward linkages to neighbourhoods nested within the metropolis, and individuals and socio-economic groups, are also required. Looking upwards, and outwards, the need to model macro-metro relationships is acknowledged. Within metropolitan areas housing outcomes need to be linked to productivity through their impact on growth drivers, namely human capital, business investment and innovation.

This short and technical chapter builds on the multi-attribute and other fundamental aspects of housing set out in Chapter 3, to suggest better conceptual approaches to capturing effects at individual and metro scales. The current absence of data forces a reliance on fragmented research studies, but new data approaches, not least housing market GIS, offer possibilities for the future.

### Key points

- Metropolitan areas are an important scale at which housing markets function, with daily travel and short distance residential moves as key mechanisms of economic linkage. Within metropolitan areas there is a geography of nested neighbourhoods that play different roles in the metropolitan housing system, and planners and providers need to see metropolitan outcomes as shaped by these local systems, as well as national and global influences.
- The study approach rejects macroeconomic modelling as a route to identifying housing productivity effects and argues that the effects of housing outcomes on growth drivers such as human capital, business investment and innovation must be identified. This goes well beyond estimating the productivity of construction (and other housing activities).
- Following from the discussion of housing attributes and fundamentals, a range of classes of productivity effects are identified.
- Establishing wide-ranging effects of housing outcomes on the metropolitan system requires some new approaches. 'Prodotypes' are suggested as a mechanism to parallel the use of 'archetypes' in estimating the physical quality and value of housing stock. This would allow estimates to be related to particular kinds of development for different groups at different locations in a metropolitan area. An econometric model of metropolitan areas is also advocated.

- The absence of development work on such models and of data to run them leaves researchers, and decision-makers, piecing together relevant evidence from existing literature.

## Starting at the metropolitan scale

Housing outcomes are important for individuals but also have salience at different local and global scales. Because of the spatially fixed nature of housing and the predominance of local rather than interregional or international moves across housing markets, there is a mix of local, national and global factors operating at different scales. Within cities, housing outcomes and processes matter at neighbourhood and small community scales, and this is widely recognised in both government and provider thinking. A key challenge is to envisage the set of local and neighbourhood mixes and investments that will serve metropolitan housing and labour demands. Neighbourhood investments, for providers and planners, need to be set within housing markets and labour markets that cohere at the scale of broad metropolitan systems. The GSC is one of the few governance bodies, like the Victoria Planning Authority for Melbourne, designed to recognize these wider, metropolitan systems (and the ‘nesting’ of different housing neighbourhoods within them). These metropolitan housing market areas and labour markets don’t have sharp boundaries and their geography often does not match with the formal boundaries of local governments.

In Maclennan et al. (2015: 17) it was noted that:

In many nations, the size of city municipalities is much larger than in Australia (in the UK for instance) and there has been in some countries the development of city-region partnerships, even around large core municipalities, that make the case for city-region or metropolitan economic development. In Australia municipalities at the heart of city regions, except for Brisbane, are small, metropolitan governance is fragmented and it is left to the states to give shape and muscle to city-region arguments and programs.

The GSC has been designed to examine arguments, cases, plans and programmes at a metropolitan scale that represents a real, functional economic geography for Greater Sydney and connected areas. The GSC is involved in making policy cases that assess both how housing attribute outcomes and housing processes impact on key economic outcomes for households, neighbourhoods and communities, metropolitan areas and the state, as well as the national economy. There will be multiple stories to tell at each of these nested levels.

The framework to capture economic effects of housing outcomes outlined below is primarily aimed at the metropolitan governance scale, because emerging understandings of sub-national economies stress the importance of the metropolitan markets nexus for economic growth (see below). There are also increasingly metropolitan-scale dimensions emerging within housing policies in the advanced economies. Governance arrangements and policy autonomies for metropolitan areas are lagging behind the recognition that the metropolitan scale is critical for good city planning and policy (Ahrend et al. 2017). Further, macro-economic type modelling-evidence seeking (estimating production functions and growth models) for housing and infrastructure effects on economies is technically near-impossible at national scales, and of doubtful validity given the localised nature of the systems in play. The metropolitan region may therefore serve as a useful scale for analysis when appropriate data exists.

Setting the housing economic policy story at the metropolitan scale, with links upwards to the nation and down to neighbourhoods and individuals, emphasises the multi-level complexity of the spatial systems involved. It also implies a housing-economy connection of many strands and levels, with potentially diverse sources and types of evidence. This is illustrated in the remainder of this report.

## Beyond employment and multiplier effects: Productivity matters

Technical measures of productivity, theories of economic growth and overall Australian productivity growth are not discussed in detail in this report. The broad approach here is based on Maclennan et al. (2015). It is shaped by the following considerations:

- It rejects any notion that the growth effects of housing (or wider infrastructure) investment ‘aggregates’ can be estimated in macroeconomic type models and focusses on metropolitan-regional scales.
- It seeks ways at metropolitan scales to link, via logic chains and empirical estimates, the impacts of local housing outcomes (attributes and their related prices) to the performance of the well-established drivers of growth (namely human capital, business and other capital and innovation), rather than directly to economic growth.
- It focusses on GDP per capita, whilst recognising that other wellbeing measures have relevance. It assumes that growth arises from increases in the availability of factor supplies (capital, labour and productive land) as well as improved use of resources, or innovation on the part of households, firms and governments.
- It stresses that outputs in relation to inputs are at the core of the measurement of productivity, and that the best approach is to identify how changing housing outcomes impact growth via these well-established principles.
- It emphasises the economic consequences of whole system housing outcomes, and not just the likely limited economic consequences of small scale public housing investment.

Productivity concerns can be studied at sectoral levels. For instance, there have been studies of productivity in construction (which is substantially lower than for many other sectors) and in housing management. More recently some authors (Albouy & Ehrlich 2013) have examined the productivity of different regional housing production systems by looking at their capacities to transform land, capital and labour into housing. This has important implications for large and fast-growing cities-regions (see further below). The emphasis here is somewhat different and seeks to show how housing, infrastructure and land impact productivity less directly. As they are truly ‘infrastructure’, they work below and through the structures of labour markets, capital markets and innovation systems, to impact growth. The task here is to unearth these effects.

### Individual housing attributes and processes and their growth effects

Some of the impacts of multiple housing investments and attribute outcomes (house size, type, design, quality, location relative to work, neighbourhood, public services, rents, prices etc.) on economic behaviours and productivity have been reported and reviewed in academic and policy literatures, for example Maclennan (2008), Monk et al. (2010) and Maclennan et al. (2015); though, as noted by Pomeroy and Marquis-Bissonnette (2016), they may require other (non-housing) things

to be done to have a significant impact. This section tries to develop a broader categorisation of, or framework for, different types of housing outcomes and their links to productivity/economy effects.

Different attributes impact in different ways:

- Physical housing outcomes (space and overcrowding, space for study, insulation and health) that will influence the wellbeing of households and their ability to develop productive capabilities (learn and work, for example) are '**housing effects**'.
- Contexts of supportive and accessible neighbourhoods with implications for the economy (education and behaviour of teenagers, labour market image etc.) are '**neighbourhood effects**'.
- Housing choices that shape the broad residential structures of cities and their connections to labour markets and other metropolitan economic systems and networks with economic effects (labour market mismatch, digital exclusion) are '**emergent spatial structure effects**'.
- Housing and land prices, as outcomes of the housing system, will play significant roles in the consumption, savings and asset decisions of households; these are '**price/rent effects**'.
- The planning, designing, financing, building, repairing, equipping and selling/letting of homes are significant economic activities that are driven by housing demands and needs. These have potentially significant economic effects not just on aggregate demand and employment ('**employment and multiplier effects**') but on how effectively the city functions as an economy ('**sectoral productivity effects**').

In developing a description of how housing affects the economy these different impacts are analysed separately, but then grouped together as the wider set of housing '**system economy effects**' (or **SEE**). They sit in contrast to the more narrowly defined, and smaller scale '**housing effects**' that arise from the interaction of physical housing attributes with labour, capital and innovation influences on growth. A framework or matrix of SEE can be developed for different geographic scales and framed for different kinds of policy actions and housing outcomes.

## Identifying housing system effects

The new narrative involves demonstrating how the housing attribute outcomes and processes discussed earlier feed into productivity drivers. The way to build the new framework is to review existing evidence (see next chapter), make new estimates, and request estimates of macro and meso effects at metropolitan-regional scales. A next step is then to build estimates of more detailed and specific programme effects based on economic modelling, i.e. systematically develop the 'big numbers' and aggregate or group estimates based on evidence of 'specific attribute or small effects'.

Evidence of SEE rarely emerges directly from census or other regularly collected government statistics or surveys. It has emerged, patchily and with much technical dispute, from academic research and from other sector reviews of how housing impacts their sector outcomes (for instance from health researchers). Maclennan et al. (2015) suggested that there is merit in continuing to systematise that research evidence and build it into cases.

Because housing policy advocates and policymakers, have either ignored economic effects or limited economic impact stories to aggregate demand (employment) and multiplier effects (that are well established and widely measured), there is little systematic research on the scale and



significance of SEE on the economy. This limits the possibility of calculating any precise SEE for the Greater Sydney economy at present, but it does allow some evidence to be presented systematically, and some preliminary modelling and calculations to be undertaken.

The core approach to identifying near-complete SEE numbers for a metropolitan economy is to systematically relate housing outcomes at the micro-scale to economic outcomes and behaviours. This, in an ideal world, would require a GIS of housing and economy outcomes for a substantial sample of individuals. It would also have a long-term panel component, and it would allow for movement across and in and out of metropolitan areas. The importance of different kinds of productivity effects (for the subsets of the housing effects set out above) could then be related to household types, area types, tenures and so on.

The policy analysis framework could then develop in two very important ways. When architects, engineers, property surveyors, etc. establish the physical condition and value of housing stock or other physical infrastructure structures, they will usually identify a series of archetypes that characterize the main types, dates, sizes of stock. They usually then derive overall estimates of value or likely repair costs by making detailed estimates for a sample of projects/structures, and calculating a system total by applying different archetype estimates to relevant projects. Such an approach could be important in the 'housing-economy' story, and might be applied to different area/tenure types or to different life-cycle groups. For example, moving social housing for senior and disabled households closer to workplaces is unlikely to impact productivity (indeed saved costs on other programmes may be the key finance ministry issue for such groups). Equally, housing provided for low-income metropolitan core-area workers with families will have different effects close to the city centre compared to the outer suburbs. That is, we are leaning towards suggesting a set of major housing policy client groups and locations for which a 'prototype' (an archetypal set of productivity effects) can be argued and used in policy case-making. This would allow housing advocates (and policymakers) to make their new economic cases more coherently, and to suggest indicative scales of effects from different programmes.

SEE archetypes, or 'prototypes', cannot be yet developed from the socio-economic data that exists, but they are real possibilities for the near future as appropriate GIS data emerges. We use research evidence on human capital effects of housing outcomes below to illustrate how this approach would likely be valuable.

The second approach would be to develop a functional economic model of the Greater Sydney economy with a well-developed housing market sector. It is many ways remarkable, given the scale and success of the city over the last four decades, that such a model does not exist. After all, Greater Sydney has a population comparable to several small European countries that do have econometric modelling of policy capabilities. In the meantime, plausible major SEE should be modelled within Computable General Equilibrium (**CGE**) models that do exist, and that offer rigour that unmodeled claims lack.

The next chapter describes housing market change in Greater Sydney over the last decade, and shapes the discussion of housing and productivity issues and measurement for the rest of the report.

## 5. The Greater Sydney story: Changing housing outcomes 2006-2016

### Chapter overview

Up to this point the report has focussed on making the case for a new housing policy narrative that includes productivity effects and definitions, clarifications, concepts and frameworks to capture effects. This chapter 'grounds' the approach in the Greater Sydney context by highlighting the main developments in the housing system that are likely to have had significant economic effects (as well as causes). It also serves as an overview of key housing trends in the metropolitan area.

### Key points

- Greater Sydney experienced sustained growth from 2006-2016, with population increasing by 17 percent and household numbers by 14 percent. That growth reflected strong inward migration from overseas offsetting a significant steady outflow of households to other parts of Australia. Greater Sydney, as an entry-point, plays a major role in supplying Australian labour markets.
- Economic growth was reflected in rising employment rather than rising incomes. The wage and price growth indices were roughly equal over the decade, suggesting flat real wage rates.
- The incomes of the highest income decile grew faster than others with an increase in inequality.
- The stock of dwellings grew by 13 percent, and the structure of construction output shifted towards apartments and smaller homes, with detached housing output sharply reduced.
- Housing stock grew largely within the existing urban footprint, especially in central and west-central Sydney (half of total output). Residential investment has significantly increased densification within the urban footprint, which may have positive productivity effects.
- Fast growth in household numbers exceeding stock increases has had the inevitable consequence of raising housing prices. Prices have doubled since 2006 and rents increased by 70 percent, largely in the period before 2013. This likely reflects the binding income constraints for renters and more elastic sources of loans and family wealth for home-buyers.
- As housing costs comprise almost a quarter of the CPI index, the rise in that component of the CPI index of more than 50 percent is likely to have had a major impact on household consumption and savings patterns, especially in the bottom half of the income distribution. This will have a negative productivity effect. Housing affordability indices have deteriorated sharply, especially in previously affordable areas of south and west Sydney.
- The home ownership rate has fallen from 69 to 66 percent over the decade.
- Although over-crowding increased, under-occupation of homes ran at a higher rate and is particularly associated with the over 60s. This may also have negative productivity effects.

- Long-distance commuting of poorer households to lower income jobs has grown as a problem; however, the self-organising shifts of employment and housing location in the city have resulted in travel-to-work times remaining relatively constant over the decade. Residential densification will also have facilitated this.
- Looking across a range of census indicators and reports, the standout problem in Greater Sydney is not commuting nor high-income housing, but is housing plus transport costs, affordability and availability for below middle-income working households in rental housing.

This material in this chapter is primarily a synthesis of available analysis, both within and beyond government. However, this section also has the secondary purpose of identifying the sources of data used in that analysis, which could also inform future modelling or other empirical evidence underpinning the arguments put forward in this report.

The section is in three parts. The first provides some context to Sydney’s housing outcomes, through an overview of Sydney’s demographic and economic trajectories over the last decade. The second outlines changing aspects of the housing system, namely changes in the supply of housing stock, including changes to structure type, tenures, location and price points. The final part highlights some of the pressure points emerging in Sydney’s housing system over the past decade.

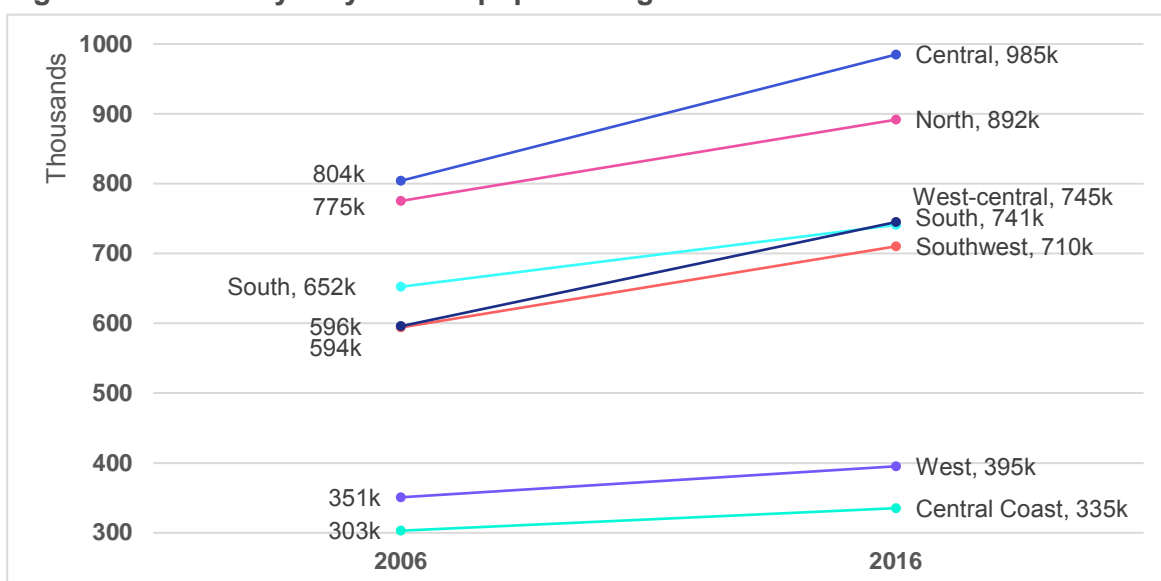
This analysis primarily uses the ABS definition of 'Greater Sydney', which differs to the Greater Sydney Commission's 'Greater Sydney Region'. The districts shown are based on the 2016 draft district plans, along with the Central Coast. Some district names changed, and the South and Southwest districts merged, in subsequent strategies.

## Greater Sydney context

### Population growth

Recent census figures show that between 2006 and 2016 Greater Sydney has grown by some 700,000 people (17 percent), from 4.1 to 4.8 million people.

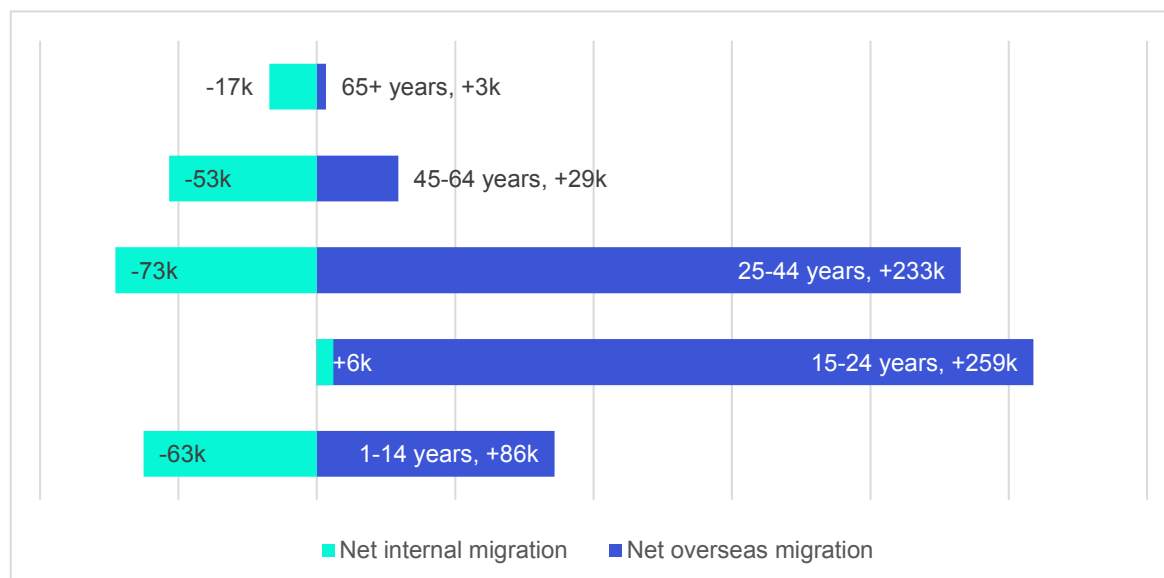
**Figure 1: Greater Sydney District population growth**



Source: ABS

Population growth due to migration in Greater Sydney primarily reflects in-migration from overseas exceeding a net out-migration to other parts of Australia (ABS 3412.0). Metropolitan Sydney lost between 15,000 and 25,000 people annually to other parts of Australia, but gained between 45,000 and 75,000 people from overseas.

**Figure 2: Greater Sydney population change due to migration, 2006-16**



Source: ABS, DIBP, derived

Domestic out-migration has a consistent age profile, with the majority being working age population older than 25 years (as well as children under 15 years, likely from the same households as these workers). There is, however, a small in-migration of young adults (15-24 years).

The figures for Sydney's overseas migration are published by the Australian Department for Immigration (DIBP 2017), and are not segregated by age. However, by comparing these figures with those held by ABS for NSW, it can be seen Greater Sydney accounts for 85-95 percent of NSW's net overseas migration. ABS do cut the state-wide figures by age group, which reveals a younger cohort of in-migration: between 40-50 percent are aged 15-24 years.

Population changes typically translate to commensurate shifts in household numbers, although a small but notable trend in the last decade towards larger households has reduced the extent to which population growth translates to housing demand. Census figures show the average Greater Sydney household in 2006 was 2.7 people and has now risen to 2.8 in 2016. This marks a reversal of long-standing trends towards smaller households before 2006, which could partly be a consequence of housing costs (and the need to combine incomes to cover those costs) (AHURI 2016). The overall growth in households from 2006-2016 was 200,000, an increase of around 14 percent over the decade.<sup>2</sup>

### Economic growth

Economic contributions of whole states are collected by ABS, but not at smaller scales. Various estimates exist of the contribution of metropolitan Sydney to the Australian economy exist, such as Rawnsley (2016) that identifies Sydney metro as comprising a quarter of the Australian economy since 2010. The report also highlights that since 2006, Sydney's economy has grown at a slightly

<sup>2</sup> Using SD in 2006 and GCCSA in 2016, but these are comparable for the purposes here

slower rate than other Australian metros (averaging 2.6 percent growth annually, lower than or equal to all other identified metros), leading to suggestions of the 2000s as a 'lost decade' for Greater Sydney. It notes that poor housing policies and the associated congestion effect were a significant contributor to sluggish performance relative to the rest of the country. Recent years, however, have seen Greater Sydney outperform other parts of the country, offsetting part of that earlier slow growth.

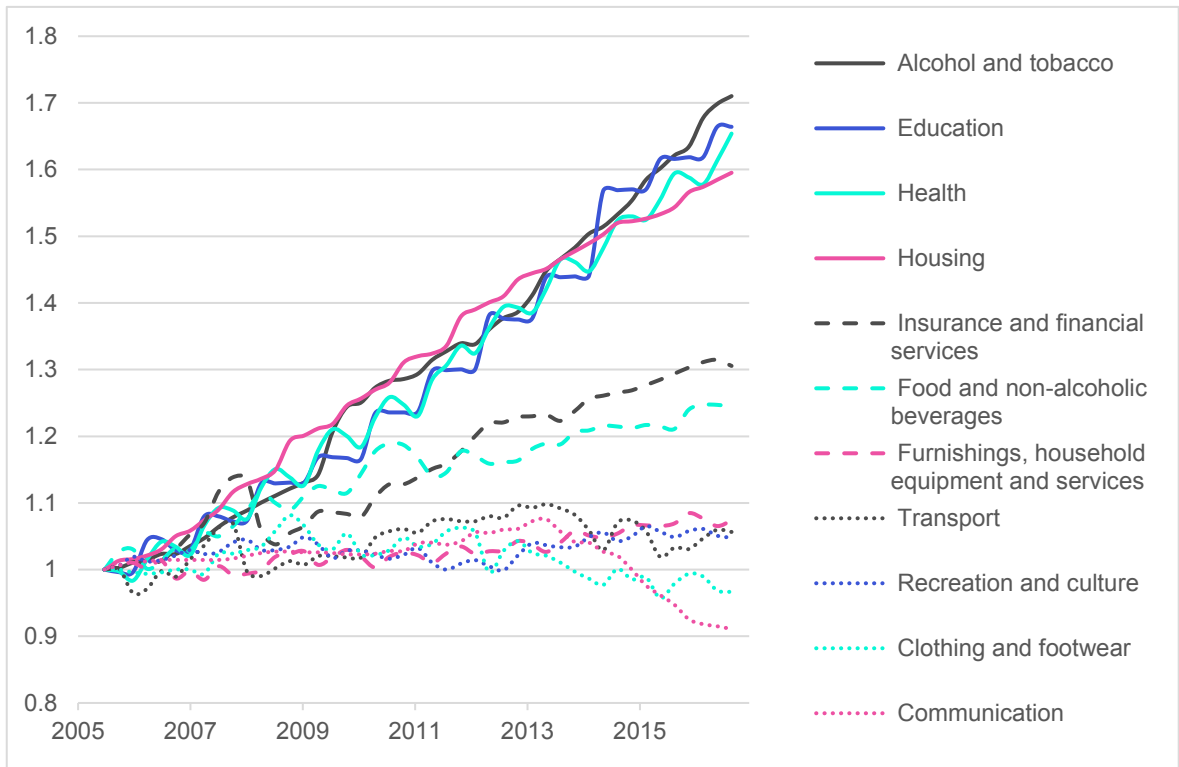
Kelly and Donegan (2014) attempt to identify the contribution to the economy of even smaller areas within the metropolis. With greater weight given to higher paid jobs and sectors with higher multiplier effects they find that economic activity in Greater Sydney remains highly concentrated, notwithstanding the shift of some jobs outside the CBD. Similar analysis by PwC (2015) and the Committee for Sydney (2015) also noted the shift of jobs outside the traditional CBD through its measure of the economic 'centre of gravity' for Greater Sydney shifting westwards in recent years (now more than 9km from the CBD).

The Kelly and Donegan (2014) and Rawnsley (2016) reports both highlight the shift in job types over the last decade or more. The main shift that both identify is the rising contribution of health, finance and professional sectors in the metro economy. Along with a rise in education, these show a shift toward a loosely associated grouping of 'innovation' sector jobs, replacing long-declining 'production' sector jobs in manufacturing, transport and logistics. Sydney's workforce is noted by Kelly and Donegan (2014) as being more highly qualified and skilled than in other parts of Australia.

Unemployment and labour participation rates for Greater Sydney also fluctuate broadly in line with the rest of the country (ABS 6291.0). Within Greater Sydney, there are notable differences in unemployment and labour force participation rates, although labour market figures at localised scales (or small geographies) are 'noisy' due to the low numbers in the survey. It is worth noting, nevertheless, that some sub-regions have performed significantly differently from the metropolitan average over the last decade. For instance, some localities (such as the Inner South West) have recorded systematically higher unemployment rates than the metropolitan average and others tracked consistently lower (such as the Northern Beaches). However, others have shown a marked shift in unemployment rates relative to Greater Sydney overall, either deteriorating (such as Ryde) or improving (such as the Outer Southwest).

Growth in incomes is usually correlated with housing demands and outcomes. For Greater Sydney, the wage index (available for NSW; ABS 6345.0) has tracked closely to the consumer price index (available for Sydney; 6401.0), meaning that real wage growth has been close to flat over the last decade. Within Greater Sydney's CPI measures, housing is one of four components that have grown more than 50 percent in the last decade (alongside the health, education and alcohol & tobacco components); but housing accounts for 22 percent of the CPI basket (ABS 6471.0), more than twice as large than these other fast-growing categories. These figures portray the spreading and deepening housing affordability issues in the metropolitan area and in the next chapter their often-unrecognised implications for productivity are outlined.

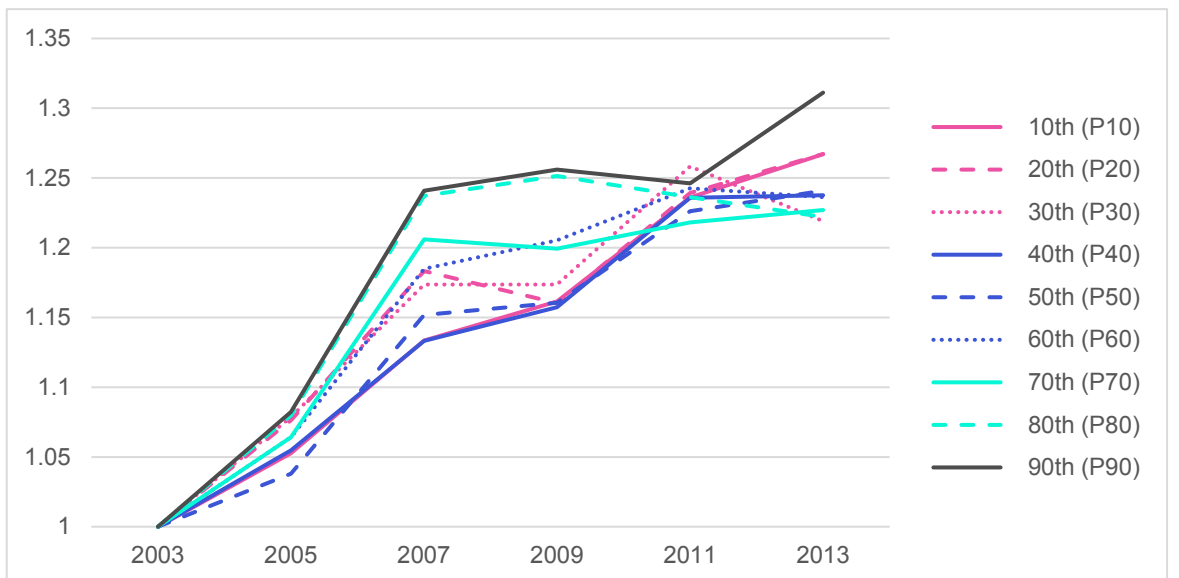
**Figure 3: Components of CPI for Greater Sydney, Jun 2006=1**



Source: ABS

Income growth figures also conceal the differences in income changes across the *household* income spectrum. Income growth by percentile (ABS 6523.0) showing that the 90<sup>th</sup> percentile (of NSW households by income) saw a greater increase (at 31 percent) in income than other cohorts (between 22 percent and 27 percent), over the decade from 2003/04 to 2013/14. The 10<sup>th</sup> through 80<sup>th</sup> percentiles have seen an income growth slower than price inflation over the same period (31 percent).

**Figure 4: Weekly income growth (selected %ile)**



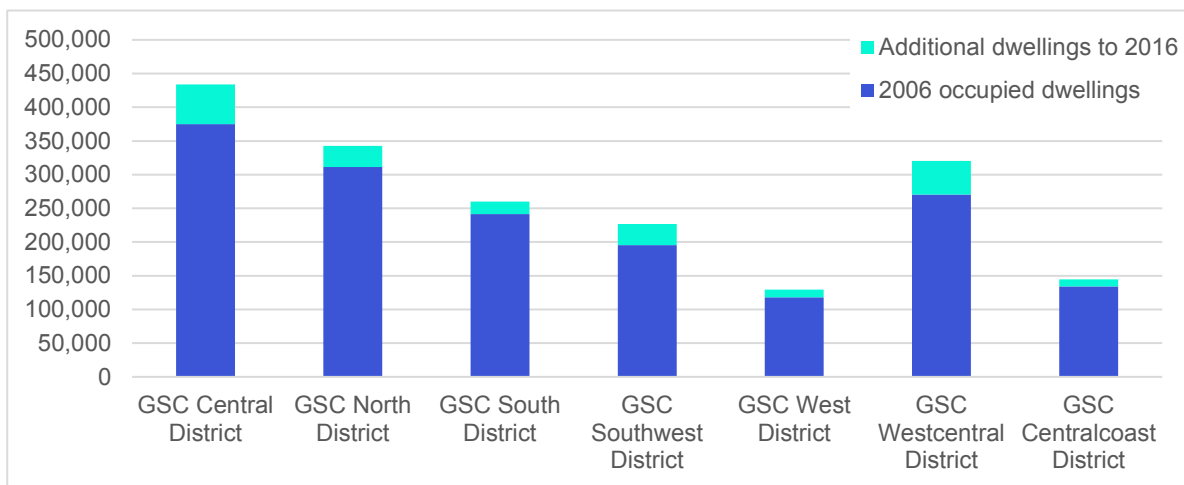
Source: ABS

## Housing system

### Housing stock

The 2006 and 2016 census figures show that the number of dwellings in Greater Sydney increased by 210,000 dwellings, an increase of 13 percent over the 2006 stock. The growth in different planning districts is notable, with over half of all dwelling growth occurring in just the Central and West-central districts. While West-central does incorporate some previously undeveloped areas it also includes the Parramatta CBD. As such this concentration of new dwellings is consistent with housing growth patterns shifting to within the urban footprint ('in-fill housing') relative to previously undeveloped areas ('green field housing').

**Figure 5: (Occupied) Dwelling growth from 2006 to 2016 in Greater Sydney, by planning district**

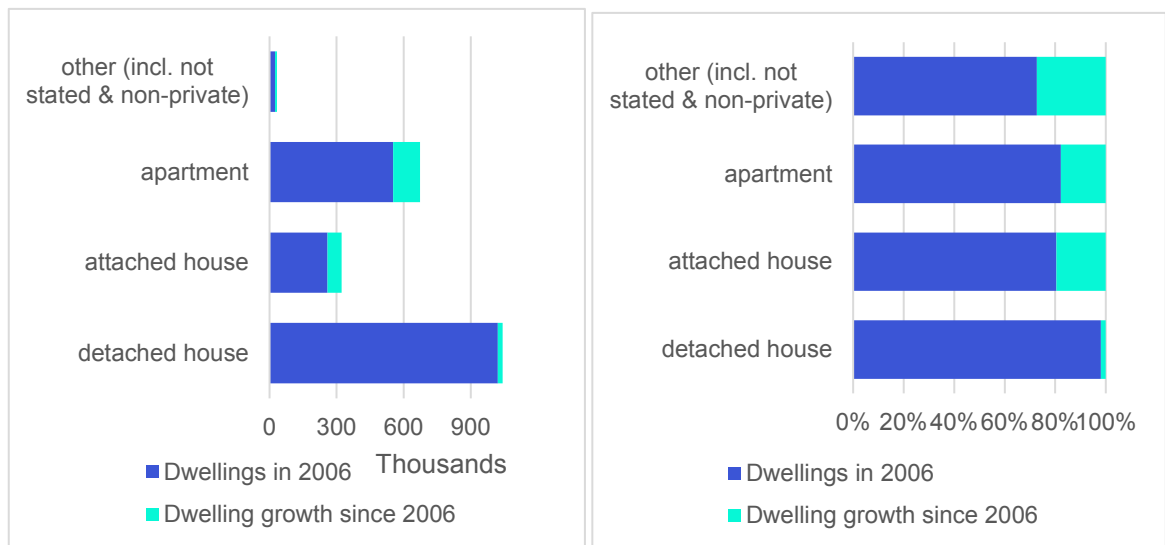


Source: ABS

Also in line with this shift is the trend that, according to the census data,<sup>3</sup> over half of all additional dwellings were apartments. This is a notable split, since in 2006 apartments comprised only one quarter of all dwellings. Similarly, attached dwelling growth accounted for another 30 percent of additional stock, off a base of only 12 percent of all stock in 2006. This growth in these two categories was around a 30 percent increase in the 2006 stock. In contrast, only 20,000 detached houses were added in the last decade, a moderate 2 percent increase in the 2006 stock.

<sup>3</sup> There has been a change in how ABS categorises dwelling structures, and some of the changing composition of structure types could be a function of recategorization rather than the composition of new housing over this period. As such, geographically detailed analysis is not included.

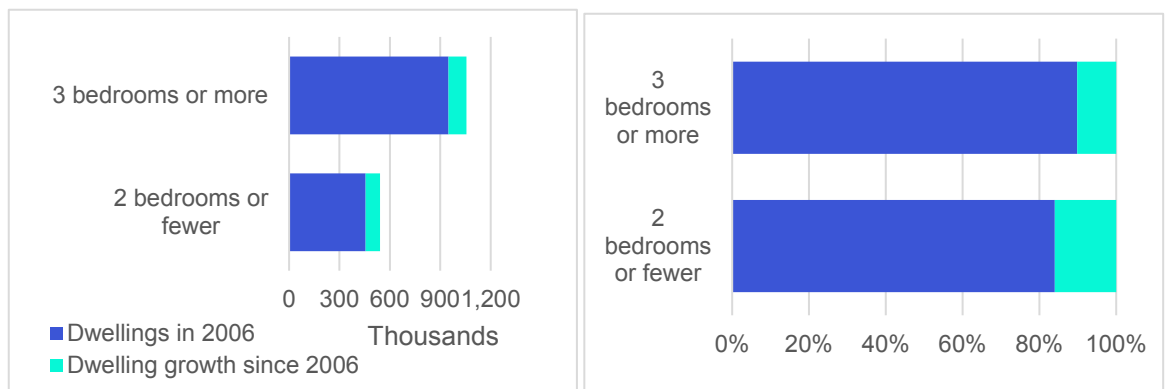
**Figure 6: Dwelling growth (and relative growth) in Greater Sydney, by structure type**



Source: ABS

Concomitant with the shift in dwelling structure has been a shift in dwelling size. Again, census figures show a 19 percent increase in the number of one- and two-bedroom dwellings, but only an 11 percent increase in dwellings with three or more bedrooms. Or, to look at it another way, these smaller dwellings represent 45 percent of additional dwellings, but only represented 32 percent of 2006 dwellings.

**Figure 7: Occupied dwelling growth (& relative growth) in Greater Sydney, by dwelling size**



Source: ABS

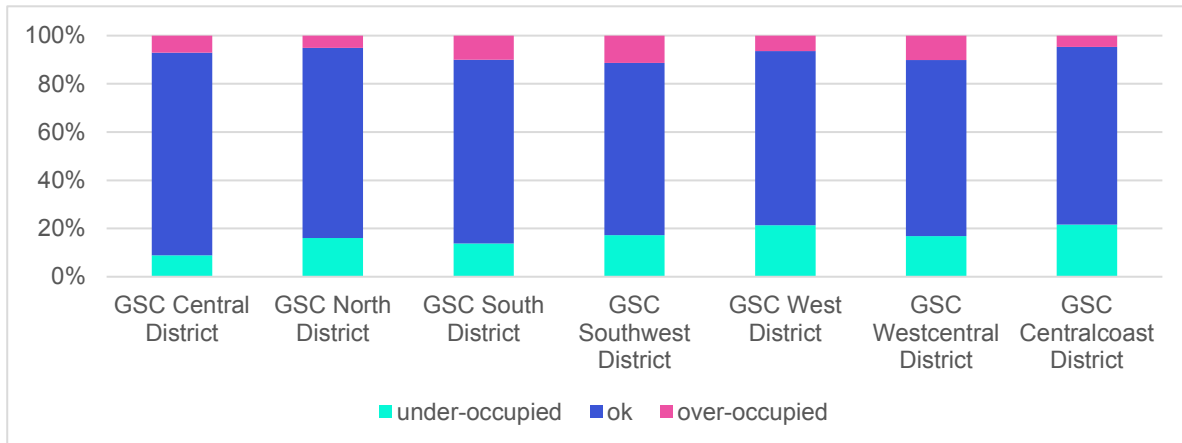
This switch in the structure of sizes of newly constructed homes has also been apparent in other pressured metropolitan areas such as Toronto, London and Vancouver. It has also been associated with prices of non-apartment homes rising faster than average and of growing under-occupation of that larger stock by older households. Recently the former Minister for Planning noted a pattern of ‘under-occupancy’ of family-sized housing (Stokes 2016). This, too, can be examined with the census figures. In 2016, 16 percent of occupied dwellings were under-occupied (with two or more ‘spare’ bedrooms; that is, bedrooms beyond the number of usual residents), similar to the 15 percent recorded in 2006.<sup>4</sup> At the other end of the spectrum over-occupied dwellings (where the number of bedrooms was two or more below the number of occupants) accounted for 8 percent

<sup>4</sup> Assuming ‘five or more bedrooms’ is actually five bedrooms, and ‘eight or more occupants’ is actually eight occupants.



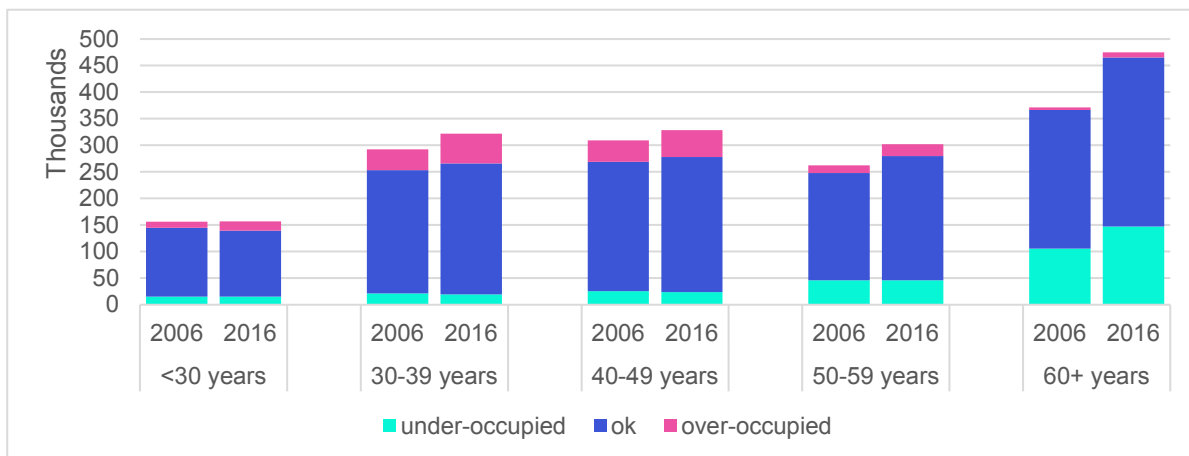
and 10 percent of occupied dwellings in 2006 and 2016. There are notably different rates of over and under-occupancy in the planning regions, though, and as noted by the former Minister, most under-occupation is where the household head is over 60 years old. This use of existing housing stock also has important economic implications and we explore the issue briefly in the following chapter.

**Figure 8: Household occupancy level in 2016, by planning district**



Source: ABS

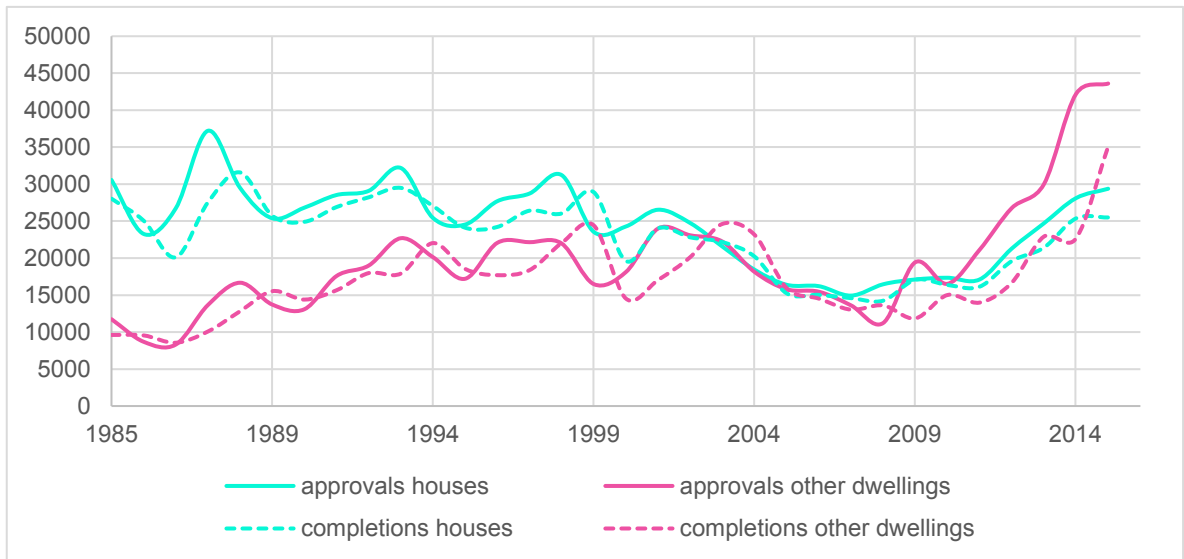
**Figure 9: Occupancy level of Greater Sydney households, by age of household head (reference person)**



Source: ABS

In addition to census data, ABS collect other indicators of housing activity. Notably, while the figures reflect dwelling approvals (ABS 8731.0) and dwelling completions (ABS 8752.0), they do not separately identify new dwellings that replace existing stock from a new dwelling that adds to the quantum of housing stock. These figures are relevant to any understanding of the resilience of the construction sector to external shocks. Figures for NSW show new dwelling completions tracking upward since 2011, after a period of flat levels of growth from 2006. The figures also show both approvals and completions of other dwellings (other than detached houses) surpassing houses in the last five years (although this was also the pattern at the beginning of the 2000s).

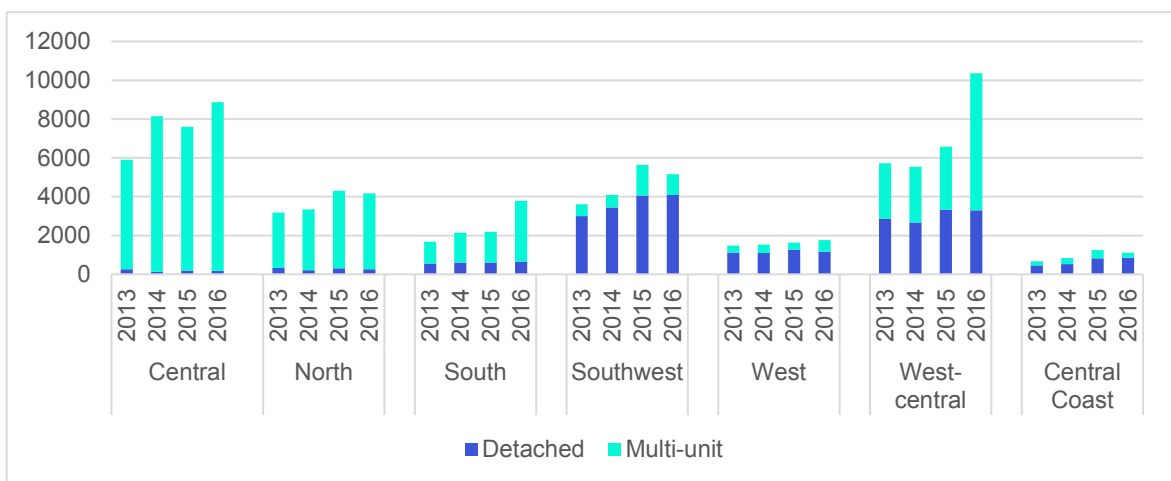
**Figure 10: Annual dwelling approvals and completions, by dwelling type**



Source: ABS

Figures of development approvals and net dwelling change are available at a finer geography, and at regular intervals, through the NSW Planning’s (2016) housing monitor reports. Only four full years of completions data are available, but show that the growth in apartments in the West-central district are a recent phenomenon, surpassing the overall growth in the Central district.

**Figure 11: (Net) new dwelling completions by planning district**

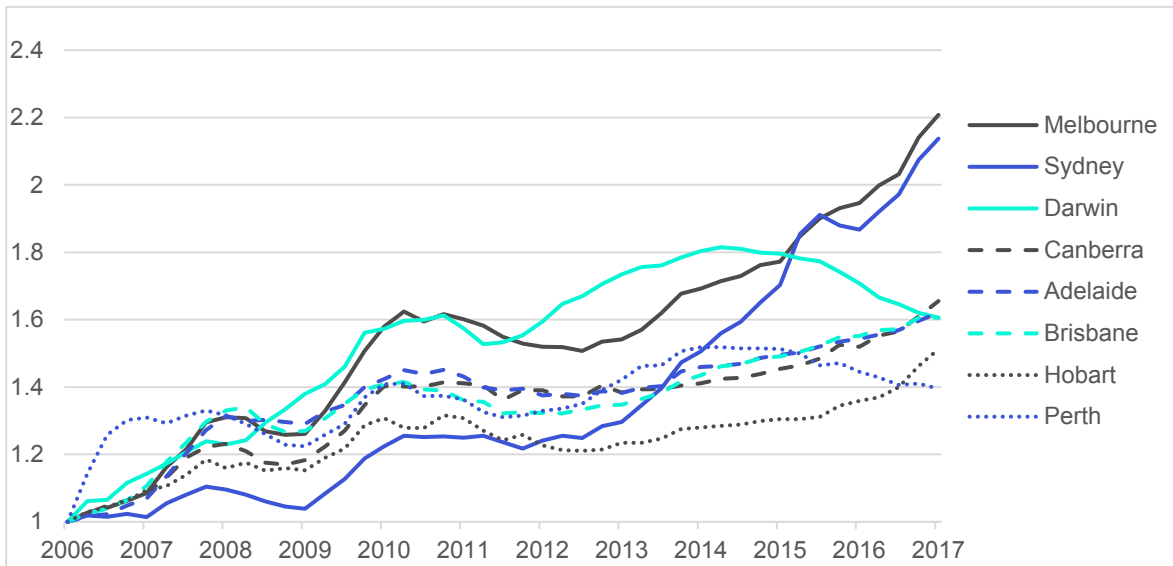


Source: NSW DPE

**Prices and rents**

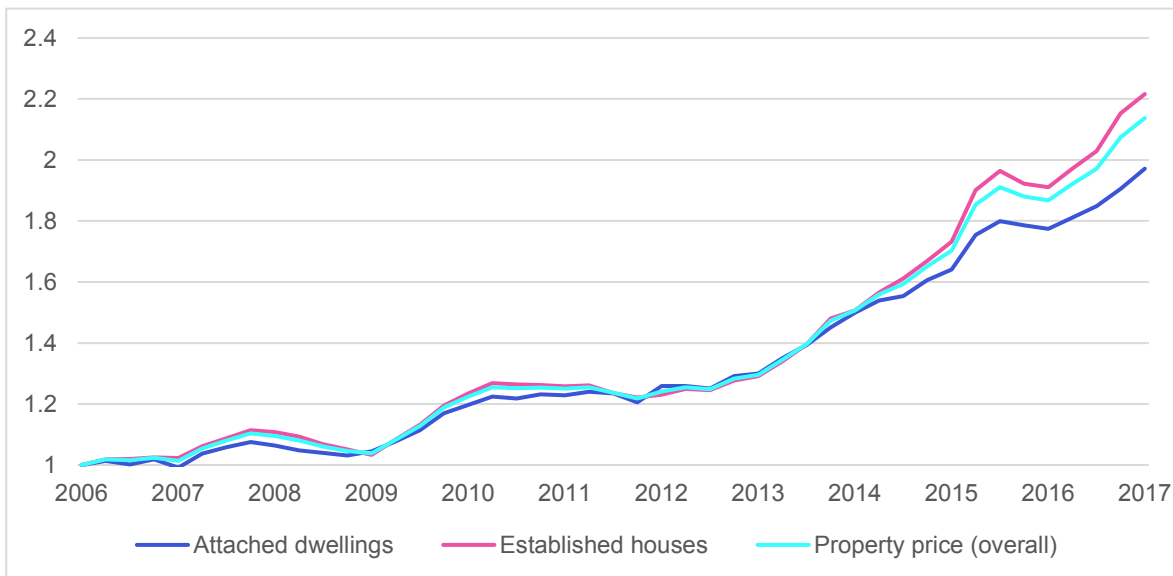
Dwelling price indices are available for the major metropolitan areas (ABS 6416.0). Indexed to 2006 Greater Sydney (along with Melbourne) prices have doubled since then. The data also has stratified indices of attached dwellings and established houses, which show that since 2014 established houses have outstripped attached dwellings.

**Figure 12: Residential price index by major cities, March 2006=1**



Source: ABS

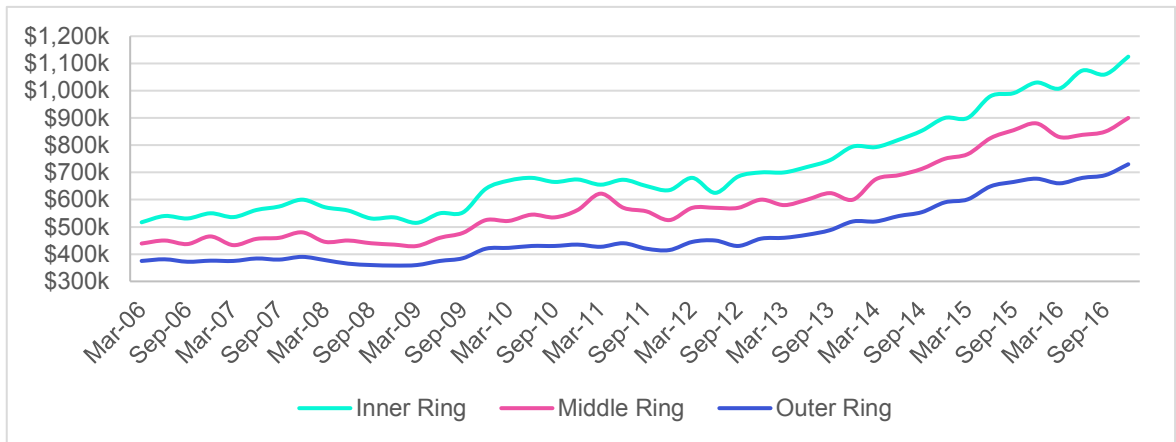
**Figure 13: Established and attached house price indices for Greater Sydney**



Source: ABS

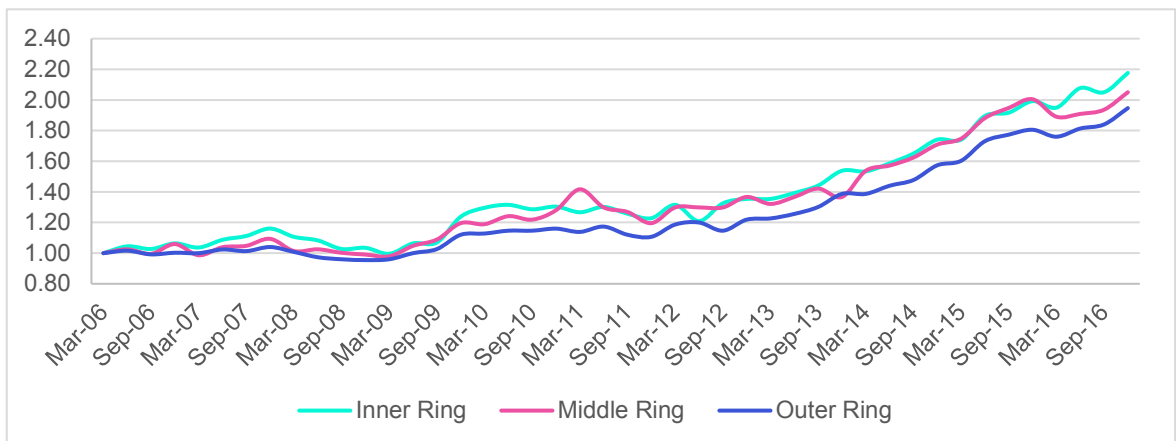
Rents and sale prices are available at smaller geographies through NSW Community Services (FACS 2017) Rent and Sales reports. The sales data shows prices have doubled over the decade but with most of the growth focussed on the last five years. It also identifies inner city areas outpacing outer areas after 2015.

**Figure 14: Median residential property sales (quarterly), by Greater Sydney region**



Source: FACS

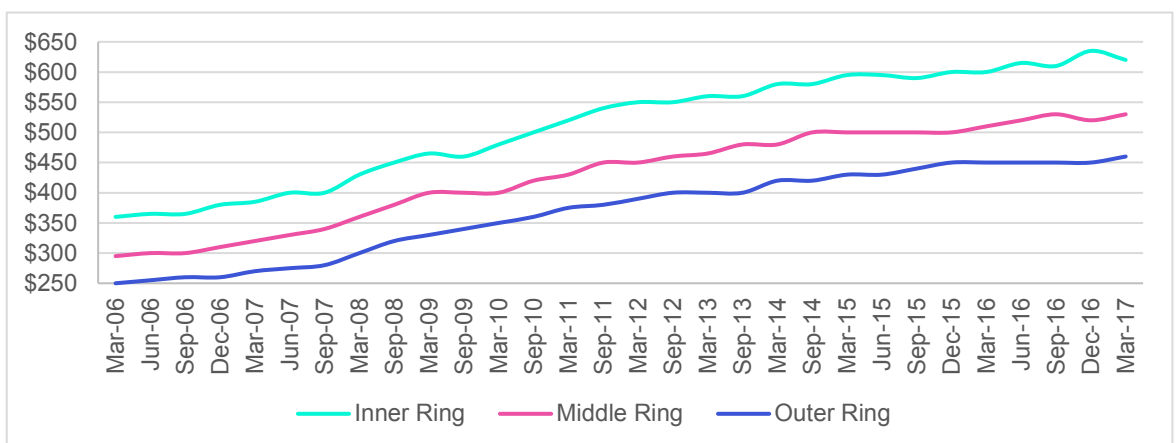
**Figure 15: Relative (Mar 2006=1) median residential property sales (quarterly), by Greater Sydney region**



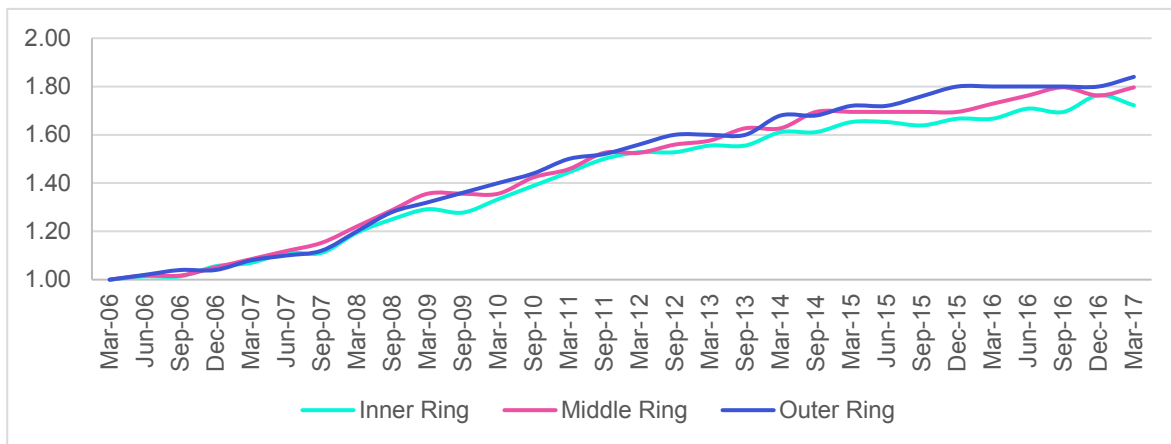
Source: FACS

The rental data reveals important contrast to prices as rent rises (after 2006) were pronounced until 2012 and have flattened somewhat recently. Overall, rents have not grown by as much as sales prices, with the overall figures suggesting an increase of around 70 percent increase over the decade, and a high degree of consistency across small geographies.

**Figure 16: Median rent (by quarter), all dwellings by Greater Sydney region**



Source: FACS

**Figure 17: Relative rent (Mar 2006=1), by Greater Sydney region**

Source: FACS

Other indices are available through private companies such as CoreLogic (Corelogic n.d.). The CoreLogic indices include repeat sales indices, hedonic indices and stratified indices. These all attempt to account for differences in the types of properties being sold when calculating changes in property values over time (e.g. Corelogic 2016). Analysis with this data is released periodically, and reveal similar patterns to the coarser indices, but reveal sub-segments of the market that appear to be cooling – most notably the apartment market outside premium locations.

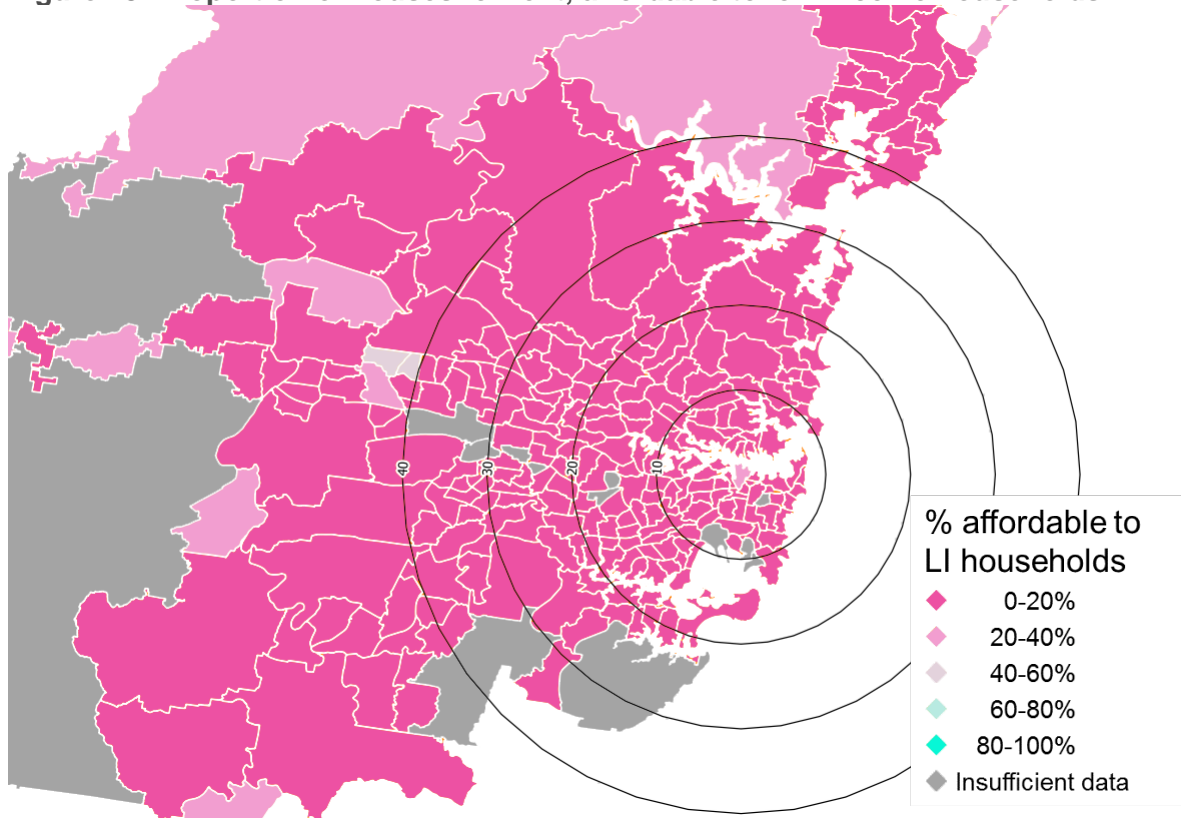
### Affordability

Housing price and income data can be combined to produce a price to income ratio that, in turn may be used as a (limited) measure of housing affordability. A good summary of sources for this is provided by the NSW Parliamentary library (Angus 2017; also see Yates 2017). They all reveal a consistent picture that housing affordability has deteriorated significantly over the last decade.

Another measure, used by van den Nouwelant et al. (2016), used point level advertised rent data to identify the proportion of properties that are affordable to low-income households (up to \$52,000 annual household income). As the maps show, houses for rent that were affordable were particularly scarce, and even apartment supply dwindled on the outskirts before it was generally affordable.

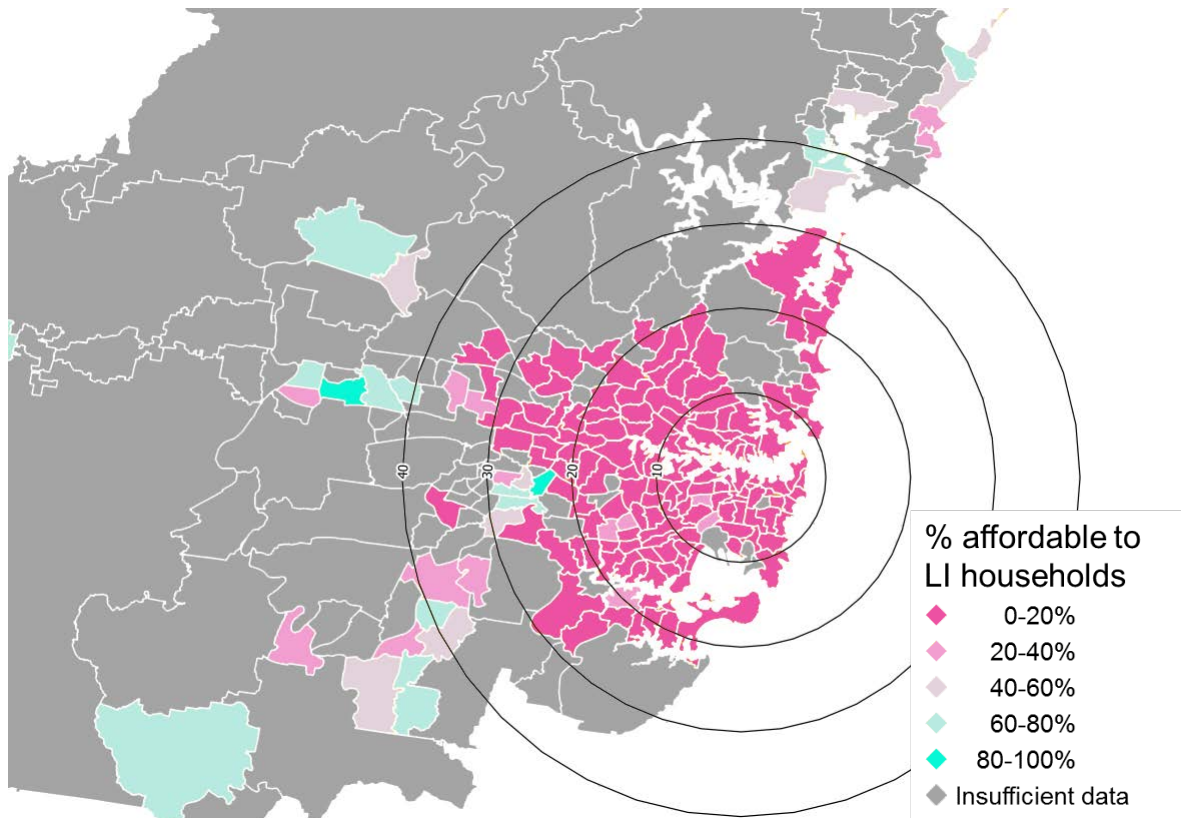
A similar method for house purchases was used by Troy and van den Nouwelant (2016), and has been incorporated by the NSW government into its liveability metrics for its district plans. This analysis showed that housing affordability changes over time. While levels of affordability were already low through northern and eastern Sydney in 2005, it has notably deteriorated throughout traditionally affordable parts of Sydney's south and west by 2015.

**Figure 18: Proportion of houses for rent, affordable to low-income households**



Source: APM, derived by van den Nouwelant et al (2016)

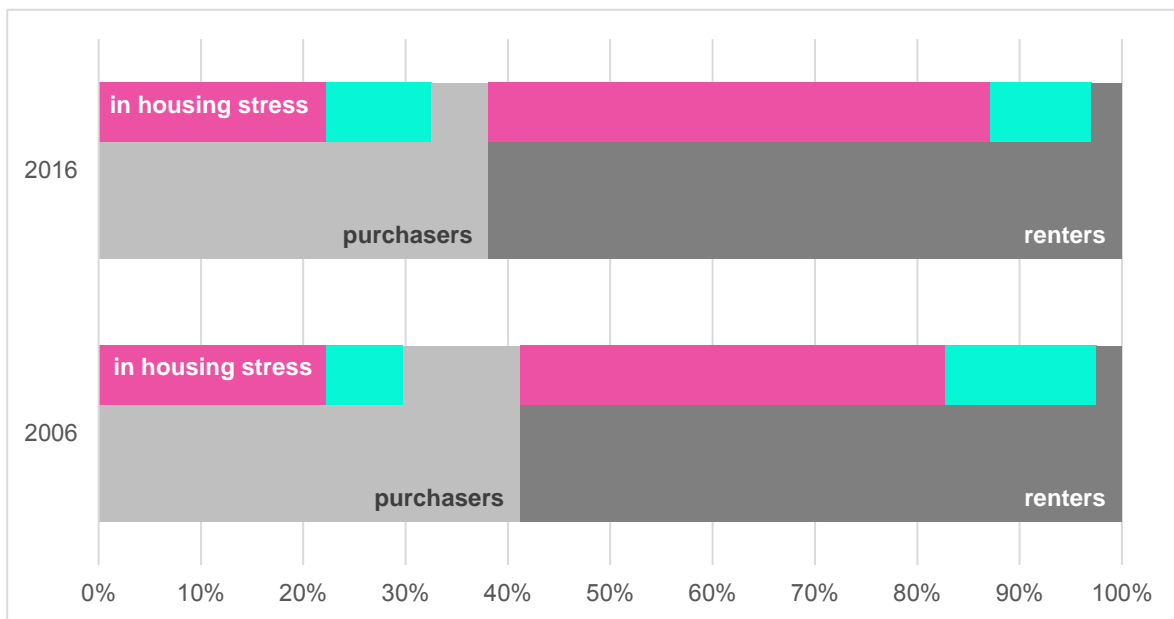
**Figure 19: Proportion of apartments for rent, affordable to low-income households**



Source: APM, derived by van den Nouwelant et al (2016)

Another common metric of housing affordability is to examine levels of housing ‘stress’, when households are spending above a particular proportion (typically 30 percent) of their income on housing costs. Derived estimates from 2006 and 2016 census household income, along with rental and mortgage payments, show that the numbers of low-income households (approximately bottom two quintiles) experiencing housing stress in Greater Sydney have increased from 160,000 to 220,000. This is an increase from 30 to 34 percent of all low-income households, and an increase from 64 to 71 percent of low-income households with either mortgage or private rental commitments. Notably, within these low-income households, part of the increase is due to the tenure split shifting slightly towards the private rental sector, where housing stress rates are consistently higher (in 2016, 81 percent of low-income renting households were in housing stress, compared with 65 percent of low-income mortgage-paying households).

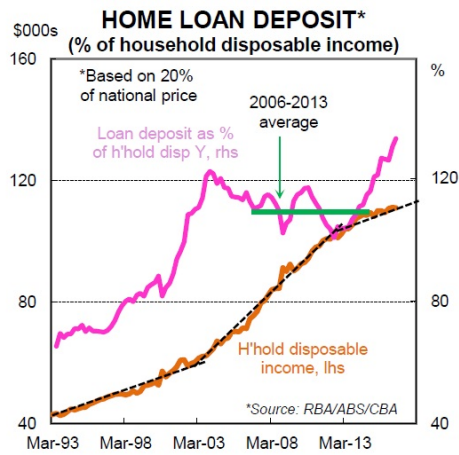
**Figure 20: Distribution of Greater Sydney low-income households with either mortgage or rent commitments**



NB: 2006 mortgagee data includes a much higher proportion of households with unspecified housing costs, so each category distinguishes those known to *not* be in housing stress (green) from those where their relative housing costs are unknown (unshaded). Source: ABS, derived

Importantly, other analysis notes that low interest rates have meant that repayments have not tracked upwards as purchase prices have. This has meant that the capacity of households to make a deposit, rather than mortgage outgoings (or some other measure of the real user cost of housing capital) is increasingly the key barrier to homeownership for younger and poorer households, as deposit requirements (typically measured as a fixed percentage of the purchase price) will move with changes in house prices.

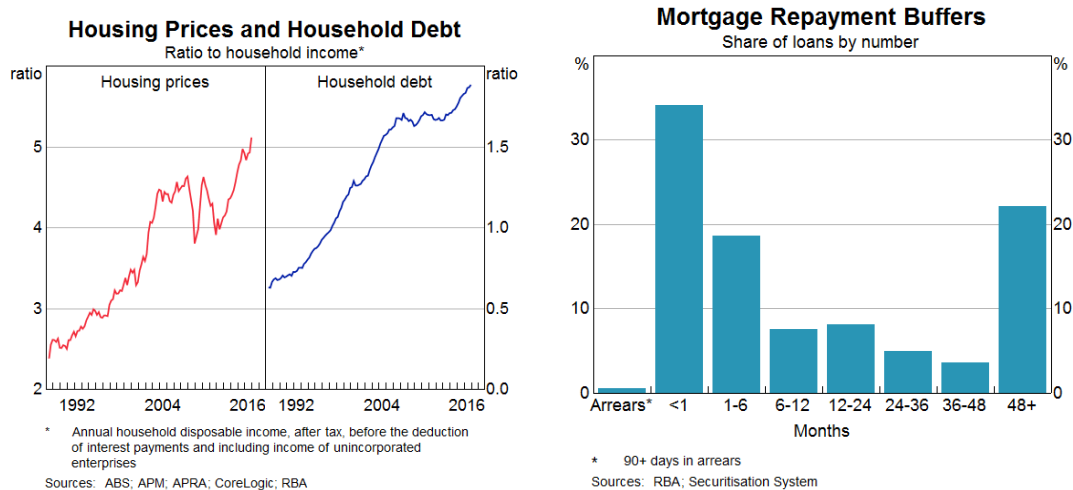
**Figure 21: RBA home loan deposit analysis**



Source: RBA

High prices also translate to a higher gross debt to income ratio, which has been noted by the RBA as a factor in financial stability, though where debts are used to purchase assets with price rises net indebtedness of households may not be rising.

**Figure 22: RBA housing debt and repayment analysis**



Source: RBA

**Tenure security**

In addition to affordability, compromise on tenure security – with ownership more preferred than renting for most Australians – is an important housing outcome. Census data shows that over the last decade a three-percentage point increase in renting households (from 31 percent to 34 percent), offset by a similar decrease in outright ownership.

Census data also shows that the age composition of the rental sector is changing. As younger households stay longer in the sector prior to purchasing and return flows of older persons from home ownership grow the average age of renters is increasing. While only 33 percent of people in their 30s rented in 2006, by 2016 the proportion was 40 percent. Even the proportions of people renting in their 50s and 60s was 3 percentage points higher than a decade earlier.



Census figures on homelessness (ABS 2049.0) for 2016 are not yet available, but the trend from 2006 to 2011 shows an increase from 15,000 to 20,000 people classified as homeless or a rise from 0.36 percent to 0.46 percent of the population. The 2011 analysis also shows differences in the rates of homelessness in Sydney's sub-regions. The City and Inner South has the highest rate – at 1.69 percent – and Baulkham Hills and Hawkesbury has the lowest rate – at 0.11 percent. Other sub-regions that are over-represented for homelessness (compared to the metro-wide rate) are Parramatta, Inner West, Eastern Suburbs and the South West. In interviews for the project there was a near unanimous view that 2016 totals will be well above the 2011 outcomes.

### **Commute times**

The previous chapter emphasised the direct links between housing choices and costs and travel costs. The two main sources for travel data in Greater Sydney are the 'journey to work' data and the 'household travel survey' data. Both are held by NSW Transport. The JTW data is derived from census data, with 2016 data yet to be released. The HTS data is collected through a survey.

Analysis of this travel data by BITRE (2015) shows that commutes continue to be primarily by car in Greater Sydney, although public transport usage is higher than other metros. However, there has been little shift in this modal split over time, despite the changing jobs profiles (industry sector) and geographies. The analysis also shows that commute distances have remained flat between 1999 and 2013. This resilience of travel patterns to shifts in other pressures, like housing pressures, is notable.

van den Nouwelant et al. (2016) explored the extent to which housing costs reduced the labour catchment of CBDs surrounded by expensive housing markets. They found that mode share to the Sydney CBD was the inverse of the metro overall, with around 70 percent of commuters coming by public transport. They also found that commute times and road distances are closely correlated with linear distances, which simplifies the analysis of commutes. Finally, they found that workers are evidently prepared to travel further for higher paid jobs. There is little incentive to travel long distances for low-paid jobs. This is of importance to the final comment of the previous paragraph, which suggests that moving to low-cost areas, away from public transport, to reduce housing costs does not equate to longer commutes, so much as a dislocation from potential labour markets.

Another important data source is the VAMPIRE index, which shows how the compromises in distance to save in housing costs are often offset by increases in travel costs. This data is on AURIN (Sipe et al. n.d.), and generally finds that outer regions of Australia's metros are more susceptible to high fluctuations in transport costs, not least because of a greater dependency on private vehicles and the price of petrol.

## **The resulting pressures**

The upshot of these patterns is that they both reflect and create significant pressures on Sydney's housing system. House price inflation, coupled with stagnant nominal income growth, has made housing costs a significantly higher burden to many households across Greater Sydney. While this translates to higher levels of housing stress – with people contributing an increasing proportion of income to housing costs – it manifests in other ways too. And they can be no less damaging a housing outcome.

Recent analysis by Rowley et al. (2017) uses a synthetic population model to estimate housing needs across Australia. They find that currently in NSW, around 373,000 households are unable to

afford market housing, including households that have not formed (most notably children staying with parents) or requiring financial assistance to avoid a position of rental stress.

As already alluded to, there is also a shift towards a compact built form, with a clear majority of housing growth delivered as attached dwellings. While the higher base of detached houses means it remains the dominant built form, the diverging price index for these two dwelling types suggest the differential demand for them. The extent to which the housing stock that is affordable in Greater Sydney is perceived as a compromise will translate to an inability to attract the most sought-after labour source. Also, the extent to which living in smaller dwellings translates to lost human capital will reduce productivity among the workforce.

Similarly, any shift to a more insecure tenure – that is, the private rental sector – will equate to economic costs or a range of compromise living arrangements such as children living with their parents longer, or sharing housing costs with extended family (multi-generational households) or unrelated adults (in share houses or with lodgers). This summary has focused on Greater Sydney data, but in many instances data for other Australian cities show that much lower compromises need to be made in these areas (see van den Nouwelant et al. 2016). This will place pressure on the economic competitiveness of Sydney. These issues re-emerge in the next chapter.

Finally, this section has not unpacked the geography of housing market economics beyond some cursory observations about the relative affordability of outer areas that are dislocated from public transport networks that service the major job centres. However, spatial segregation, as outlined elsewhere in this report, has economic costs too. These will be the outcome of a housing system typified by those with less means having to make greater compromises on housing outcomes. In the real economy, geography, growth and the distribution of growth gains are always related. The next chapter turns to the question to the identification of evidence for housing effects on metropolitan economic growth and Chapter 7 brings together key evidence available.

## 6. Productivity, cities and housing

### Chapter overview

Fast growth has been an important feature of metropolitan economies in OECD economies over the last two decades, reversing a wider perception that cities, and especially city cores, were a drag on national economies. The evolving economic narrative for city economic development has come to focus upon agglomeration effects on productivity growth with city size and employment densities now acknowledged to facilitate labour market and innovation system functioning. The productivity gains estimated to arise from employment densification/labour market integration are now an important element in support for transport investments. This chapter explores these arguments, extends them to residential densification (that also increases the number of workers available to firms within some travel time bound). It also highlights that metropolitan growth usually leads to different kinds of congestions that imposes costs on households and firms and may, if not managed, attenuate local economic growth. Managing 'congestion costs' is an important role for metropolitan governments and capacities to do so vary from place to place and over time. Price, and other housing pressures, are not only a form of 'congestion cost' but they also have the capacity to reinforce significant wealth shifts achieved through trading on land and housing shortages rather than competitive entrepreneurial behaviour. These have important implications for productivity and growth in the longer term as well as the present.

### Key points

- Greater Sydney and Melbourne have become major engines of growth for state and national economies, and their size and density have given them visibility in the global economy. and agglomeration economy possibilities that make labour markets efficient and facilitate dynamic innovation ecologies.
- Almost a decade ago the Australian Treasury Secretary argued that future Australia, reflecting these metropolitan economic dynamics, would grow within the existing major cities.
- Commentators in Australia and elsewhere have emphasised that agglomeration boosters for productivity are not automatic but that they must be managed, not least to ensure that new growth gains from agglomeration are not devoured by congestion costs and reduced growth.
- The growth policy management challenges for Australian cities are quite clear but it is not at all apparent they have been widely understood, as economic problems, and acted upon. International evidence from the UK, the USA and New Zealand all highlights that some of the largest agglomerations, that exceeded national and other city productivity growth in the 1980s and 1990s, are now recording productivity growth at national average rates and firms are exiting them at faster than expected rates. The Major Cities unit reported this pattern for Australia in 2014 and recognised a range of infrastructure shortages as contributing to congestion. They did not mention housing.
- We need to talk about housing: commercial indices of city attractiveness for start-ups, firm growth, inward investment and where to study all put Sydney near the top of ratings on innovative firm ecologies and high-quality labour supply; the city slips down the ratings, and

- faster than any other Australian metropolitan area, because of poor scores related to the housing sector.
- There is much evidence that housing supply inelasticities determine these outcomes but there is no firm evidence, lying beneath mountains of rhetoric, of the extent to which supply is constrained by planning, shortages of key infrastructure to facilitate development or the strategic firm behaviours of the development sector: the notion that simply unshackling housing supply from the planning system will resolve housing shortages has been systematically demolished by Meen et al. (2016).
  - There is growing prima face evidence that housing shortages have significantly shifted the distribution of wealth and income in Greater Sydney over the last decade. That shift, see Chapter 7, is likely to have reduced city productivity.
  - Interviews with providers, policymakers and planners highlighted several economic concerns that they believed were important but for which they could not provide systematic evidence. These included increases in inequality and potential financial instability for home-owners (that can be otherwise evidenced, see above), and concerns about low-income workers with long commutes (not least to essential city centre jobs). They also highlighted a number of housing outcomes that they believe may damage productivity in the longer term that were not raised with the research team by officials. These were:
    - Tight housing markets are forcing the different generations within extended families to live further apart than they would like. This deprives 'middle' generations of informal childcare provision by grandparents that reduces workforce participation/hours, and may also attenuate informal care provision by the 'middle' generation for older parents;
    - The deferred purchase of homes by younger households may have significant implications for their work, savings and consumption decisions in the next decade as they progress to family formation and development whilst also buying a home for the first time; and
    - A concern for damage to the educational performance of today's toddlers in overcrowded short-term housing arrangements.

## From city decline to managing growth

Until the start of this millennium, the focus of cities policies that were largely driven by national or state/provincial authorities (in OECD countries) was on economic decline, concentrating disadvantage and physical dereliction (Maclennan 1999). Cities were often seen as a burden on national economies and city policies as about regeneration, income redistribution and displacement of more productive economic activity and, hence, a drag on the competitiveness of places that were growing. Some countries, including much of the EU and the UK, took a different view. They argued that cities could compete successfully in the long term if supported by policies that recognised the need for collaboration as well as competition, the imperative of overcoming market as well as state failures, and the need to reduce cumulative negative externalities arising from concentrated poverty to maximise growth potential.

At that time, less attention than was probably required was paid to the challenges of managing city growth. In Australian cities, including Melbourne and Sydney, growth challenges had swept away

most 'inner-city' decline issues (though poverty concentrations still occur within these cities) and in most of the OECD by the first decade of this millennium coping with growth rather than dealing with decline lay at the core of urban policy issues. That changing emphasis was apparent in Canadian policies after 2005 (Harcourt 2006) and has become the major focus of City Deal programmes in the UK and the Netherlands. In this millennium, the new understanding of the significance of agglomeration economies (Glaeser 2010), and the growing shares of metropolitan production in gross national product, have seen cities back at the centre of policy discussions about growth and productivity.

A very senior and explicit recognition of both the prospects and problems for Australian cities was set out by Henry (2009) who noted the strong future potential for population and economic growth in Australia and that such growth would largely be within existing metropolitan areas. He also noted that failure to plan for and invest in infrastructure and housing would lead to actual growth falling well below the potential.

Although growth and 'success' are the big stories, rising inequalities of incomes and wealth and reduced efforts in low-income housing policies have also seen increased socio-economic segregation in Australian, and other leading OECD countries, in the last two decades. Disadvantage and place regeneration remain policy issues within fast growing places. We return to this issue below but our main concern is whether governments have failed to act on Henry's sensible warnings and may now be curtailing metropolitan economic potential. The broad structure of this argument is set out below.

## Cities and productivity

The core economic roles of cities, as discussed in location theories, have been that they serve as minimum transport cost points for the production of a large range of goods and services and often lie at the centre of markets for goods to be distributed, globally, national and regionally. Cities, in that broad sense of linking producers and consumers and workers and producers, were key points of connectivity in economies. For the last two decades, emerging arguments about the roles of cities as growth dynamos, rather than as drags on the economy, has relied on the rehabilitation of 'agglomeration' economies as a key idea. At the simplest (and the definition and identification of different kinds of agglomeration economies is a rather complex process) agglomeration economies, arise due to both the increasing scale and density (of employment and/or residential land uses) of cities. The main channels to growth discussed in the literature relate to large cities as being able to attract and integrate high-quality and other kinds of labour supply more efficiently than smaller places and, secondly, for cities to facilitate the clustering and face to face contacts that are required to create trust that is key to innovation and flexibility in fast changing economies.

There is little doubt that the important conceptual and empirical work of Glaeser (2010) has facilitated the acceptance of the productivity possibilities of cities, through agglomeration economies, in economics and finance ministries across the OECD. The agglomeration effects of city size and density is now a fashionable policy rhetoric. There is a great deal of evidence that cities now produce shares of national economic output that exceed their population shares and much prima facie evidence to support some positive effects on growth of urban size and density. Early review work by Graham (2007) indicated that doubling employment density raises the average product of labour in metropolitan areas by 6 percent, with a much bigger effect of close to 20 percent for the service sector from doubling local market scale (not just density). The positive effects of city size and density in five OECD countries have been identified by Ahrend et al. (2017).

In New Zealand, Maré and Graham (2013) reported that a 10 percent increase in employment density leads to a 0.7 percent increase in multi-factor productivity. That said, most cities stressing agglomeration economies as a key to their success have remarkably little current evidence of what matters and what works in their own metropolitan area.

Growth in key parts of modern economic bases include fast technological innovation and financial services and these sectors are demonstrably 'city-loving' (they are concentrated in and grow faster in metropolitan areas) and appear to thrive on agglomeration economies. Technological innovation in Boston and San Francisco and finance in London and New York are oft quoted exemplars of the effects.

The way these concentrations create their own dynamic within local economic systems is well documented by Puga (2010). He highlights the ways in which these concentrations develop, attracting similar talent as well as diverse, related supply chains. This usually involves significantly raising salaries in these sectors relative to the rest of the economy with reinforcing inflows of high-quality human capital. These high-income, growth and 'selection' effects then impact on urban markets and service systems and both raises and changes the structure of housing demands arising from a more educated immigrant workforce (Behrens et al. 2014). Higher salaries and profits mean larger and more expensive homes for some; if this immigrant group lies ahead of the resident population in terms of incomes and income growth then shortages of land, construction labour and materials will impact existing residents (though some make capital gains) and make housing system entry level more difficult.

Once the wider impacts of growth induced by 'agglomeration driven' sectors are recognised it is imperative for policy to pay heed to Bertaud's (2014) emphasis that agglomeration gains and gains from city size are only potential gains. They can only be reaped where firms, workers and households can trade and exchange their goods, labour and ideas with minimal frictions of time and costs. Failure to have metropolitan supply system responses to agglomeration driven demands, as Henry had observed, can attenuate or stop metropolitan productivity growth. For instance, several authors, such as Cheshire et al. (2014), cast doubts on the empirical importance of agglomeration effects per se. Angel and Blei (2016) and Bertaud (2014) suggest productivity and city size are not intrinsically related, and McCann and Acs (2011) note the difference between mature, wealthy economies (with fewer effects) and metropolitan economies in the emerging South. Moretti (2013), in looking at new labour patterns in the USA finds the same variety in outcomes, not all potential 'city' growers do so.

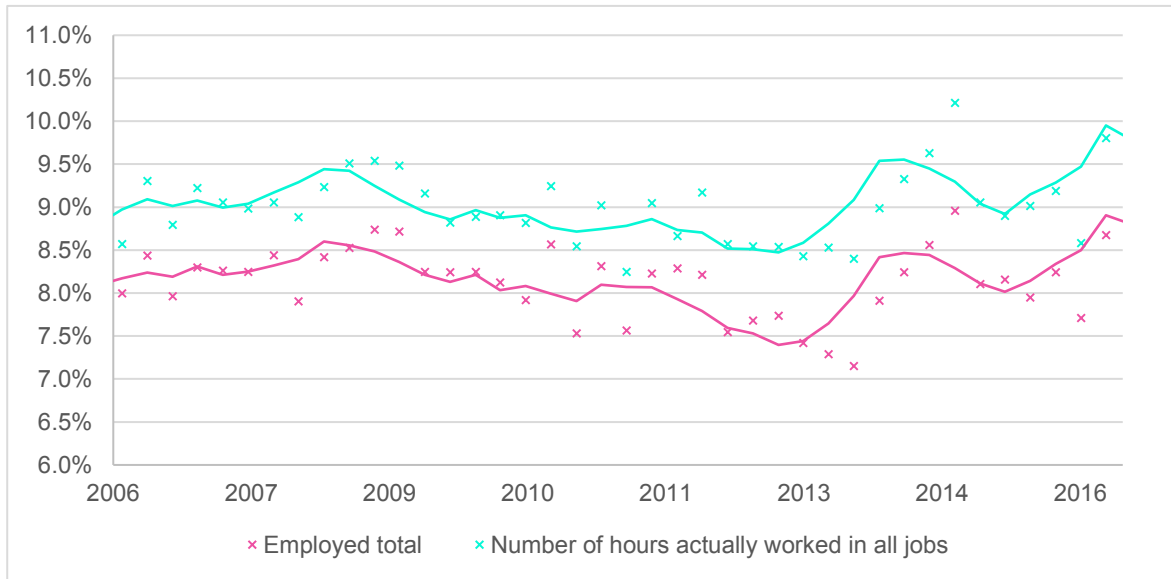
## Supply inelasticity

Supply inelasticity has been raised as an issue at different, earlier, points in this paper. However, at this point it is useful to reflect further on this fundamental of housing markets that is a key factor in generating 'congestion costs' in the housing sector.

Each housing development in a metropolitan area has some area of distinctiveness. Each unique development contributes to a heterogeneous product mix that is produced through competitive supply chains without much collaboration in procurement processes. Employment sub-contracting tends to mean that supply chains are destroyed in downturns and not always quickly established in upturns. The industry, renowned for its poor data, largely comprises small firms who, with the prospect of labour movement, resist skills training. With little production or assembly of components off-site, the imperative for on-site production has slowed the take-up of scale economies and innovation in production. Sector productivity is typically lower than most other

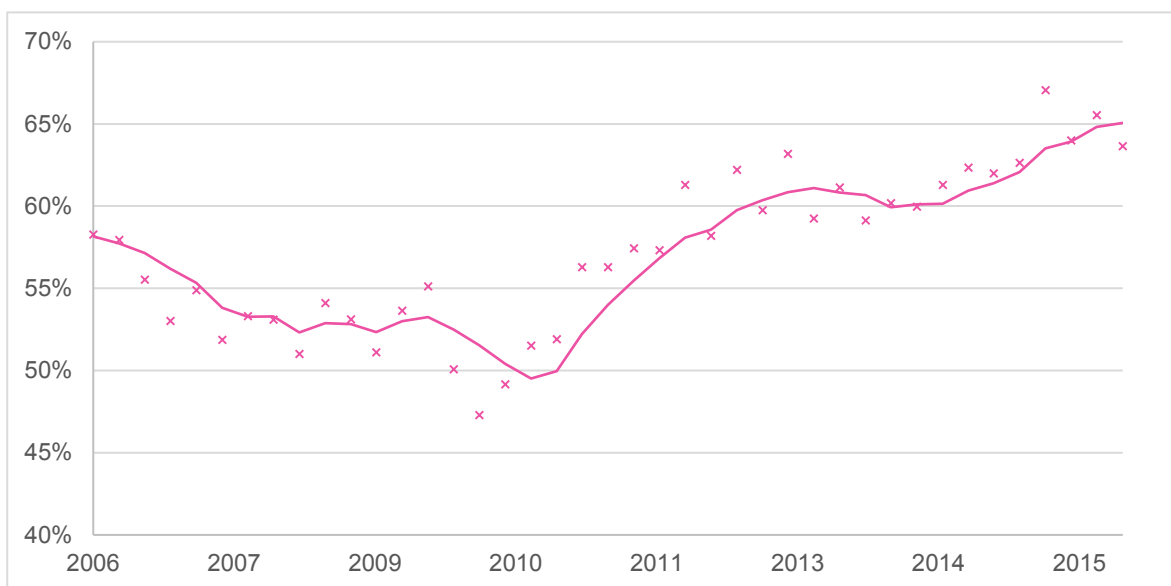
major sectors and has lagged the economy average for the last forty years. A building boom and a diversion of resources into housing construction will almost invariably reduce national or metropolitan productivity growth for as long as that boom continues (the construction period effect) even if the units produced might markedly raise productivity in the longer term. The charts below suggest that high and sustained construction activity from 2006 onwards allied to a rising share of residential construction in total output means that a growing Greater Sydney means a large low productivity sector in the short-term.

**Figure 23: Proportion of Greater Sydney labour force and hours worked in construction**



Source: ABS

**Figure 24: Value of residential building activity as proportion of all building activity (NSW)**



Source: ABS

Different (generally untested) hypotheses are proposed about further sector features leading to reduced productivity and supply shortages. Pro-market and anti-regulation advocates argue that the imposition of quality and environmental standards and the development of linkage fees

requiring developers to fund more local infrastructure costs reduce builders' profit margins. However, Greater Sydney residential developers are reputed to earn returns in the 17-20 percent range (demanded of them by banks) and it would be unusual if some expected regulatory costs were not reflected in lower payments to landowners. Developers also argue that local authorities in areas of housing shortages systematically under-zone land for housing as it will both protect 'nimby' voters and, at the same time, increase bargaining possibilities in relation to planning gain. They also note the rising costs of permits and slow processing of development proposals (that imposes holding costs on developers).

No doubt there is scope to streamline development permission processes (though planning staff cuts may have shaped current difficulties). But there is little doubt that the conflicts that arise in land development require a planning system, and it is also apparent that without the capacity of metropolitan authorities to identify key sites for development, developer uncertainty would increase (where should they purchase land?) and that the economic provision of infrastructure may well be compromised. Planners, too readily seen as the problem in the metropolitan housing system, do need to improve their economic argumentation but they can respond, with evidence, that areas with development permission may lie undeveloped because of absence of state infrastructure provision and indeed firm commitments to provide services that new residents will require. And firms too need to be clear on why, with zoned land and infrastructure on tap, they have not rapidly implemented firm growth strategies. Or do they maximise long term revenues by slowing the peak pace of development?

Whatever the causes, supply is inelastic. Equally, it is not clear that deregulating the land planning system will solve the supply inelasticity problem: that is a false expectation of the 'well-behaved market' school of thinking but is not well founded in empirical housing economics (Meen et al. 2016). The development industry personnel interviewed did not wish to see the Greater Sydney market freed from all planning influences but they did want a faster, better informed planning process. They also referred positively to governance developments such as the West Australia Planning Commission approach.

## City size, growth, productivity and housing consequences

These observations take us back to two older ideas in urban economies. The first is the extensive literature from the 1950s to the 1980s on optimal city sizes. It suggested that size was not always the predominant driver of city growth performance. The second, re-stresses older locational influences and the importance of effective connections within metropolitan areas and their global and local economic hinterlands. In cities with fast population growth there are spatially fixed systems that come under immediate pressures, most notably on transport, housing and the environment. With inelastic supply responses, congestion costs for users and scarcity rents for system owners rise. These scarcities are quickly reflected in greater wealth and income inequalities and in increased dispersions in incomes and home values with lower income households forced out of the 'superstar cities' (Gyourko et al. 2013).

Albouy and Ehrlich (2013) also note the empirical disconnect between city size, growth and economic performance, but they also offer a more explicit conceptual understanding of Bertaud's (2014) observation on the gap between city potential and performance. Albouy and Ehrlich (2013) look at the transformation of land, materials, capital and labour into physical dwellings/places in different metropolitan areas. They make an important distinction between the tradeable goods section of the metropolitan economy and the local infrastructure/housing production systems.



When housing/property input costs are high and property prices low then they argue that the local housing production system is productive. When input costs are low but property costs are high then the housing supply system is unproductive. When high productivity in tradeable goods is associated with low productivity in housing then productive resources are likely to migrate from the competitive tradeable sector to the housing sector: in this way rising 'scarcity rents' can reduce activity in the tradeable goods sector.

In general, according to Albouy and Ehrlich, increasing city scale raises tradeable sector productivity and reducing scale gives increasing housing productivity. In a sense, this is a formalisation of the cautionary tale for Australian cities expressed by Henry (2009). In short, rising congestion costs from housing, transport and related activities may eat up the productivity gains from the tradeable sector and curtail national and metropolitan growth.

Importantly, Albouy and Ehrlich note that their analysis also highlights how cities are successful in delivering housing productivity. Key housing growth outcomes are subject to policy choices and they require to be managed. In many respects, identifying and managing economic outcomes, and housing outcomes that attenuate growth and wellbeing is the *raison d'être* of the GSC and it is critical for them, and Greater Sydney, that the feedback effects of housing, infrastructure and planning systems are better recognised and managed in the city's growth processes.

## Are metropolitan areas losing their competitive edge: and Sydney?

The notion that metropolitan areas can continue to surge forward based on agglomeration economies driving demands without significant policy responses to deal with infrastructure and housing shortages is coming under increasing scrutiny. Hsieh and Moretti (2017) have highlighted how in the USA there is recent evidence that firms requiring high skills have been moving away from New York and Boston to localities with lower housing costs, as skilled households seek different lifestyles and lower housing prices to establish families. As noted earlier, the NZ Treasury is concerned that Auckland is losing its leadership in productivity growth.

In Australia, such concerns were already demonstrable at the start of this decade. The Major Cities Unit (**MCU**) reported (MCU 2010: 52-3) that:

There are indications that the major cities may be losing their edge in contributing to economic growth. Using a similar productivity-adjusted industry-employment mix to re-scale national growth in Value-Added by Industry for each city, estimates can be made of the likely difference in economic growth between the major cities and the national economic average... (over a)...33-year period from 1976 to 2009 the major cities recorded economic growth that was, on average, 0.201 per cent greater than the national average. This was largely concentrated in the larger capital cities, which recorded a 'premium' of 0.212 per cent... However, over the past decade, the contribution of the major cities has resulted in an average economic growth only 0.037 per cent more than the national average.

The MCU offered an interesting explanation of these patterns, suggesting:

This result may have occurred because of events in the past decade that have affected the industry specialisation of cities, such as the global downturn in the ICT industry in 2000–01 and the early impact of the recent global financial crisis. Other contributing factors may have included increased inefficiencies and productivity losses arising from an infrastructure backlog, transport congestion, and increased costs associated with the movement of

freight, and the provision of services such as water, power and sewerage associated with the growth of cities. The resources boom may have seen increased relative non-city productivity.

All these explanations may still be valid. However, it is telling that the MCU does not list rising housing shortages and prices and rents in the penultimate sentence of the quote. This reinforces our evidence that economics and infrastructure sectors in Australian policymaking have simply failed to see the housing effects on economies. Commercial indices of 'city success and performance' for international cities tell a common story about Sydney (e.g. EIU 2016). It scores highly as a place to locate and form a business, it has high-quality labour, it has world class institutions in research and human capital formation. Agglomeration pulls still seem to figure strongly and consistently place Sydney in the global top ten for these attractors. However, on indices of cost-of-living, housing prices, rents and availability it consistently ranks towards the bottom of the range of 25-50 leading world cities. This has an impact on the choices of households and firms who might come to Sydney or choose to remain there. And these same surveys suggest that these issues are less problematic in Melbourne, which has grown faster than Sydney over much of this millennium. Indeed, as noted in the next chapter, metro Sydney grew less rapidly than other Australian metros from 2006-2010 but has improved its relative performance in recent years.

It is high time for housing market outcomes to feature in core economic policymaking for the metropolitan economy. To minimize the gap between potential agglomeration benefits, largely driven by potentially mobile skilled workers, and sustained productivity growth gains there seems to be strong prima facie case for the development of a housing policy for Greater Sydney designed to support economic development.

### **'The word on the streets'**

In our interviews, we heard stories from five different sources of skilled workers, creative sector leaders and key public sector workers leaving Greater Sydney at previously unprecedented rates. There was no firm evidence to back these concerns, nor indeed to refute them. Almost all the groups we spoke to argued that their growing housing needs lists and fast selling speeds (in the new private sector) indicated that demand in the city still vastly outstripped likely annual supply, even after the 15 and 20 percent price rises of the last two years. The imperative for a supply 'strategy' was ubiquitous amongst our interviewees and few believed that this would be most effectively achieved by deregulation and freeing markets (a view that is rumoured to prevail within the NSW Government, but was not made to us). The issue of removing regulations is examined further below (Chapter 8).

A programme of research questions about housing effects on the economy emerged through these interviews. In subsequent chapters, we present evidence on a range of housing effects on economies, but it is useful first to illustrate the range of issues raised. They included:

- Does pushing poorer households to the edge of the metropolitan area reduce their participation in the Greater Sydney economy: not just in the labour market, but in shopping, socialising and more general participation? Will there be costs of low cohesion and exclusion in the longer term, and would more mixed income developments closer to core nodes in the metropolitan area prevent some of these emergent difficulties?

- If high housing costs and rising deposits are pushing 25-40 year-olds out of home ownership when interest rates are low, how will they cope with becoming owners further into the life cycle when other costs increase? How, ultimately, will they accumulate assets for their old age?
- What happens to long term skills and productivity if children in poorer families live in overcrowded and temporary homes, with much early-life mobility? Will their human capital potential be reduced?
- How have recent price surges increased private debt and raised potential financial instability in the city?
- How do rising house prices increase wealth and income inequalities across and within generations? How do they affect consumption (see below)?
- How do long commuting times, not least allied to long hours at work, reduce labour productivity (a view shared with the Productivity Commission)?
- What are the effects of markets, through intergenerational effects, increasingly separating both older and younger members of families from each other? For many households, cross-generational ties and daily links are functionally important. Retired grandparents play an increasing role in giving women flexibility to join the labour market by providing childcare. In turn, middle-aged parents are increasingly spending time providing daily care for their parents. What are the economic effects of this un-costed family labour (and capital) on economic performance and the public costs of alternative support services?
- Have rising house prices diverted seniors' savings into overconsuming their own home and diverting savings from the other sectors of the economy?

These are important micro-meso level questions for which there is only fragmented evidence currently available for Greater Sydney. But what does published research evidence tell us about housing and productivity in other locations?

## 7. Housing outcomes: Micro-economic evidence on human capital and related effects

### Chapter overview

Housing, through its associated activities, characteristics and costs has a wide range of impacts on productivity through effects on the development of human capital, deployment of business capital and innovation. Systematic research on even obviously significant channels of impact is missing. This chapter makes a case for greater recognition of the issues by reviewing available research evidence on housing outcomes and productivity.

### Key points

- There are major gaps in the stock of evidence that would be desirable to be able to calibrate housing programmes to enhancing productivity: often, even obvious connections have not been explored: however, because providers and governments have not taken the empirical questions seriously does not mean that they are not important for the economy.
- Research on human capital effects of housing makes a case for using the frameworks developed in this report, and a significant range of impacts are established.
- The wellbeing, educational performance and human capital development of Australia's children, particularly for households in poorer rental accommodation, is adversely affected by:
  - housing affordability, reducing both the standard of the homes they live in and parental income for other support;
  - poor physical quality of homes reducing health; and
  - insecure living arrangements raising early age residential mobility and disrupting educational and social development.
- Rental housing has long been a facilitator of labour mobility that helps cities grow; but with more younger households living longer in expensive rental accommodation there is evidence for Australia that they are now increasingly likely to quit metropolitan labour markets as they do not face costs of selling a home, and thereby reduce labour market 'thickness':
  - rising house prices have a range of effects on labour supply choices:
    - they induce older working households purchasing homes to remain longer in the labour market, beyond conventional retirement ages (raising productivity); and
    - rising housing wealth appears to induce older women to leave the labour force earlier (lowering productivity) and younger women to substitute unpaid caring for paid work;

- poor housing quality has a demonstrable effect on adult health and absence from work (lowering productivity);
- there are more signs of neighbourhood effects hampering the education and productive early work behaviours of young Australians, as there is growing segregation of low-income households into remoter, poorer suburbs; and
- the emergent spatial structures of metropolitan housing and labour markets poses problems of job access for less affluent households, and younger women in particular.
- The research base in relation to business capital and innovation is markedly weaker. A few areas have been explored in depth, however, and suggest significant housing impacts:
  - The quality and variety of neighbourhoods, and the housing styles they contain, have been important in attracting clusters of highly skilled and high-tech workers, especially close to downtown neighbourhoods that allow easy walking to work;
  - Similar observations have been made in relation to attracting managerial and entrepreneurial talents to outer suburbs;
  - Neighbourhood context is important in service provision for new, home-based firms; and
  - Housing wealth and debt can play critical roles in shaping the formation and growth of small businesses, not least via equity withdrawal.

The intention of this chapter was to provide a full account of how different housing attribute outcomes impacted productivity in the economy. The initial aim to link housing attributes to performance outcomes for human capital, business capital and innovation in a systematic framework were partially frustrated by absence of data and research. Yet the framework was useful for assembling the productivity evidence available and identifying where major gaps exist. There is sufficient evidence to provide a story of human capital effects, and it is presented below along with more fragmentary evidence for other growth drivers. Given the distinctive nature of our urban housing markets, the focus of this chapter is on identifying quantitative evidence from Australian research, while also noting more definitive or notably different outcomes from international work.

There are three scales at which human capital effects can be identified – the household scale, the neighbourhood scale, and the metropolitan scale. The first is considered next; the latter two scales are addressed in the following section.

## Effects on households in the life cycle

At the household scale, there are four main ways in which research has shown housing conditions impact on the development of human capital:

- Housing conditions and child school performance;
- Labour mobility and housing (i.e. willingness/capacity to move to opportunity);
- Older people working longer and housing costs increases; and
- Housing conditions and health impacts on labour supply and quality.

### **Housing conditions and child school performance**

The association between poor housing conditions and poor childhood development and school performance is now increasingly well-established, supported by a diverse and growing body of academic evidence. Previous reviews by Maclennan (2008; Maclennan et al. 2015) map out the various ways housing conditions can shape the capacity of children to develop human capital from a young age. Importantly, these reviews stress that housing affects childhood development in two ways (2015: 37): “through the direct impact of poor quality housing, and its concurrence (and therefore heightened impact) with other challenges— particularly low socio-economic status.”

Several features of poor housing have been empirically shown to shape children’s development outcomes. In a series of important Australian studies, Dockery et al. (2010; 2013) outline the following list:

- environmental allergens and toxicants;
- cleanliness, housing disrepair and safety;
- building height and opportunities for outdoor play;
- crowding;
- housing affordability;
- home ownership; and
- frequent residential moves and homelessness.

Efforts to determine the significance of these impacts in Australia inevitably encounter difficulties with data inadequacies, but three recent studies have identified modest but statistically significant associations between these housing variables and the wellbeing and development of children (Dockery et al. 2010; 2013; Johnstone et al. 2014). Overall, the Australian studies showed only minor health impacts on children from these housing variables, reflecting the relatively high quality of our housing stock (although indigenous children were a notable exception in this regard).

These studies also confirm that different variables affect children in different ways. While allergens, toxicants, cleanliness and disrepair are linked to poor physical health, “it is the things likely to impact upon the quality of relationships—frequent moves, renting rather than owning and being in financial stress—that appear to impact upon children’s social and emotional wellbeing” (Dockery et al. 2013: 51). This is of particular concern given the link between these factors and housing affordability, which has declined dramatically across Australia’s major cities in recent years, especially Greater Sydney.

National research shows a growing number of children are now living in private rental, and are therefore likely to be in less secure housing circumstances. Over a million Australian families now live in this tenure, and in the decade from 2003-4 to 2013-14 the number of lower income families in this sector who were paying unaffordable rent levels increased by almost 220,000 (Stone & Reynolds 2016). The link between private rental and frequent moves is well-established, with new Australian research (Whelan & Parkinson 2017: 2) documenting:

[s]ubstantially lower rates of geographic mobility for owner-occupiers (mortgagors and outright owners) compared with private renters (approximately 15 percentage points lower), especially among mortgagors with low loan-to-value ratios and those who own their homes outright (after controlling for individual, household and contextual factors).

As well as distinctive tenure qualities, Australia's urban mobility patterns also have distinctive socio-economic qualities, which Baker et al. (2016: 73) describe as a 'two-speed process', whereby:

the relatively well off and the upwardly mobile improve the areas in which they live over an extended period, while the vulnerable make more frequent, multiple moves—living in less advantaged areas each time.

Together, these trends all suggest an increasing number of Australian children are living in insecure housing circumstances brought on by declining affordability. This increases their risk of poor social, emotional and educational outcomes, and undermines the development of the human capital required to drive Australia's urban productivity in coming years.

### **Labour mobility and housing (i.e. willingness/capacity to move to opportunity)**

Beyond the potential risks to children, the mobility patterns associated with different housing tenures may also affect urban productivity levels in other ways. Rates of home ownership continue to decline, and increasing numbers of Australians are living in private rental (Eslake 2017; Janda 2017). This shift is particularly noticeable in the traditional 'first home owner' demographics – those aged between 25-39 (Stiles 2017), meaning many young Australians are renting for longer before buying. This has a number of potential productivity impacts. On the one hand, this extended period of private rental may make urban labour markets more elastic, as workers are more likely to maximise their productivity levels by moving to wherever the best work opportunities are available. On the other hand, the increased mobility associated with growing private rental levels may also mean it is easier for workers to move away, particularly if the prospect of buying seems increasingly remote. There are concerns a 'brain drain' of this kind is now occurring in Greater Sydney, with housing affordability cited as one reason for leaving the city (Brook 2017). A 'brain drain' effect of this kind would have clear productivity implications.

### **Older people working longer and housing costs increases**

Younger Australians are not the only demographics whose economic choices are being reshaped by housing affordability. The housing market also shapes the economic behaviour of older Australians. New research suggests the growth in house prices may have some productivity benefits, as "[r]ising levels of mortgage indebtedness appear to be extending working lives...[which] will help mitigate declining rates of employment and productivity slowdown due to population ageing" (Cigdem-Bayram et al. 2017: 1). At the same time, however, for those who fortunate enough to have accrued significant housing wealth, rising house prices can have counterproductive effects on labour market participation. Recent AHURI research shows that "higher house price growth leads to a reduction in labour market participation and hours of work for older women (precipitating early retirement) and younger partnered couples (substituting from market work to non-market carer activities)" (Atalay et al. 2016: 54). The significant growth in housing wealth of many Australian home owners thus also has the potential to reduce labour supply, prompting Atalay et al. (2016: 54) to conclude that "policies that dampen house price inflation (e.g. new housing supply) may also contribute to labour force productivity growth."

### **Housing conditions and health impacts on labour supply and quality**

Another way housing circumstances may hasten reduced labour market participation by older Australians—among others—is by contributing to declining health. Extensive research identifies clear links between housing and health throughout the life cycle, establishing the poor health

effects of common housing issues such as poor plumbing, heating and ventilation, mould, pest infestations, overcrowding, unsafe buildings, and exposure to carbon monoxide, excessive noise and cigarette smoke (see Marmot 2010; Baker et al. 2013; Phibbs & Thompson 2011; Maclennan et al. 2015 for overviews). As Maclennan et al. (2015) note, this link has also been on the Australian Government's radar for some time now. This concern at least partly reflects the significant productivity impacts associated with the health of the national workforce (Comcare, n.d.). For example, absenteeism and presenteeism associated with poor health estimated to cost the Australian economy upwards of \$30 billion a year (PWC 2010).

As well as forcing lower income residents into poor quality dwellings featuring the range of issues noted above, declining housing affordability also affects health in other ways. As Baker et al. (2013: 2) put it, “the overarching means by which housing affects health in Australia at the population level, appears to be affordability.” In addition to the impacts on children already outlined, there is evidence that links living in precarious housing circumstances with worse health outcomes for all residents, including poor mental health (Mallett et al. 2011). Research also indicates that individuals place a high importance on housing security and need to feel settled before they start looking for paid work (Hulse & Saugeres 2008). Substance use problems are also associated with experiencing housing problems (AIHW 2016).

Health issues are also linked to urban planning and the distribution of housing across the broader urban area. Research shows considerable health gains flowing from city planning that encourages a compact city—namely, a city of short distances that promotes increased residential density, mixed land use, proximate and enhanced public transport, and an urban form that encourages cycling and walking (Kent et al. 2011; Stevenson et al. 2016). Notably, this compact and connected urban form is rare in the outer suburban areas where lower income residents are now increasingly concentrated. As well as these effects on the health of workers, further negative productivity impacts associated with this suburbanisation of disadvantage are considered in the next section.

## Effects at the neighbourhood and metropolitan scale

An assessment of the quality of housing is not only based on the size, building quality and cost of an individual dwelling, but also by its location – both the type of neighbourhood, and how close it is to jobs, infrastructure and services. The evidence on these ‘spatial effects’ is outlined here.

### Neighbourhood effects

The existence and impact of negative ‘neighbourhood effects’ (also called ‘area effects’) flowing from living in disadvantaged neighbourhoods has been hotly debated now for decades, and the evidence remains mixed (Galster & Freidrichs 2015). Overall, the international literature “suggests small yet statistically significant impacts on poorer households residing in poor areas” (Atkinson 2008: 2). While it is notoriously difficult to isolate the influence of specific factors in this context, a number of recent Australian studies have reached similar conclusions, indicating neighbourhood characteristics have small but significant impacts on student outcomes (Dockery et al. 2013; Johnstone et al. 2014). Again, however, these studies show only a ‘modest’ effect, and the conclusions are subject to various caveats.

Suffice to say that the evidence of productivity impacts from negative neighbourhood effects in Australia is not as well established as in the international literature. In part, this reflects the different socio-economic qualities of Australia's urban neighbourhoods compared to the US and the UK, where much of this research was conducted. In particular, disadvantage in Australia has



traditionally been more dispersed, dictated by housing tenure as much as neighbourhood location (Hulse & Pinnegar 2015).

However, the increasing suburbanisation of disadvantage in Australian cities is now reinforcing locational disadvantage, as lower income residents are being forced to move further away from areas with good access to jobs, transport and services (Atkinson et al. 2011; Randolph & Tice 2014; Pawson et al. 2015). As Pawson et al. (2015: 1) conclude, summarising the results of a major multi-year study into Australian urban disadvantage:

Alongside its acknowledged negative social and economic impacts for residents directly impacted, there is a dawning recognition that growing spatial polarisation of our major cities impairs overall urban productivity, thus imposing costs on all.

### **Location and labour market effects**

The importance of a 'thick' labour market – i.e. one with lots of workers able to access lots of jobs – for urban economic growth and productivity is well established in the economic literature. Research also shows that labour markets and housing markets are closely connected, as a recent review by the authors identified (van den Nouwelant et al. 2016: 14):

Labour markets are closely linked to housing markets, and labour market elasticity to housing market elasticity. Glaeser et al. (2005) outline how an inelastic housing market—that is, one where a demand increase is met with a price increase rather than a supply increase—will constrain population (and so labour market) growth. This has a knock-on effect on wages and the potential for sustained economic growth to be achieved through increases in productivity.

Overall, however, there is little research identifying or quantifying the constraints on productivity caused by the unaffordability or unavailability of housing reducing the thickness of urban labour markets. An analysis by the Grattan Institute in 2013 attempted to address this gap by identifying the constraints on residents in outer suburbs accessing jobs within a 'reasonable commuting time' (assumed to be up to an hour each way). The report concluded that "labour markets are shallow in significant parts of Australia's biggest cities [because in] many suburbs—particularly outer suburbs—residents can reach fewer than 10 percent of all metropolitan jobs with a reasonable commuting time". While the findings do not reflect how far workers are actually willing to travel to access work, they do suggest that Australia's big cities are showing "strains in the triangle of work, home and transport that could threaten national prosperity" (Kelly et al. 2013: 1).

To gauge the productivity impact of the outward shift of affordable housing more clearly, recent work by van den Nouwelant et al. (2016) examined the extent of the 'spatial mismatch' between Australia's central cities, where many lower income jobs are located, and where most lower income workers actually live. It concluded that even in Sydney, the supply of lower-income labour supply to the central city is generally 'thick'. However, there are some potential warning signs emerging in relation to specific industries (van den Nouwelant et al. 2016: 4):

This research suggests [central-city] businesses, on the whole, are not currently constrained by a shortage of high-quality workers for lower income jobs. Despite the clear link between high housing costs and a spatial mismatch of [lower-income] workers from [central-city] jobs, there are a number of mitigating factors at play. These factors—including a supply of short-term workers, lifestyle and professional benefits, and good transport links—have insulated businesses from the effects of high housing costs to a great extent.

However, there are signs of constraints, particularly in the hospitality sector, that suggest labour market thickness is being affected by housing costs.

As well as potential impacts on specific industries like hospitality, the ‘strains’ Kelly et al. described affect the potential productivity certain groups more than others. Younger women are one such group, as they continue to take on the majority of parenting responsibilities. Limited childcare options can restrict parents to roles within a short commute from home, even if these are lower-paid positions that do not take advantage of their full skill set (Kelly 2015). This ‘spatial leash’ (Williams et al. 2009) has a negative impact on individual careers, and if it results in the best quality candidates being unavailable to fill the most highly skilled roles, can have negative productivity effects on the metro-wide economy.

For those who can venture further from home to access the best job opportunities, this can often mean a lengthy commute. Maclennan et al. (2015: 32) identify two potential productivity costs flowing from this: “lost time (although capacities to work ‘on the move’ may be rising in some sectors), and reduced disposable (post travel cost) incomes and consumption.” International evidence supports these concerns. For example, Sweet (2011: 398) examined the ‘second order’ impacts of traffic congestion and concluded that:

[The] research suggests that traffic congestion slows growth, it changes urban economic geographies, and it influences productivity. However, because it is endogenous to the economy, estimating its economic impact may be a matter of identifying congestion thresholds beyond which additional growth and productivity are inhibited.

Looking at commutes more broadly, van Ommeren & Gutiérrez-i-Puigarnau (2011: 1) found that negligible commutes would reduce absenteeism by 15–20 percent, and that this is “consistent with extended urban efficiency wage models”.

## Scanning for effects on business and capital: Missing links

In setting out to undertake this review the team had hoped to provide an assessment for housing effects on business capital equivalent in breadth and variety to the labour market. In project interviews, and in business literature from other pressured cities, it was widely reported that the business sector was concerned about housing outcomes. Almost all the concerns related to potential and actual shortages of different kind of labour, most notably skilled, creative workers and what they labelled ‘key workers’ (arguably in locally integrated supply chains everybody is a key worker!). However, there is an emerging literature, mostly European in nature that has connected housing outcomes to the formation and growth of small businesses and to housing and neighbourhood influences on the formation of networks of social capital and to meeting the lifestyle requirements of particular kinds of highly educated, skilled workers (creatives).

Notable references include Florida’s (2002) work establishing the characteristics of homes and neighbourhoods that the ‘creative classes’ aspired to live in. There is growing evidence that any such professionals want to walk or cycle to work (and if these strategies fail take public transport) and live close to workplaces. A city that seeks to be at the forefront of technological progress and associated start-ups needs to have regard to these residential preferences of very mobile labour. Start-ups and small companies in more traditional and service oriented sectors are influenced by housing and neighbourhood variables. Mason et al. (2015) and Van Ham et al. (2013) have recently illustrated how neighbourhood contexts and housing assets may shape entrepreneurship and small business success, not least where new firms can informally access support (peer advice,

for example) in local social realms (including, yes, cafes). Reuschke and Maclennan (2015) also indicate how housing equity and mortgage circumstances can have fundamental impact on the formation and growth of small businesses. Room space to work at home, or in garden sheds (where Bill Gates started on the road to Microsoft), was reported as a problem in suburban Melbourne in Maclennan et al. (2015). More generally of course, competition for labour when housing sectors expand may hamper other business growth and long-term patterns of savings and debt associated with rising home-ownership and prices have implications for capital market competition for some forms of business (this issue is explored in the chapter below).

This area of research is in its infancy and there is much need of an informed view of 'Business and Housing' developing in metropolitan Australia.

## 8. Modelling big numbers: Key questions for housing and productivity

### Chapter overview

The previous chapters have posed questions and presented evidence that suggests there is a housing-productivity story to understand and tell. Major gaps in data, evidence and modelling have been highlighted. These observations need to prompt action rather than despair in policy formation. One important step forward is to bring analysis for housing policy development up to at least the standards of rigour involved in modelling other forms on infrastructure investment and potentially seek wider improvements by jointly modelling housing, transport and other investments. Waiting for perfection in data and modelling may be the enemy of good policy and improving policy narratives. The study concludes by identifying some key housing-productivity questions that can be analysed using the CGE modelling techniques already available to NSW and other Australian states. These questions are summarised here.

### Key points

#### 1. Housing effects on productivity arising from residential density increases

- How are proposed increases in population and employment densities likely to increase productivity? Modelling should recognise that increased densities come out of combined transport and housing investment.
- What is the effect on productivity, income and fiscal revenues of raising existing residential densities across the existing metropolitan area given some assumption of 'Glaeser' effects?
- What is the effect of separately estimating productivity effects with distance decay effects arising from higher housing densities around each focal point in Sydney's 'three cities'?

#### 2. Effects on productivity from consumption changes due to with rising prices/rents

- What are the consumption, employment and (consequent) productivity effects of excess housing payments in the metropolitan-regional area? How would Greater Sydney spend and save differently if 'scarcity rents and supernormal profits' for housing/landowners were reduced back to 2010 levels?
- Households carry the burden of high housing costs by commuting longer and further: in assessing consumption effects housing and travel costs need to be jointly modelled.
- What are the implications for state governments and their economies of a 5, 10 and 20 percent rise in housing prices in the year ahead in major cities?
- What are the future effects, e.g. five and ten years ahead, of delayed home ownership entry by current 25-35 old households? This includes comparing their future savings and consumption asset positions with current 45-55-year-old households.
- Estimates should be made of the benefits of Prime Minister's Cities Unit's proposition of a '30-minute' city for the metro population and for the poorest third of workers.

### 3. Effects of supply side changes

- What would the effect be on the Greater Sydney economy of balancing the market by specified stock additions within a two-year period and, more reasonably, a five-year period (recognising that housing demands will rise each year with positive net immigration)?
- A 'balanced' market implies supply and demand at or near equilibrium, and real house price increases should be close to zero (or at the general RPI). Can we estimate how much housing would be produced at that house price increase rate? How would it compare with likely estimates of demand (derived outside of a CGE model)? That is what gaps are there in the cases made by 'supply-siders'?
- What would be the saving on state borrowing or revenue raising from a programme of housing units provided through inclusionary zoning? What are the effects on the average household if all new schemes in Greater Sydney had a 10,20 or 30 percent IZ requirement?

During project interviews with providers and policymakers in Greater Sydney and Melbourne there was a widespread view expressed that 'infrastructure' makes a better productivity case than housing in resource debates and has been relatively more successful in securing public investment support. At the core of that success is the ability of the infrastructure sector to cite 'big number' productivity and employment effects from investments that have been derived from economic models. As noted above most of these arguments relate to transport investment and the value of saved travel time. Saved travel time is a consequence of investment to relieve growth induced congestion. Rising rents and prices for housing, with scarcity rents increasing, are the equivalent of rising congestion costs for the housing system. It is important, therefore, for the housing and policy sectors to estimate equivalent measures for the housing sector.

This chapter identifies some 'big productivity numbers' related to housing system investments and outcomes could usefully to be modelled by states to inform decision taking within finance ministries. There is a clear case that states or metropolitan areas should be developing their own econometric models of their economies that include a well-developed housing system sector, but in the meantime the housing sector should at least ask government for parity of treatment with approaches to transport investment.

The project interviews and review of research evidence suggested several 'big-number' estimates that need to be made to establish the broad scale of economic effects of the housing sector. The key issues that emerged were 'housing roles in density and agglomeration', 'housing affordability', 'housing construction period effects', 'human capital-labour market effects of housing', 'socio-economic' mix effects at different locations', 'the capacity of the supply side to stabilise prices', 'population ageing in situ' and 'implications for the NSW budget'.

The prima facie cases for modelling these areas of potential impact are set out below.

### Agglomeration effects and residential densities

Following the work of Glaeser (2010) and others, noted in Chapter 6, it is now widely accepted that increasing population density within metropolitan areas leads to higher productivity. Reviews of the estimated range of effects given density increases are available and have been used to justify transport investment programmes. These transport estimates are usually associated with rises in employment density or connectivity. The logic chain involved in this modelling needs to be made

more explicit. Arguably, employment density may rise as more workers become locally available. In recent decades, the increasing investment of multi-apartment dwellings with high residential densities in of more central locations (and other key city nodes) may well have partially underpinned such employment density increases. The housing sector needs to challenge the attribution of density related productivity gains to transport only investments.

This raises several important modelling questions for governments and others:

- How are proposed increases in population and employment densities likely to increase employment and productivity? Modelling should recognise that increased densities come out of combined transport and housing investment. As an initial exercise, we would impose density increases without reference to the difficulties of raising these densities.
- What is the effect on productivity, income and fiscal revenues of raising existing employment and residential densities by some fixed percentage across the existing Sydney metropolitan area given some assumption of 'Glaeser' effects?
- If Greater Sydney is to become 'three cities' what is the effect of separately estimating productivity effects with distance decay effects arising from higher employment and housing densities around each of the focal points of the in 'three cities'. (will this raise productivity potential of raised housing densities). How will this be specified in a CGE model?
- How will proposed housing investment strategies, and densities, help achieve that objective without negative effects on other outcomes (for instance rising transport costs and more extensive transport investment)?

## Paying for housing, consumption and productivity

Housing economists have been interested, for a decade and more, in the consumption effects of rising house prices. The focus has been on how changes in home values for owners are associated with changes in household, or national, consumption. This interest has been related to a concern that rising house prices lead to housing equity withdrawal when prices are rising and that this boost consumption in the cyclical upswing in ways that exacerbate economic instability. A review of estimates of such effects in advanced economies suggest that rising house prices, for housing asset owners, increase household consumption by around 0.05 to 0.10 of increased housing wealth (Maclennan 2010). Recent estimates for Australia, by Ong et al. (2017), fall in a similar range.

The effects of these past price rises on the household consumption spending of current housing purchasers as well as potential first-time buyers (either renting housing or living at home with parents) who are saving towards future house purchase need to be considered. This suggests that as house prices rise these effects on current and future purchasers will reduce consumption, as, respectively, mortgage payments and household savings for deposits rise and may offset, or completely negate, the increased consumption of owners. Rising house prices have not only a wealth effect but disposable income effects for current purchasers and savings effects for potential purchasers (who may be tenants or younger people living at home with parents). These effects have, surprisingly, been omitted from assessments of how rising house prices reduce consumption (see Ong et al. 2017).

There is not an exact correlation between rising house prices and rising rents. However, in assessing these housing-economy interactions it is even more remiss that the effects of rising rents on consumption, and savings, by tenants has received little attention (not least as housing demand

becomes more price inelastic as disposable incomes are low and falling). For tenants, rising rents immediately reduces their disposable incomes and that reduces consumption, particularly for tenants who are also saving to enter ownership. It is likely that these rent to reduced disposable income transmission effects will have a substantially greater impact, per capita, than wealth effects for owners. The marginal propensity to consume out of income typically lies in the range 0.85 to 0.9, that is each dollar lost to tenants from their disposable incomes leads to an almost equivalent reduction in their consumption of other goods and services. The importance of this rent payment effect at the metropolitan economy level will depend, inter alia, on the extent to which rents rise, tenant income growth, the frequency of repricing rents and rental sector tenant turnover rates. Detailed work on this effect is required but we note that rent burdens rose faster in Greater Sydney between 2006-2012 than recently but they are still rising for lower income renters (see Chapter 5 above). Of course, rising rents mean rising profits for landlords, and these also need to be netted out. But there are grounds to believe that a 'widow's cruse' like effect will ensue as landlords wealthier (though not all are wealthy) than their tenants have higher marginal propensities to save from rising incomes.

These rent and price effects on consumption in the economy have been considered at length because there is a case that they have a significant effect on consumption. The balance effects of rising housing costs in the rental sector have almost certainly reduced consumption in the metropolitan economy. Rising housing wealth could have a similar effect. In short, an inflating housing sector diverts household resources into, largely, paying more for an existing asset without any significant productivity effect: in the main the houses produce the same physical set of services and, hence, have no effect on output. They result, primarily, in growthless spending. For those with reduced disposable (after housing cost) incomes there is reduced spending on consumption goods with likely scale economies and rising production productivity. In consequence rising housing costs will reduce growth and productivity in the economy (though supply increases they induce will potentially raise some productivity effect).

In making policy judgements about the 'affordability of housing', for renters and owners alike, the polity is taking a view that house prices/rents are too high relative to household incomes, and this problem has arisen primarily by housing costs rising faster than incomes. These rises are more pronounced in metropolitan areas and within such areas core locations have risen fastest. These, in effect, 'excess housing costs' represent a congestion outcome of current patterns of economic development. Transport policy widely supports the reduction of the congestion costs on travel to work within metropolitan areas through investments, and other measures, to reduce travel times and costs (reducing a congestion cost of growth). It is measuring these effects that gives the transport sector a 'big number'.

The discussion in the paragraphs above suggests an equivalent number for the housing sector, the rising scarcity rents of housing, and the reduced consumption and productivity that they induce in the economy. A core case for housing policy investment is that concentrated growth drives up housing prices and rents raising scarcity rents; scarcity rents are, in many respects, the housing sector equivalent of travel congestion costs.

The question then becomes one of measurement. The research team could produce simple estimates of the scale of the effects, and they are significant. However, given the potential importance of housing outcomes for state economic planning and policy there are key questions that the housing sector should direct to relevant economics/finance ministries. These questions are of particular significance:

- What are the consumption, employment and (consequent) productivity effects of excess housing payments (for owners and renters and in aggregate) in the metropolitan-regional area? How would Greater Sydney spend and save differently if 'scarcity rents and supernormal profits' for housing/landowners were reduced back to 2010 levels?
- A key issue here is to identify what other categories of spending/savings have been reduced as a result of rising housing payments and the productivity effects estimated by applying sector productivity estimates to the sectors that have risen and fallen (and therefore changed the average productivity measure for Greater Sydney).
- There is a growing awareness that households carry the burden of high housing costs by commuting longer and further. Canadian research shows how important it is to look at housing and travel costs together. It would be interesting to take transport plus housing costs for households into this assessment and examine their combined effects on consumption and productivity.
- What are the implications for state-provincial governments and their economies of a 5, 10 and 20 percent rise in housing costs in the year ahead in major cities?
- What are the future effects, say five and ten years ahead, of delayed home ownership entry by current 25-35 old households on their future savings, consumption asset positions contrasted with current 45-55-year-old households?

The modelling possibilities, as for the other areas of effect discussed below, depend on the CGE model to be used. Housing producers need to agree with government on some reasoned estimate of the extent of 'excess payment' to be made and the housing-economy relevance of the models being used.

These estimates are aimed at understanding the wider economy effects of rising house prices, not least on productivity. Some house price increases may reflect the rising productivity of a place but in the main they reflect rising scarcity rents. Increasing the price, for example, on existing homes, reduces savings in non-housing instruments and consumption on other goods and services without increasing the flow of 'physical housing services'. That is, rising house prices and rents are likely to reduce other consumption and savings.

## Housing construction period effects

It was noted in Chapter 6 that rising prices in the housing sector lead, if with some inelasticity, to rising housing outputs from construction of new homes and home renovation and extensions. Construction sector activity, whether responding to price signals or population growth pressures, rises with growth and in upswings it often has periods of growth faster than the economy. Although growth is now lower and less certain for the Australian economy and for Greater Sydney there has been a historically growth phase of the economy and the city over the last 20 years. After the event, the construction of more homes in Greater Sydney has a positive productivity effect by producing the housing and neighbourhoods that are the essential infrastructure for growth. However, as the housing construction process has a low productivity of labour relative to other consumption sectors a higher than average construction effort will lower short-term productivity figures. State governments should have a sense of these numbers. For the housing sectors, and indeed most other infrastructure sectors, it also means that cramming state support for housing into stability programmes and cyclically raising and then lowering housing policy support may be a productivity



lowering policy. More stable and sustained housing programmes might have a less damaging effect on the economy. CGE modelling could inform this important issue.

### Labour market effects (mismatch costs)

There is growing evidence of long commutes to work, not least for lower income workers, as lower income market housing and social housing land purchases are displaced to lower cost land locations within large cities.

What is the cost of these commutes in terms of lost productivity (work hours, reduced labour market participation, lower efficiency with tiredness etc.) and how might they be reduced through housing investment programmes of different scales, locations?

### Housing, commuting and labour market effects

In Chapter 7 evidence was assessed on the effects of a variety of housing outcomes on human capital and labour markets. But there are also some potential CGE modelling possibilities. Unless CGE modelling can be done for a representative lower income household in employment, say at 30 percent of the way up the earnings/income distribution, then we need to address the housing consequences of commuting, and vice versa, by dealing with the representative CGE household. In metro markets, we know that, often, property prices per square metre rise with proximity to the market core (usually the CBD but with sub-peaks spread through the metro area). In many ways, this is an extension of the first question but can we, *ceteris paribus*, estimate the benefits of moving workers closer to their jobs by changing the set of housing opportunities. In CGE this may be proxied by reducing travel times/costs by some percentage for the average household and modelling the consequences. How can this be made more specific? What if we test the Prime Minister's Cities Unit's '30- minute' city idea for the metro population and for the poorest third of workers. Can it be tested in CGE models?

### Housing supply solutions

One of the arguments against housing policy interventions (cases) is that the supply side of the system will resolve the problem of housing affordability and this argument was made to us by a small number of those interviewed. Meen et al. (2016), repeating earlier work for the UK government, has already demonstrated the implausibility of this policy strategy for resolving Sydney's supply problems. The 'leave it to the market' (usually after removing regulations) is much too simplistic. No doubt rethinking regulation would make supply more elastic but other factors also limit responses. It ignores the well-established market failures that arise in 'free' markets for housing construction, not least the uncertainties that developers face in knowing where to develop and the difficulties that governments would have in deciding where to locate key infrastructure. It also ignores the reality that in advanced economies adequate housing (the merit good standard that society deems households should have) usually costs well above what the poorest fifth of households can afford so problems of 'needs' and low incomes are not resolved even by the most efficient of markets unless society decides that there is no minimum acceptable housing for its poorer households. We do have to deal with 'affordable housing' (so-called) as well as housing affordability.

That said, let's take the argument at face value for the present. We have estimates of the number of houses that NSW/Greater Sydney needs to create a 'balanced market'. Let us assume, to start,

that there are no constraints, neither in regulations relating to land and land supply nor in the construction labour and materials sector, and on adding that housing stock to the Sydney metropolitan area. The following questions are important, and should be modelled by the state:

- What would the effect be on the Sydney economy of balancing the market by quantitative additions within a two-year period and, more reasonably, a five-year period (recognising that housing demands will rise each year with positive net immigration). This could be modelled as a ‘shock’ to the supply side. Can the CGE model do this? That is, tell us the consequences of the ‘supply side’ response. We can check this against simpler calculations based on likely supply elasticities.
- A ‘balanced’ market implies supply and demand are at or near equilibrium and that real house price increases should be close to zero (or at the general RPI). Can we estimate how much housing would be produced at that house price increase rate? How would it compare with likely estimates of demand (derived outside of a CGE model)? That is, what gaps are there in the cases made by ‘supply-siders’, ‘planners’ and others because different theoretical beliefs (without recourse to much evidence at all) currently pervade the debates.

## Inclusionary zoning

Transport improvements and supportive housing investment by the state create substantial infrastructure and planning gains for landowners. There is a strong case made above that Inclusionary Zoning (IZ) is a productivity efficient way of providing affordable housing, in owned and rented sectors. The overall cases may not need CGE modelling: technically, well designed IZ simply extracts scarcity rents with no productivity effect and obviates the need for tax revenue supported investment: raising that revenue taxes the productive effort of firms and households. It would be useful to have modelling to answer the following questions:

- What is the saving on state borrowing or revenue raising from a programme of housing units provided through inclusionary zoning?
- What are the effects on the average household if all new schemes in Sydney had to have 10, 20 or 30 percent IZ?

## Ageing households and caring families

Changing demographics, conjoined to housing cost/price changes, have created some important intergenerational family connections in housing choices and investments and have increased the proportion of older households remaining in their peak housing consumption homes (‘the family home’) simply to maintain housing investment returns though the homes are too large for them and remain unavailable to emerging families with peaking consumption demands. This emerging issue was raised in a significant number of interviews with providers and policymakers and some estimates suggest that there may be close to 1 million under-occupied homes in the GSC area. There is an innovative ‘caring family’ housing policy strand, that takes account of emerging intergenerational connections, to develop. This involves the following issues and questions:

- Facilitating older (grandparent) and younger (parents) to locate closer together allows grandparents to provide more grandchildren support and gives parents to have more flexible choices of whether, where and when to work. An estimate of increased labour

market participation because of more proximate grandparent-parent living could inform assessments of housing productivity effects.

- Older people under-consuming large homes whilst they maintain their housing investment portfolio could be encouraged to solve two problems if they were to be aligned with NFP and other developments. They would be encouraged to downsize (to a mixed income, mixed-age development that they would still own) but their excess housing capital would be reinvested to either provide a purchase deposit for a younger family member or a rental unit for family or general rental. The move produces a good housing solution for the older household, it frees family units for growing families and it helps provide rental or owning units for young people. There needs to be CGE modelling, and other research, to highlight the effects of recycling elderly under-occupied properties in novel ways. This would significantly raise the productivity of the housing system and is a potential 'big number' for housing policies.

The modelling suggestions made above are intended to put some very broad estimates around some general, stylised policy thrusts and to highlight the role of housing prices, costs and outputs in these estimates. If they are taken up by states, or by coalitions of housing providers, they will be making these housing 'cases' for the first time within economic models. This chapter has made cases to examine density, labour market accessibility, housing affordability, ageing and family relationships, inclusionary zoning and supply side strategies and see some merit in exploring them within CGE. Some key policy issues may not fit well within a CGE framework. An important policy issue of this kind may be the 'socio-economic mix' in developments within different parts of the metropolitan area. We need to specify the range of groups to be mixed, the spatial scales over which an average mix is to be obtained (is it to be within buildings, streets, neighbourhoods or some wider areas). The possibilities for and the costs and benefits of mixing groups depend on some more exact characterisation of the mix policy aim. It may be that the mix case gets made after the modelling suggested above with an argument to show how mix in different places can increase density and supply and reduce travel times and maintain other consumption for less affluent core area workers.

This, however, is reaching ahead of 'fast' 'big numbers'. There is sufficient data pertaining to the Greater Sydney housing system to estimate some 'big numbers' with existing data, some key assumptions and some economic logic. It would however be a better first step if state finance and other ministries moved to a programme of discussion about housing investment and productivity effects based on the best modelling that the state sector can provide. With a pervasive housing affordability problem, the states, other official bodies and representatives of the housing providers need to cooperate in shaping questions and answers not to marginally shift housing budgets but to get a big picture grip on what present housing outcomes are doing to the economy, younger and poorer people.

## 9. Conclusions

The previous chapters have covered conceptual, empirical and policy materials on housing and economic growth and productivity. Policy shifts in managing metropolitan housing markets require a new conceptual apparatus that changes the status quo in several different ways. These ‘conclusions’ are a succinct summary of the key research findings, and hopefully also offer the ‘beginnings’ of new housing market policies.

1. There is clear evidence of significant negative economic feedback from the current state of Sydney’s and Melbourne’s housing systems. This is particularly true of the burdens and other economic consequences of recurrent annual increases in prices and rents over the longer term.
2. These price shifts, ahead of real incomes, have had wide (and widely discussed) impacts on housing affordability for around half the population. They have underpinned significant increases in inequality of housing wealth and disposable income. Critically, and with little public or policy discussion, they have impacted negatively on metropolitan productivity growth.
3. Present volumes of investment in housing will not resolve the continuing shortages of housing in Greater Sydney, clearly driven by the fundamentals of population and employment growth. Although price increases may reduce from present levels, they will remain strong. In other words, policy change has dealt with some ‘icing’ but not what bakes the ‘cake’.
4. Resolving current levels of excess demand, other than by simply encouraging upward price adjustment (that may well re-encourage rising speculative demands), is unlikely by ‘market only with deregulation’ proposals alone. Such proposals owe more to a reliance on abstract theoretical market models than to econometric work on supply responses and price elasticities. A more considered approach to housing market policies might help the housing system to support rather than inhibit the growth of the economy.
5. Cases for housing policies from housing providers such as the non-profit sector have seldom made strong arguments for support on the grounds of enhancing growth and productivity. Their arguments, rooted in the social policy traditions of housing policies, have typically concentrated on ‘merit’ cases informed by estimates of housing need. Economic arguments have generally only been deployed by lobbies to make a case for housing as an important stimulus sector, with high multiplier values, when governments are seeking to combat recession.
6. In making cases for pro-economy housing policy, NFPs traditionally emphasise social needs and employment effects. Merit good and stimulus arguments for housing are often valid and need to be made. But they have two drawbacks: they miss important consequences for growth from housing system outcomes, and are too easily dismissed as ‘redistributive’ resource bids that policy advisors and officials can find difficult to support. The housing sector needs a new economic story.
7. In this research federal government officials appeared open to taking a fuller account of how housing impacts the economy, society and other areas of public expenditure. However, there appeared to be limited evidence available within the federal government on housing effects on the economy. Macroeconomic modelling has to include a realistic characterisation of the Australian housing sector. Metropolitan markets do reflect global and national policy settings and economic events, but they are crucially local in many dimensions. Unless the federal government develops its capacity to

undertake macro to metro level modelling, it will be unable to offer fully informed commentary on how housing prices, inter alia, are unfolding in the major blocks of the Australian economy. The Australian Government needs a new housing-economy story at metropolitan scales.

8. There is some excellent modelling of intergenerational economic issues in the NSW Treasury, but this needs to be extended to include modelling techniques aimed at understanding the consequences of the 20 percent rise in house prices last year. Why? More generally, the past two decades have cut down housing policies in Australian states, in the main, to focus on the difficult issues of homelessness and the poorest households. There has been reduced focus on modelling or policy for the overall housing market, but that is where major policy issues have arisen over the last decade. This has led to a lack of capacity, data and research to give an informed view on how better economic outcomes will emerge from possible housing market interventions. The state government would benefit from a more technically advanced policy narrative for the housing sector.
9. In the absence of deep data, evidence and modelling, the ways in which housing shapes economic development need to be addressed across the silos of government that deal with housing, the economy, infrastructure and planning. These conversations need to extend to organisations such as the GSC, the NSWFA and the private sector peak bodies, which have real experience of housing outcomes in the city. Of course, as academics, the study team will encourage more research on these issues. But above all we advocate an urgent cross-sectoral conversation on how to improve the economic performance of the metropolitan housing system. As the conversation unfolds, a new housing-economic narrative for metropolitan Australia can emerge.
10. Any new economy-relevant narrative must be rooted in fundamental features of housing and housing markets. These fundamentals are that (i) housing is a complex good - forget the apples and oranges of Economics 101; (ii) once built it is fixed in space; and (iii) it is a durable good and in consequence a household asset. These different attributes and the outcomes associated with them, such as size, type, neighbourhood context, location, price and price change processes, have myriad connections to the economy. Further, as paying for housing often absorbs 20 percent of household income and is now a key form of household wealth (and debt), the sector and these complex connections constitute a major 'weight' in the economy.
11. At the same time, housing 'processes' of selling, buying, maintaining, financing, designing, planning and building may employ one in six employees in a metropolitan area. The pro-cyclical nature of these activities increases the amplitude of metropolitan business cycles.
12. The diversity of housing in a metropolitan area and the geography of neighbourhoods and housing product groups requires care in describing the metropolitan market (and this is missing in most commercial reports). The housing market coheres at different scales and effects may occur at all of them; critical scales for policy analysis are the individual household, the neighbourhood, major sectoral or spatial markets, and the metropolitan area.
13. The fundamentals of housing have implications for the functioning of housing markets. Variety poses information issues for buyers and sellers. There are significant spillovers or externalities from individual housing choices (I do like your roses, but I don't like the carbon coming out of your faulty heating/cooling system) and other market failures that policy needs to address.
14. The spatially fixed and durable capital aspects of housing allow it to fit with modern definitions of infrastructure. A key aspect of the new policy narrative for housing is that it shapes social,

environmental and economic outcomes as essential economic infrastructure. This emphasis should not simply be limited to public housing (as in Victoria), but should extend to the housing system as a whole. Many observations to support this proposition emerged in the research. Housing investment has been unfairly and adversely contrasted with transport investment in budgetary decision taking, and transport cost-benefit analysis appears to claim gains that ought to be partially attributed to other sectors, particularly housing investment. Indeed, housing and transport outcomes and decisions really need to be addressed and resolved simultaneously (whether the issue is the affordability of housing/transport choices or the productivity effects on the economy) to make effective decisions in policy cases. Meanwhile, states may be wise to place homelessness and low-income housing issues in social affairs ministries, but they need a different ministry for assessing and delivering housing outcomes for a better economy. It simply will not happen in existing housing ministries given their current configurations.

15. The complex, localised, durable nature of housing leads to complex supply chains for new housing, that relieves market pressures. Housing supply, especially in metropolitan areas, is a notoriously inelastic system. The sluggish nature of housing supply arises from regulatory effects, materials and labour shortages and, on occasion, the market strategies of construction firms. Housing investment and supply strategies for metropolitan areas need to be a key element of metropolitan strategy, to accommodate growth without undue price increases.
16. When supply is inelastic price dynamics are more likely to emerge that encourage speculative demands for housing, exacerbating housing shortages. However, the major gainers from price appreciation are incumbent owners of land and property, who earn what are called 'economic or scarcity rents'. Rising prices usually mean simply a rise in price of existing capital goods that make no additional contribution to output or productivity in the economy. Certainly, some of their 'new wealth' may enter consumption. At the same time, however, new entrants face rising prices and rents that reduce their disposable incomes significantly and with it their consumption of goods and services. Overall, the result is reduced household consumption. These affordability and distributional effects on productivity are potentially large, a 'big numbers' effect from housing market outcomes. Yet they are not deployed in Australian housing policy debate.
17. A popular productivity argument in metropolitan decision-making involves the productivity gains that arise from agglomeration in cities, as higher employment densities translate into more effective labour markets and metropolitan innovation systems. But an emerging issue in the last decade in major pressured cities is that the congestion costs of agglomeration induced growth are now 'eating' the agglomeration gains. Rapidly rising housing costs play an important role in this. So, we see the displacement of firms, moving to lower cost but lower productivity locations outside of New York and San Francisco; productivity growth in Auckland now falling to below the national average; and a growing slew of commercial sector reports indicating high housing costs in Greater Sydney as a problem for moving executives, labour market movers and students. The cost enhancing and productivity reducing effects of housing outcomes in recent years are a growing concern voiced by businesses in Sydney. It is time to take these issues seriously in economic and housing thinking for the state and the city.
18. There is a case to be made that the agglomeration productivity gains claimed by transport investment may be partly attributable to housing policies and investments.
19. The literature review revealed a wide, but often unsystematic, range of productivity effects from housing and neighbourhood outcomes. There is a relatively full story for housing impacts on

the quality and productivity of human capital. Research has hardly touched the connections between housing and business and even less so innovation, but there is enough prima face evidence that a stronger research/modelling exercise is needed.

20. Finally, it is possible to model some macro-metro effects for housing outcomes in Greater Sydney via CGE models of the NSW economy. These models have limitations but they are already used in other areas of state policymaking. Recommendations for CGE modelling include the housing effects on the economy that arise from agglomeration, house price and rent effects, supply side change, mixed communities and home-owner ageing.

This report has covered a lot of ground, and more material on the potential importance of housing in the economy and in economic policymaking is emerging month by month. The importance of the housing sector in shaping the economic development of citizens, cities and the nation is no longer deniable. The explicit exploration of housing effects on productivity, as essential city infrastructure, now needs to become part of national, state and city policy development. This will require a lot of work to fill the gaps in evidence and modelling, and to shape investment strategies to manage better metropolitan growth in Australia. Government economic analysis of housing strategies for Sydney and Melbourne should be developed further to set global best practice, given both the strong global attraction of these great cities and the attention that their planning and development draws in international metropolitan management debates. The writing of new policy narratives for housing has started, but the task now is for government, housing providers and researchers to work collaboratively, to shape better outcomes from the impressive emergence of Greater Sydney and Melbourne as true world cities.

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