

# Supply-side Issues in the Housing Sector

Wing Hsieh, David Norman and David Orsmond\*

Supply-side factors can affect the responsiveness of new dwelling construction to changes in housing demand. Recent reports and liaison with industry participants point to a range of supply-side rigidities in the Australian housing market, including the length and complexity of the planning process, issues related to the provision and funding of infrastructure, land ownership and geographical constraints, and other challenges related to infill development. In recognition of this, governments have made some progress in addressing these concerns.

## Introduction

Despite being just 3–4 per cent of GDP, the construction of new houses and apartments tends to have a significant effect on overall developments in the Australian economy, reflecting the volatility in new dwelling investment, its strong links with spending on household durables and its sensitivity to interest rate movements. While the factors that underpin housing demand have traditionally been the focus when explaining the cycles and trends in new dwelling construction, it has been increasingly recognised that supply-side factors can add to the cost of housing construction and impede the ability of the housing industry to respond in a timely manner to changes in demand (see, for instance, COAG Reform Council (2011), National Housing Supply Council (2011), Productivity Commission (2011), Yates (2011) and Housing Supply and Affordability Reform (HSAR) Working Party (2012)).

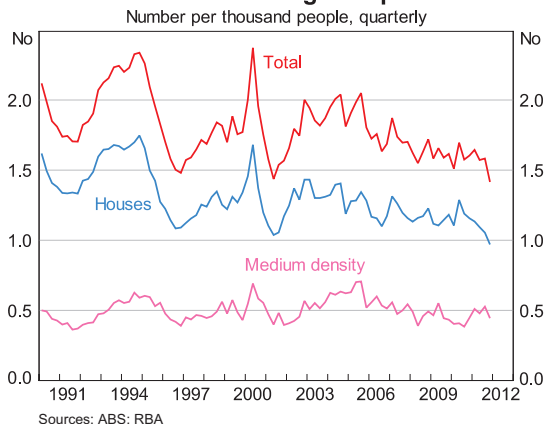
As part of its business liaison, the Reserve Bank regularly meets with a wide range of developers, builders, state and local government agencies and housing industry associations across Australia. Drawing on these discussions as well as recent industry reports, this article summarises the factors that industry participants suggest are the main supply-side rigidities within the housing sector. The

article also discusses recent policy initiatives that aim to address these concerns.

## Recent Developments in Dwelling Construction

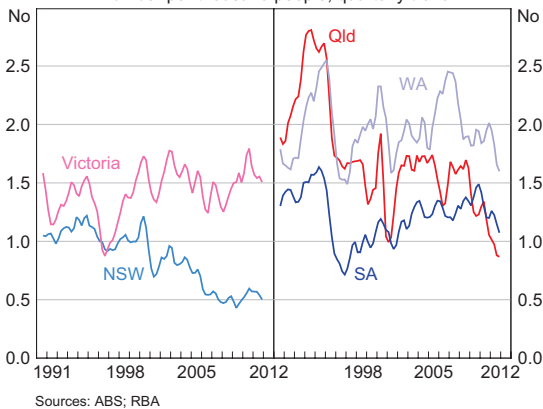
Housing demand fundamentals were strong over much of the past decade, underpinned by a high rate of population growth, relatively low unemployment rates and the strong growth in household income. At the same time, however, the number of new residential dwellings built relative to the size of the Australian population declined, although there was considerable variation between the states (Graphs 1 and 2). These developments have led some

**Graph 1**  
**Residential Building Completions**



\* The authors are from Economic Analysis Department.

**Graph 2**  
**Residential Building Completions by State**  
 Number per thousand people, quarterly trend



commentators and industry participants to suggest that supply-side constraints have played a role in explaining the weak level of housing construction activity in Australia over the past decade. While most industry participants note that demand-related factors have weighed heavily on housing construction in the past few years – including the reduced willingness of households to take on debt following the global financial crisis – looking ahead, they point out that the ability of the housing sector to respond to an increase in demand will depend on how well a range of supply-side issues are addressed.

## Overview of the Process for Greenfield and Infill Housing Developments

Housing supply policies and processes are largely the domain of state governments and local councils. State governments generally set the outer urban boundary of their capital cities and, in conjunction with local councils, determine the areas in which they will permit new dwellings to be built. New dwellings can be built either on the city fringe ('greenfield developments') or within existing urban areas ('infill developments'). Historically, between one-half and three-quarters of new dwellings have been built in existing urban areas; the main exception is Perth where the majority of

new development is for free-standing homes on greenfield sites. Infill developments include large medium-density developments (primarily former industrial, or 'brownfield', sites) as well as low-rise medium density developments (less than four storeys) and single homes that are usually built by small and medium-sized developers.

The process of converting vacant land into a dwelling can be divided into six broad (and in some cases overlapping) stages:

- **Land identification and release:** Identification by state government of an area that has urban development potential; this stage may include the development of a strategic plan.
- **Rezoning to residential:** Rezoning of the identified land for residential purposes by local councils and state agencies; this is often initiated by a developer but may be initiated by the government in line with its strategic plan.
- **Detailed site planning and approval:** Involvement of the relevant agencies to provide basic infrastructure such as roads, water, schools and health facilities. Determination of the level of infrastructure fees paid by the developer to the state government, local council and/or infrastructure providers.
- **Subdivision and development support:** Typically initiated by the developer and usually the responsibility of a local council; covers issues such as the layout of local roads, lot sizes and streetscapes.
- **Major civil works and issuing of titles:** Development of the engineering designs for the subdivision and provision of services, usually in stages for large release areas; titling of lots.
- **Development approval and dwelling construction:** Housing design approval by local council and construction.

Industry participants note that impediments and delays can occur at each of these steps. While it is difficult to be definitive, in recent years the process to convert farmland to new dwellings seems to

have taken around six or more years, although the amount of time, and the time taken at each stage, has varied across the capital cities and even within local councils of the same city.<sup>1</sup> For infill development, the process is shorter given the presence of existing infrastructure, but it has often taken around five years to move from a brownfield site to housing construction, depending on variables such as the extent of any contamination to the site and opposition to development plans. The time taken to build single dwellings in infill areas is usually shorter, but again can be subject to significant delays.

## Housing Supply Impediments

Several supply-side factors have been cited in recent official reports and by industry participants as being responsible for delaying the availability of new residential developments and raising the cost of their provision (see, for instance, the National Housing Supply Council (2010), Productivity Commission (2011) and HSAR Working Party (2012)). The factors identified can be broadly classified into four inter-related groups.

### Complexity of the planning process

The complex planning issues and delays that occur at each stage in the process are commonly cited as 'front and centre' when it comes to understanding why housing supply has not been more responsive to changing demand factors. Industry participants argue that the following factors lengthen the time it takes to negotiate development approvals and create uncertainty about the likelihood of its eventual success:

- a lack of coordination between the various agencies involved, including local councils, utility and other infrastructure providers, as well as state planning and environmental departments
- uncertainty about planning standards, development assessment policies and state

and federal environmental laws, all of which can change during the development process

- negotiation of infrastructure requirements, and delays in governments or utility providers installing infrastructure
- insufficient resources at councils to assess zoning and development applications quickly
- limited scope for automatic approval of complying building applications
- local opposition to urban expansion and high-density developments (see also below).

While there are sound reasons for councils and government agencies to impose stringent tests during the planning phase, the uncertainty and time typically taken to settle planning issues can increase the cost and risk of housing development. In particular, because developers incur holding costs on land (both the cost of financing its acquisition and land tax), the time it takes to get through the planning process increases total development costs. And since the economic viability of a new development is ultimately capped by the prices of existing housing in nearby areas, increases in costs due to a protracted planning process can make new housing developments unviable.

### Provision and funding of infrastructure

Residential landholdings cannot be developed unless there is sufficient infrastructure – primarily water, sewerage, transport and energy – in place to service the new residences. Historically, state governments covered the cost of providing infrastructure for new housing from general tax revenue. Over recent decades, state policies have shifted toward user-funding of infrastructure, which has meant a significant increase in the private cost of development. Infrastructure charges raise the final sale price, reduce developer margins and/or lower the value of the undeveloped land, all of which can make the process of housing development less viable.

There are three broad types of infrastructure costs: charges to cover the provision of utilities such as water, electricity and sewage for new developments;

<sup>1</sup> While this article concentrates on supply-side issues in capital cities, there is evidence that the issues raised affect regional cities to some extent as well.

charges by the state government for roads and other transport services; and charges by councils to fund community services for new and existing residents (including parks, childcare centres, libraries, community centres, recreation facilities and sports grounds). Developers often fund at least half of new utility and transport infrastructure in Sydney, Brisbane, Perth and Adelaide. However, the way this occurs varies among the state capitals. In Sydney, a fixed-rate levy is typically paid to the state government; in south-east Queensland, developers pay the state or local council a negotiated fee to arrange the infrastructure; while in Perth and Adelaide, developers negotiate directly with utility providers and the departments of transport. In many cases, developers in these cities may be able to recover some of this cost from subsequent developments that share the use of this infrastructure, although this entails a financing cost until the urban boundary catches up. In contrast, in Melbourne the state government funds most of these costs. With regard to community infrastructure charges for greenfield developments, in all capital cities these are generally charged to developers. The cost of this infrastructure charge can vary significantly across councils.

In addition to the cost itself, uncertainty surrounding the eventual level of the infrastructure charges is also a challenge. Infrastructure costs imposed by councils or utility providers in a number of states can be subject to negotiation on a case-by-case basis, and so can vary considerably across developments in ways that are difficult to predict upfront.

Infrastructure charges also apply to infill developments. While they are generally lower than for greenfield developments due to the presence of existing services, these charges can also vary significantly across sites, largely based on the adequacy of existing infrastructure. Infill infrastructure charges tend to be calculated as a share of the construction cost, but they too can be subject to negotiation between the builder and council concerned.

### Land ownership and geographical constraints

An additional impediment to the conversion of identified greenfield land to market-ready lots can be the structure of land ownership at the city fringe. In north-west Sydney and in pockets around Perth, land on the urban fringe is fragmented by 'market garden' style blocks. As these cities have grown in size, having multiple owners at the fringe makes it more difficult and costly to consolidate and bring large parcels of land to market. Liaison contacts note that existing landholders often resist selling for lifestyle reasons and/or because their price expectations exceed the current market valuation. Fragmented ownership of land can also be an issue for infill development if developers are unable to accumulate a sufficient number of adjacent lots to make high-density development viable.

Too much concentration of ownership of land zoned for development at the fringe can, in principle, also be an issue. There have been occasional concerns about developers with large holdings of zoned land 'drip feeding the market' with small parcels in order to maintain the price of land at the fringe. Nonetheless, the general feeling among most housing industry participants, and reaffirmed recently by HSAR Working Party (2012), is that concentrated land holdings are not a widespread issue given the significant tax and interest holding costs involved; recent falls in greenfield land prices support this contention (see below for further details).

Expanding the city fringe further can also be particularly difficult in cities such as Perth and Sydney that have natural geographical constraints. In Perth, the coastal sands in the metropolitan region that are easy to build on have already been developed and the remaining englobo land – land identified as eligible for housing but not yet rezoned or serviced – involves considerable geological and infrastructure issues. In Sydney, there is a high risk of flooding in regions close to the Nepean River that lies west of the city's major growth centres, and there are large national parks to the north and south of the city.

## Public attitudes towards infill development

Much of the future demand for new housing in each capital city is expected to be met by development in infill areas. As noted, infill development also faces some of the challenges discussed above, particularly those associated with the complex planning process. However, an additional barrier to the flexibility of the supply of new infill dwellings occurs when there is community opposition to development.<sup>2</sup> Proposed developments can attract opposition from existing residents concerned about the possible change in the character of the suburb, environmental issues, the increase in congestion and/or perceived loss of value in their homes.

In some instances, these concerns can result in developments not being approved or only being approved with restrictions that make the projects less viable. Council requirements are sometimes perceived to lack transparency, and there are claims of development applications being refused for criteria not specified in advance. Councils, on the other hand, claim that many of these issues arise when developers do not engage with them earlier in the process, which would have enabled the councils to identify aspects that were unlikely to be subsequently approved. In other cases, developers may secure council approval, but then be subject to legal challenges from the local community. The costs of holding land while developers negotiate with the local community and council or engage in disputes can render a project unprofitable by the time it is eventually completed. These types of concerns may increase over time as more residents move to the inner-city areas, and thereby boost the number of people consulted when considering future development approvals.

<sup>2</sup> The redevelopment of existing blocks of apartments is also challenging, and requires agreement by all owners.

## Impact on the Overall Cost of Development

It is difficult to estimate accurately the impact that supply impediments have had on the total cost of housing development. As noted, infrastructure charges are, in principle, explicit, but nonetheless vary considerably by state and location. In addition, many of the factors highlighted above incur an indirect cost by lengthening the time it takes to progress through the development stages, which requires longer finance periods than would otherwise be required. Furthermore, regulatory issues can increase the risk of development, which in turn raises the expected margin required before a development can proceed.

Nonetheless, information is available to assess the impact of some of these factors on the total cost of greenfield and infill development, at least in representative suburbs in the capital cities. Data commissioned for the National Housing Supply Council from Urbis (2011) indicate that the cost of infrastructure in a typical three-bedroom greenfield location in Sydney in 2010 was around \$44 000 per lot, though other reports suggest that this could be as high as \$70 000 in other suburbs of Sydney (Table 1). The cost of infrastructure was somewhat lower in Perth and Brisbane, at between \$20 000 and \$30 000 in the same period, with again a wide variation within cities. These estimates were much lower in Adelaide, though in liaison, industry participants suggested that costs were typically closer to those charged in Brisbane.<sup>3</sup> In contrast, infrastructure charges were lower at around \$12 000 in Melbourne since developers cover only community infrastructure. For infill developments, the cost of infrastructure varies based on the location of the site; Urbis (2011) estimates that the cost for a two-bedroom apartment was around \$15 000 for a typical development in Sydney and Brisbane, but only a few thousand dollars in Melbourne and Perth.

<sup>3</sup> The difference is likely to reflect Urbis's (2011) choice of suburb, since Salisbury in Adelaide is a relatively established suburb with reasonable existing infrastructure.

**Table 1: Greenfield Infrastructure Development Charges**  
Thousands of dollars per lot in 2010

City	Indicative cost <sup>(a)</sup>	Range
Sydney	44	15–70
Melbourne	12	12–17
Brisbane	26	15–40
Perth	21	na
Adelaide	7	na

(a) Selected regions are Kellyville (Sydney), Wollert (Melbourne), Redbank Plains/Springfield (Brisbane), Wellard (Perth) and Salisbury (Adelaide)

Sources: Productivity Commission (2011); RBA; Urbis (2011)

In addition to infrastructure charges, there can be a range of other government charges on housing development that vary by state. These typically added a further \$13 000 to costs for greenfield developments in Sydney and \$8 000 to the costs for Melbourne in 2010, with either land taxes or council rates quite sizeable in these cities (Table 2). In contrast, in Brisbane and Perth these charges add only marginally to the cost of infrastructure, since other forms of government charges are of minimal importance.<sup>4</sup>

Overall, aggregating these taxes and charges imposed by governments for representative suburbs in each state, Urbis (2011) estimates that in 2010 government charges (excluding GST) levied on developers amounted to around \$60 000 per greenfield dwelling in Sydney, and between \$20 000 and \$30 000 per greenfield dwelling in other cities. For infill developments, total government charges levied on developers were typically around half those for greenfield developments, at \$20 000 to \$25 000 per apartment in Sydney and Brisbane and around \$10 000 per apartment in Melbourne and Perth. The lower figure for infill development relative to greenfield development reflects the significantly smaller charges for infill infrastructure.

These data suggest that in 2010, government charges (excluding GST) added around 5 per cent to the cost of each greenfield dwelling in Melbourne, 10 per cent

in Brisbane and Perth, and a bit less than 15 per cent in Sydney. The percentages were much lower for infill apartments, with government charges adding around 2½ per cent to the overall cost of building infill apartments in Melbourne and Perth and around 5 per cent in Sydney and Brisbane. These charges can be quite significant compared with the margins earned by developers of dwellings: Urbis (2011) data indicate that between 9–14 per cent of the final sale price was retained as gross profit for developers (from which they would have needed to pay overheads), with the margin for Sydney greenfield developments much lower. These margin levels may also account for the concerns that industry representatives note in regard to the indirect costs and risks associated with the uncertainty of the eventual amount of the government charges, and more broadly the delays they face during the planning period that add to the indirect cost of construction.<sup>5</sup>

## Government Response

It is widely accepted that some planning regulation is important and that new housing infrastructure needs to be funded. However, there has been recognition by governments at all levels that current policies may impose unduly complex and prolonged restrictions and thereby raise the costs and limit the flexibility

4 GST levied on the final sale price of new dwellings adds a further \$50 000 for infill apartments and houses in Sydney, or around \$40 000 for houses in other states (with these differences fully reflecting differences in the cost base from which GST is levied).

5 A further implication from these data is that construction costs amount to around half of the final sale price of new dwellings and, as noted by Urbis (2011) and Kelly, Weidemann and Walsh (2011), are significantly higher (in levels) for apartments than for houses. The data also show that land acquisition is a high share of the total development cost. In contrast to the costs of construction, land acquisition costs vary significantly by state, although this variation is sensitive to the representative suburb selected in each of the capital cities.

**Table 2: Development Costs and Margins**  
Thousands of dollars per dwelling in 2010; selected regions<sup>(a)</sup>

	Sydney	Melbourne	Brisbane	Perth
<b>Greenfield<sup>(b)</sup></b>				
Total development costs	500	366	307	311
<i>Of which:</i>				
Land	135	55	25	38
Construction	214	221	202	196
Services and finance	94	68	51	52
Government charges <sup>(d)</sup>	58	21	29	25
– Infrastructure and council fees	44	12	27	22
– Transfer duties <sup>(e)</sup>	8	3	1	2
– Land tax and council rates	5	5	1	1
Margins (per cent) <sup>(f)</sup>	3	10	9	14
<b>Infill<sup>(c)</sup></b>				
Total development costs	487	438	425	464
<i>Of which:</i>				
Land	90	35	45	71
Construction	283	314	283	297
Services and finance	90	78	77	85
Government charges <sup>(d)</sup>	24	11	21	12
– Infrastructure and council fees	14	3	17	7
– Transfer duties <sup>(e)</sup>	5	2	2	4
– Land tax and council rates	5	6	2	1
Margins (per cent) <sup>(f)</sup>	10	14	14	12

(a) Selected greenfield regions are Kellyville (Sydney), Wollert (Melbourne), Redbank Plains/Springfield (Brisbane), Wellard (Perth); selected infill regions are Mascot (Sydney), Brunswick (Melbourne), Indooroopilly (Brisbane) and East Perth (Perth)

(b) Assumes a three bedroom house

(c) Assumes a two bedroom apartment in a multistorey block of 50 apartments

(d) Excludes GST on final sale price; net GST paid during development is zero as GST payments are fully remitted

(e) Includes stamp duty paid by developers, but excludes stamp duty paid by final buyers

(f) Calculated as gross profit divided by final sale price; gross profit estimates are calculated as the sale price minus total development costs and GST paid on final purchase price

Sources: RBA; Urbis (2011)

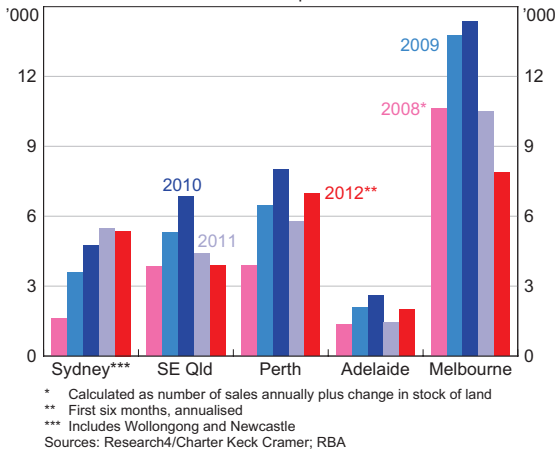
of housing supply. In response to these concerns, greater attention has been paid to these issues in recent years at state and local levels, as well as by intergovernmental bodies such as the Council of Australian Governments (COAG), and several studies and policy initiatives have already been undertaken.

One response has been to accelerate the release of greenfield land. For example, the Victorian Government widened the urban growth boundary

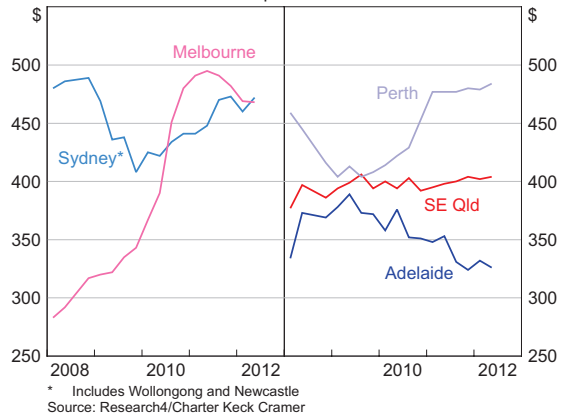
for Melbourne in mid 2010, adding 43 600 hectares of additional land, and a further 6 000 hectares was added this year. Likewise, there have been a number of rezonings undertaken in Adelaide in 2010 and 2011 that have seen large tracts of new land released. In part reflecting these efforts, the number of developed lots released increased significantly in the capital cities in 2009 and 2010 (Graph 3).<sup>6</sup>

<sup>6</sup> The number of new lots released has fallen significantly since 2010 as developers pulled back on new projects due to weak demand.

**Graph 3**  
**New Land Releases**  
 Number of lots per annum



**Graph 4**  
**Median Land Price by City**  
 Per square metre



Since then, in the context of soft demand conditions, land prices have fallen in Adelaide and have come down somewhat in Melbourne (Graph 4). These rezoning actions have relaxed the first two steps in the land development process outlined earlier, which should enable new supply to be able to be brought to market more rapidly as demand strengthens over time.

A second response has been the establishment of centralised state authorities to deal with major new residential development proposals. Most mainland states now have such authorities operating – including Development Facilitation Services in Queensland and the Development Assessment Panel in Western Australia – with a number having been established within the past two years. The purpose has been twofold. In some cases, the authority is intended to address community opposition to infill development, balanced in some instances by an earlier focus on community engagement and concerns. In other cases, the purpose of the authority has been to streamline the development process by acting as a coordinator between the multiple government agencies and infrastructure providers involved. Thus far, there have been mixed responses as to whether these authorities have achieved their stated aims, and some states have returned greater control to local councils.

A third response has been to streamline the approvals process by allowing projects that are code compliant to be approved within certain time frames and with a simpler application process. For example, the residential design ‘R-code’ in Perth has been expanded to reduce restrictions on higher-density developments, and in Sydney, complying developments can be assessed within 10 days. Indeed, HSAR Working Party (2012) reported that greater use of code complying assessment was helping to reduce development costs and increase housing supply. In a related development, there has also been greater emphasis on precinct planning in Melbourne and Adelaide, whereby councils approve and publish a development plan for a broad growth area that then acts as a framework against which individual development submissions are assessed. This has given more clarity about what is permissible prior to commencing planning, and is reported to have taken perhaps six months off the total time required to bring new land to market.

A fourth response has been efforts to cap infrastructure costs in Sydney and Brisbane. In New South Wales, the state government imposed a \$20 000 cap per lot on local council charges in infill areas and a \$30 000 cap per lot in greenfield areas, although around 20 councils have been granted exemptions. In Brisbane, charges for infrastructure



have been capped at \$20 000 for dwellings with one to two bedrooms and \$28 000 for dwellings with three bedrooms or more, which has reduced charges in some areas but has reportedly seen other councils that previously charged less raise their levies. However, these caps in Sydney and Brisbane do not cover all possible charges for infrastructure. Ultimately, these difficulties reflect the challenge of funding infrastructure, since any reductions in developer-financed funding need to be replaced with revenue from other sources so as to enable councils to continue to provide a full range of services to the local area.

## Looking Ahead

A range of supply-side issues in the housing sector has received considerable attention by state and local governments in recent years and efforts have been undertaken to increase the ability of housing supply to better respond to changes in demand. In the Bank's liaison, industry representatives generally report that the changes in policies introduced to date have made some difference to the time, cost and risk involved in undertaking new residential developments, although they caution that the supply process remains challenging. Given the difficulties involved in satisfying the large number of stakeholders involved in the housing supply process, it is likely that these important issues will remain on the policy agenda for some time. ✎

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