

## Keystart Home Loans Programme

(sourced from <http://www.keystart.com.au/about-us/about-us>)

Keystart was established in 1989 to provide low-deposit home loans to West Australians unable to meet the deposit requirements from mainstream lenders. Keystart reached a milestone in 2014, during its 25th anniversary – it has helped more than 85,000 West Australians, those who never thought they would be able to own a home, access home ownership.

### Unique offer

Keystart's offer is unique in the West Australian home loan market:

1. *A lower deposit scheme.* The deposit required in the metropolitan area is 2% of the property purchase price and up to 10% in regional WA depending on the property price and its location. For first home buyers, the first home owner grant can contribute toward the deposit.
2. *No lenders mortgage insurance (LMI).* LMI is typically required by other lenders if clients fall short of their deposit requirements. Keystart saves clients between \$8,000 and \$10,000 by charging no LMI.
3. *No ongoing monthly account keeping fees.*
4. *Education program.* This program was implemented in September 2010 and designed to help a growing number of ineligible West Australians (mainly through too much debt) become eligible for a Keystart loan. The program has over 600 participants and has proved successful in its aims since inception.

### Unique Business

Keystart is governed by the Corporations Act and regulated by the Australian Securities and Investments Commission. It also has one shareholder: the WA Department of Housing.

1. *Transitional scheme.* One of the objectives of Keystart is to help West Australians access the home ownership market. When clients' financial circumstances improve, they are free to refinance to a provider that can offer bundled financial solutions that Keystart does not offer (such as credit cards or financial planning services) or other solutions that may support their individual objectives. Almost 80% have transitioned to a private lender.
2. *Quality loan-book.* Over 90% of Keystart clients are in excess of their repayments by one month. The benchmark default rate in the mortgage market has been consistently above 1% of a loan book. Keystart's default rate has been consistently between 0.25% and 0.5%.
3. *Full documentation.* Keystart maintains strict criteria to ensure its clients can comfortably service a loan and sustain their home ownership journey.
4. *No government subsidy.* No subsidies are provided to Keystart and has not required ongoing financial assistance.
5. *Strong social dividend.* Surpluses are returned to The Department of Housing in the form of a dividend, and the Department uses those funds to fulfil its social housing objectives.

## **ACT's Land Rent Scheme**

(sourced from [http://www.economicdevelopment.act.gov.au/affordable\\_housing/land\\_rent](http://www.economicdevelopment.act.gov.au/affordable_housing/land_rent))

The Land Rent Scheme is an ACT Government initiative to increase access to affordable home ownership. The main purpose of the scheme is to reduce the entry costs and mortgage payments for homeowners. The scheme is also expected to be used as a means for people to advance their entry into homeownership, by saving to buy the land outright in the future while paying land rent.

Under the scheme, lessees rent the land from the Government. They are required to pay the Government land rent, calculated on the unimproved value of the block of land. Lessees are then required to construct a house on the land within two years of the lease being granted.

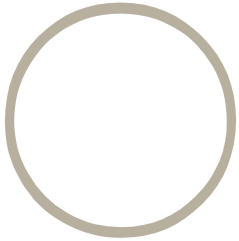
The scheme allows a person to lease the land rent block of land on an ongoing basis or to convert the land rent lease to a traditional Crown lease at a later date, effectively purchasing the land from the Government at that time.



*www.TheCIE.com.au*



# *Taxation generated from the Housing Sector*



*Prepared for*

*Housing Industry Association*



FINAL REPORT



*Centre for International Economics  
Canberra & Sydney*

*4 May 2011*

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## Summary

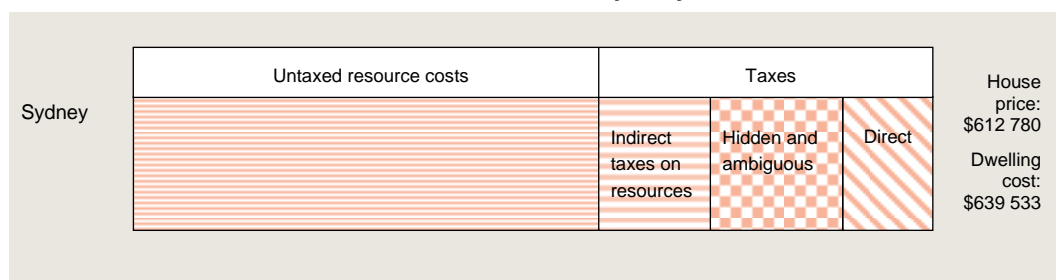
The housing sector is one of the most heavily taxed sectors of the Australian economy, both in absolute and relative terms. The housing sector contributes between \$36 billion and \$40 billion in taxation revenue each year to federal, state and local governments in Australia. This equates to 11 to 12 per cent of the total revenue collected by all tiers of government. Only one sector, wholesale and retail trade, contributes more and its contribution is only marginally larger.

### *The housing sector is more heavily taxed than most*

All indicators are that the burden of tax falling on the housing sector is considerably higher than the average for all other sectors. New housing in particular is inequitably taxed, accounting for around 1.2 per cent of value added in the economy yet contributing 2.8 per cent of government taxation revenues. In terms of GST alone, the residential building sector accounts for 13 per cent of all GST revenue raised by the Commonwealth Government.

In addition to the readily identifiable taxes such as GST there is a range of hidden taxes that not only add to housing costs but cause a wasteful use of resources and impose deadweight losses on the economy. The average tax burden on the new housing sector is estimated at around 31 per cent of the value of output compared with an economy-wide average of 24.4 per cent. When hidden taxes are added in, the tax on new housing is an estimated 44 per cent (\$268 000) of the purchase price of a new house in Sydney (see chart 1), 38 per cent (\$184 000) in Melbourne and 36 per cent (\$191 000) in Brisbane.

#### 1 Resource costs and taxes of new house — Sydney



Source: TheCIE.

In relative terms the tax burden on existing dwellings (the stock of existing houses) is not as inequitable as that imposed on new housing. However, existing dwellings are also taxed above average at 24.9 per cent of their value of output and pay 8.4 per cent of all government taxation revenue while contributing around 7 per cent of value added.

It is not only the Commonwealth Government that extracts large amounts of taxation from housing and the residential building sector. State and local governments also rely heavily on taxes and charges on residential properties for their revenue. Residential property taxes and charges contribute over 40 per cent of total state and local government taxation revenue.

Given this situation, it's not surprising that even larger (in absolute dollar terms) than the GST revenue from new homes are state stamp duties on new and existing residences. And almost equally large again are council rates.

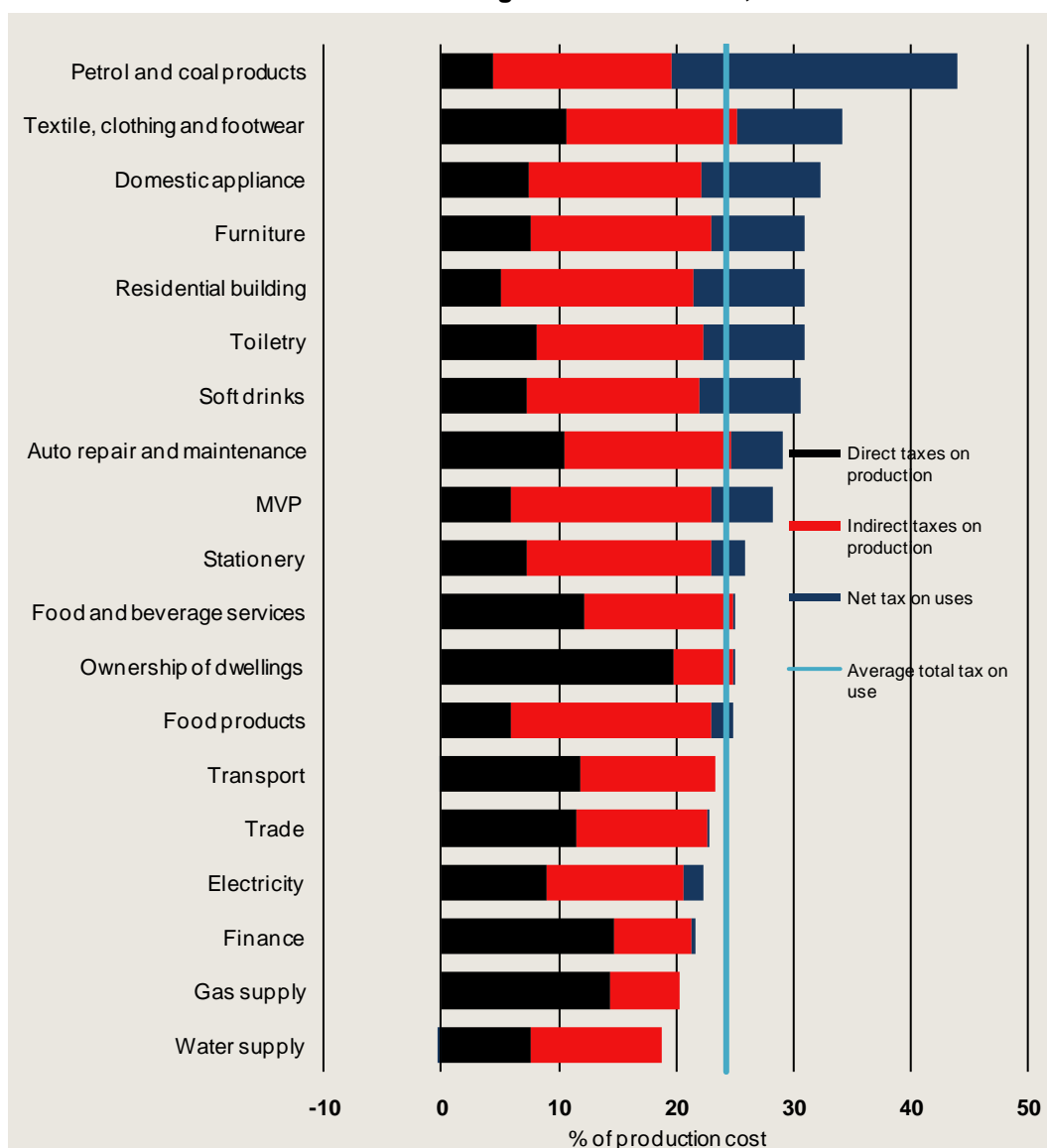
In addition to these taxes are other imposts on housing including infrastructure charges, a raft of levies and compulsory fees, as well as other generic taxes levied across most sectors such as income taxes, fuel taxes, payroll taxes and import duties. GST and stamp duties cascade on top of these already high taxes escalating them further.

On virtually any basis of measurement the taxation burden borne by Australia's residential building sector appears disproportionately large. Among the 111 sectors identified in the Australian Bureau of Statistics' input-output tables, residential building ranked 11th highest in terms of total tax burden on the production and use of products (that is new dwellings). Ranking less highly (37th) was the total taxation of the ownership of dwellings, which while still relatively highly taxed, suggests there is considerable inequity in the tax treatment of new versus existing dwellings. That said, it should be noted that housing is taxed twice, when it is being built as well as on an on-going basis.

And among Australia's largest industrial sectors (those with a value added of more than \$10 billion) the residential building sector is the second most heavily taxed in relative terms, with an average tax burden of 30.9 per cent of the value of output (see chart 2).

In absolute terms housing is the second largest contributor of tax to Australian governments, contributing around 12 per cent of all revenues in aggregate. Only wholesale and retail trade contributes more, about 13 per cent. The next largest contributing sector is transport at about 7.5 per cent.

## 2 Tax burden of selected consumer goods and services, 2006–07



<sup>a</sup> Some sectors are aggregated and averaged using their production cost as weight. Especially highly taxed sectors such as tobacco, alcohol and gambling have been removed due to the special rational for their tax treatment.  
 Data source: CIE estimates based on Australian Input-Output Tables 2006-07.

### *The taxes of housing fall heavily on home buyers*

Simulations using the CIE-REGIONS model of the Australian economy indicate that most of the burden (incidence) of taxation on housing falls on home buyers and existing owners. Only a small per cent of the burden (2 to 6 per cent) falls on the owners of land, producers and suppliers.

For a young couple in Sydney, the cost of financing the extra cost of a home due to taxes amounts to around 33 per cent of their after tax incomes (based on 25 to 34 year olds' national average take-home income). In their first year they have to pay double this when they pay stamp duty. As highlighted in the Henry Tax Review

(Henry 2009) to name just one of numerous sources, taxes on housing greatly reduce housing affordability. Were the young Sydney couple referred to above to have paid a 10 per cent deposit on their \$612 000 new home, the extra cost of tax would roughly double their monthly repayments.

Conversely, and importantly, the removal of taxes from the housing sector would see the majority of benefits accruing to households. This is because households bear more of the tax burden than producers before the tax cut, which is in turn due to the fact that the demand for housing is generally less elastic than the supply in the longer term.

### ***Many of the taxes on housing are economically inefficient***

A number of the taxes imposed on the housing sector, and on new housing in particular, are inefficient. Among the vast array of taxes paid by the housing sector, about half of them are identified by Henry as being highly inefficient. In particular, Henry found fault with stamp duties, the existing land taxes, the effects of zoning on raw land prices, excessive requirements in the building code, the effects of planning delays and uncertainties in planning on risk premiums and finance charges of developers and inefficient and excessive charges within infrastructure charges.

In total, we find that the quantum of these inefficient taxes ranges from \$45 300 on a new apartment building in Melbourne to \$141 500 on a new house in Sydney. For Sydney, the \$141 500 worth of inefficient taxes represents more than half of the total \$267 879 in taxes levied on the median house.

Removing these taxes on housing and replacing them with more efficient taxes has the potential to provide a significant boost in efficiency and productivity to the economy, in addition to improving new home affordability.

### ***Big economic boost by moving to more broad-based taxes***

Simulation results using the CIE-REGIONS model confirm that many of the taxes applying specifically to housing are relatively inefficient in terms of the costs they impose on the rest of the economy. Simulations also suggest that the Australian economy could be given a boost by replacing these inefficient taxes with more efficient broad-based ones.

As just one example of a potential tax policy change, were all inefficient taxes on housing replaced with a broadening of the GST base (for example, by removing the current exemptions) simulation results indicate that national welfare could be increased by an estimated \$11.5 billion a year, or 1.96 per cent of real national consumption, and residential construction activity would increase by up to 14 per cent. GDP would increase by around 1.9 per cent. Such a move would go some

distance towards helping solve Australia's large and growing housing shortage crisis.

The findings of the Henry Tax Review were similar. By removing specific, mainly state based taxes and replacing them with broad-based taxes, GDP was estimated to expand by 2 to 3 per cent or by \$25 to \$40 billion a year. This is larger than the change we have estimated, but the specific taxes we have removed and replaced with broad-based taxes are only a subset of all the taxes Henry changed. Another difference in our estimates is that we have also incorporated removal of hidden taxes which were not included in the Henry Tax Review estimates. The comparable subset of taxes we change are one third of those identified by Henry in total and our gains are approximately a third as well. When we simulate the same tax changes as Henry we get very similar results.<sup>1</sup>

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<sup>1</sup> According to the KPMG Econtech report prepared for the Henry Tax Review, \$12.4 billion of conveyance duties cost GDP 1.2 per cent, whereas \$42 billion of GST cost GDP only 1.5 per cent (a much more efficient tax), while land tax and municipal rates have little impact on GDP (KPMG Econtech 2010, Appendix C, p134-135. This implies if \$12 billion of conveyance duties and \$3 billion of municipal rates are replaced by \$15 billion of GST, the net impact on GDP would be an increase of 0.63 per cent. Our \$15 billion stamp duty and municipal rates reform (replaced by higher GST rate) without the \$5 billion of productivity improvement would increase real GDP by 0.6 per cent

# *1 The contribution of taxes to house prices*

The housing sector is a large part of the Australian economy. Together the value added (income) derived from residential construction and dwelling sectors account for around 8.2 per cent of all value added. Value of output in the construction sector is considerably higher than value added because the sector's heavy use of intermediate inputs such as cement, sand and rock, concrete, steel, aluminium, other metals, glass, fuel, timber, plastics, ceramics, textiles, transport, machinery and financial services. Indirectly, taxes on these intermediate inputs become taxes on the housing sector.

The housing sector is heavily taxed. For instance, the residential construction sector alone accounts for 13 per cent of all GST revenue raised by the Commonwealth Government. Even larger in absolute dollar terms are state stamp duties on new and existing residences with revenue collected about twice that derived from GST on new houses. Almost equally large are council rates. In addition to these are other charges such as infrastructure charges and a raft of other levies and compulsory fees as well as generic taxes levied across most sectors such as income taxes, fuel taxes, payroll taxes and import duties.

The Housing Industry Association (HIA) is seeking an independent assessment of the extent and impact of taxation levied on the housing industry in Australia and to compare this to taxes levied on other industries. HIA is also interested to understand the efficiency of taxes levied on the sector. The many inefficient taxes applied currently to housing are likely to be causing a range of adverse impacts in terms of the supply of housing and housing affordability.

## *Likely issues involved in this project*

Many taxes increase the cost of residential building as well as the cost of other products supplied to the economy. However, some products are taxed more heavily than others. Those products that are labour intensive, are of high value, are immobile and that involve little import content are likely to be taxed most heavily. Housing has all these characteristics.

### *Types of taxes*

Some taxes are explicit; others may be hidden or ambiguous.

- Explicit taxes include income taxes (personal or company), payroll tax, stamp duty, GST, land taxes, betterment taxes, fuel excises and import duties on inputs such as glass. These taxes may be levied directly on the building sector, as stamp duty and GST are, as labour, capital and intermediate inputs going into the sector. There may also be negative explicit taxes in the form of first home owner entitlements grants for instance. Council rates also add to the holding costs of developers and, like all taxes, add to the final cost of a home and land package or an apartment.
- Ambiguous taxes include developer charges imposed by state governments and local councils ostensibly for the provision of infrastructure or to ensure standards are met, but if they are excessive, ineffective or contribute to general revenue they may be construed as additional taxes (this includes where charges are retained to meet future expenditures, used only remotely or not at all for infrastructure, or are not connected with the land on which they are imposed).
- Hidden taxes arise from regulations that are forced on the industry which impose costs or delays but which deliver little in terms of economic benefit and may relate to excessive compliance to standards including environmental (energy efficiency) standards, occupational health and safety requirements, levies (such as long service levies, training levies, fire levies on insurances and others), imposed over-engineering, building restrictions and slow release of land by government authorities.

Building and building materials are highly labour intensive and income taxes (and in some cases, payroll taxes) add to the cost of labour. Although payroll taxes may not affect small businesses, large businesses are involved in the supply of timber, concrete, bricks, cement, steel, plastics, excavation and infrastructure supply.

Fuel excise is likely to raise the costs of many products going into building. Import taxes may raise the costs of building materials and items used in fitouts and finishes.

Ambiguous and hidden taxes are by their nature difficult to determine precisely, but they potentially add significantly to the costs of new house and land packages, and new apartments. Understanding the potential extent to which these items might inflate costs is important in understanding the wider taxation impost on the building industry.

Stamp duty and GST are proportional to end value and cascade on top of other taxes (including ambiguous and hidden taxes), on what are already high valued consumer items, adding further to the costs to consumers.

### *The efficiency of tax*

Most taxes are distortionary and impose costs on the economy. They do so because they alter input and output prices which alter peoples' optimal choices of input use and final consumption. They also reduce incentives to work and invest. In short they greatly alter human economic behaviour in complex ways, the implications of which

are difficult to predict. Moreover, behavioural responses are likely to be unstable through time. As technology and culture changes, peoples' responses to taxes also change. This makes measurement of impacts difficult and often it means taxes give rise to expensive unintended consequences.

Designing optimal taxes is a major challenge of modern economies. Theoretical models may point toward the strengths of certain taxes. However, practical considerations of implementation, their impacts on investor confidence and sovereign risk as well as the massive unpredictability of politico-economic forces and rent seeking affecting their final design, can mean most taxes are far from perfect. The recent Henry Tax Review finds large faults with most taxes.

Ultimately, the efficiency of taxes comes down to how much money government takes out of the economy to provide public services and the costs this imposes on the rest of the economy. Even more important than the question of the optimal design of types of tax is the question of the optimal tax take by government. A country cannot make itself wealthy by charging more tax to provide fewer and fewer services. It can however promote wealth and efficiency twofold by providing more and better services for a lower tax take.

- The first gain must come from government achieving productivity gains like the rest of the economy and given the economies of scale and scope of a growing economy, it is not unreasonable to expect these exist in immense proportions in the largesse of government as they do in other sectors that tend to get smaller as the economy grows.
- The second gain comes from reducing distortions in the private sector by reducing tax rates overall promoting productivity in the private sector.

Better tax design is a third source of potential gain and relates to replacing highly distortionary taxes with less distortionary ones. Tax reform is about seeking to achieve gains in all three areas.

As a large sector paying considerable amounts of tax, the housing industry has a keen interest in all three areas of potential tax reform. As a starting point HIA is interested in knowing precisely how and how much it is taxed, what are the impacts and distortions of those taxes, whether there are more efficient taxes and what are the impacts of potentially paying less tax.

## *Approach*

To understand all the dimensions of the tax impost on the housing sector it will be necessary to:

- factually identify all explicit, ambiguous and hidden taxes and carefully document how these impact on the cost of building new houses, requiring a decomposition of all major activities, inputs and outputs involved in land development, input supply, building, marketing and sales (this will involve a full



set out of the housing supply chain and the timing and quantity of each 'tax' in that chain so as to provide figures for the total tax take on the average house and land package and on an average apartment);

- identify the taxes on houses after construction, the dwelling sector;
- be able to compare the overall rate of tax on housing with other big budget household consumables such as automobiles and food;
- assess who is able to pass on the tax and who ends up paying it;
- how the payment of taxes impacts on economic behaviour to reduce demand for housing and its supply and what the economic cost of this is; and
- assess how alternative configurations of the tax mix might reduce the economic costs of tax collection.

To factually identify taxes will require a bottom-up assessment of industry data and close consideration of all taxes as they apply at each stage of development of a new house or unit. This is done in chapters 2, 3 and 4. Chapter 4 also attempt to quantify all inefficient taxes as identified in Henry (2009).

To compare the taxation impost relative to other sectors and to assess its effects will require a top-down analysis using a detailed model of the Australian economy (CIE-REGIONS) which includes all major tax activities. This chapter looks not only at the taxes on residential construction but also at those applying to completed and occupied dwellings. This is conducted in chapter 5.

In chapter 6, the CIE-REGIONS model is used to identify the impacts on housing affordability of reductions in inefficient taxes being replaced by more efficient taxes elsewhere in the economy. This chapter seeks to identify who pays the taxes.

In chapter 7 the economy wide efficiency effects of the taxes are assessed using the CIE-REGIONS model.

## 2 *The extent of taxes on housing*

Housing is subject to a range of taxes and quasi-taxes both during construction and throughout the life of a dwelling. We categorise these taxes as:

- explicit direct and indirect taxes – taxes that are levied solely to raise general government expenditure such as payroll tax, stamp duty and income taxes;
- ambiguous taxes – taxes that could be viewed as user charges or taxes, such as infrastructure levies, long service leave levies and building permit fees;
- hidden taxes – arrangements that increase the cost or reduce the profitability of building new housing often to achieve other social objectives, such as building standards and zoning restrictions; and
- subsidies or negative taxes – such as assistance for first home buyers and capital gains exemptions.

This chapter sets out the taxes applicable to housing in five Australian states and the rates at which they are levied.

### *Explicit direct and indirect*

#### *Taxes applied across the economy*

A range of taxes applied to the housing sector are ‘generic’ in their application to different types of economic activity. In estimating the quantum of generic taxes, we are interested in identifying the generic taxes incurred in both the intermediate and final stages of production.

The Australian Government taxes that are applied across the Australian economy are shown in table 2.1.

In addition, state governments levy payroll tax, which applies to all sectors. Payroll tax arrangements vary across states as shown in table 2.2.

#### *Property specific taxes*

Property is levied with a range of additional direct taxes by state governments. The most significant of these is stamp duty, which is charged when a property or dwelling is sold. Some land also attracts tax, though land tax, although there are widely available exemptions.

## 2.1 Major direct taxes applied across the Australian economy

<b>Tax</b>	<b>Details</b>
Capital gain tax	Capital gains are a component of income, typically with a 50 per cent discount on the amount of the capital gain. Owner-occupied dwellings are exempt from capital gains. See box 2.5.
Income tax	15 per cent for each dollar between \$6 001 and \$37 000 30 per cent for each dollar between \$37 001 and \$80 000 37 per cent for each dollar between \$80 001 and \$180 000 45 per cent for each dollar over \$180 000 1.5 to 2.5 per cent (for Medicare levy and Medicare Levy Surcharge)
Company tax	Rate of 30 per cent on profits
GST	10 per cent on most goods and services
Fuel excise	Heavy vehicles using public roads pay 22.6 cents per litre of fuel <sup>a</sup> Machinery and plant pay 19.0715 cents per litre of fuel

<sup>a</sup> This charge is the heavy vehicle road user charge to cover the costs of road infrastructure.

Data source: Australian Tax Office website, accessed 15 March 2011.

## 2.2 Payroll tax in each state (2010–11)

<b>State</b>	<b>Rate as a share of wage bill</b>	<b>Exemptions</b>
NSW	5.5 per cent (1 July 2010), 5.45 per cent 1 January 2011	Do not have to pay if total wages bill is less than \$658 000
Victoria	4.9 per cent	Do not have to pay if total wages bill is less than \$550 000
Queensland	4.75 per cent	Do not have to pay if wages bill is less than \$1 000 000
Western Australia	5.5 per cent	Do not have to pay if wages bill is less than \$750 000
South Australia	4.95 per cent	Do not have to pay if wages bill is less than \$600 000

Note: States have various ways of calculating wage bills and offer various exemptions for some types of organisations (such as government agencies and charitable organisations).

Data source: State revenue authorities.

The stamp duty and land tax rates and thresholds applied across the states are shown in tables 2.3 and 2.4. Each of the states has different arrangements for thresholds and rates applied. Exemptions are available for stamp duty for first home buyers in a number of states and all states have exemptions for land tax if it is the principal place of residence.

During construction, developers will also be required to pay council rates, typically levied based on the value of the land.

In addition to the above specific taxes on property mentioned above, there may be taxes specific to intermediate inputs used in building homes. These include tariffs, anti-dumping duties and sales taxes such as fuel excises. Anti-dumping duties are currently levied on glass and cement, which are both important inputs into the building sector.

### 2.3 Stamp duty

State	Highest rate	Average rate for \$600 000 property	Exemptions
	%	%	
NSW	7	3.7	Concession available for first home buyers for dwellings less than \$600 000
Victoria	6	4.7 <sup>a</sup>	Concession available for first home buyers with a family for dwellings costing less than \$200 000 and for principal place of residence
Queensland	5.25	2.1	Concession available for first home buyers for dwellings less than \$550 000
Western Australia	5.15	4.4	Concession available for first home buyers for dwellings less than \$600 000
South Australia	5.5	3.8	

<sup>a</sup> Based on concessional rate for principal place of residence.

Data source: State revenue authorities.

### 2.4 Land tax

State	Lowest threshold*	Highest threshold	Range of rate
	\$	\$	%
NSW	387 000 – 2 366 000	>2 366 000	1.6-2
Victoria	250 000 – 600 000	>=3 000 000	0.2-2.25
Queensland	600 000 – 999 999	>=5 000 000	1-1.75
South Australia	300 001 – 550 000	>1 000 000	0.5-3.7
Western Australia	300 000 – 1 000 000	>=11 000 000	0.09-2.16
Tasmania	25 000 – 349 999	>=350 000	0.55-1.5

Note: Land tax is not paid for principal place of residence

Data source: State revenue authorities.

### Ongoing taxes on dwellings

Dwellings continue to be taxed after they are built.

- Every time a dwelling sells, stamp duty is paid by the buyer. Over the life of a dwelling this can amount to hundreds of thousands of dollars.
- Capital gains tax is levied on investor properties when they are sold while owner-occupied dwellings have an exemption from capital gains tax (see box 2.5).
- Every year owners of dwellings pay council rates, typically based on the assessed value of the land. Across NSW this averaged \$760 in 2008-09 (excluding water charges).<sup>2</sup>

<sup>2</sup> NSW Division of Local Government, Department of Premier and Cabinet, Comparative Information on NSW Local Government Councils 2008/09, p 32.

## 2.5 Capital gains tax and income tax on the property sector

Capital gains tax is applied to property except for owner-occupied dwellings. The rental value of property is also taxed except for owner-occupied dwellings. Owner-occupiers pay no rent, but they do receive an imputed rental value from living in their homes.

For investment properties, income from the property is taxed and interest, depreciation and expenses are allowed as a deduction against rental income. In addition, capital gains are taxed when the property is sold and the undepreciated costs of improvements are allowed as a deduction against any capital gain. So the government taxes the value created by the property minus the costs of supplying it. In effect it taxes the value added.

In the case of owner-occupied houses the government neither taxes the value created (the imputed rent) nor allows any deductions of the costs (interest, expenses, depreciation), and there is no capital gains tax nor any need for deductions of undepreciated costs of improvements.

Whether the exempt status represents a tax concession or negative tax is not entirely clear. In many cases the expenses might exceed the imputed rent, leading to lower tax revenues. Moreover, it helps offset the heavy incidence of income taxes on savings. Henry (2009, p12) argues that income taxes create a bias against saving by creating an increasing implicit tax on future consumption. This provides an argument for lower taxes on lifetime savings such as superannuation and owner-occupied housing.

- Every year, owners of investment properties may be liable for land tax.
- Most dwellings are insured and banks typically require that a dwelling purchased through a loan is insured. Insurance is a heavily taxed sector, with insurance tax applied (and GST cascading off insurance tax). Insurance tax rates for each state are shown in table 2.6

## 2.6 Insurance taxes

State	Name of insurance tax	Rate
		%
NSW	Insurance protection tax	9
VIC	General insurance duty	10
QLD	Insurance duty	7.5
WA	Insurance duty	10
SA	Stamp duty on general insurance	11
ACT	Insurance premium	10
NT	Insurance premium	10
TAS	General insurance levy	8

Data source: State revenue authorities.

## *Ambiguous taxes*

Ambiguous taxes are charges that are related to specific activities but may be levied above the cost of the services provided or above the costs less the share that should be borne by government. In this sense it is often ambiguous as to whether they are a usage charge or a tax. As the Productivity Commission notes:

**A fee-for-service** is a direct charge for the provision of a service. The general principles are that: a fee must reflect the costs of the service provided; and the service must be rendered to, or at the request of, the party paying the account. If these principles are not met, then a purported fee-for-service may amount to a tax...<sup>3</sup>

The incidence of usage charges and cost recovery arrangements for government services has been steadily rising. For example, full cost is now paid for electricity and water, road costs are more heavily borne by users and infrastructure (including for new housing) is more likely to be funded by users than 15 years ago. There is a significant question as to whether this increase in user charges has been matched by a decline in taxes or whether the overall burden of government has increased in the past two decades because so many more services are now being paid for directly. Government revenue from taxes has remained fairly stable as a share of GDP since 1999–2000, although falling in 2008–09 largely due to the Global Financial Crisis

## *Infrastructure charges*

The most significant ambiguous taxes for new housing are infrastructure charges levied by state and local governments. These ostensibly aim to cover the costs of the infrastructure directly associated with a new development. But as the Henry review noted, 'infrastructure charges can sometimes be used to raise tax revenue, rather than focusing on providing efficient user charging'.<sup>4</sup>

The amounts charged for infrastructure levies vary across (and within) states and have been in considerable flux in recent years. For example, in 2006, Special Infrastructure Contributions in NSW levied by the NSW Government were around \$33 000 per dwelling.<sup>5</sup> In addition, developers could pay up to \$35 000 for water-related infrastructure.<sup>6</sup> In 2007, Special Infrastructure Contributions were reduced to

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<sup>3</sup> Productivity Commission 2001, *Cost recovery by government agencies*, Inquiry Report, p XXXIII.

<sup>4</sup> Henry, K. 2009, *Australia's future tax system – Report to the Treasurer*, December, p 424.

<sup>5</sup> The charge was \$485 000 per hectare of net developable area, amounting to around \$33 000 per dwelling at the densities originally envisaged. See Growth Centres Commission, *Special Infrastructure Contributions Practice Note*, December 2006; Premier of NSW, 'Levies on new homes slashed to improve housing affordability' Media release, 12 October 2007.

<sup>6</sup> Sydney Water, *submission to IPART review of developer charges for metropolitan water agencies*, 21 December 2007.

around \$23 000 per dwelling.<sup>7</sup> In December 2008, developer contributions for water were removed except for recycled water.<sup>8</sup> Also in December 2008, the share of estimated developer costs borne by the NSW Government was altered effectively reducing per dwelling charges to around \$11 000 per dwelling.<sup>9</sup> At the same time caps were imposed on local council contributions of \$20 000 per dwelling, although many councils were exempted. Finally, in July 2011 Special Infrastructure Contributions will increase back to about \$17 000 per dwelling.

Representative infrastructure contributions have been estimated across Australia by a number of studies (tables 2.7 and 2.8). Greenfield areas face total infrastructure contributions of \$37 300 on average in NSW. For some developments, charges will be much higher than this. Outside of NSW, total infrastructure charges range from just over \$3000 per dwelling in South Australia to \$27 000 per dwelling in Queensland. Infill areas typically face smaller charges.

Within Sydney, local council charges historically applied to new dwellings vary from an average of \$4000 in Eastern Sydney to \$38 000 in North East Sydney

In addition to (or sometimes instead of) these infrastructure contributions, governments can seek work-in-kind from developers.

There may also be additional infrastructure related charges outside of those above, such as \$6200 for a developer contribution to recycling facilities in Sydney's growth centres.<sup>10</sup> There are also requirements that new dwellings install infrastructure suitable for the National Broadband Network.<sup>11</sup> For new dwellings these costs are borne by developers (but are part of general NBN expenditure for existing dwellings). These costs are around \$2500 per dwelling.<sup>12</sup>

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<sup>7</sup> Premier of NSW, 'Levies on new homes slashed to improve housing affordability' Media release, 12 October 2007; Growth Centres Commission, *Special Infrastructure Contributions Practice Note*, November 2008.

<sup>8</sup> Sydney Water, *2009/10 Developer charges price list*, <http://www.sydneywater.com.au/Publications/FactSheets/DeveloperChargesPriceList.pdf>.

<sup>9</sup> NSW Planning, Planning circular, 23 December 2008.

<sup>10</sup> CIE 2010, *Costs and benefits of alternative growth paths for Sydney*, prepared for NSW Planning.

<sup>11</sup> On 18 March 2010, the Australian Government introduced the *Telecommunications Legislation Amendment (Fibre Deployment) Bill 2010* with new arrangements to begin on 1 July 2010.

<sup>12</sup> Department of Broadband, Communications and the Digital Economy 2009, *National Broadband Network: Fibre-to-the-premises in Greenfield estates*. Consultation Paper, May, p. 5. The scheme commenced on 1 January 2011 and exact costs are yet to be determined.

## 2.7 Alternative estimates of infrastructure contributions

State	URBIS ( for 2009)		AHURI (for 2007)	
	Greenfield	Infill	Local	State
NSW	37 300	15 000	45 000	33 000
Victoria	11 000	1 609		5 400
Queensland	27 000	25 000		30 000
Western Australia	20 000	5 000	na	na
South Australia	3 693	5 577	na	na

Data source: Urbis 2010, *National Dwelling Costs study*, prepared for FaHSCIA; AHURI 2009, *Counting the costs — planning requirements, infrastructure contributions and residential development in Australia*, final report no. 140, November.

## 2.8 Local council contributions for a 3-bedroom house — Sydney

Sydney Metro Region	Average contribution
	\$/dwelling
North East	38 225
North West	19 855
North	19 598
Sydney	17 717
Inner North	15 167
South West	14 120
Inner West	9 954
Central Coast	7 010
West Central	6 258
South	5 896
East	4 213

Data source: SGS Economics and Planning (2008), Section 94 Database, prepared for NSW Department of Planning — reported in CIE 2010, *Benefits and costs of alternative growth paths for Sydney*, prepared for NSW Planning.

The extent to which infrastructure charges and work-in-kind are a charge or a tax is not clear. Issues around this have been discussed extensively by the Productivity Commission.<sup>13</sup> There is some evidence that infrastructure contributions have not been spent as quickly as they were collected. For example, the Property Council of Australia notes that local councils in NSW have \$560 million in collected infrastructure funds that have not been spent, equivalent to about 3 years collections.<sup>14</sup> The Productivity Commission noted even greater lags between collection and use, with unspent funds amounting to over \$1 billion.<sup>15</sup>

<sup>13</sup> Productivity Commission 2009, *Public infrastructure financing: an international perspective*, Staff working papers, Chapter 7.

<sup>14</sup> Property Council of Australia, 'Sydney councils stockpile \$560 million unspent funds' media release 20 January 2011.

<sup>15</sup> Productivity Commission 2009, *Public infrastructure financing: an international perspective*, Staff working papers, p 117.



### *Other levies and fees*

In addition to infrastructure levies, state governments impose a range of other levies related to training and long service leave, issuing of permits and application fees. It is often clear that these fees and charges are not set on a cost reflective basis (such as when application fees vary by property value while costs do not). As the Productivity Commission noted in its review of cost recovery by government agencies, user charges are best used to promote efficiency rather than to raise revenue.<sup>16</sup> There are no efficiency advantages to user charges for activities that are mandated by governments and which do not change behaviour of users, such as the requirement to seek a building permit. The highly variable charges across states and within states and the frequent linking of charges to costs also suggests that charges are not set on the basis of cost recovery and may represent taxes rather than efficient user charges.

While these fees are often small in size, by sheer number they can add a significant amount to the cost of building a new dwelling. A summary of the various fees and charges for each state is shown in tables 2.9 and 2.10.

Builders are also required to take out compulsory builders insurance in most states for work above \$12 000. This covers the work for a period of six years. Home warranty insurance premiums can range from 0.5 per cent of building cost to 1 per cent. For example, the NSW Government, which is the compulsory insurer, mandates a premium of 0.9 per cent of the contract price for multiple dwellings in metropolitan areas.<sup>17</sup>

A final ambiguous tax is the cost of the Building Code of Australia. While this represents mandatory requirements for new buildings, an online copy costs \$286 (GST exclusive). It is unclear why mandatory requirements should not be disseminated over the internet free of charge as is legislation.

### *Hidden taxes*

Hidden taxes arise from policies that increase the cost or reduce the value of developing and building in a particular place. The most pervasive hidden taxes for development of housing are zoning restrictions and development controls. These instruments can radically change what activities can occur in particular places. A second significant hidden tax is the standards required for building new dwellings,

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<sup>16</sup> Productivity Commission 2001, *Inquiry into cost recovery by government agencies*, Inquiry report.

<sup>17</sup> NSW Home Warranty Insurance Fund website, accessed 21 March 2011: [https://homewarranty.nsw.gov.au/portal/server.pt/community/b%3Bbuilders\\_\\_contractors/256/premiums/1199](https://homewarranty.nsw.gov.au/portal/server.pt/community/b%3Bbuilders__contractors/256/premiums/1199).

## 2.9 Long service fees and training levies

State	Long service fees	Training levies
NSW	0.35 per cent of project costs	Na
Victoria	2.70 per cent of labour costs	Na
Queensland	0.30 per cent of project costs	0.10 per cent of costs
Western Australia	2.25 per cent of labour costs	0.18 per cent of costs
South Australia	2.25 per cent of labour costs	0.25 per cent of costs

Data source: State Government web sites.

## 2.10 Other planning fees, levies and charges

State	Fees, levies and charges
NSW	<ul style="list-style-type: none"> <li>▪ Planning approval fee of \$1160 + \$2.34 for each \$1000 that the cost of works exceeds \$250 000 <sup>a</sup></li> <li>▪ Residential development assessment fee of \$1277 <sup>a</sup></li> <li>▪ Rezoning application of \$1000 <sup>a</sup></li> <li>▪ Transfer fee of \$190</li> <li>▪ Ad valorem transfer charge of 0.2 per cent for each dollar between \$500 000 and \$1000 000 and 0.25 per cent for each dollar above \$1000 000</li> <li>▪ Subdivision fees totalling \$8988 for some developments <sup>a</sup></li> </ul>
Victoria	<ul style="list-style-type: none"> <li>▪ Planning approval fee of \$1209<sup>a</sup></li> <li>▪ Rezoning application of \$2918<sup>a</sup></li> <li>▪ Transfer fee of \$1104</li> <li>▪ Subdivision fees totalling \$1391 for some developments<sup>a</sup></li> <li>▪ Building permit levy of 0.064 per cent to fund the building control system, 0.064 per cent to fund the dispute resolution system and an additional 0.032 per cent for residential building (which has been partially repealed)</li> </ul>
Queensland	<ul style="list-style-type: none"> <li>▪ Planning approval fee of \$1555<sup>a</sup></li> <li>▪ Rezoning application of \$1428<sup>a</sup></li> <li>▪ Transfer fee of \$703</li> <li>▪ Subdivision fees totalling \$15 750 for some developments<sup>a</sup></li> </ul>
Western Australia	<ul style="list-style-type: none"> <li>▪ Planning approval fee of \$900<sup>a</sup></li> <li>▪ Transfer fee of \$180</li> <li>▪ Subdivision fees totalling \$2931 for some developments<sup>a</sup></li> <li>▪ Building permit levy of 0.35 per cent of costs</li> </ul>
South Australia	<ul style="list-style-type: none"> <li>▪ Planning approval fee of \$250<sup>a</sup></li> <li>▪ Residential development assessment fee of \$51</li> <li>▪ Transfer fee of \$2484</li> <li>▪ Subdivision fees totalling \$1314 for some developments<sup>a</sup></li> </ul>

<sup>a</sup> PC review.

Sources: Productivity Commission 2011, *Performance Benchmarking of Australian Business Regulation: Planning, zoning and development assessments*, Draft report, February; State Government websites; Urbis 2010, *National Dwelling Costs study*, prepared for FaHSCIA.

including standards about structural integrity, energy efficiency and in some cases water efficiency.

Evaluating hidden taxes is more complicated than other forms of taxes as hidden taxes are in place in order to achieve other community objectives. For instance, zoning restrictions aim to coordinate development so infrastructure is less costly and to minimise negative externalities of particular types of development, such as ensuring that heavy industry isn't set up in the middle of a residential area with associated noise issues.

Hidden taxes can be more damaging than other forms of taxes. Taxes that transfer income to the government typically lead to costs in the order of almost nothing to over 25 cents per dollar of money transferred.<sup>18</sup> These costs arise because resources are shifted to less efficient activities and because of administration costs in government. The economy-wide costs are therefore significantly higher than the costs imposed on building new dwellings. However, for some hidden taxes, the cost increases reflect inappropriately directed resources. For example, higher energy efficiency requirements are achieved through additional capital, labour and materials being dedicated to the building. For these taxes, economy-wide costs can be as high as the costs imposed on the building sector directly.

### *Cost of zoning restrictions*

In Sydney, where evidence has been collected, zoning restrictions likely lead to:

- a cost of between \$40 and \$80 per square metre for restrictions on the use of rural land on Sydney's fringe for residential purposes;
- no cost in some suburbs but costs of up to \$400 per square metre in others for restrictions on the use of low density residential land for higher density development.<sup>19</sup>

In the absence of these zoning restrictions, land would hence likely be cheaper both for infill developments and Greenfield developments.

Anecdotal evidence suggests that there will be particular areas where zoning will restrict land values by far more than these typical figures. For example, rezoning of an area in St Leonards in Sydney led to properties worth an estimated \$3 million being sold for redevelopment for \$14.5 million.<sup>20</sup>

Outside of Sydney there is no specific information available on the costs of zoning. However, differences in raw land costs, particularly for Greenfield areas, are a good indicator of the extent to which zoning is likely increasing land value. These suggest that Sydney is facing much higher zoning distortions than other cities (chart 2.11).

Development controls, which are much more detailed requirements about what buildings must cover to be acceptable, can also increase costs and drive down returns. Development controls can cover floor space ratios, aspect, distance from other properties and many other factors.

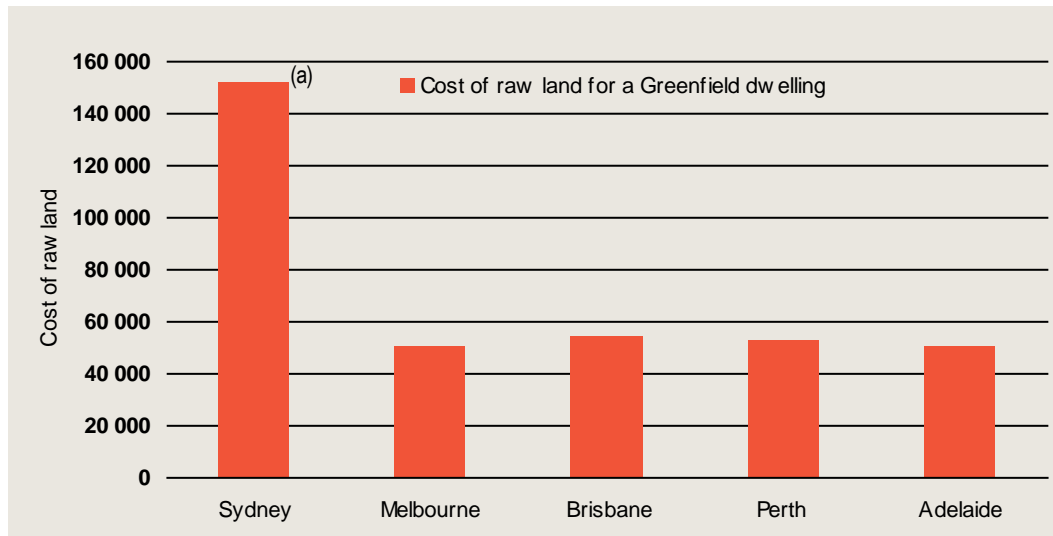
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<sup>18</sup> Campbell, H. 1997, 'Deadweight loss and the cost of public funds in Australia', *Agenda*, vol. 4, no. 2, pp. 231-36; Gabbitas, O. and D. Eldridge 1999, 'Reforming State Taxation', *Policy*, Autumn, pp. 20-28.

<sup>19</sup> CIE 2010, *Benefits and costs of alternative growth paths for Sydney*, prepared for NSW Planning.

<sup>20</sup> Australian Financial Review, 'Smart Owners reap windfall', Wednesday 9 March 2011, p 3.

### 2.11 Raw land price for Greenfield development



<sup>a</sup> This may be much higher than many developers pay — see later.

Data source: Urbis 2010, *National Dwelling Costs study*, prepared for FaHSCIA.

The role of zoning restrictions in inhibiting housing affordability was noted in the Henry Tax Review, with a recommendation that COAG place priority on reviewing institutional arrangements to ensure that zoning and planning do not unnecessarily inhibit housing supply and housing affordability.<sup>21</sup>

#### *Cost of building standards*

Building standards could increase the cost of building in many ways, potentially with benefits such as increasing the likelihood of a building surviving fires or cyclones or reducing the ongoing costs of living in a particular dwelling.

Recently, building standards have progressed beyond structural features to encompass energy and water efficiency. The Building Code of Australia sets minimum standards for residential buildings — currently at 5 stars but expected to move to 6 stars shortly. In NSW, the Building Sustainability Index (BASIX) sets minimum standards for water efficiency.

These standards can impose considerable costs in the building of a house. For some types of dwellings and in some locations these costs will be more than recovered, while in others they will not. The net costs of a typical Greenfield house for moving from the optimal star rating to a 6 star rating is shown in table 2.12. In Sydney, Melbourne and Brisbane, 6 star energy efficiency standards could lead to net costs of around \$40/m<sup>2</sup> for low density housing. For most houses in most locations achieving one extra star rating requires deploying expensive technologies such as double glazing, floor insulation or external shading.

<sup>21</sup> Henry, K. 2009, *Australia's future tax system – Report to the Treasurer*, December, p 422.

## 2.12 Costs and benefits of energy efficiency standards

State	Costs	Benefits	Net costs
	\$/m <sup>2</sup>	\$/m <sup>2</sup>	\$/m <sup>2</sup>
Sydney	49.76	14.2	35.56
Melbourne	68.52	25.3	43.22
Brisbane	55.76	10.1	45.76

Note: Building type is type 1, which is a single storey, four bedroom house.

Data source: The CIE 2010, *Building Code star ratings: What's optimal and what's not?*, prepared for Master Builders Australia.

In NSW, the BASIX sets requirements for water and energy standards. Meeting water standards imposes an additional cost on new dwellings. For example, putting in rainwater tanks to meet BASIX requirements can cost around \$4000 per lot (outside of recycled water areas).<sup>22</sup> The financial costs of rainwater tanks has been found to be significantly higher at between \$2.16 to \$11.59 per thousand litres than current water prices from large scale water supply systems and reservoirs (of between \$1 and \$2 per thousand litres).<sup>23</sup> For units, costs will typically be in higher quality appliances.

### *Planning approval delays*

Planning times involve the time needed to develop an application to the appropriate standards, including hiring consultants and architects, as well as the time taken to get approval.

For Greenfield development, planning times encompass many more steps and can take many years. Steps include making a decision to urbanise the land, local planning leading to rezoning, extending trunk and lead-in infrastructure to the area, development application, subdivision, construction and sale.<sup>24</sup>

Planning approval delays act like a hidden tax, increasing the cost of financing new developments. A reasonable timeframe suggested by the builders CIE spoke to for this project is that planning approval take eight months and land preparation another four months. In practice, development takes considerably longer than this. This means that the upfront costs of development have to be financed over a longer period of time.

Within a state there is also wide variation in planning times as planning approval is given by local councils for most dwellings. Average council development applications (DA) approval times in Sydney in 2009–10 ranged from an average of nine days for the quickest council to 805 days for the slowest for single new

<sup>22</sup> CIE 2010, *Benefits and costs of alternative growth paths for Sydney*, prepared for NSW Planning, p 93.

<sup>23</sup> Marsden Jacobs and Associates 2007, *The cost effectiveness of rainwater tanks in urban Australia*, prepared for the National Water Commission, p ix.

<sup>24</sup> NSW Planning, Metropolitan Development Program 2008-09, p.23.

dwellings (table 2.13). For multi-unit dwellings, times ranged from 23 days to 844 days. Average approval times are significantly longer for multi-unit dwellings versus single dwellings and for subdivisions.

### 2.13 Sydney council development approval times

<i>Measure</i>	<i>Mean gross days for single new dwelling DA determined</i>	<i>Mean gross days for new multi-unit DA determined</i>	<i>Mean gross days for other residential DA determined</i>	<i>Mean gross days for subdivision DA determined</i>
	Days	Days	Days	Days
Average	70	194	60	111
Minimum	9	23	2	2
Maximum	805	844	303	433

Data source: NSW Planning 2010, Local Development Performance Monitoring 2009-10, statistical table.

### *Planning uncertainty*

Planning uncertainty increases the risks that developers face. If there is higher risk, developers will only develop if they can achieve a higher return.

Planning uncertainty can take a number of forms.

- Uncertainty about whether approval will be gained for a particular development.
- Uncertainty about what charges or work-in-kind will be required by local councils.
- Uncertainty about what conditions will be placed on development in order to gain approval.

There are also other forms of uncertainty unrelated to planning, which builders and developers will always have to deal with, such as uncertainty about future market prices and costs.

Builders and developers have suggested that they are most apprehensive about changing the rules once development has begun. In this case, costs are already sunk and developers cannot decide not to go ahead with the project without significant losses.

The extent of extra return that developers and builders require for planning uncertainty is not well known. Our consultations have suggested required margins in the order of 15 to 20 per cent. A low-risk business would require margins closer to 5 per cent.<sup>25</sup> We are told by developers that financial institutions require them to target a rate of return between 15 and 20 per cent given the nature of the risks

<sup>25</sup> For example, for electricity, allowable retail margins are 5.4 per cent. Independent Pricing and Regulatory Tribunal of NSW 2010, *Review of regulated retail tariffs and charges for electricity 2010-2013*, Final report.

involved. Through our consultations we were also told that an additional risk premium of least one percentage point was required in Sydney over other states.

### *Negative taxes*

Subsidies or negative taxes are often applied to particular types of housing or groups of participants in the housing market. The major negative tax applied to housing is grants to first home owners. These include First Home Owners Grants of \$7000 given by state and territory governments and the now ceased First Home Owners Boost provided by the Australian Government.

### 3 *Taxes paid on a new house or apartment*

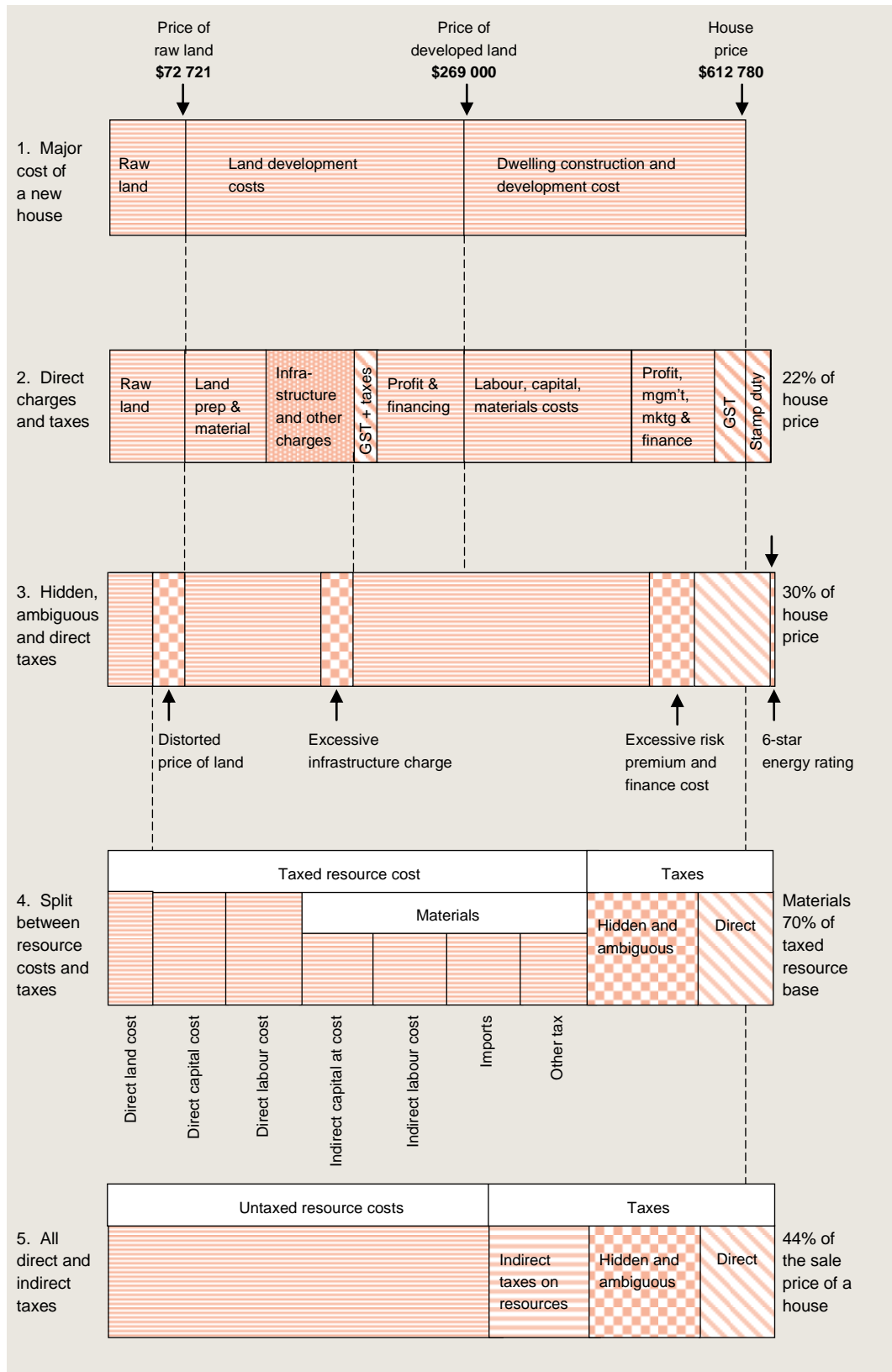
Chart 3.1 sets out the resource and tax costs involved in the building and purchase of a median new house in Sydney. The house is around 250 square metres. It shows that all direct, indirect, ambiguous and hidden taxes make up around 40 per cent of the cost of buying a new home.

- Level 1 shows the price of raw land, developed land and the sales price of the house.
- Level 2 breaks down the costs of a new house by direct charges and taxes plus costs of buying resources and services needed to construct the house and it shows that around 22 per cent of the sales price of a house is direct taxes and charges. It also shows that stamp duty is a tax levied on top of the price of a house.
- Level 3 identifies the magnitude of hidden taxes buried in distorted land prices due to zoning and delays, excessive infrastructure charges, increased risk due to planning uncertainty and delays and those likely to be imposed by the building code once the six star energy rating becomes mandatory. Legitimate infrastructure charges and other 'reasonable' government charges are subsequently included among the resource costs of building and development but the excessive component is separated and included among the hidden taxes.
- Level 4 breaks down resource costs into their direct and indirect elements.
- Level 5 identifies the indirect taxes such as income tax, company tax, payroll tax, fuel excise and stamp duties falling indirectly on the resource costs of building. It shows these increase the total taxes collected by governments on the construction of a new house to be around 40 per cent (or \$246 636) of the cost or purchase price of the new home in Sydney.

Chart 3.2 compares the taxes and resource costs of new houses and apartments for Sydney, Melbourne and Brisbane. Table 3.3 presents the components of the taxes in more detail. In all cities the resource costs of housing are reasonably similar although Sydney is more expensive. However, the tax burden of housing is much higher in Sydney. It is 46 per cent higher than Melbourne and 40 per cent higher than Brisbane for new houses. For apartments the differences are not as stark with Sydney's tax burden being 33 per cent higher than Melbourne's and 22 per cent higher than Brisbane's. That said, the resource cost of building apartments in Sydney is higher than in the other two major cities.

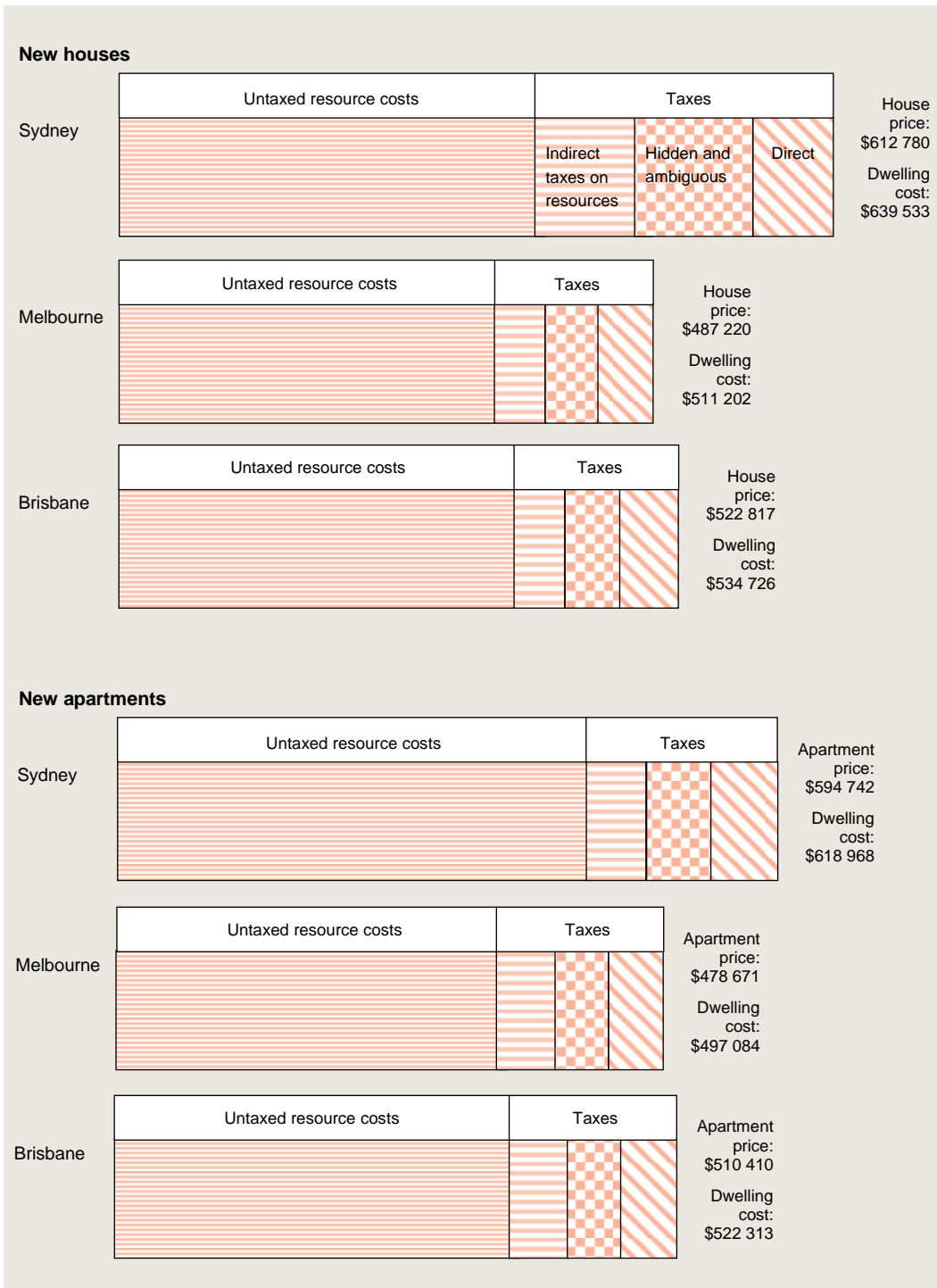


3.1 Breakdown of costs and taxes of a new home: Sydney



Source: TheCIE.

3.2 Resource costs and taxes of new houses and apartments — major cities



Source: TheCIE.

### 3.3 Taxes on housing

	New homes			New apartments		
	Sydney	Melbourne	Brisbane	Sydney	Melbourne	Brisbane
Direct	75 422	63 312	55 170	73 694	55 607	52 238
Hidden/ambiguous	106 276	45 398	56 346	51 331	28 545	46 718
Indirect	86 180	75 071	79 265	84 598	73 058	72 504
<b>Total</b>	<b>267 879</b>	<b>183 781</b>	<b>190 781</b>	<b>209 623</b>	<b>157 210</b>	<b>171 460</b>

Data source: TheCIE 2011.

### *Details underlying the costings*

Cost structures derived in this chapter are representative of the 'median' Greenfield and infill (apartment) development undertaken in 2011. The analysis is underpinned by data on the median cost of transacted land<sup>26</sup> and value of construction derived from ABS Building Approvals data for 2009–2010. A range of sources have been used to develop a detailed breakdown from these data points. The CIE developed the cost structure with guidance from a range of builders and developers, ensuring that a cross section of the industry was consulted. The cost structure is intended to reflect the median cost of new dwellings in 2011. The cost of housing is representative of the majority of new dwellings, taking into account variation between jurisdictions. Together, New South Wales, Victoria and Queensland in 2010 contributed almost three quarters of the total number of new dwellings in Australia. Reflecting this, we present the cost structure for new dwellings in Sydney, Melbourne and Brisbane.

### *The median cost of developed land*

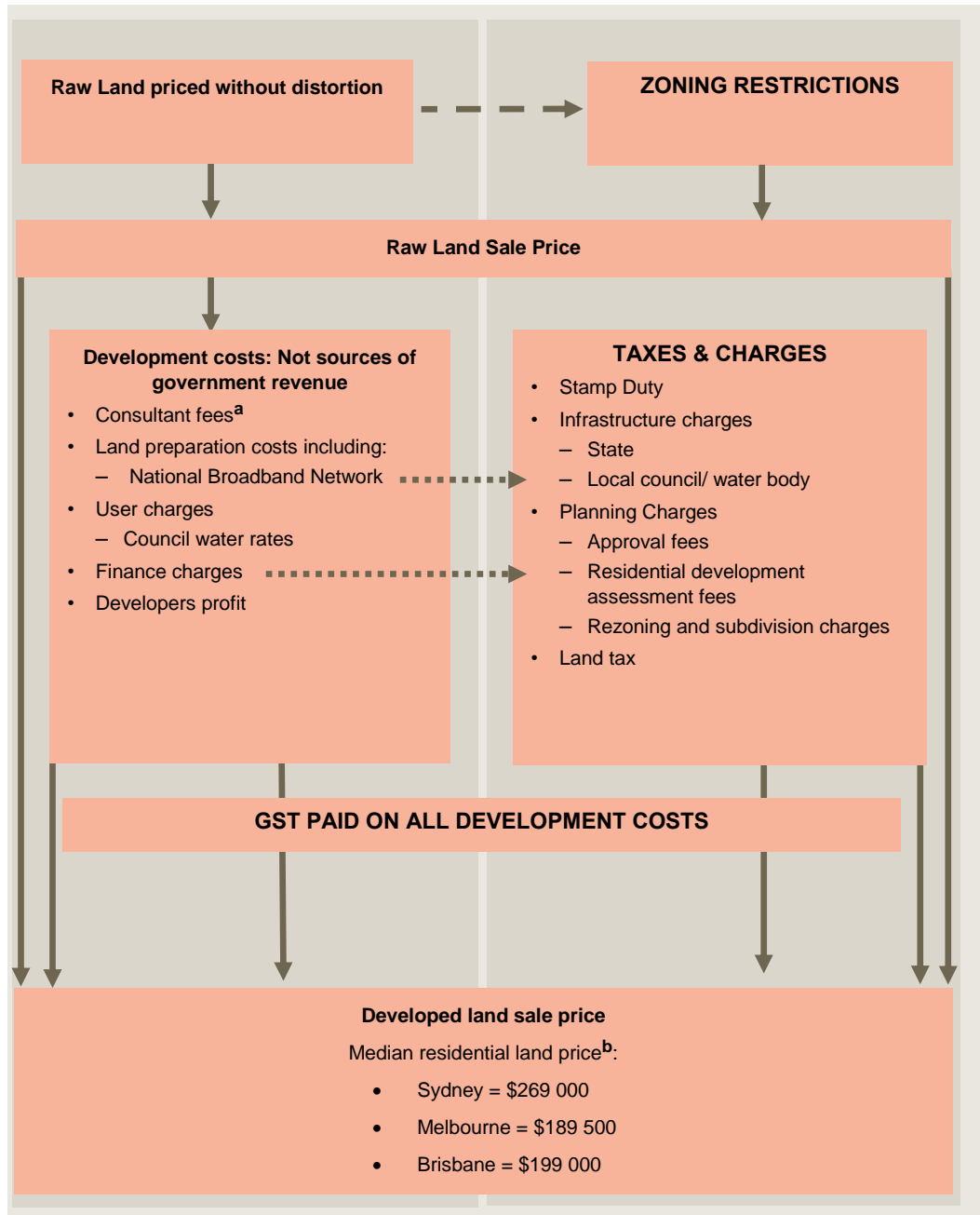
The main development costs incurred by developers and, ultimately by households, are mapped in chart 3.4. Through this value chain raw land is transformed into developed land through connecting the land to utilities, municipal water systems and sewers, and transportation networks. This table identifies which of the development costs constitute taxes or charges. From the remaining development costs, some items may also contain a hidden or ambiguous tax component.

As previously outlined, there is wide variation in the scale of taxes and other development charges applied to land. However, an important source of information is the observed median developed land sale price for each city. This provides an important reference point from which to estimate the *magnitude* of the costs incurred

<sup>26</sup> The median value of transacted land for Greenfield development was obtained from the Residential Land Report supplied by HIA. This data set could not be applied to infill development, such that the value of transacted land was derived from the cost of raw land and development costs. The cost of raw land for infill development was based on Urbis 2010 and consultation with industry stakeholders.

at the median in the development of land. We use this developed land sale price to work back to a raw land price for Greenfield development by subtracting the various cost components incurred by developers.

### 3.4 Value chain land development



<sup>a</sup> If not appropriately designed, consultant fees can have an embedded hidden tax related to unnecessary planning requirements.

<sup>b</sup> Obtained from unpublished data source, Residential Land Report (HIA, 2011), June quarter 2010.

Note: We assume that the developer sells the land and house as a package such that there is no transaction or stamp duty paid on the developed land sale price.

Source: TheCIE 2011.

Importantly, the raw land sale price in some jurisdictions contains a hidden tax component resulting from the monopoly of supply that local councils and State Governments have over land release. This hidden tax is apparent where the raw land sale price is greater than the value of similar land that is not designated as available for residential use, such as agricultural land.

Development costs, other than taxes, include land preparation costs, consultant fees, finance charges, council water rates, and development profit. Some of these charges may amount to taxes and inefficiencies if they are excessive relative to what they need to be.

- Planning delays add to financing costs and represent hidden taxes upon which the goods and services tax cascades as the developer tries to recuperate all development costs.
- Land preparation costs incorporate the cost of installing the National Broadband Network (NBN). This may represent a tax on housing for some residents whose net gain from the installation of the NBN is lower than the net cost.
- Consultant fees incorporate a hidden tax component where the cost of activities related to compliance is disproportionate to the benefits flowing from compliance (such as to third parties).

Table 3.5 presents CIE estimates of the magnitude of the costs identified in chart 3.2.

### 3.5 Developer fees and charges — Greenfield and infill

	<i>Sydney</i>	<i>Melbourne</i>	<i>Brisbane</i>
<b>Greenfield</b>			
<b>Raw land sale price</b>	<b>72 721</b>	<b>50 125</b>	<b>39 937</b>
<i>Raw land priced without distortion</i>	<i>(32 340)</i>	<i>(30 336)</i>	<i>(30 444)</i>
<i>Value of zoning distortion</i>	<i>(40 381)</i>	<i>(19 789)</i>	<i>(9 493)</i>
Stamp duty	1 163	953	524
Consultant fees	6 000	4 650	5 000
Infrastructure charges	45 601	20 800	41 357
Other infrastructure charges	6 200		
Planning charges	3 437	4 127	2 983
Land preparation costs	51 235	53 639	50 561
Council rates	345	156	141
Water usage charge	2 067	2 176	2 003
Land tax	1 457	1 117	909
Finance charge	17 342	9 957	10 368
<b>Total development costs</b>	<b>207 568</b>	<b>147 700</b>	<b>153 783</b>
Developer's profit	43 589	29 540	30 757
<b>Total exclusive GST (land, development, profit)</b>	<b>251 156</b>	<b>177 239</b>	<b>184 540</b>
GST	17 844	12 711	14 460
<b>Total inclusive GST<sup>a</sup></b>	<b>269 000</b>	<b>189 950</b>	<b>199 000</b>

(Continued next page)

## 3.5 Developer fees and charges — Greenfield and infill (Continued)

	Sydney	Melbourne	Brisbane
<b>Infill</b>			
<b>Raw land sale price<sup>b</sup></b>	<b>85 000</b>	<b>55 000</b>	<b>72 000</b>
Raw land priced without distortion	(73 913)	(47 826)	(62 609)
Value of zoning distortion	(11 087)	(7 174)	(9 391)
Stamp duty	1 465	1 070	1 080
Consultant fees	26 571	17 787	17 117
Infrastructure charges	16 318	13 500	27 196
Planning charges	333	12	850
Land preparation costs	5 000	5 000	5 000
Council rates	504	219	97
Water usage charge	308	3 264	457
Land tax	2 971	463	1 931
Finance charge	13 505	6 963	9 089
<b>Total development costs</b>	<b>151 975</b>	<b>110 452</b>	<b>144 208</b>
Developer's profit	31 915	20 655	26 963
<b>Total exclusive GST</b>	<b>183 889</b>	<b>123 932</b>	<b>161 779</b>
GST	9 889	6 893	8 978
<b>Total inclusive GST<sup>a</sup></b>	<b>193 778</b>	<b>130 825</b>	<b>170 757</b>

<sup>a</sup> For Greenfield development, the value of raw land is estimated by subtracting land development costs from the observed average value of transacted land. <sup>b</sup> For infill development, we utilise Urbis (2010) raw land values, adjusting the Melbourne value based on recent market developments.

Data source: TheCIE 2011.

Charts 3.6 and 3.7 illustrate the main cost components for Greenfield and infill development, respectively. Raw land (undistorted by zoning and delays) and development costs represent the largest cost component in both Greenfield and infill development. The remaining cost components represent government taxes and charges which equate to:

- 44 per cent of Greenfield development and 22 per cent of infill development in Sydney;
- 33 per cent of Greenfield development and 22 per cent for infill development in Melbourne; and
- 37 per cent of Greenfield development and 29 per cent for infill development in Brisbane.

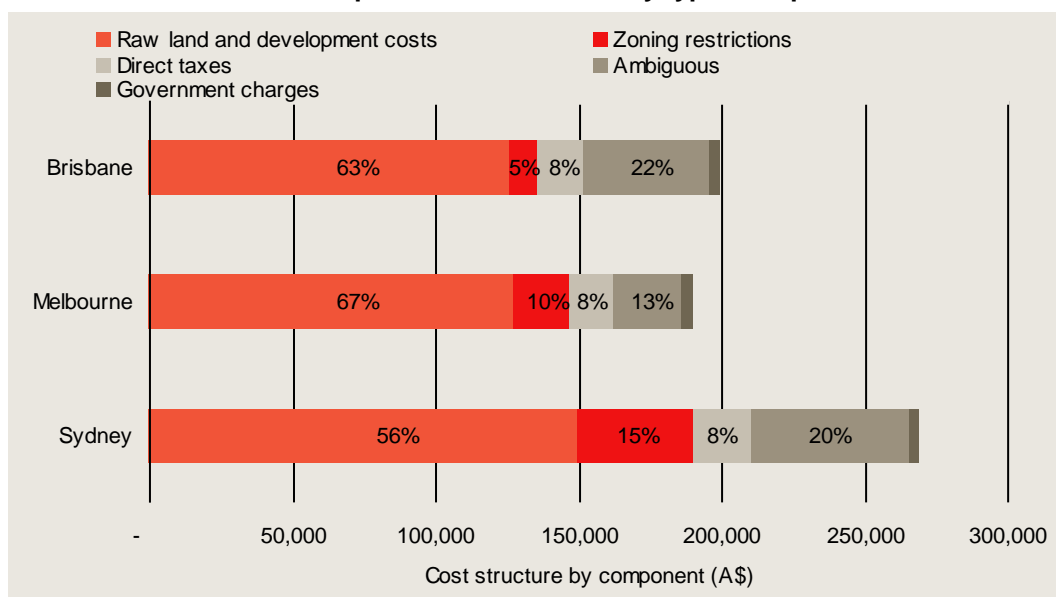
Government taxes and charges on infill are significantly lower on infill dwellings, reflecting lower ambiguous taxes and charges such as infrastructure charges and a smaller anticipated impact of zoning restrictions on a given dwelling.

### *The median cost of houses*

Land is only one input into dwelling construction and taxes on land are only the first set of taxes that are applied to housing. In addition to taxes on land, home owners pay 'direct' taxes on their homes and 'indirect' taxes on building inputs. The

magnitude of some taxes applied directly to the home owner, such as stamp duty and GST, will reflect the median price of a home. These taxes cascade off earlier taxes on the costs of building and building inputs. Taxes are applied at different rates according to the mix of labour, capital and imported inputs which attract different tax rates.

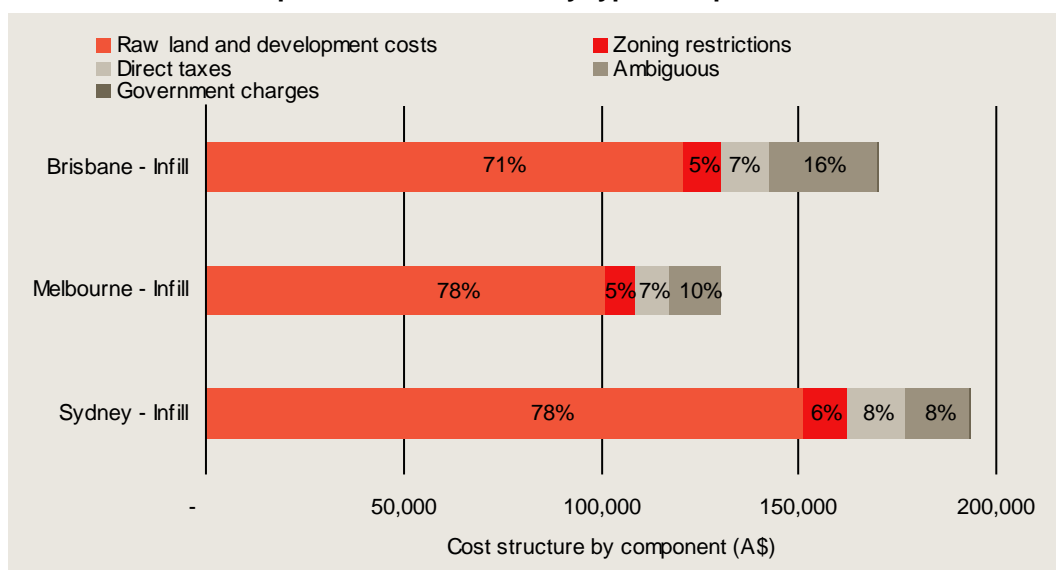
### 3.6 Greenfield land development cost structure by type of expenditure



Note: Infrastructure charge contains both tax and non-tax components.

Data source: TheCIE 2011.

### 3.7 Infill land development cost structure by type of expenditure



Note: Infrastructure charge contains both tax and non-tax components.

Data source: TheCIE 2011.

The median cost of a house can be observed from data collected by the Australian Bureau of Statistics. *Catalogue 8731.0* presents monthly data of building work approved from sources including from permits issued by local government authorities and other principal certifying authorities.

Accounting for the GST, finance and a builder's margin, we derive an estimate for the median dwelling construction cost. The average construction cost in 2011 for the median home is approximately:

- \$232 370 in Sydney excluding GST;
- \$200 684 in Melbourne excluding GST; and
- \$220 776 in Brisbane excluding GST.

Table 3.8 presents a representative cost structure for housing development, expected to be characterised by a medium finish house of approximately 250 square metres in floor area. A breakdown of the building inputs used in the construction of the average Greenfield development is provided in appendix A.

### 3.8 Median cost structure housing development

<i>Item</i>	<i>Sydney</i>	<i>Melbourne</i>	<i>Brisbane</i>
	A\$	A\$	A\$
<b>Land development costs</b>	<b>269 000</b>	<b>189 950</b>	<b>199 000</b>
<b>Total construction costs — observed</b>	<b>275 338</b>	<b>240 176</b>	<b>262 711</b>
Construction costs	232 370	200 684	220 766
Builder's profit	14 359	12 951	13 780
GST	25 031	21 834	23 883
Finance	3 578	4 706	4 282
<b>Total development costs</b>	<b>68 441</b>	<b>57 094</b>	<b>61 106</b>
Management	7 509	6 550	7 165
Developer's profit	41 251	33 734	36 899
Marketing and sales cost	12 516	10 430	10 430
Finance	944	1 189	1 057
GST	6 222	5 190	5 555
Price of house exclusive GST	563 683	447 484	478 918
GST	49 096	39 736	43 898
<b>Price of house inclusive GST</b>	<b>612 780</b>	<b>487 220</b>	<b>522 817</b>
<b>Transaction costs</b>	<b>26 754</b>	<b>23 982</b>	<b>11 909</b>
Stamp duty	23 065	21 203	9 549
Transfer fee	433	1 151	733
Professional fees <sup>a</sup>	3 255	1 628	1 628
<b>Total cost inclusive GST</b>	<b>639 533</b>	<b>511 202</b>	<b>534 726</b>

<sup>a</sup> Includes GST.

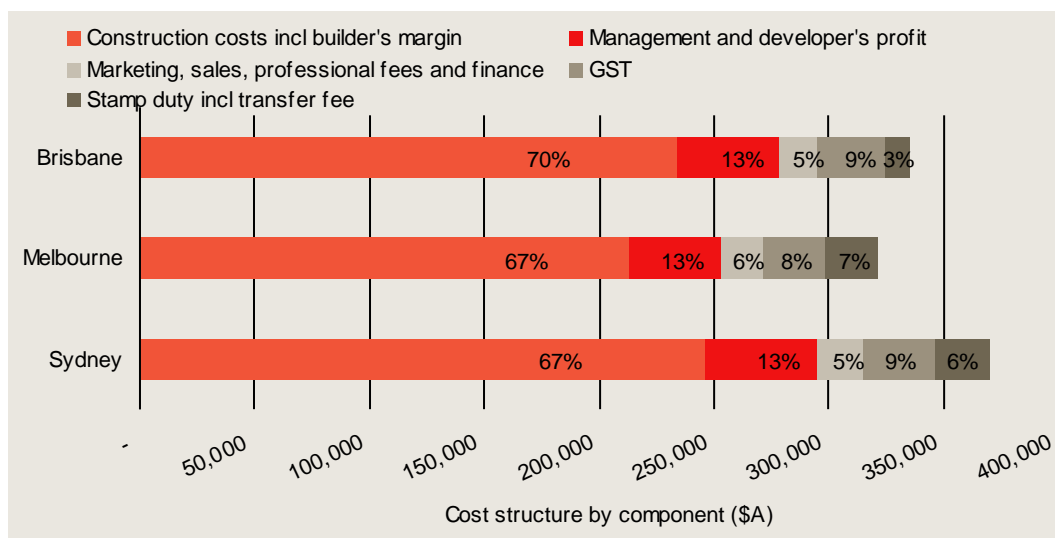
Data source: TheCIE 2011.



Chart 3.9 illustrates the relative size of the components listed in table 3.8. Housing development costs consist of:

- construction costs (66–70 per cent);
- a developers profit and management fees (around 13 per cent).

### 3.9 Construction, development and post-sale costs by category — Greenfield house



Data source: TheCIE 2010.

- Developers profit is based on an expected rate of return of around 15 per cent to cover the sorts of risks incurred.
- Financial institutions expect this sort of targeted profit margin when lending to developers.
- marketing, sales, post-sale professional fees and finance costs (around 5 per cent).
  - Generally, marketing and sales costs account for around 1–2 per cent and 4–5 per cent of the value of construction, respectively.
  - Finance costs (of only 1 per cent) which are based on the time periods for construction outlined in the 2010 Urbis report.
- direct taxes including stamp duty and GST (between 12 and 15 per cent). Direct taxes are lower in Queensland (12 per cent) than Sydney and Melbourne (15 per cent) due to lower stamp duty rates.

The median cost of constructing new apartments is more expensive on a per metre basis than housing, particularly for high rise development. High rise development is more expensive than low rise development as a result of higher labour costs and structural integrity requirements. Whereas housing development can be undertaken for around \$1000 per square metre, infill development usually costs between \$2000 and \$2500 per square metre.

For a 100 square metre apartment in terms of floor area, we estimate the median construction cost to be:

- approximately \$256 988 excluding GST in Sydney;
- approximately \$225 430 excluding GST in Melbourne; and
- approximately \$218 869 excluding GST in Brisbane.

The median price of an apartment reflects the mix of low and high rise apartments. Brisbane has the highest share of low rise development (dwelling units with less than four storeys) which is likely to be a significant factor contributing to the relatively low value of construction for Brisbane apartments. The median value of low rise apartments is fairly similar across the cities; there is considerable variation between the cities for high rise apartments.

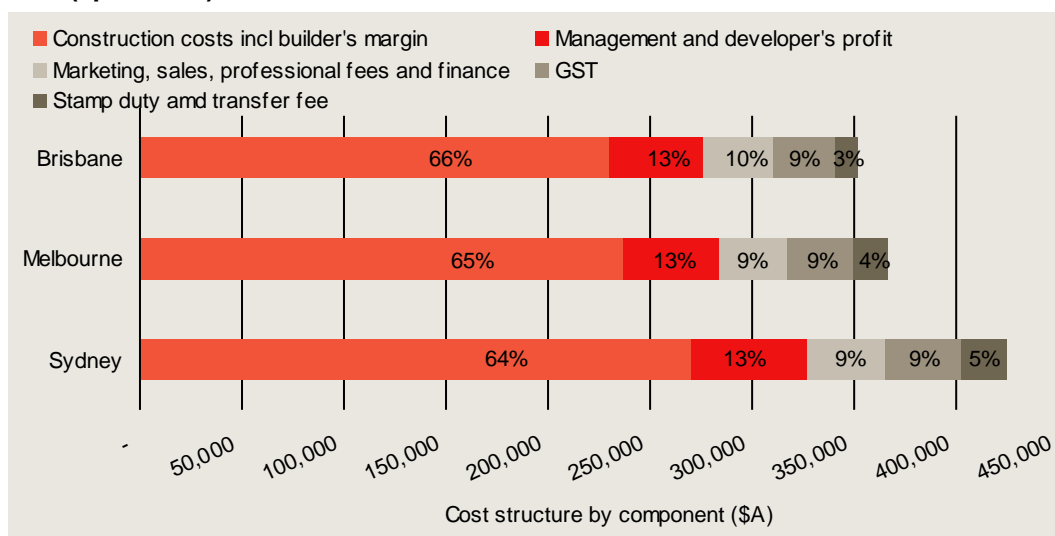
Table 3.10 and chart 3.11 show the CIE's indicative cost structure for apartments. Based on consultation, a new apartment is expected to have a median floor area of around 100 square metres plus car space(s). A representative breakdown of the intermediate inputs used in the construction of an apartment is provided in appendix B.

### 3.10 Median cost structure apartment

<i>Item</i>	<i>Sydney</i>	<i>Melbourne</i>	<i>Brisbane</i>
	A\$	A\$	A\$
<b>Land development costs</b>	193 778	130 825	170 757
Total construction costs — observed	318 186	279 114	270 990
Construction costs	256 988	225 430	218 869
Finance	18 498	16 227	15 754
Builder's margin	13 774	12 083	11 731
GST	28 926	25 374	24 635
<b>Total development costs</b>	<b>82 778</b>	<b>68 732</b>	<b>68 663</b>
Management	8 678	7 612	7 391
Developer's profit	47 670	39 203	38 062
Marketing and sales costs	13 852	11 473	12 777
Finance	5 053	4 196	4 191
GST	7 525	6 248	6 242
Price of apartment exclusive GST	548 402	440 156	470 555
GST	46 340	38 516	39 855
<b>Sale price (GST inclusive)</b>	<b>594 742</b>	<b>478 671</b>	<b>510 410</b>
Transaction costs	24 226	18 413	11 903
Stamp duty	22 253	15 178	9 114
Transfer fee	207	1 469	1 023
Professional fee inclusive GST	1 766	1 766	1 766
<b>Total inclusive GST</b>	<b>618 968</b>	<b>497 084</b>	<b>522 313</b>

Data source: TheCIE 2011.

### 3.11 Construction, development and post-sale costs by category — infill (apartment)



Data source: TheCIE 2011.

#### Combined cost structure

Land and housing development costs are combined to generate an estimate of the total median cost of a dwelling, which is equivalent to the sale price plus transaction costs (see tables 3.12 and 3.13).

### 3.12 Cost structure — Greenfield development (house)

Item	Sydney	Melbourne	Brisbane
	A\$	A\$	A\$
Developed land sale price	269 000	189 950	199 000
Total construction costs	275 338	240 176	262 711
Development costs	68 441	57 094	61 106
Transaction costs	26 754	23 982	11 909
<b>Total cost</b>	<b>639 533</b>	<b>511 202</b>	<b>534 726</b>

Data source: TheCIE 2011.

### 3.13 Cost structure — infill development (apartment)

Item	Sydney	Melbourne	Brisbane
	A\$	A\$	A\$
Developed land sale price	193 778	130 825	170 757
Total construction costs	318 186	279 114	270 990
Development costs	82 778	68 732	68 663
Transaction costs	24 226	18 413	11 903
<b>Total cost</b>	<b>618 968</b>	<b>497 084</b>	<b>522 313</b>

Data source: TheCIE 2011.

## *The full quantum of taxes paid and collected*

Some direct taxes are easily identified. Others are less transparent requiring more effort to quantify.

### *Direct taxes*

Direct taxes incorporate stamp duty, GST, land tax and council rates. Whilst stamp duty and GST are paid throughout the entire development process, land tax and council rates are incurred during the development of land only.

Developers indicated to the CIE that most raw land purchased by developers is effectively exempt from GST.

Stamp duty is paid on raw land twice but only once on the value of developed land and house. Whilst most residents will be exempt from paying land tax, the land tax paid by the developer will be borne by the end resident or owner.

Tables 3.14 and 3.15 present CIE estimates of the total *direct* tax burden on the median dwelling.

### 3.14 Direct taxation on Greenfield

	<i>Land tax</i>	<i>Stamp duty</i>	<i>GST</i>	<i>Council rates</i>	<i>Total direct taxes</i>
<b>Expected median value</b>	\$A	\$A	\$A	\$A	\$A
Sydney	1 457	24 228	49 392	345	<b>75 422</b>
Melbourne	1 117	22 156	39 884	156	<b>63 312</b>
Brisbane	909	10 073	44 046	141	<b>55 170</b>
<b>Percentage of total cost</b>	%	%	%	%	%
Sydney	0.2	3.8	7.7	0.1	<b>11.8</b>
Melbourne	0.2	4.3	7.8	0.0	<b>12.4</b>
Brisbane	0.2	1.9	8.2	0.0	<b>10.3</b>

Note: Estimates are based on only one transfer of ownership after the purchase of raw land by the developer.  
Data source: TheCIE 2011.

### 3.15 Direct taxation on infill development

	<i>Land tax</i>	<i>Stamp duty</i>	<i>GST</i>	<i>Council rates</i>	<i>Total direct taxes</i>
<b>Expected median value</b>	\$A	\$A	\$A	\$A	\$A
Sydney	2 971	23 781	46 501	504	<b>73 694</b>
Melbourne	463	16 248	38 676	219	<b>55 607</b>
Brisbane	1 931	10 194	40 016	97	<b>52 238</b>
<b>Percentage of total cost</b>	%	%	%	%	%
Sydney	0.5	3.8	7.5	0.1	<b>11.9</b>
Melbourne	0.1	3.3	7.8	0.0	<b>11.2</b>
Brisbane	0.4	2.0	7.7	0.0	<b>10.0</b>

Note: Estimates are based on only one transfer of ownership after the purchase of raw land by the developer.  
Data source: TheCIE 2011.

- Direct taxation accounts for between 10.0 and 12.4 per cent of the *total cost* of a dwelling.
- The largest component of direct taxes is GST; which is effectively taxed at a rate of less than 10 per cent.
- The median *value* of direct taxes is highest in Sydney due to higher land and construction-related costs. However, as a share of total costs Melbourne has the highest rate of direct taxation on houses due to higher stamp duties.
- Direct taxes in Brisbane are still significantly lower as a result of lower rates of stamp duty.

### *Ambiguous taxes: local and state government infrastructure charges*

Government infrastructure charges represent significant costs to home owners. Infrastructure charges vary extensively from state-to-state and between local councils. The variability in infrastructure charges across states suggests that there is no clear framework for deciding on an appropriate level of charging for new development. Different jurisdictions charge for different types of costs – for instance NSW and Victoria apply infrastructure charges for a much broader range of infrastructure than other states, although Victoria’s charges are capped for many types of infrastructure.<sup>27</sup> Some new developments within a state pay for more of their infrastructure than others. These factors suggest that a significant component of infrastructure charges may be viewed as a tax.

Developers consulted said they had concerns about ‘gold plating’ whereby developer contributions foster investment in infrastructure beyond the optimal quantity or quality. In addition, concerns were raised around the reliance of local councils on infrastructure charges.

The Henry Tax Review (2009) finds that infrastructure charges have the potential to improve the allocation of infrastructure, but in practice they have a number of problems. A key principle for infrastructure charges noted in the Henry Review is that where they are not structured as efficient user charges to reflect the extra cost of associated development, they are revenue raising taxes that discourage development and reduce housing affordability.<sup>28</sup> If they were set appropriately they would help provide price signals about where development is most and least costly. Henry maintains that many of the costs currently funded through infrastructure charges do not provide a good signal of where new development is least costly.

Henry suggests that a number of infrastructure charges are legitimate whilst others may not be. The ones that may **not** be appropriate include community facilities such

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<sup>27</sup> Henry, K. 2009, *Australia's future tax system – Report to the Treasurer*, December, p 425.

<sup>28</sup> Henry, K. 2009, *Australia's future tax system – Report to the Treasurer*, December, p 425.

as schools, libraries and child care facilities, regional improvements such as parks, open space and capital repairs, public transport capital improvements, regional road improvements and conservation of natural resources. Charges on these types of infrastructure should only reflect the additional costs that the development imposes on society rather than the total cost.

Henry highlights the difference between Melbourne and Sydney. Sydney charges for parks, education, trunk roads, public transport and housing. Sydney also enables child care centres, libraries, community centres, recreation facilities and sports grounds for infrastructure that service the development site or precinct. However, Melbourne has a cap on community infrastructure contributions at \$900.

It would appear that Melbourne more closely follows the Henry review overview of efficient infrastructure charges. By assuming that Melbourne is a possible best practice benchmark, we can illustrate the potential magnitude of excessive infrastructure charges as set out in table 3.16. We have incorporated the National Broadband Network within the tax component of infrastructure charges on Greenfield development because we do not have evidence to suggest that consumers would actually prefer the NBN over alternative or existing arrangements.

### 3.16 Potential size of taxation component of infrastructure charges

	<i>Sydney</i>	<i>Melbourne</i>	<i>Brisbane</i>
	A\$ per dwelling	A\$ per dwelling	A\$ per dwelling
Greenfield	27 801	3 000	23 557
Infill	2 818	0	13 696

*Note:* We have also excluded the charge of \$6000 for Sydney home owners to comply with BASIX requirements.

*Data source:* TheCIE 2011.

### *Hidden taxes*

A number of hidden taxes are effectively built in to the cost structures.

#### *Likely impacts of zoning restrictions*

Zoning or planning restrictions artificially increase the value of raw land by limiting the release of land. The impact on the price of housing is thought to be significant. One way to represent it is to compare the raw non-urban land values, where the price of land of housing should equal the value of agriculture, with observed raw land values.

In a recent report, the CIE (2010) identified median land values of non-urban properties from a database of properties in 15 jurisdictions in the Sydney region.<sup>29</sup>

<sup>29</sup> CIE 2010, Costs and benefits of alternative growth paths for Sydney, prepared for NSW Planning.

The value of non-urban properties ranged from \$25 per square metre in the Blue Mountains to \$143 per square metre in Pittwater. However, most values were between \$40 per square metre and \$80 per square metre. We adopt the simple average of the land value for the 15 jurisdictions of \$60 per square metre.

Using the raw land values in the cost structure for Greenfield development, the CIE estimates that the median block of land may contain an artificial premium of approximately \$75 per square metre in Sydney, \$39 per square metre in Melbourne and \$19 per square metre in Brisbane. This represents an artificial increase in the value of land by over 100 per cent in Sydney, around 65 per cent in Melbourne and around 30 per cent in Brisbane (table 3.17).

### 3.17 Zoning restrictions — potential impact on raw land values

	<i>Units</i>	<i>Sydney</i>	<i>Melbourne</i>	<i>Brisbane</i>
<b>Greenfield development</b>				
Estimated average size of block	m	539	506	508
Raw land — CIE estimated median	A\$ per m <sup>2</sup>	135	99	79
Undistorted value of raw land	A\$ per m <sup>2</sup>	60	60	60
Artificial land scarcity premium	A\$ per m <sup>2</sup>	75	39	19
<b>Potential average value of distortion</b>	<b>A\$</b>	<b>40 381</b>	<b>19 789</b>	<b>9 493</b>

*Note:* Greenfield development.

*Data source:* TheCIE 2011.

The restriction of land release for infill development also artificially raises the demand for land above supply. The impact of zoning restrictions on infill would be highly dependent on the location of the property and local council. We do not have specific data to compare median infill land values (from Urbis) to infill land values in relatively unrestricted jurisdictions.

The CIE takes a conservative approach and assumes that zoning restrictions result in an average land scarcity premium of around 15 per cent.<sup>30</sup> In reality, it could be significantly higher. Based on this assumption, the premium for infill development may equate to approximately \$11 087 per dwelling in Sydney; \$7174 per dwelling in Melbourne and \$9391 per dwelling in Brisbane.

#### *Planning uncertainty*

Planning uncertainty impacts on all new dwellings and increases the margins required by developers and builders in order to make development worthwhile. Low risk activities will require margins of only 5 per cent, while margins for development are in the order of 15 to 20 per cent. It is difficult to know how much lower margins

<sup>30</sup> A previous CIE report found that removing zoning restrictions could increase land values by anywhere from nothing to 50 per cent depending on the area. Source: CIE 2010, Costs and benefits of alternative growth paths for Sydney, prepared for NSW Planning, p 135.

might be under a more certain environment for developers. Margins overseas vary from those sought by Australian developers and builders. For example, the US National Association of Home Builders reports target margins of 8-15 per cent.<sup>31</sup> In the UK, the Office of Fair Trading suggests margins similar or higher than those for Australia.<sup>32</sup> If the US represents the margins for a low-risk environment, it is plausible that a less risky Australian planning environment would lead to margins required by developers and builders falling by 5 per cent.

In Sydney, consultations indicated an additional premium for planning uncertainty of one per cent over other cities. Each additional one per cent risk premium required to offset planning uncertainty in Sydney (an additional per cent on the profit margin) is equivalent to an extra \$5311 on the cost of a house and \$5329 on the cost of an apartment. Were the risk premia 5 per cent for Sydney and 4 per cent elsewhere, the hidden cost of planning uncertainty would be as set out in table 3.18

### 3.18 Planning uncertainty: additional risk premiums and potential associated cost

	<i>Sydney</i>	<i>Melbourne</i>	<i>Brisbane</i>
<b>Additional risk premium</b>	%	%	%
Greenfield	5	4	4
Infill	5	4	4
<b>Potential cost</b>	A\$	A\$	A\$
Greenfield	26 553	17 380	18 217
Infill	26 645	17 327	18 351

Data source: TheCIE 2011.

#### *Planning delays*

The numbers of months for planning approval, compared to the best case scenario identified in the Urbis study and costs associated with financing these delays are shown in table 3.19.

### 3.19 Planning approval time — unnecessary delays and potential associated cost

	<i>Sydney</i>	<i>Melbourne</i>	<i>Brisbane</i>
<b>Length of unnecessary planning delays</b>	Months	Months	Months
Greenfield	7	4	4
Infill	9	5	5
<b>Potential cost</b>	A\$	A\$	A\$
Indicative cost of planning delay – Greenfield	11 541	5 229	5 080
Indicative cost of planning delay – Infill	10 781	4 044	5 279

Note: Planning delays are calculated by subtracting the expected median planning approval time from the best case scenario identified from the Urbis 2010 report.

Data source: TheCIE 2011.

<sup>31</sup> National Association of Home Builders 2010, Cost of doing business study, p xviii.

<sup>32</sup> UK Office of Fair Trading 2008, Homebuilding market study, Annexe O, p 5.



The planning delays above reflect only the last part of the development process. Often major new developments can take up to 10 years to be given approval. A years delay early in the development process is less costly than a year's delay later because fewer costs have been incurred. However, these delays are often associated with costs to achieve planning approval and still require ongoing management expenses.

#### *Fees and charges*

Fees and charges account for a small but significant component of the cost of a new dwelling. Together, they comprise up to one per cent of the cost of a house and less than half of one per cent of the cost of an infill development. Henry suggests that these charges are reasonably justified. As a result, we have not incorporated these government charges in our quantification of the taxes applied to housing.

#### *Building codes – energy efficiency requirements*

Although not currently implemented, state governments have been considering introducing requirements for new buildings to meet energy efficiency ratings of six stars. The CIE completed a Regulation Impact Statement in 2010 on the incremental net benefit of requiring new buildings to be built to a six star standard. Currently, states have adopted requirements for buildings to have a five star rating. The report findings were that the introduction of the six star energy efficiency requirements is likely to impose a net cost in most areas and a net present value cost to the Australian economy.

The CIE in 2010 undertook a review to identify the 'optimal' energy efficiency rating and *net cost* of moving above this optimum. Generally the optimal star rating is around or below 5, with the weighted averages by locations between 4.4 and 5.5 stars (CIE, 2010). The 2010 report concluded that the current minimum energy efficiency requirements for new homes are likely to be at, or already past, the optimal level in most areas. The report took into account a range of different house 'types'<sup>33</sup> and capital cities. Taking a simple average of the results for each housing type, movement above the optimal energy efficiency rating by one star may:

- pose an average *net cost* of \$35.56 per square metre in Sydney.
- pose an average *net cost* of \$43.22 per square metre in Melbourne; and
- pose an average *net cost* of \$45.76 per square metre in Brisbane.

Table 3.20 shows the potential net cost of an incremental movement from the optimal star rating.

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<sup>33</sup> Houses were classified according size and house characteristics including glazing ratio, external wall, windows, external blinds, external doors, floor, ceiling, internal walls and roof characteristics and number of storeys.

### *Generic taxes: indirect taxes on the residential construction sector*

Table 3.21 shows the average rate of net taxes by type of tax for the *construction industry and material supplying industries*. As can be seen, the effective rate of taxation is less than the actual taxation rate. This is due in part to the exemptions and subsidies which may be taken up by the construction industry, so the rate is net of those exemptions and subsidies. In the case of company tax, it is also because the return to capital (profit) incorporates depreciation provisions.

#### 3.20 Potential impact of moving above optimal star rating

	<i>Units</i>	<i>Sydney</i>	<i>Melbourne</i>	<i>Brisbane</i>
Average floor area	m2	270	253	254
Cost related to energy efficiency standards	\$/m2	-35.56	-43.22	-45.76
Potential cost per new house	A\$ per house	-9 583	-10 926	-11 609

<sup>a</sup> The average floor area taken from ABS, Catalogue 8731.0 (February, 2010).

Data source: TheCIE 2011.

#### 3.21 Net taxation rates for the construction material supplying sectors

	<i>Sydney</i>	<i>Melbourne</i>	<i>Brisbane</i>
<b>Tax rate by type of tax</b>	%	%	%
Income tax	19.2	19.2	19.2
Company tax	17.2	17.2	17.2
Import tax	2.7	2.7	2.7
Payroll and other taxes	3.6	3.6	3.6

Data source: CIE-REGIONS model and Australian National Accounts: Input-Output Tables, Catalogue 5209.055.001 (ABS, 2010)

Taxation rates are applied consistently across jurisdictions and sectors, however the effective rate of taxation paid on inputs varies by industry. This is the result of the organisational and profitability profile of the sector which includes or exempts companies from paying various forms of tax. In the construction sector, for example, there is a high percentage of companies which are either non-employing or have less than 20 staff such that many companies are likely to be exempt from payroll tax.

Box 3.22 identifies the share of 'inputs' such as labour, capital and imports to the residential dwelling sector. We identify input coefficients for both the 'direct' inputs related to the land and housing development and 'indirect' inputs involved in the manufacture of materials utilised in the average dwelling.

The tax base for all taxes listed in table 3.20 is treated as the input share of the sum of all land development, construction and development costs that do not represent taxes. The product of the tax rate and tax base results in the estimated total value of generic taxes on new houses (shown in chart 3.22). For the median dwelling, generic taxes on direct and indirect inputs represent around 13 to 15 per cent of the total cost of a new dwelling.

### 3.22 Input content for residential dwelling sector

Activities related to land and housing development are comprised by 'inputs' such as labour, capital and imports. Some taxes are designed in a way that taxes specific inputs to products and production at varying rates. Thus, we need to know the breakdown of these costs in terms of the labour, capital and import shares.

Using the Australian National Accounts: Input-Output Tables, *Catalogue 5209.055.001* (ABS, 2010), we can estimate the 'direct' input mix for the residential dwellings sector. In the final construction of dwellings, approximately 7.1 per cent is attributable to labour and 15.8 per cent to capital. The majority of inputs are classified as 'intermediate inputs' (76.2 per cent) – cement, concrete, steel, aluminium, timber, fuel, glass, plastics, ceramics and textiles. In turn, these intermediate inputs are comprised of capital, labour, and imported inputs – we need to account for the taxes imposed on these.

It is possible to represent the total cost of a dwelling in terms of both the direct and indirect components. The input shares or 'coefficients' from both direct and indirect activity for residential building construction can be identified from the latest input-output tables (2006-2007). Table 17 of the input-output tables presents the primary input content in terms of total requirements per \$100 of final use by the industry. The tables indicate that for every dollar of final use in the residential building construction industry:

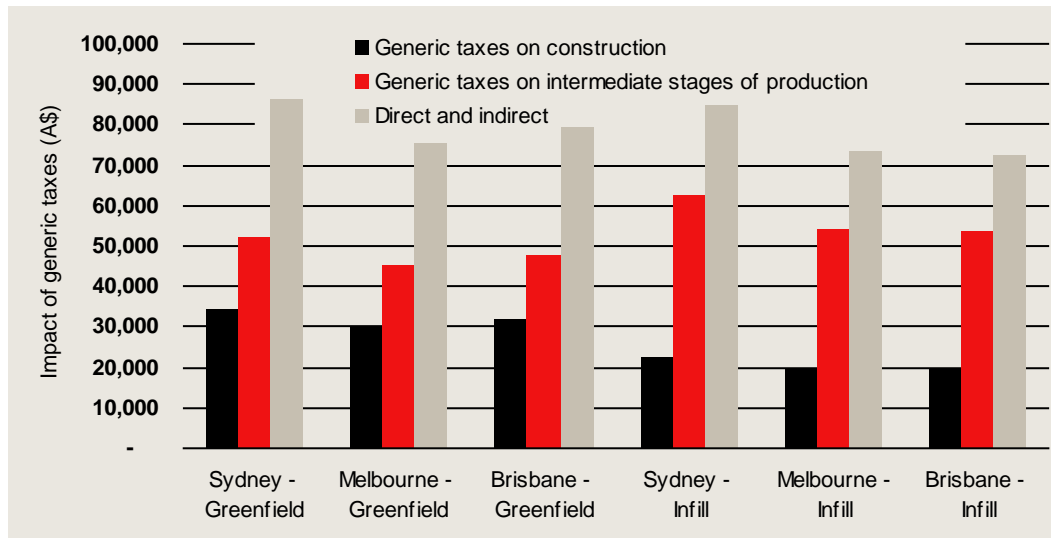
- 43 per cent is paid in compensation of employees or labour component on which taxes are levied;
- 41 per cent is gross operating surplus and mixed income or capital component on which taxes are levied;
- 12.5 per cent is paid to imported products including import taxes; and
- 3.6 per cent is spent on additional separate taxes less subsidies on products and production<sup>34</sup>.

Taxes related to the intermediate stages of production account for around three fifths of the all generic taxes whilst the inputs related to the construction of a dwelling account for around two fifths (see chart 3.23).

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<sup>34</sup> Other taxes on production include taxes related to the payroll or workforce numbers excluding compulsory social security contributions paid by employers and any taxes paid by the employees themselves out of their wages or salaries; recurrent taxes on land, buildings or other structures; some business and professional licences where no service is provided by the Government in return; taxes on the use of fixed assets or other activities; stamp duties; taxes on pollution; and taxes on international transactions.

### 3.23 Impact of generic taxes on median dwelling



Data source: TheCIE 2011.

### Taxes not included in the analysis

A number of other implicit taxes on housing can be identified that are *additional* to those embedded in the cost structure. They include long service levies and training levies, costs related to complying with building codes and a range of ongoing taxes including stamp duty, insurance duty and fire service levies. These additional taxes are quantified using the median value of dwellings.

#### Long service and training levies

Construction levies such as long service levies and training levies represent ambiguous taxes on housing. Long service leave levies are incurred on the construction value of dwellings in each state and territory in Australia. Home owners in Queensland, Western Australian and South Australia are also liable to pay training levies. Levies are charged as a percentage of the value of construction or value of labour content of construction.

Using the CIE's cost structure and applicable rates (see chart 2.9), we estimate the average contribution based on the median value of construction for Greenfield and infill development (see chart 3.24).

### 3.24 Levies on the construction of a median dwelling

	Sydney	Melbourne	Brisbane
	A\$	A\$	A\$
Training levies — Greenfield	na	na	221
Training levies — Infill	na	na	219
Long service levies — Greenfield	813	386	717
Long service levies — Infill	889	433	657

Data source: TheCIE 2011.

### *Stamp duty*

Stamp duty taxes incurred on transacted property provide a significant source of revenue for State governments. It is possible to estimate the median rate of taxation for stamp duties on a dwelling over its lifetime. Indications are on average that dwellings are sold once every 11 years.

The present value of stamp duty expected to be collected for new dwellings built in 2011 is estimated in table 3.25.<sup>35</sup>

### 3.25 Ongoing taxes on housing — stamp duty

	Sydney	Melbourne	Sydney
<b>Present value of future collections — stamp duty</b>	A\$	A\$	A\$
Housing/Greenfield development	55 899	51 387	23 141
Infill development	53 932	36 786	22 089

*Data source:* TheCIE 2011.

### *Insurance duty*

Insurance duties are paid on most types of insurance across all jurisdictions in Australia. The rate of insurance tax varies between states: 9 per cent in NSW; 10 per cent in Victoria and 7.5 per cent in Queensland. Based on the average household premium for 2010 (Insurance Council, 2010), the average taxation paid for a dwelling purchased in 2011 is likely to be approximately \$64.30 in Sydney, \$71.40 in Melbourne and \$53.55 in Brisbane.

Over time, insurance duties accumulate to a more significant total. The present value of insurance duty at today's rates on the median dwelling is expected to be approximately<sup>36</sup>:

- \$1356 in Sydney;
- \$1507 in Melbourne; and
- \$1130 in Brisbane.

### *Fire service levy*

In addition to insurance duty, some states also impose a levy to recover the cost of fire services provided to the community. New South Wales and Victoria both have fire levies set as a portion of the insurance premium. The ACT also imposes a fire service levy on all rate payers, set at a flat rate for each household irrespective of

<sup>35</sup> We assume house price appreciation of 3 per cent in real terms each year and a discount rate of 5 per cent.

<sup>36</sup> Assuming a 5 per cent discount rate and a real increase in the value of a dwelling by 2.5 per cent.

whether the resident has insurance. The current method of imposing the fire levy in NSW and Victoria increases the cost of housing on households that purchase insurance.

Based on the average insurance premium for Australian households, the average fire services levy would be equivalent to around \$135.70 in NSW and \$142.8 in Victoria. Over a thirty year period, based on today's rates the median household with insurance could expect to pay<sup>37</sup> approximately \$2863 in fire service levy contributions in Sydney and \$3013 in Melbourne. Victoria is moving towards abolishing its fire service levy and replacing it with a property levy.

### *Building levy*

Some states also require a building permit levy to be paid on construction. Victoria, Western Australia, the Northern Territory and the ACT have legislated building permit levies.

- Building levies on the median house are expected to total around \$257<sup>38</sup> in Melbourne and \$740 in Perth.
- On the average infill development, we would expect building levies to cost \$289 in Melbourne and \$1077 in Perth.

In Victoria, the building levy is charged at a rate of 0.064 cents in every dollar of the cost of building work to fund the building control system and 0.032 cents in every dollar of construction to fund the dispute resolution service, building advice and Conciliation Victoria (Building Commission, 2011). An additional 0.032 cents in every dollar of the cost of the construction of domestic buildings was required until it was repealed in June 2010, but it still applies in some circumstances (Building Commission, 2011).

In Western Australia, a building licence application fee of 0.35 cents for ten elevenths (10/11) of the estimated value of construction (see chapter 2).

### ***Estimates of taxes are likely to be conservative***

That various levies and taxes have not been included is one reason why estimates of taxes should be treated as conservative. The excessive infrastructure charge assumes Melbourne is a best practice benchmark, which is unlikely to be so, and the only hidden tax quantified due to the building code is the incremental 6 star energy efficiency rating requirement.

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<sup>37</sup> Utilising a discount rate of 5 per cent and real rate of growth in the value of housing of 2.5 per cent.

<sup>38</sup> Excludes the repealed levy which still holds in some circumstances.

Another factor that makes the estimates conservative is that the escalating effects of higher taxes on raising profit margins and finance margins and the effects of GST and stamp duty escalating these. This is addressed in the next chapter.

### *The potential impact of taxes*

One way to illustrate the potential impact of taxes on new houses is to quantify the burden of financing these taxes. A prospective home buyer in Sydney may expect to pay \$267 879 in taxes for a median priced house. The cost of financing this debt, at an interest rate of 7.5 per cent each year, is equivalent to an annual cost of \$20 000. A young couple (between 24 to 35 years of age) earning the average wage for their age group of \$73 308 per household pays approximately \$12 600 in income tax each year leaving an after-tax income of \$60 700.

The cost of financing the tax component of the price of a house (\$20 000) equates to 33 per cent of their after-tax income. In the first year, the couple would also have to pay the \$24 000 in stamp duty. In their first year of buying the house, the cost to them of taxes would be \$20 000 plus \$24 000 equating to \$44 000. This is equivalent to 72 per cent of their after-tax income. On a pre-tax basis, total taxes of \$12 600 income tax plus \$44 000 of housing taxes represent 77 per cent of their pre-tax income, leaving them only \$16 708 to live on in the first year. The equity implications of taxes on housing are likely to be complex, but the financial stress housing taxes impose on young first home buyers are likely to be large though mostly hidden.

## *4 Removal of taxes and charges on housing*

The estimates in chapter 3 provide an indication of the extent of government taxes and charges that fall on Australia's housing sector. The economic effects of reducing any of these elements are complex. Moreover, the actual reduction of these taxes and charges would likely pose difficult decisions for governments, particularly in those cases where taxes would need to be raised by other means. However, where these costs represent gold plating and inefficient use of resources there is obvious scope to reduce them. Moreover, where these taxes are specific to the building sector, tax theory would suggest they are likely to be particularly distorting. Removing them and replacing them with a broad-based tax that is spread across all sectors could minimise those distortions.

To the extent that taxes can be reduced the benefits will not necessarily all go to house owners. Some of the benefit may also go back to land holders. To determine how these benefits are split and what benefits might arise from minimising distortions requires the use of a sophisticated economic model. This will be considered in chapters 6 and 7. Here we consider the quantum of reducing various classes of taxes and those considered inefficient taxes by the Henry Tax Review.

### *Tax targets emerging from the Henry tax review*

The Henry Report (2009) is the latest study to find fault with many of the taxes levied on housing. In particular inefficiencies are highlighted in the cases of stamp duties, the existing land taxes, the effects of zoning on raw land prices, excessive requirements in the building code, the effects of planning delays and uncertainties in planning on risk premiums and finance charges of developers and inefficient and excessive charges within infrastructure charges. In total, these inefficient taxes range from \$45 300 on a new apartment building in Melbourne to \$141 500 on a new house in Sydney as set out in table 4.1. For Sydney, the \$141 500 worth of inefficient taxes represents over half of all taxes levied on the median house in Sydney of \$267 879.

Henry (2009, p.247) concludes that stamp duties on conveyances are inconsistent with the needs of a modern tax system. In table 4.1 we assume they are inefficient in their entirety.

On land taxes, Henry (2009, p.261 and p.417) finds that land taxes in their current form discourage large-scale investments in land reducing the scope for economies of scale and scope. In table 4.1 we assume they are inefficient in their entirety.



On zoning Henry (2009, p.421, p.424) makes the observation that it can greatly restrict the supply of land and drive up land prices significantly. He also makes the point that it may encourage governments to create economic rents through restrictions and planning delays and then tax the excessive value back through betterment taxes and excessive infrastructure charges. This is likely to stop land being devoted to its most productive use and the uncertainties of negotiated/non-transparent betterment taxes create large uncertainties for developers which are passed on in increased risk premiums. In table 4.1, conservative estimates of the excessive cost of raw land are derived based on differences between zoned and unzoned land on the urban fringe (as set out in table 3.17).

#### 4.1 Potential scale of inefficient or excessive tax on a dwelling

	<i>Sydney</i>	<i>Melbourne</i>	<i>Brisbane</i>
	A\$ per dwelling	A\$ per dwelling	A\$ per dwelling
Stamp duty	24 228	22 156	10 073
Land tax	1 457	1 117	909
Excessive land price	40 381	19 789	9 493
Planning delays and uncertainties <sup>a</sup>	38 094	22 609	23 297
Excessive infrastructure charges	24 801	-	20 557
National Broadband Network	3 000	3 000	3 000
Building code excesses	9 583	10 926	11 609
<b>Total — Greenfield</b>	<b>141 545</b>	<b>79 597</b>	<b>78 938</b>
Stamp duty	23 718	16 248	10 194
Land tax	2 971	463	1 931
Excessive land price	11 087	7 174	9 391
Planning delays and uncertainties <sup>a</sup>	37 426	21 371	23 630
Excessive infrastructure charges	2 818		13 696
National Broadband Network	Na	Na	Na
<b>Total — Infill</b>	<b>78 020</b>	<b>45 257</b>	<b>58 843</b>

<sup>a</sup> Estimated through removing excessive delays and uncertainties. Therefore, estimates also reflect resulting reduction in other taxes such as the GST.

Data source: TheCIE 2011.

Henry (2009, p.422) draws attention for the potential of national mandated building code requirements to raise building costs as a hidden tax and specifically mentions energy efficiency requirements. In table 3.20, conservative estimates of the extra net costs of complying with the 6 star energy rating are derived indicating the requirement is likely to impose a substantial tax that delivers negative net benefits. In table 4.1, it is included in its entirety.

The Henry tax review (2009) finds that infrastructure charges have the potential to improve the allocation of infrastructure, but in practice they have a number of problems. In table 3.16, excessive infrastructure charges are estimated and these are included in table 4.1.

The National Broadband Network fee is also included within the tax component of infrastructure charges on Greenfield development because no benefit cost analysis

has been conducted so there is no evidence to suggest that consumers would actually prefer the NBN over alternative or existing arrangements.

Henry (2009, p.20) points out the many inefficiencies associated with planning delays and uncertainties. The hidden tax costs of risk premia and planning delays are estimated in tables 3.18 and 3.19 and these are reproduced in table 4.1.

### *The escalating effects of the various taxes on housing*

There are many permutations and combinations of possible tax reductions on housing. Removing each tax or charge separately leads to a more than proportionate fall in the total dwelling cost. This reflects the cascading nature of taxes where a fall in a tax component reduces the tax base for stamp duties, the GST and generic (indirect) taxes such as income and company tax.

Tables 4.2 and 4.3 illustrate the notional impact of removing the taxes identified in chapter 3.

#### 4.2 Notional impact on price from removal of taxes — Greenfield

<i>Item</i>	<i>Sydney</i>	<i>Melbourne</i>	<i>Brisbane</i>
	\$/dwelling	\$/dwelling	\$/dwelling
1. Current cost of house to home buyer	639 533	511 202	534 726
2. Scenario 1: less direct property specific taxes (stamp duty, GST, land tax)	557 678	442 681	474 203
3. Scenario 2: less non-tax component of ambiguous taxes (excessive infrastructure charges)	520 897	438 820	443 891
4. Scenario 3: less hidden indirect taxes	443 009	396 623	414 617
5. Scenario 4: less generic taxes	371 617	330 952	345 567

Data source: TheCIE 2011.

#### 4.3 Notional impact on price from removal of taxes — infill

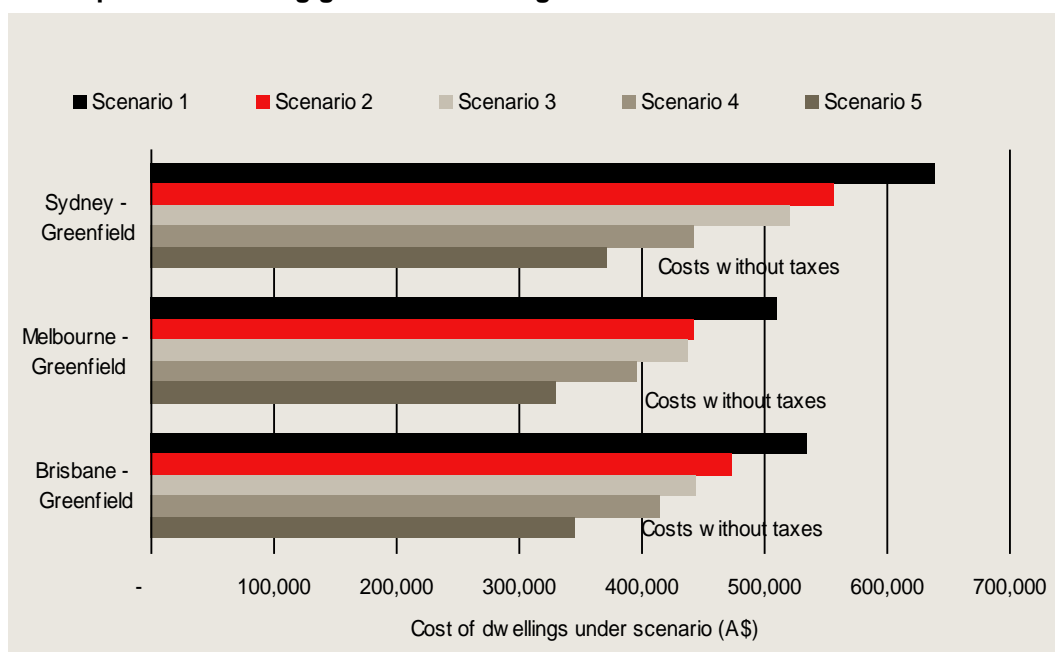
	<i>Sydney</i>	<i>Melbourne</i>	<i>Brisbane</i>
	\$/dwelling	\$/dwelling	\$/dwelling
1. Current cost of house to home buyer	618 968	497 084	522 313
2. Scenario 1: less direct property specific taxes (stamp duty, GST, land tax)	543 212	440 975	469 184
3. Scenario 2: less non-tax component of ambiguous taxes (excessive infrastructure charges)	539 470	440 975	451 560
4. Scenario 3: less hidden indirect taxes	494 485	413 674	420 778
5. Scenario 4: less generic taxes	421 048	347 895	356 819

Data source: TheCIE 2011.

## Greenfield

Chart 4.4 shows the impact of removing government charges and taxes on the price of the median house.

### 4.4 Impact of removing government charges and taxes — Greenfield



Data source: TheCIE 2011.

For Sydney, under current arrangements (scenario 1) the median cost of a new house is estimated to be approximately \$639 533.

- Removing property-specific taxes reduces the cost by \$81 855 (scenario 2).
- Then if we also remove the non-tax component of ambiguous taxes this reduces the cost by \$118 637 (scenario 3).
- If we also remove hidden taxes the cost of a house reduces by \$196 524 (scenario 4).
- Removing all the above taxes plus generic taxes reduces the cost by \$267 916 (scenario 5). The quantity of taxes is slightly greater than indicated in chart 3.1 which reflects the *net impact* of:
  - removing the extra finance and profit charges that arise simply because of the higher cost of building the house due to the tax components; and
  - reducing the tax collected through stamp duty and GST in scenario 2 and smaller untaxed resource costs on which generic taxes are paid (scenario 5).

For Melbourne, under the current scenario the median cost of a new house is estimated to be approximately \$511 202 (scenario 1).

- Removing property-specific taxes reduces the cost by \$68 521 (scenario 2).

- Then if we also remove the non-tax component of ambiguous taxes this marginally increases the reduction in cost to \$72 381 (scenario 3).
- If we also remove hidden taxes the cost of a house reduces by \$114 579 (scenario 4).
- Removing all the above taxes plus generic taxes (scenario 5) reduces the cost by \$180 250.

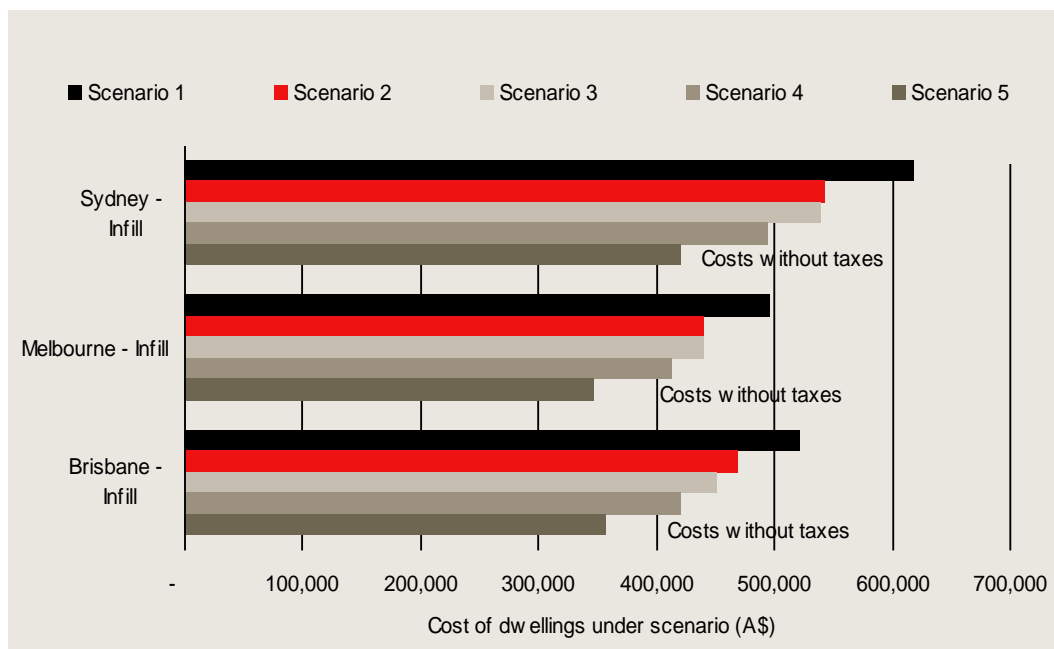
For Brisbane, under the current scenario (scenario 1) the median cost of a new house is expected to be approximately \$534 726.

- Removing property-specific taxes reduces the cost by \$60 523 (scenario 2).
- Then if we also remove the non-tax component of ambiguous taxes this reduces the cost by \$90 835 (scenario 3).
- If we also remove hidden taxes the cost of a house reduces by \$120 109 (scenario 4).
- Removing all the above taxes plus generic taxes reduces the cost by \$189 159 (scenario 5).

### *Infill*

Chart 4.5 shows the impact of removing government charges and taxes on the price of the median apartment.

#### 4.5 Impact of removing government charges and taxes — infill



Data source: TheCIE 2011.

In Sydney, the median cost of purchasing a new apartment is estimated to be approximately \$618 968.

- Removing property-specific taxes reduces the cost by \$75 756 (scenario 2).
- Then if we also remove the non-tax component of ambiguous taxes this reduces the cost by \$79 498 (scenario 3).
- If we also remove hidden taxes the cost of a Sydney apartment reduces by \$124 483 (scenario 4).
- Removing all the above taxes plus generic taxes reduces the cost by \$197 920 (scenario 5).

In Melbourne, the median apartment is currently expected to cost approximately \$497 084.

- Removing property-specific taxes reduces the cost by \$56 109 (scenario 2).
- There is no ambiguous tax component for Melbourne infill.
- If we also remove hidden taxes the cost reduces by \$83 411 (scenario 4).
- Removing all the above taxes plus generic taxes reduces the cost by \$149 190 (scenario 5).

In Brisbane, the median apartment is currently estimated to be \$522 313 (scenario 1).

- Removing property-specific taxes reduces the cost by \$53 129 (scenario 2).
- Then if we also remove the non-tax component of ambiguous taxes this reduces the cost by \$70 753 (scenario 3).
- If we also remove hidden taxes the cost reduces by \$101 535 (scenario 4).
- Removing all the above taxes plus generic taxes reduces the cost by \$165 494 (scenario 5).

## 5 *How taxes on housing compare with taxes on other sectors*

The housing sector pays proportionately higher taxes than other sectors. This chapter provides evidence from the taxation statistics, input-output tables and the CIE-REGIONS model.

### *Higher than average direct contribution to government revenues from the housing sectors*

Table 5.1 reports total taxes charged on new and existing properties between 2000–01 and 2008–09. Most of the figures are drawn directly from Australian Bureau of Statistics (ABS) taxation statistics (ABS Cat No. 5506.0) with the following adjustments:

- Federal and state taxes on property are split between residential and non-residential properties using a 9 to 1 ratio. This ratio is a conservative assumption for taxes on residential property based on the size of mortgage loan, land value and net capital stocks of these two types of properties. As shown in table 5.1, mortgage loans for non-residential property constitute around 5 per cent of total mortgage loans; and the land value and net capital stock of non-residential properties account for about 10 per cent of all properties.
- Stamp duties and other taxes on transactions are split between new and existing properties according to the purchase value of new and existing properties (ABS Cat No. 5609.0 Table 1).
- Goods and services tax (GST) on new housing for 2001–02, 2004–05, 2005–06 and 2006–07 is drawn from Australian Input-Output (IO) tables in the relevant years (ABS Cat No. 5209.0.55.001). GST on new housing in these years accounted for about 13–14 per cent of total GST revenues. GST on new housing in other years is estimated using this share.
- Labour and capital incomes of the residential building sector are also drawn from the IO tables. Income taxes are then estimated using the tax rates of 19.2 per cent for labour and 17.2 per cent for capital. For those years in which data is not available from the IO tables, income taxes from the residential construction sector are estimated via extrapolation (using their shares of total income tax in adjacent years).

### 5.1 Size of residential and non-residential mortgage and stock value

	<i>Mortgage</i>			<i>Land value</i>			<i>End of year net capital stock</i>		
	<i>Residential</i>	<i>Non-Residential</i>	<i>Share of non-residential</i>	<i>Residential</i>	<i>Commercial</i>	<i>Share of non-residential</i>	<i>Ownership of Dwellings</i>	<i>Rental, hiring and real estate services</i>	<i>Share of non-residential</i>
	<i>\$m</i>	<i>\$m</i>	<i>%</i>	<i>\$b</i>	<i>\$b</i>	<i>%</i>	<i>\$m</i>	<i>\$m</i>	<i>%</i>
2000-01	53 264	1 487	2.72	1 018.90	110.20	9.76	774 557	100 735	11.51
2001-02	69 591	3 218	4.42	1 282.60	126.90	9.00	822 816	107 171	11.52
2002-03	84 565	5 371	5.97	1 506.00	156.70	9.42	903 588	115 300	11.32
2003-04	118 273	7 360	5.86	1 784.00	178.40	9.09	1 002 959	126 704	11.22
2004-05	138 520	8 464	5.76	1 840.50	203.50	9.96	1 096 565	140 100	11.33
2005-06	166 689	9 599	5.45	2 080.10	220.90	9.60	1 179 793	155 405	11.64
2006-07	204 002	11 199	5.20	2 332.70	242.80	9.43	1 271 537	174 269	12.05
2007-08	171 229	8 648	4.81	2 429.00	265.10	9.84	1 368 788	192 734	12.34
2008-09	136 305	7 069	4.93	2 260.80	275.00	10.84	1 445 589	203 342	12.33
2009-10	112 325	3 991	3.43	2 828.80	290.50	9.31	1 519 061	211 472	12.22
<i>Average</i>	<i>125 476</i>	<i>6 641</i>	<i>5.03</i>	<i>1 936</i>	<i>207</i>	<i>9.66</i>	<i>1 138 525</i>	<i>152 723</i>	<i>11.83</i>

Data source: ABS Cat. No. 5232.0.55.001, Table 1; ABS Cat. No. 5204.0, Table 58 and Table 61.

- Net taxes on construction for 2001–02, 2004–05, 2005–06 and 2006–07 are directly drawn from IO tables and estimated via extrapolation for other years.
- Capital gains tax (CGT) on housing is estimated using data in ABS taxation statistics yearbooks. The yearbooks publish total CGT payable for three entities: individuals, companies and funds, and total capital gains by asset type (shares, real estate, and other assets). The CGT on housing is estimated by applying the share of real estate in total capital gains to total CGT payable for each of the three entities.

In total, the housing sector contributes around \$36 billion to \$40 billion dollars in taxation to federal, state and local governments in Australia on an annual basis. This equates to around 11 to 12 per cent of total taxation revenue. New housing contributes about 2.8 per cent and existing housing about 8.4 per cent (table 5.2).

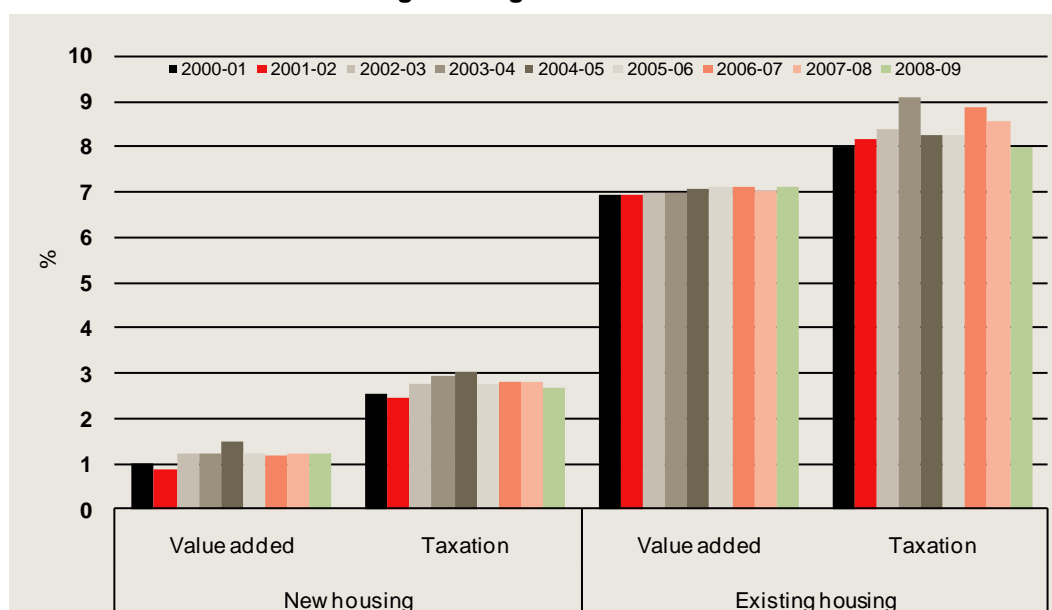
Chart 5.3 compares the value added shares of new and existing housing with their respective shares of total taxation revenue. It is clear that both sectors contribute higher than average taxation to government. For example, new housing accounts for about 1.2 per cent of total value added on average, while contributing about 2.8 per cent of taxation revenue on average. Similarly, existing housing accounts for about 7 per cent of total value added, while contributing about 8.4 per cent of taxation revenue on average. These measures of tax exclude the hidden taxes discussed in previous chapters so understate the total tax impost falling on the housing sector.

### 5.2 Taxes on property, 2000–01 to 2008–09

	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
<b>Taxes from new housing</b>									
Net taxes on construction	285	316	373	424	481	547	543	584	561
Income taxes of construction	1 641	1 162	1 723	2 107	2 396	1 986	2 291	2 589	2 438
GST on new housing	3 168	3 517	4 151	4 532	5 133	5 163	5 473	5 894	5 661
Stamp duties	264	315	323	468	451	587	704	646	416
Other taxes on transaction	94	43	28	36	38	14	12	11	17
<b>Sub-total</b>	<b>5 451</b>	<b>5 353</b>	<b>6 598</b>	<b>7 567</b>	<b>8 498</b>	<b>8 297</b>	<b>9 023</b>	<b>9 725</b>	<b>9 094</b>
<i>Sub-total as % of total taxation revenue</i>	<i>2.5</i>	<i>2.5</i>	<i>2.8</i>	<i>2.9</i>	<i>3.0</i>	<i>2.8</i>	<i>2.8</i>	<i>2.8</i>	<i>2.7</i>
<b>Taxes on existing housing</b>									
Land taxes	1 893	1 955	2 298	2 753	3 225	3 252	3 922	3 911	5 009
Municipal rates	5 797	6 127	6 548	6 953	7 413	7 909	8 527	9 173	9 851
Other taxes on immovable property	461	478	509	614	705	779	863	935	991
Stamp duties	6 212	7 348	8 797	10 318	9 209	10 295	12 113	13 075	8 439
Other taxes on transaction	2 206	998	752	789	771	243	206	230	345
CGT on property	599	887	1 144	1 944	1 697	2 131	2 829	2 513	2 482
<b>Sub-total</b>	<b>17 167</b>	<b>17 793</b>	<b>20 047</b>	<b>23 370</b>	<b>23 020</b>	<b>24 609</b>	<b>28 460</b>	<b>29 838</b>	<b>27 116</b>
<i>Sub-total as % of total taxation revenue</i>	<i>8.0</i>	<i>8.2</i>	<i>8.4</i>	<i>9.1</i>	<i>8.3</i>	<i>8.3</i>	<i>8.9</i>	<i>8.6</i>	<i>8.0</i>
<b>Total taxes on housing</b>	<b>22 619</b>	<b>23 145</b>	<b>26 645</b>	<b>30 938</b>	<b>31 518</b>	<b>32 906</b>	<b>37 482</b>	<b>39 562</b>	<b>36 210</b>
<i>Total housing tax as % of total taxation revenue</i>	<i>10.5</i>	<i>10.6</i>	<i>11.2</i>	<i>12.0</i>	<i>11.3</i>	<i>11.0</i>	<i>11.7</i>	<i>11.3</i>	<i>10.7</i>

Data source: ABS and CIE estimates.

### 5.3 Shares of new and existing housing in total value added and taxation revenue

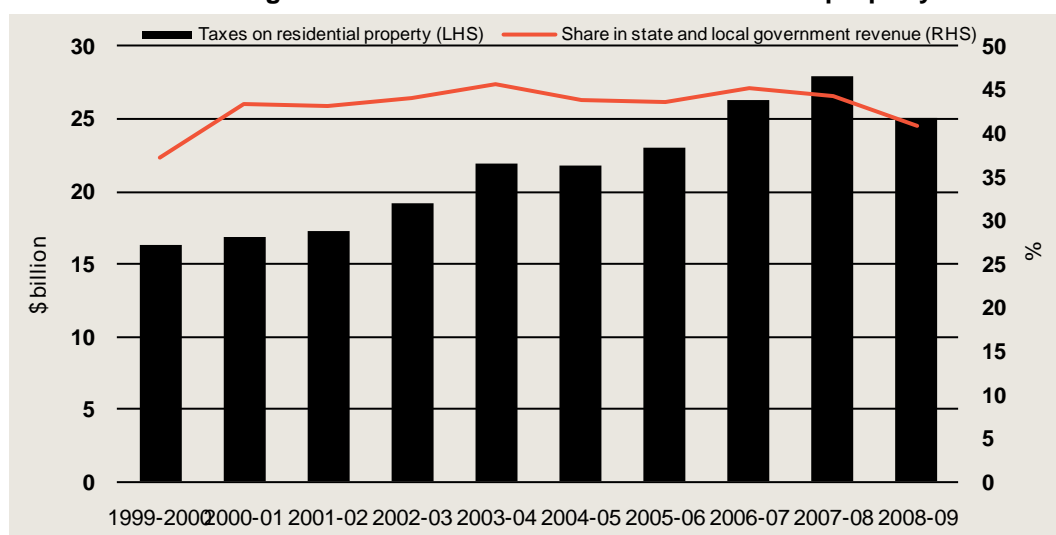


Data source: ABS and CIE estimates.



State and local governments rely heavily on taxes and charges on residential properties for their revenue. Residential property taxes and charges contribute to over 40 per cent of total taxation revenue of state and local governments in Australia (chart 5.4).

#### 5.4 State and local government taxation revenue on residential property



Data source: ABS and CIE estimates.

### *Comparison of direct and indirect taxes with other sectors*

Table 5.5 reports the direct and total tax burden on production and tax burden on final use of selected commodities and services (those with value added higher than \$10 billion) estimated from the latest Australian Input-output table for 2006-07. It excludes most ambiguous and hidden taxes for all sectors.

Residential building construction, with an average tax burden of 30.9 per cent of the value of output, is the second most heavily taxed sector among the big sectors. Only non-residential property operators and real estate services (45.3 per cent) is higher. At 24.9 per cent, the total tax burden of the ownership of dwellings is also above the average level of all sectors.

Among all 111 sectors identified in the IO table, residential building ranked 11th in terms of the tax burden on use, while dwelling ownership ranked 37th.

### *How the estimates are derived*

Australian input-output tables provide an instrument to compare tax burdens across 111 sectors of the Australian economy with detailed information provided on:

- intermediate use of every commodity by each production sector;

## 5.5 Tax burden as percentage of production cost of selected sectors, 2006–07

	<i>Net taxes on products</i>	<i>Net taxes on production</i>	<i>Labour income tax</i>	<i>Capital income tax</i>	<i>Total direct taxes</i>	<i>Total direct and indirect taxes</i>	<i>Net taxes on use</i>	<i>Total tax burden</i>
Sheep, Grains, Beef and Dairy Cattle	1.0	2.0	1.6	6.2	10.9	22.6	1.0	23.6
Coal mining	-0.7	0.3	2.4	6.3	8.3	19.4	0.3	19.7
Oil and gas extraction	-0.3	0.5	1.0	12.4	13.6	18.4	2.7	21.2
Non Ferrous Metal Ore Mining	0.6	0.4	1.6	9.2	11.9	19.8	0.1	19.9
Basic Non-Ferrous Metal Manufacturing	0.1	0.3	1.0	3.0	4.3	19.8	0.3	20.1
Residential Building Construction	0.5	0.5	1.4	2.7	5.0	21.6	9.4	30.9
Non-Residential Building Construction	0.4	0.3	1.9	2.3	4.9	21.5	0.0	21.5
Heavy and Civil Engineering Construction	0.4	0.3	3.1	1.2	5.1	21.6	0.0	21.6
Construction Services	0.4	0.7	4.1	3.4	8.7	21.1	0.2	21.3
Wholesale Trade	0.5	2.5	5.5	2.1	10.7	22.9	0.0	22.9
Retail Trade	0.4	2.4	7.2	2.7	12.6	22.6	0.0	22.6
Food and Beverage Services	3.8	1.2	4.9	2.1	12.1	24.9	0.1	25.0
Road Transport	4.1	2.9	4.7	2.8	14.5	26.0	0.0	26.0
Transport Support services and storage	1.1	0.9	3.2	5.9	11.2	21.5	0.0	21.5
Telecommunication Services	0.9	0.5	2.8	5.4	9.6	21.2	4.2	25.4
Finance	1.1	2.0	4.1	7.6	14.7	21.4	0.3	21.6
Insurance and Superannuation Funds	0.7	1.7	6.1	6.1	14.5	20.9	0.1	21.0
Auxiliary Finance and Insurance Services	0.2	0.7	10.3	2.7	14.0	20.2	1.3	21.5
Ownership of Dwellings	2.5	5.6	0.0	11.7	19.8	24.9	0.0	24.9
Non-Residential Property Operators and Real Estate Services	1.0	0.9	3.6	5.1	10.7	21.5	23.8	45.3
Professional, Scientific and Technical Services	1.5	1.1	5.9	1.6	10.1	22.8	0.6	23.4
Computer Systems Design and Related Services	0.3	0.9	9.3	1.6	12.1	21.1	0.1	21.2
Building Cleaning, Pest Control, Administrative and Other Support Services	0.8	0.7	8.5	0.9	10.9	21.8	0.7	22.5
Public Administration and Regulatory Services	0.1	1.0	9.9	1.4	12.5	21.0	0.2	21.2
Education and Training	0.3	1.4	13.0	1.2	15.9	21.1	0.1	21.3
Health Care Services	0.2	2.2	12.0	2.4	16.8	21.6	0.0	21.6
Residential Care and Social Assistance Services	0.2	1.4	13.5	1.6	16.7	20.9	0.0	20.9
<b>Average of all 111 sectors</b>	<b>0.9</b>	<b>1.4</b>	<b>4.9</b>	<b>3.6</b>	<b>10.9</b>	<b>22.0</b>	<b>2.4</b>	<b>24.4</b>

Note: Sectors are selected with value added higher than \$10 billion from 111 sectors in the input-output table.

Data source: CIE estimates based on Australian Input-Output Tables 2006–07.

- labour income (compensation of employees);
- capital income (gross operating surplus and mixed income);

- net taxes on products<sup>39</sup> for intermediate use and final use; and
- other net taxes on production.<sup>40</sup>

It should be noted that the taxes entered into the IO table are not complete, with the important omission of income taxes on labour and capital. To estimate income taxes we have applied effective income tax rates of 19.2 per cent for labour income and 17.2 per cent for capital income.

The sum of the net taxes on products, other net taxes on production and labour and capital income taxes provides a measure of the direct tax burden in producing a commodity or service. However, the direct tax burden does not measure the true tax burden of a sector as it omits those taxes embedded in the intermediate inputs. As a result, the direct tax burden is small if a sector uses a high proportion of intermediate inputs. For example, the residential building construction sector uses about 76 per cent of intermediate inputs, and its direct tax burden is only 5 per cent of total production cost. Should its intermediate inputs share be 50 per cent, the direct tax burden would be 9.7 per cent.

Therefore to estimate the tax burden on the production of a good we have to include the indirect taxes associated with intermediate inputs. Appendix C gives a formal discussion of estimating the total tax burden in the production of a commodity. The basic idea is to calculate the tax burden in a cascading way, that is, the producer of a commodity pays direct taxes, and producers of intermediate inputs into the production of the concerned commodity paid direct taxes during their production process, and so on. In this way, the direct and indirect tax burden in the production process of residential building construction would be 21.6 per cent of total production cost, which is equivalent to the average of all sectors (22 per cent).

However, to calculate a complete taxation burden we need to then add in any taxes charged on the industry and final use of the product (which in the case of residential construction includes very substantial taxes including stamp duty). In addition to the

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<sup>39</sup> A tax on product is a tax that is payable per unit of some good or service. The tax may be a specific amount of money per unit of quantity of a good or service (quantity being measured either in terms of discrete units or continuous physical variables such as volume, weight, strength, distance, time, etc.), or it may be calculated *ad valorem* as a specified percentage of the price per unit or value of the goods or services transacted. A tax on a product usually becomes payable when it is produced, sold or imported, but it may also become payable in other circumstances, such as when a good is exported, leased, transferred, delivered, or used for own consumption or own capital formation.

<sup>40</sup> Other taxes on production include taxes related to the payroll or workforce numbers excluding compulsory social security contributions paid by employers and any taxes paid by the employees themselves out of their wages or salaries; recurrent taxes on land, buildings or other structures; some business and professional licences where no service is provided by the Government in return; taxes on the use of fixed assets or other activities; stamp duties; taxes on pollution; and taxes on international transactions.

production cost, uses of a good or service usually require margin products (transport and trade) to deliver the good or service. The cost of these margins forms part of the cost of the use of the good or service. It also embeds taxes charged during producing these margin products, and these taxes should be counted as part of the indirect tax burden for the products' use. The IO table also identifies these net taxes although it does not identify specific margin products for each of the final uses. Accordingly, the average of the total tax burden during production for all the margin products is thus used to calculate the tax burden for use of the product.

The product (that is houses and apartments) of residential building construction is used as fixed capital formation in the dwellings ownership sector, and the buyers pay the production cost as well as a net tax at 9.4 per cent of production cost. This additional taxation on use (predominately in the form of stamp duty and GST) brings the total tax burden on residential building to 30.9 per cent, the second-highest proportional burden of the sectors and well above the average of all sectors (24.4 per cent).

### *Comparison with other consumer goods*

Chart 5.6 illustrates the composition of the total tax burden for selected consumer goods and services. Some commodities or services are aggregated and the burdens are averaged using their production costs as weights. The coloured vertical line shows the average total tax burden on final use for the whole economy.

The chart clearly shows that taxes charged on final uses make big difference in the total burden for the goods and services shown. For example, petrol has significantly higher total tax burdens due to the excises charged on final consumption.

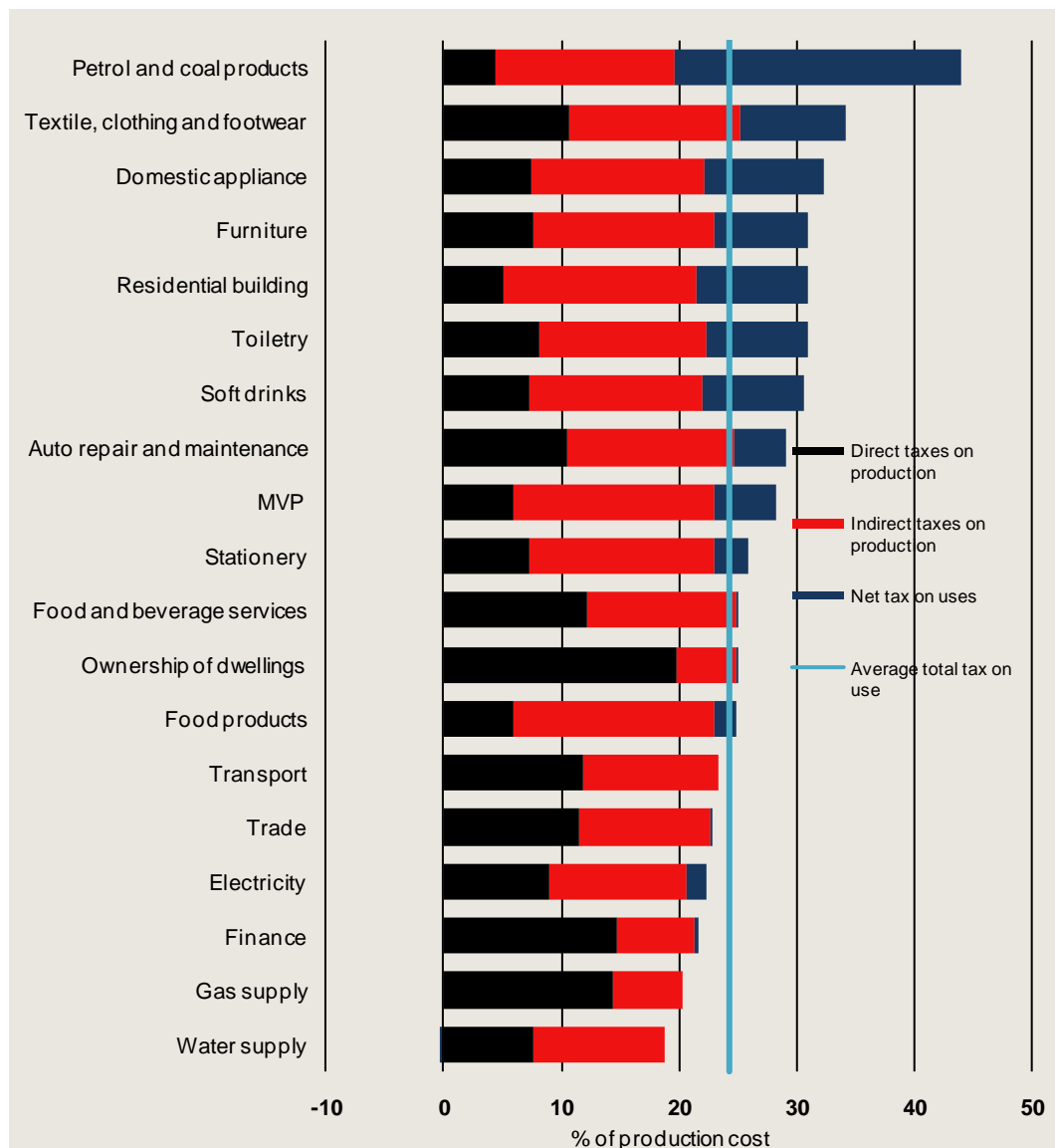
Higher tax burden on textile, clothing and footwear (TCF) is due to high proportion (over half) of imports in the final use and the relatively high import duties still applying to TCF. It measures the tax burden on final use of both domestic and imported goods, and perhaps in one sense may be argued to overstate the tax burden on domestic products.

The total tax burden of the residential building construction is about average during the production phase but higher than average for final use due to stamp duties and GST levied upon sale. The total tax burden of the ownership of dwelling is higher than average during the production phase and higher than average for the final use.

Utilities in general have a lower than average tax burden.

In absolute terms housing is the second largest contributor of tax to governments, contributing around 12 per cent of all revenues. Only wholesale and retail trading contributes more, about 13 per cent. The next largest contributing sector is transport at about 7.5 per cent.

### 5.6 Tax burden of selected consumer goods and services, 2006–07



<sup>a</sup> Some sectors are aggregated and averaged using their production cost as weight. Especially highly taxed sectors such as tobacco, alcohol and gambling have been removed due to the special rational for their tax treatment.

Data source: CIE estimates based on Australian Input-Output Tables 2006-07.

### *Contributions to government revenues from economic growth*

Using the CIE-REGIONS model it is possible to investigate the sectoral contribution to government taxation revenue in Australia. Six consumer goods or services were selected:

- Ownership of dwellings, that is housing;
- Textile, clothing and footwear (TCF);
- Road passenger transport;
- Food, beverage and tobacco;

- Electricity; and
- Petrol products.

For each sector, a \$500 million increase in demand for each of the selected goods or service was simulated. In a general equilibrium framework, higher demand for one good or service creates complicated impacts on other sectors: it boosts those sectors which provide inputs to the production of the good or service with simulated higher demand; but it will in general depress the demand for other goods and sectors.

In order to measure the impact of higher demand on government taxation revenue as accurately as possible (that is, to offset the substitution effect on other sectors, while still maintaining the general equilibrium property of higher demand on the supply side), two scenarios were simulated:

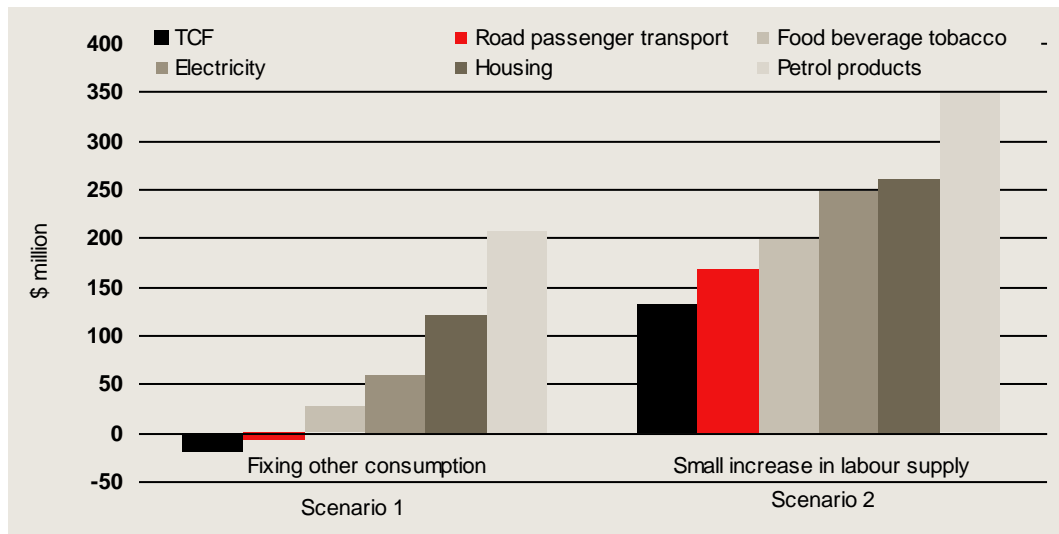
- household demand for other major goods and services remains fixed; and
- a small increase in labour supply (equivalent to a boost in immigration) which boosts the overall economy, thus offsetting the negative impact on other sectors.

The second scenario generates bigger impacts on taxation revenue than the first scenario because, with higher labour supply, the overall economy and total income level is boosted. By contrast, the income level under the first scenario remains unchanged. Therefore, we need to compare the impact on tax revenue of higher demand for various consumer goods under the same scenario, rather than the impacts between the two scenarios.

Chart 5.7 reports the simulation results. It depicts the change in government taxation revenue of higher demand for one good or service. \$500 million more demand for housing would generate about \$120 more in government taxation for the first scenario, while about \$260 more revenue for the second scenario.

For the same amount of increase in demand, only higher demand for petrol products could generate more taxation revenue (\$80 million more) than the housing sector does. All other sectors would generate less taxation revenue than the housing sector. It is clear from the chart that the relativities of the impacts of higher demand from different commodities persist across the scenarios.

### 5.7 Change in taxation revenue by higher consumption in one sector relative to the impact of higher consumption in housing



Data source: CIE-REGIONS model simulations.

## 6 *Who pays the tax*

Who pays any given tax of housing (the incidence of the tax) depends on the characteristics of demand and supply for new and existing homes. If demand is relatively tighter (less elastic) than supply, consumers are likely to pay the majority of the tax. If the opposite is true producers and land holders are likely to pay a higher proportion of the tax. This is explained in more technical terms in appendix D.

### *Characteristics of demand and supply*

At a theoretical level, it is widely held that in the housing market demand is relatively less elastic while supply is more elastic. While this may not be the practical case in the short run, in the longer term this is due to the fact that shelter is a necessity of life. In other words, there is a relatively rigid demand for housing in the longer term. On the other hand, the supply of housing is more flexible, especially in the long run. Construction workers, materials and machinery could be used to build residential dwellings instead of other types of infrastructure. Existing large blocks of land can be subdivided or multi-storied dwelling built on them. Moreover, agricultural and other land could be turned into residential blocks fairly easily, especially in Australia, in the absence of artificial barriers.

The supply of land is likely to be considerably less flexible than the supply of materials, workers, capital and machinery. Nonetheless, the raw cost of land is but a small proportion of the overall cost of a house at around nine per cent only. This diminishes the effect of land on the overall flexibility of supply as is further explained in appendix D.

Table 6.1 summarises the derived demand and supply elasticities from various simulations with the CIE-REGIONS model. The elasticities vary depending on the closure and shocks implemented.

#### 6.1 **Derived demand and supply elasticities**

	<i>Demand</i>	<i>Supply</i>
Construction	-0.26 ~ -0.61	6.37 ~ 8.77
Ownership of dwellings	-0.59 ~ -1.15	1.43 ~ 2.50

*Data source:* CIE-REGIONS simulations.

Two observations may be made from table 6.1. First, supply elasticities are higher than demand elasticities for goods and services of the construction and dwelling



sectors. This confirms the discussion presented earlier, and implies that consumers and users bear more of taxes in the construction and/or dwelling sectors.

Second, the supply elasticities of construction are consistently higher than those of dwellings. This is simply because the construction sector produces new housing while the dwelling sector is related to the whole stock of housing, new and established. It is relatively easier to increase the building of new houses, but more difficult to increase the whole housing stock at the same proportion.

### *Measuring the benefit of tax cuts to industry and households*

Several simulations were carried out using the CIE-REGIONS model to quantify the effects of various tax cuts:

- Simulation A: reducing state payroll tax on the construction sector by \$500 million;
- Simulation B: reducing stamp duties and other taxes on capital in the construction sector by \$500 million; and
- Simulation C: reducing stamp duties and other taxes on capital in the dwellings sector by \$500 million.

The impacts of these tax cuts on sectoral price and production are reported in table 6.2. They are presented in the form of percentage changes relative to pre-tax cut levels.<sup>41</sup>

#### **6.2 Percentage change in price and quantity of construction and dwellings of tax cut by \$500 million**

	<i>Changes in construction</i>			<i>Changes in dwellings</i>		
	<i>Consumer price</i>	<i>Producer price</i>	<i>Quantity</i>	<i>Consumer price</i>	<i>Producer price</i>	<i>Quantity</i>
<b>Tax cut in construction sector</b>						
A: State payroll tax	-0.35	~0.01	0.09	-0.23	0.06~0.10	0.14
B: Stamp duty/other capital tax	-0.28	0.02~0.03	0.17	-0.20	0.09~0.16	0.23
<b>Tax cut in dwellings sector</b>						
C: Stamp duty/other capital tax	0.00	0.0~0.02	0.13	-0.32	0.12~0.22	0.31

Data source: CIE-REGIONS simulations.

<sup>41</sup> A higher percentage change in dwelling quantity than in construction quantity does not necessarily mean higher output in absolute terms because in the model database, total output of construction is higher than the output of dwellings which is the annual value of services provided by the housing stock. For example, in simulation A, construction supply increase by 0.09 per cent, which is equivalent to about \$171 million in absolute term, while the 0.14 per cent increase in dwelling supply is equivalent to \$145 million.

Both consumers (buyers) and producers (sellers) benefit from the tax cuts which reduce the deadweight loss. How they share that benefit is set out in table 6.3 and further explained in appendix D.

Cutting payroll tax by \$500 million in construction sector as modelled in simulation A leads to a reduction in production cost. It shifts the supply curve further out, leading to lower prices paid by housing buyers and higher after-tax price received by the producers. As discussed above and further explained with more detail in Appendix D, because the demand is more elastic than the supply, the fall in consumer price at 0.35 per cent is much higher than the rise in producer price at about 0.01 per cent. The lower consumer price boosts demand for new housing, and at the same time the higher producer price provides incentive for producers to supply more to meet the higher demand of 0.09 per cent (worth of around \$171 million in dollar term).

With higher reductions in consumer price, the buyers enjoy most of the gain from the tax cut, amounting to \$664 million measured by consumer surplus (see chart 6.3). Because the producer price rises only marginally, the sellers gain between \$19 million and \$27 million, measured by producer surplus.

When the lower price of construction products (that is new housing and renovations) feeds into the dwellings sector, the price of services provided by new and existing houses falls by 0.23 per cent accordingly. Lower prices in turn increase demand by 0.14 per cent (worth of around \$145 million in dollar term). Because the taxes are multiplicative of production costs, lower input prices lead to lower tax impost on suppliers of the dwelling services. As a result, the producer price rises by 0.06 to 0.1 per cent to provide the incentive to producers to supply more to meet the higher demand.

Similar to the situation in the construction sector, consumers gain more than producers due to the greater reduction in consumer price (see charts 6.2 and 6.3). With consumers gaining \$238 million and suppliers between \$58 million and \$101 million, the relativeness of consumer surplus and producer surplus is not that large as in the construction sector because the supply of dwellings is less elastic than the supply of new housing while the demand is more elastic for dwellings than for new housing.

The impacts of simulations B and C are similar in their direction of impact but the magnitude of change varies. But there is a difference for simulation C where the tax cut happens in the dwellings sector. As a result, the impacts on the sector are higher than those on the closely connected construction sector in both percentage and absolute terms.

### 6.3 Benefits of tax cuts to consumers and producers

Simulation	Construction		Dwellings		Overall in housing	
	Gain to consumers	Gain to producers	Gain to consumers	Gain to producers	Gain to consumers	Gain to producers
	\$m	\$m	\$m	\$m	\$m	\$m
A	664	19 ~ 27	238	58 ~ 101	902	19 ~ 27
B	531	37 ~ 51	207	95 ~ 167	738	37 ~ 51
C	202 ~ 474	28 ~ 39	332	133 ~ 232	534 ~ 806	28 ~ 39

Data source: TheCIE estimates based on CIE-REGIONS simulations

Two observations may be made from table 6.3. First, the overall economic benefit is higher than the value of tax cuts of \$500 million. This is due to lower taxes which reduce market distortions and eliminate some deadweight losses. The extra benefit above the \$500 million tax cuts represents the reduction in deadweight losses.

- The lower tax that benefits buyers and suppliers causes both increases in demand and supply for housing resulting in an expansion of the sector.
- Increased activity in housing attracts consumer spending power and supplier investment away from other sectors resulting in reductions in activity in other sectors which is not included in table 6.3.
- Changes in prices mean that the previous and expanded activity transacts at slightly higher prices.

The second and important observation is that most of the benefits accrue to households. This is because they bear more tax burden than producers before the tax cut, which is in turn due to the fact that demand for housing is less elastic than the supply.

## 7 *Inefficiency of taxes on houses and alternatives*

The Henry Tax Review identified many inefficient taxes imposed on the housing sector. In chapter 4 estimates of Henry's inefficient taxes were shown to make up over half of the taxes imposed on the construction sector.

### *Relative efficiency of various taxes*

Charts 7.1 and 7.2 show estimates of the relative efficiency of a wide range of taxes. Efficiency is measured in terms of the economy-wide effects on real national consumption as well as the effects on housing supply. It is generally held that changes in real consumption are a better measure of impact on welfare of policy changes than the change in real GDP.

The relative measures are derived using simulations from the CIE-REGIONS model. Various taxes are reduced by a set amount (\$500 million) and replaced by either a general increase in GST, or with the specific introduction of a GST on food. GST is generally perceived as an efficient tax relative to most, but one of its glaring inefficiencies is the exemption on food.

- When GST is set at the same rate across all products consumed its potential to create distortions in the economy is limited. With an increase in GST, the after tax price of goods and services would increase by the same proportion for all products, leaving the relative price of goods and services unchanged. Therefore no further distortions to the patterns of production and consumption are imposed on an economy after the introduction of GST, except for the effect it has on devaluing peoples' savings.
- With exemptions from GST on certain goods and services (such as food) the non-distortionary property does not hold. This leads to higher than optimal levels of consumption of food items hence causing distortions within the economy.

Charts 7.1 and 7.2 show the results of 30 simulated tax reforms (15 tax cuts, each with two different offsetting arrangement of GST, one on food specifically, the other a general increase.). The tax cuts simulated are as follows.

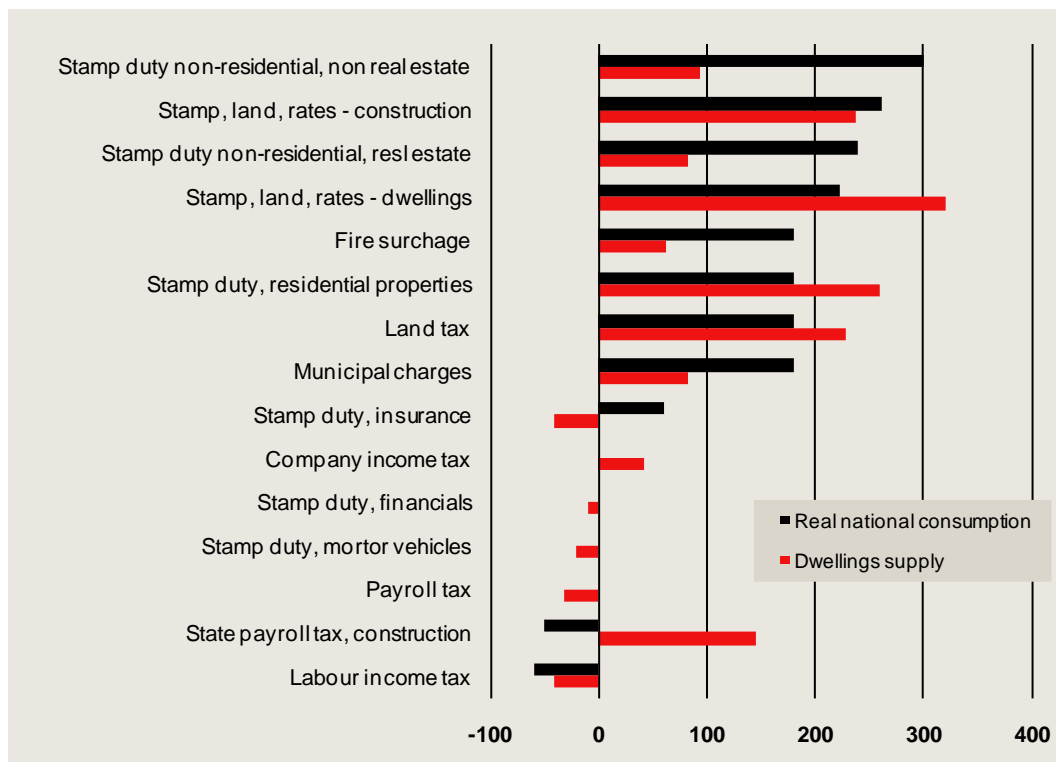
- F1: Labour income tax.
- F2: Company income tax.

### 7.1 Ranking of tax cuts: GST food



Data source: CIE-REGIONS simulations.

### 7.2 Ranking of tax cuts: GST



Data source: CIE-REGIONS simulations.

- S1: Stamp duty on insurance.
- S2: Fire surcharge.
- S3: Stamp duty on financials.
- S4: Stamp duty on motor vehicles.
- S5: Stamp duty on residential properties.
- S6: Land tax.
- S7: Municipal charges.
- S8: Stamp duty, non-residential, non real estate.
- S9: Stamp duty, on non-residential real estate.
- S10: Payroll tax.

The first two are federal taxes, and the rest are state and local government taxes and charges. These simulations reduce the relevant tax across all the sectors. In addition, simulations were carried out to reduce taxes on construction and dwellings sectors only.

- S11: Stamp, land, rates, construction.
- S12: Stamp, land, rates dwellings.
- S13: State payroll tax on construction.

The results seem to confirm that stamp duties are bad for the economy relative to GST particularly if they can be replaced by a GST on food. The results also confirm that stamp duties and other specific taxes on housing are relatively inefficient for the economy as a whole and unnecessarily reduce dwelling supply. As a result, these taxes on housing have a major impact on housing affordability. The results indicate that:

- a \$500 million reduction in non-residential stamp duties and replacement with a \$500 million GST on food would increase national welfare (national consumption) by over \$450 million due to reductions in distortions across the economy, and indirectly it would add over \$150 million to the value of the supply of housing;
- a \$500 million reduction in most state, property specific taxes such as stamp duties, land tax and rates on dwellings, and replacement with a \$500 million GST on food would increase national welfare (national consumption) by over \$350 million due to reductions in distortions across the economy, but it would also increase the supply of housing considerably more, over \$400 million; and
- a \$500 million reduction in income taxes on wages and replacement with a \$500 million GST on food would, by comparison, increase national welfare (national consumption) by less than \$100 million only, and have little impact on housing.

Cutting property taxes on construction and dwellings would create the third and fourth largest gains in household consumption among the 15 tax cuts simulated. Cutting stamp duties on residential properties, land taxes, municipal charges and fire

charges all lead to improvement in welfare. This suggests that residential properties incur a relatively high tax burden, which distorts the pattern of production and consumption of dwellings.

A striking result is that funding the tax cuts through broadening the GST base to cover food items would undoubtedly improve welfare, as evidenced by the positive change in real consumption in charts 7.1 and 7.2. This is because broadening the GST base would remove the current distortions from the existing GST regime with exemptions.

Most of the tax cuts funded by a broader GST would improve, or at least not harm, households' welfare. The only two exceptions are the tax cut on labour income tax for all sectors, and the cut on payroll tax on construction, which see household consumption fall slightly.

### *Simulation of cuts in inefficient taxes*

Removing potentially inefficient or excessive taxes on housing as identified in table 4.1 (and the Henry Tax Review) and replacing them with a broad-based tax such as GST (without exemptions) would greatly enhance economic welfare. The composition of the reductions in specific housing taxes in aggregate would be:

- about \$9 billion worth of tax cuts in the construction sector representing stamp duties, land tax, excessive land prices due to zoning and delays, excessive infrastructure charges and municipal rates;
- a productivity improvement worth of about \$5 billion in production cost savings in the construction sector from removing planning delays and uncertainties, excesses of the building code and the broadband network charge; and
- about \$6 billion worth of tax cuts in the dwellings sector representing stamp duty and land tax.

Three alternative arrangements were made to cover the above tax cuts to ensure budget neutrality:

- Alternative A: the tax cuts are funded by extending GST coverage as well as raising GST rate. Under this alternative, the GST would be extended to cover food, health and education which are currently exempt of GST. But the extension will cover only 30 per cent (\$4.5 billion) of the tax cuts because the tax base of these uncovered commodities and services is relatively small. The remaining \$10.5 billion worth of tax cuts would need to be funded by raising the GST rate.
- Alternative B: the tax cuts are funded by raising GST rate with the existing coverage.
- Alternative C: the tax cuts are funded by raising land taxes.

## *Consumption and GDP may increase by up to around 2 per cent*

Table 7.3 summarises the impact on national gross domestic product and private consumption of cutting taxes on housing with the three alternative arrangements from the CIE-REGIONS model simulations.

Results from the CIE-REGIONS model indicate that removing taxes on housing and replacing with broadening of the GST base would result in a net welfare gain to the nation (measured as an increase in real consumption) of up to \$11.8 billion a year (1.96 per cent) or up to 1.9 per cent increase in gross domestic product.

### 7.3 Impact of cutting housing taxes with alternative arrangements

	<i>Gross Domestic Product</i>		<i>Private Consumption</i>	
	%	\$ billion	%	\$ billion
Alternative A: Broader GST	1.91	21.8	1.96	11.8
Alternative B: Higher GST rate only	1.64	18.7	1.78	10.7
Alternative C: Higher land taxes	0.54	6.1	0.42	2.5

*Data source:* CIE-REGIONS simulations.

Removing the taxes in housing and replacing them by broadening the GST base (Alternative A) will generate the biggest benefits for the whole economy among the three alternatives. This is mainly due to two reasons.

- As a broad based tax, the GST is less distorting than the taxes in housing.
- The distortion is further reduced by expanding the coverage of the GST. Theoretically, if all goods and services are subjected to a GST with the same rate, there will be no further distortion apart from falling real wealth because the relative price of goods and services stays the same. Compared to the Alternative B where the tax cuts are funded by raising the GST rate with existing coverage, the broadening of tax base brings about additional benefit of \$1.1 billion in household consumption or \$3.1 billion in GDP.

Replacing the taxes in housing sector by higher land tax will improve welfare marginally. This suggests that the land tax is as distorting as the taxes in housing. It still creates a massive distortionary tax levied on one sector of the economy (the housing sector). Moreover, although land may be regarded a immobile, and therefore a good tax target, in reality raw land is a relatively small input affecting the overall elasticity of supply. It is more mobile than sometimes assumed.

Due to the relative inefficiencies of a land tax, the following discussion focuses on the Alternatives A and B only.

Removing around \$20 billion in specific and hidden taxes in the housing sector would:



- boost consumption and production in housing by around \$9.2 billion (Alternative A) or \$8.4 billion (Alternative B) even incorporating greater GST bills due to broadening;
- boost spending in all other sectors from money (expenditure) saved on housing, although much of this is clawed back from the increase in GST, but overall the net increase in real consumption is an estimated \$2.5 billion (Alternative A) or \$2.3 billion (Alternative B);
- remove the current distortion and inefficiency in the pattern of production and consumption in the economy that is biased against housing and leading to an undersupply and under-consumption of housing.

### *Considerable benefits of broad-based taxes*


Specific taxes on individual sectors distort the pattern of consumption and production from what would be optimal without the tax. Broad based taxes that tax all sectors equally do not create the inefficiencies of distorting the preferred patterns of consumption and production. Switching from a specific industry tax to a broad-based one removes such inefficiencies allowing for a real increase in the value of consumption.

### *Results consistent with Henry review results*

The findings of the Henry Tax Review were similar. By removing specific, mainly state based taxes and replacing them with broad-based taxes, GDP was estimated to expand by 2 to 3 per cent or by \$25 to \$40 billion a year. This is larger than the change we have estimated, but the specific taxes we have removed and replaced with broad-based taxes are only a subset of all the taxes Henry changed. Another difference in our estimates is that we have also incorporated removal of hidden taxes which were not included in the Henry Tax Review. The comparable subset of taxes we change are one third of those identified by Henry in total and our gains are approximately a third as well. When we simulate the same tax changes as Henry we get very similar results<sup>42</sup>.

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<sup>42</sup> According to the KPMG Econtech report prepared for the Henry Tax Review, \$12.4 billion of conveyance duties cost GDP 1.2 per cent, whereas \$42 billion of GST cost GDP only 1.5 per cent (a much more efficient tax), while land tax and municipal rates have little impact on GDP (KPMG Econtech 2010, Appendix C, p134-135. This implies if \$12 billion of conveyance duties and \$3 billion of municipal rates are replaced by \$15 billion of GST, the net impact on GDP would be an increase of 0.63 per cent. Our \$15 billion stamp duty and municipal rates reform (replaced by higher GST rate) without the \$5 billion of productivity improvement would increase real GDP by 0.6 per cent.



*Appendices*

## A Inputs to construction of house

### A.1 Construction cost components — Greenfield

	<b>Sydney</b>	<b>Melbourne</b>	<b>Brisbane</b>
	A\$ per dwelling	A\$ per dwelling	A\$ per dwelling
Professional fees	6 593	5 694	6 264
Preliminaries	20 535	17 735	19 509
Excavation	6 912	5 969	6 567
Concrete	24 615	21 259	23 386
Brickwork	13 990	12 083	13 292
Carpentry	16 953	14 641	16 107
Insulation	2 290	1 978	2 176
Joinery	8 599	7 427	8 170
Windows and glazing	17 636	15 231	16 755
Hardware	1 380	1 192	1 311
Roofing and roof plumbing	16 106	13 909	15 301
Doors	5 532	4 778	5 256
Plastering	14 679	12 677	13 946
Tiling	4 383	3 785	4 164
Floor coverings	9 073	7 836	8 620
Painting	11 842	10 227	11 250
Plumbing and drainage	20 528	17 729	19 503
PC items.	5 297	4 574	5 032
Electrical	11 618	10 034	11 038
External work	13 809	11 926	13 120
Construction cost – total	232 370	200 684	220 766

Data source: TheCIE 2011.

## B Inputs to construction of apartment

### B.1 Construction cost components — infill

	<b>Sydney</b>	<b>Melbourne</b>	<b>Brisbane</b>
	A\$ per dwelling	A\$ per dwelling	A\$ per dwelling
Preliminaries and overheads	37 667	33 041	32 080
Demolition	1 028	902	875
Excavation	14 157	12 419	12 057
Landscape	2 210	1 938	1 882
Concrete	13 361	11 720	11 379
Formwork	19 990	17 535	17 025
Reinforcement	12 513	10 976	10 657
Masonry	13 875	12 171	11 817
Waterproofing	2 775	2 434	2 363
Metalwork	13 361	11 720	11 379
Aluminium doors and windows	11 357	9 962	9 672
PC items	6 295	5 522	5 361
Carpentry works	8 068	7 077	6 871
Roof framing and cladding	2 312	2 028	1 969
Joinery	10 483	9 196	8 928
Door hardware	437	383	372
Hydraulics services	22 687	19 902	19 322
Render and plasterboard	17 908	15 709	15 252
Tiler and paving	8 171	7 167	6 959
Carpet	3 340	2 930	2 845
Electrical (mechanical/lift services)	30 961	27 159	26 368
Painting	4 034	3 539	3 436
<b>Construction cost — total</b>	<b>256 988</b>	<b>225 430</b>	<b>218 869</b>

Data source: CIE 2011.

## C Estimating total tax burden in production

Suppose the cost structure of an industry  $j$  is as follows:

- Shares of intermediate input  $i$ :  $a_{ij}$ ;
- Shares of primary factor input  $l$ :  $f_{lj}$ ; and
- Share of direct tax:  $t_j$

such that  $\sum_i a_{ij} + \sum_l f_{lj} + t_j = 1$

The total tax is the sum of direct tax and indirect taxes paid in the production of other inputs:

$$x_j = t_j + \sum_i a_{ij} t_i + \sum_i \sum_k a_{ij} a_{ki} t_k + \sum_i \sum_k \sum_m a_{ij} a_{ki} a_{mk} t_m + \dots$$

Let  $X = (x_1 \ x_2 \ \dots \ x_j \ \dots \ x_N)$  be the total tax vector;  $T = (t_1 \ t_2 \ \dots \ t_j \ \dots \ t_N)$  the direct tax vector; and  $A$  the intermediate input matrix such that  $A(i,j) = a_{ij}$ . The above formula can be written as

$$X = T + TA + TAA + TAAA + \dots = T + (T + TA + TAA + TAAA + \dots)A = T + XA$$

Rearranging the equation gives

$$X(I - A) = T$$

where  $I$  is an identity matrix with  $N$  by  $N$  dimensions. Solving the above expression gives

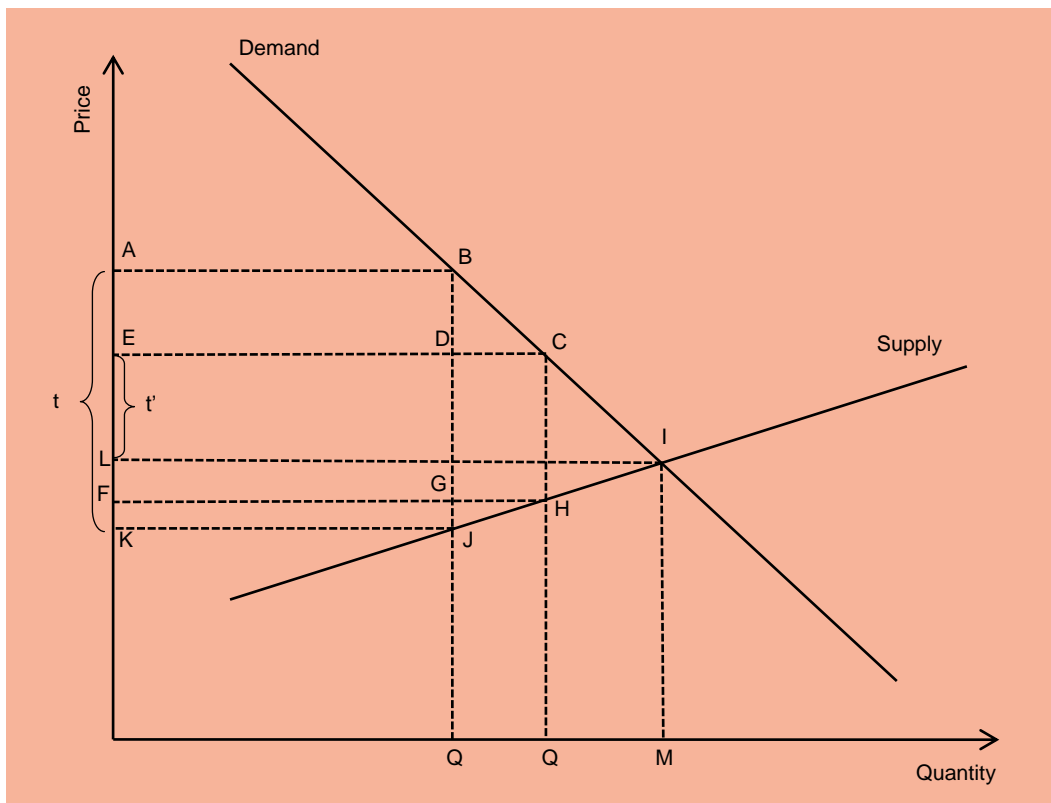
$$X = T(I - A)^{-1}$$

In the terminology of the input-output framework, matrix  $A$  is called the direct requirement coefficients matrix and matrix  $(I - A)^{-1}$  the total requirement coefficients matrix.

## D Economics of taxation burden

Chart D.1 illustrates the tax incidence in a simple demand and supply framework. If there is no tax or subsidy, the market would be in equilibrium with price at  $L$  and quantity at  $M$ .

### D.1 Demand, supply and tax incidence



Source: TheCIE illustration.

A tax at the rate of  $t$  will create a wedge of that amount between the price paid by the consumers ( $P_D = A > L$ ) and the price received by the producers ( $P_S = K < L$ ). The difference between consumer (producer) price and the original price level defines the incidence of the tax by consumer (producer). In the total tax of  $t$ ,  $AL$  is borne by consumers and  $LK$  by producers. With higher consumer price, the demand falls to  $Q$ . Meanwhile, with lower producer price, the supply falls by the same amount.

With higher price and lower demand, consumers lose the consumer surplus by the area  $ABIL$ ; and with lower price and production, producers lose the producer surplus

by the area  $IJKL$ . The government gains tax revenue of  $ABJK$ . The deadweight loss is therefore the triangle  $BIJ$ .

The incidence of tax is determined by the relative slope of demand and supply curves, i.e. the demand and supply elasticities. Consumers will have to bear more tax burden than producers if demand is more inelastic than supply. This is the case shown in chart D.1. With a more elastic supply function producers can relatively easily adjust their production, leading to larger change in quantity relative to change in price. On the other hand, with more inelastic demand, consumers more or less have to stick with certain amount of demand, resulting in larger change in price relative to change in quantity.

By contrast, more elastic demand than supply would put more tax burden on producers because consumers in this case are relatively easy to adjust their demand than producers adjust their production.

The incidence of taxation also implies the share of benefit following tax cuts. If consumers (producers) bear more tax burden, then a tax cut would see consumer (producer) grasp more of the benefits. As shown in chart D.1, with tax cuts from  $t$  to  $t'$ , demand would go up from  $Q$  to  $Q'$ , and the consumer price falls to  $E$  while the producer price up to  $F$ . The gain to consumers is the change in consumer surplus represented by area  $ABCE$ , and the gain to producers is the change in producer surplus represented by area  $FHJK$ . In this particular case where demand is more inelastic, consumers gains more than producers following the tax cut.

### ***Incidence of housing taxation***

In the housing market, it is widely held that demand is relatively less elastic while supply is more elastic. This is due to the fact that everyone needs a shelter to live everyday. In other words, there is a rigid demand for housing. On the other hand, supply of housing is much more flexible, especially in the long run. Construction workers, materials and machinery could be used to build other types of infrastructure. Agricultural and other land could be turned into residential blocks fairly easily, especially in Australia.

It follows that consumers, that is, house buyers would end up bear most of the taxes discussed previously. We try to quantify the incidence using the CIE-REGIONS model.

As a general equilibrium model, the demand and supply relationship is much more complex than the one in chart D.1. First of all, the housing market is represented by two sectors – construction and ownership of dwellings. The products of construction sector, that is, new houses, enter into the dwellings sector as fixed capital information. It is this housing capital that provides households with shelter service flows.

Furthermore, the housing market is linked to other good and service markets. Changes in the housing market will have impact on other markets, and vice versa. These impacts affect both demand and supply. For example, higher demand for housing in principal would depress other demands given certain amount of the income or budget. However, to fulfil the increase in demand, there will be more building activities, which in turn lead to higher demand for other materials and primary factors. The higher demand for primary factors means higher income to households, which will further boost demand.

As a result, the derived demand and supply response from CIE-REGIONS modelling is a composite one reflecting all the underlying forces. It is therefore necessary to isolate the price and quantity relationship as hard as possible when deriving the demand and supply elasticities. It could be done through careful formulation of shocks and selection of simulation results. For example, cutting payroll tax in construction sector by \$500 million would lead to a fall of 0.35 per cent in price and a rise of 0.09 per cent in production of the sector. The tax cuts enable the construction sector provide products in lower costs. In other words, the supply curve of the sector shifts out. On the other hand, the demand curve for construction products more or less stays the same.<sup>43</sup> This means that the observed changes in price and quantity could be interpreted as moves along the demand curve, implying the observed demand elasticity be of about -0.26 ( $= 0.09/-0.35$ ).

Another example is higher demand for dwellings due to a taste change. A one per cent rise in demand leads to a rise of 0.71 per cent in price. It could be interpreted as a shift in the demand curve. The observed changes are moves along the supply curve. It therefore implies the supply elasticity of dwellings be of about 1.41 ( $= 1/0.71$ ).

Table D.2 summarises the derived demand and supply elasticities from various simulations with the CIE-REGIONS model. The elasticities vary depending on the closure and shocks implemented.

## D.2 Derived demand and supply elasticities

	<i>Demand</i>	<i>Supply</i>
Construction	-0.26 ~ -0.61	6.37 ~ 8.77
Ownership of dwellings	-0.59 ~ -1.15	1.43 ~ 2.50

*Data source:* CIE-REGIONS simulations.

Nevertheless, two observations may be made from table **Error! Reference source not found.** First, supply elasticities are higher than demand elasticities for goods and services of the construction and dwelling sectors. This confirms the discussion

<sup>43</sup> Of course in a general equilibrium framework, the demand curve would move as well because of the income and substitution effects caused by the tax cut, but those would be in second order.



presented earlier, and implies that consumers and users bear more of taxes in construction and/or dwelling sectors.

Second, the supply elasticities of construction are consistently higher than those of dwellings. This is simply because the construction sector produces new housing while the dwelling sector is related to the whole stock of housing, new and established. It is relatively easier to increase the building of new houses, but more difficult to increase the whole housing stock at the same proportion.

### *Supply elasticity of land*

The CIE-REGIONS model does not separate land from other capitals in the construction sector.

Suppose inverse supply functions of the land and building are of linear form:

$$P_L = a + bQ$$

$$P_B = c + dQ$$

The supply elasticities of land and building are:

$$e_L = (dQ/dP_L)/(Q/P_L) = P_L/b/Q$$

$$e_B = (dQ/dP_B)/(Q/P_B) = P_B/d/Q$$

The inverse supply function of final housing is the addition of the above two supply functions:

$$P = P_B + P_L = (a + c) + (b + d)Q$$

And the supply elasticity of final housing is

$$e = (dQ/dP)/(Q/P) = P/(b + d)/Q = (b e_L + d e_B)/(b + d)$$

Land cost accounts for about 10 per cent of the housing cost. This implies that the price of land and the price of building construction have a 1 to 9 ratio. This inturn suggests that  $b/d = 1/9$  approximately. Therefore the above supply elasticity of final housing can be written as

$$e = 0.1e_L + 0.9e_B$$

With the land supply elasticity being as low as 0.1, the supply elasticity of building would be between 7.07 and 9.73 so that the supply elasticity of housing construction falls between the ranges reported in table **Error! Reference source not found.**

### *Measuring the benefit of tax cuts to industry and households*

Several simulations were carried out using the CIE-REGIONS model to quantify the benefits of various tax cuts:

- Simulation A: reducing state payroll tax on construction sector by \$500 million;
- Simulation B: reducing Federal payroll tax on construction sector by \$500 million;
- Simulation C: reducing state capital tax on construction sector by \$500 million; and
- Simulation D: reducing state capital tax on dwellings sector by \$500 million.

The impacts of these tax cuts on sectoral price and production are reported in table D.3. They are presented in the form of percentage changes relative to pre-tax cut levels.

### D.3 Percentage change in price and quantity of construction and dwellings of tax cut by \$500 million

	<i>Changes in construction</i>		<i>Changes in dwellings</i>	
	<i>Price</i>	<i>Quantity</i>	<i>Price</i>	<i>Quantity</i>
<b>Tax cut in construction sector</b>				
A: State payroll tax	-0.35	0.09	-0.23	0.14
B: Federal payroll tax	-0.35	0.10	-0.22	0.13
C: State capital tax	-0.28	0.17	-0.20	0.23
<b>Tax cut in dwellings sector</b>				
D: State capital tax	0.00	0.13	-0.32	0.31

Data source: CIE-REGIONS simulations.

The impacts of simulations A and B are similar because the tax cuts affect the production in the same way although the taxes are collected by different jurisdictions. There is no corresponding cut in payroll tax in the dwellings sector because the sector does not use labour to produce services.

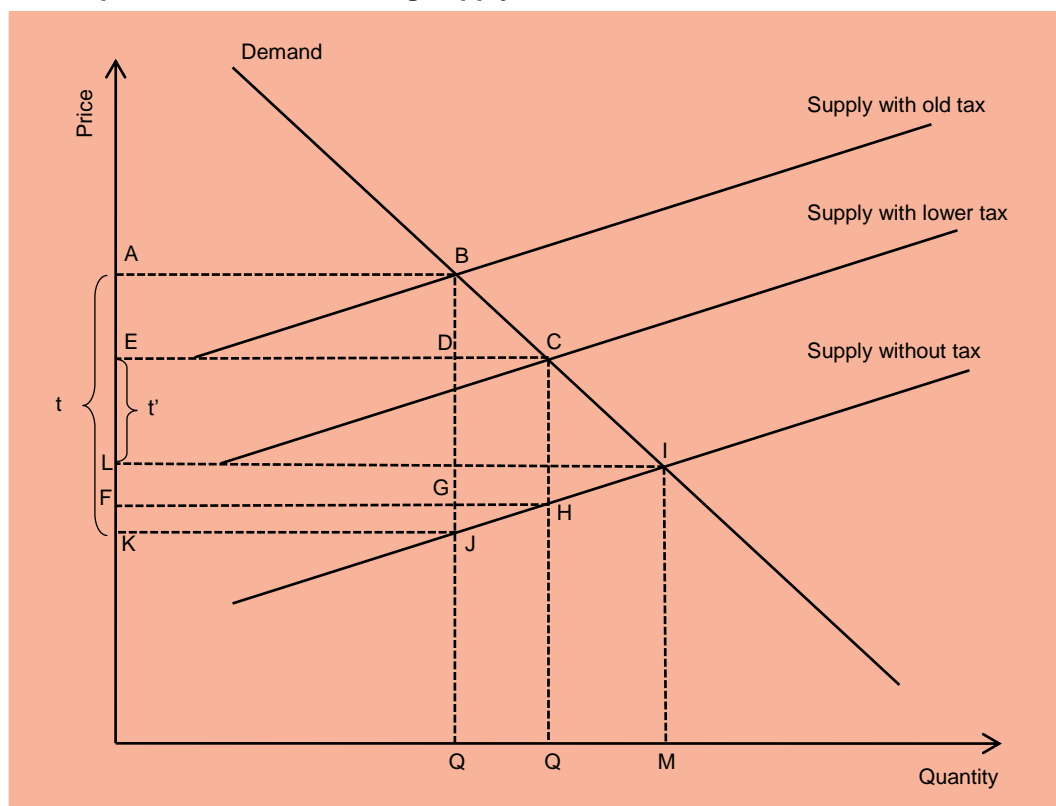
As discussed above, these tax cuts essentially lower the marginal cost of production in relevant sector, and the observed changes in price and quantity can be interpreted as moving along the demand curve.

Chart D.4 illustrates the impact of a tax cut which affects the supply curve. This chart is essentially a reproduce of chart D.1 with new supply curves added, namely supply curves with old tax and with lower tax. The gains to consumers or users are measured by the trapezoid *ABCE* which is the change in consumer surplus. It can be shown that the gains can be calculated as

$$-(1+q/2)pV_0$$

where *p* and *q* are percentage changes in price and quantity, respectively, and *V*<sub>0</sub> is the sales value before tax cut.

#### D.4 Impact of a tax cut affecting supply curve



Source: TheCIE illustration.

The gains to producers can be measured by the trapezoid  $FHJK$ , which is the change in producer surplus. It can be shown that the gains are

$$(1+q/2)qV_0/e_s$$

where  $e_s$  is the supply elasticity.

As shown in table D.3, lower cost of construction resulted from tax cuts in the sector feeds into the dwelling sector, lowering the price of dwellings as well. This means that the supply curve of dwellings shift out while the demand curve stays the same. The changes in the dwellings market are similar to the changes in the construction market, and thus the gains to households and producers can be measured in the same way as discussed above.

It should be noted that the consumer of the construction products (i.e. buyers of new housing) are the producers of the dwellings services. As a result, the gains to consumer of construction products and the gains to producers of dwellings services should be counted only once when calculating the overall benefits.

The cut in capital tax in the dwellings sector works in a similar way as illustrated by chart D.4, that is, a shift of the supply curve with the demand curve unchanged.

Table D.5 summarised the estimated benefits to consumers and producers of the four tax cuts.

#### D.5 Benefits of tax cuts to consumers and producers

Simulation	Construction		Dwellings		Overall	
	Gain to consumers	Gain to producers	Gain to consumers	Gain to producers	Gain to consumers	Gain to producers
	\$m	\$m	\$m	\$m	\$m	\$m
A	664	19 ~ 27	238	58 ~ 101	902	19 ~ 27
B	664	22 ~ 30	228	54 ~ 94	892	22 ~ 30
C	531	37 ~ 51	207	95 ~ 167	738	37 ~ 51
D	202 ~ 474	28 ~ 39	332	133 ~ 232	534 ~ 806	28 ~ 39

Data source: TheCIE estimates based on CIE-REGIONS simulations.

Two observations may be made from the table. First, the overall benefit is higher than the value of tax cuts of \$500 million. This is because with lower tax, the distortion is smaller, so is the deadweight loss. The extra benefit above the \$500 million tax cuts represents the reduction in deadweight loss.

Second, most of the benefits accrue to households. This is because they bear more tax burden than producers before the tax cut, which is in turn due to the fact that demand for housing is less elastic than the supply.

## E CIE-REGIONS model

CIE-REGIONS model is a general equilibrium model of the Australian economy. It was developed by the Centre for International Economics based on the publicly available MMRF-NRA model developed by the Productivity Commission (2006).<sup>44</sup>

Some of the key aspects that make this model especially suited for this task are that it:

- uses a 2005/06 input-output table
- provides a detailed account of industry activity, investment, imports, exports, changes in prices, employment, household spending and savings and many other factors;
  - identifies 58 industries and commodities (table E.1)
  - the industries which are particularly relevant to this task are construction and ownership of dwellings
- accounts for Australia's six states and two territories as distinct regions including specific details about the budgetary revenues and expenditures of each of the eight state and territory governments and the Australian Government (the government finances in CIE Regions align as closely as practicable to the ABS government finance data);
  - includes a detailed treatment of the fiscal effects of the Goods and Services Tax (GST);
  - specifically accounts for major taxes including land taxes, payroll taxes, stamp duties and others at the state level, as well as income taxes, tariffs, excise, the GST and other taxes at the federal level (table E.2);
  - traces out the impact of transfers between governments;
- accounts for differing economic fundamentals in the states (for instance, the mining boom in WA and Queensland);
- can produce results on employment and value added at a regional level; and

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<sup>44</sup> Productivity Commission 2006, *Potential Benefits of the National Reform Agenda*, Report to the Council of Australian Governments, available at <http://www.pc.gov.au/research/commissionresearch/nationalreformagenda>

- can be run in a static or dynamic mode. The dynamic version allows analysis to trace impacts over time as the economy adjusts, being particularly useful over the medium to longer terms.

The CIE has used CIE-REGIONS to analyse the impacts of a range of policy changes, including state tax reform, local infrastructure development, and industrial development strategies.

### E.1 CIE-REGIONS industries/commodities and margin services

1	Livestock	30	Electricity generation - hydro
2	Crops	31	Electricity generation - other
3	Forestry	32	Electricity supply
4	Fishing	33	Gas supply
5	Coal	34	Water and sewerage services
6	Oil	35	Construction
7	Gas	36	Wholesale trade
8	Iron ore	37	Retail trade
9	Other metal ores	38	Mechanical repairs
10	Other mining	39	Hotels, cafes and accommodation
11	Food, beverage and tobacco	40	Road passenger transport
12	Textiles, clothing and footwear	41	Road freight transport
13	Wood products	42	Rail passenger transport
14	Paper products	43	Rail freight transport
15	Printing	44	Pipeline transport
16	Petroleum products	45	Ports services
17	Chemicals	46	Transport services
18	Rubber and plastic products	47	Water freight transport
19	Other non-metal mineral products	48	Ship charter
20	Cement and lime	49	Air passenger transport
21	Iron and steel	50	Air freight transport
22	Other non-ferrous metals	51	Communication services
23	Metal products	52	Finance
24	Transport equipment	53	Business services
25	Other equipment	54	Ownership of dwellings
26	Other manufacturing	55	Government administration and defence

(Continued next page)

**E.1 CIE-REGIONS industries/commodities and margin services** (Continued)

27	Electricity generation - coal	56	Education
28	Electricity generation - gas	57	Health
29	Electricity generation - oil	58	Other services
Margin services			
Gas supply (part of commodity 33)		Pipeline transport (part of commodity 44)	
Wholesale trade (part of commodity 36)		Ports services (part of commodity 45)	
Retail trade (part of commodity 37)		Water freight transport (part of commodity 47)	
Hotels, cafes & accommodation (part of commodity 39)		Air freight transport (part of commodity 50)	
Road freight transport (part of commodity 41)		Finance (part of commodity 52)	
Rail freight transport (part of commodity 43)			

Source: CIE-REGIONS database.

**E.2 Federal and state taxes**

<b>Federal taxes</b>	<b>State, territory and local government taxes</b>
Good and service tax (GST)	Payroll tax
Sales taxes	Land tax
Excises and levies	Municipal rates
Labour income tax	Fire surcharges
Company income tax	Stamp duties on
Non-residents income tax	- insurance
Import duties	- financials
Export taxes	- motor vehicle
	- residential property
	- non-residential property
	- non-residential non-real estate

Source: CIE-REGIONS database.