

Commercial-in-Confidence



April 2008

Analysis of State Tax Reform

Report by Access Economics Pty Limited for
**Financial Industry Council of
Australia**

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EXECUTIVE SUMMARY

The Financial Industry Council of Australia (FICA) commissioned Access Economics to review State taxes and, especially, their impact on economic efficiency. FICA plans to use this study as part of their submissions to future reviews of State taxes.

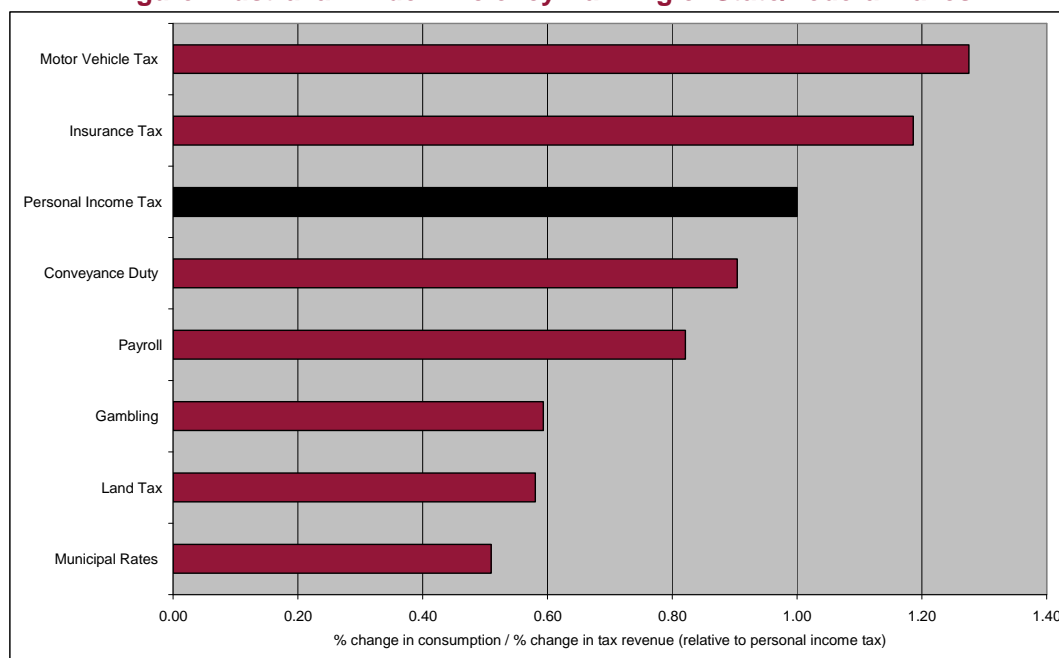
In reviewing these taxes, Access Economics carried out a quantitative analysis of State taxes using a multi-sector/multi-region general equilibrium model of the Australian economy. This model provides estimates of economic welfare, measured in terms of real household consumption, under different mixes of tax.

Most States and Territories have very similar sources of tax revenues. Property based taxes (including municipal rates) typically make up about one half of all the tax revenue collected, with this roughly equally divided into municipal rates and property conveyance duty. Payroll taxes account for about one quarter of revenue. The remaining quarter is spread over gambling, insurance and motor vehicle taxes.

Various refinements made to the general equilibrium model provide a strong basis for developing a ranking of the various taxes in terms of their impact on economic efficiency (or, equivalently, how distortionary each tax is). The results incorporate a richer set of considerations than previous similar studies although some simplifying assumptions are still needed in order to make the exercise operational.

The efficiency of each tax is summarised in the following figure which uses personal income tax as a reference point. Taxes at the top of the figure are especially inefficient while those at the bottom are less distortionary.

Figure: Australian-wide Efficiency Ranking of State/Federal Taxes



The efficiency rankings are based on the ratio of the percentage change in real consumption to the percentage change in tax revenue that is induced by changing each tax in turn. The ranking primarily reflects a combination of:

- ❑ the assumed differences in the elasticity of supply and demand in the relevant markets; and
- ❑ whether the taxes fall on businesses or households. Those that directly affect business tend to be less efficient since:
 - they have a proportionally larger impact on export industries which face very elastic demand; and
 - they have second-round impacts through their effect on the cost of capital and, thus, investment decisions and the accumulation of capital.

More efficient taxes tend to be those that apply to markets with relatively less elastic supply and demand since a change in the level of tax will have a limited impact on the amount of the good or service being consumed and, thereby, the impact on the efficient allocation of economic resources will be relatively small.

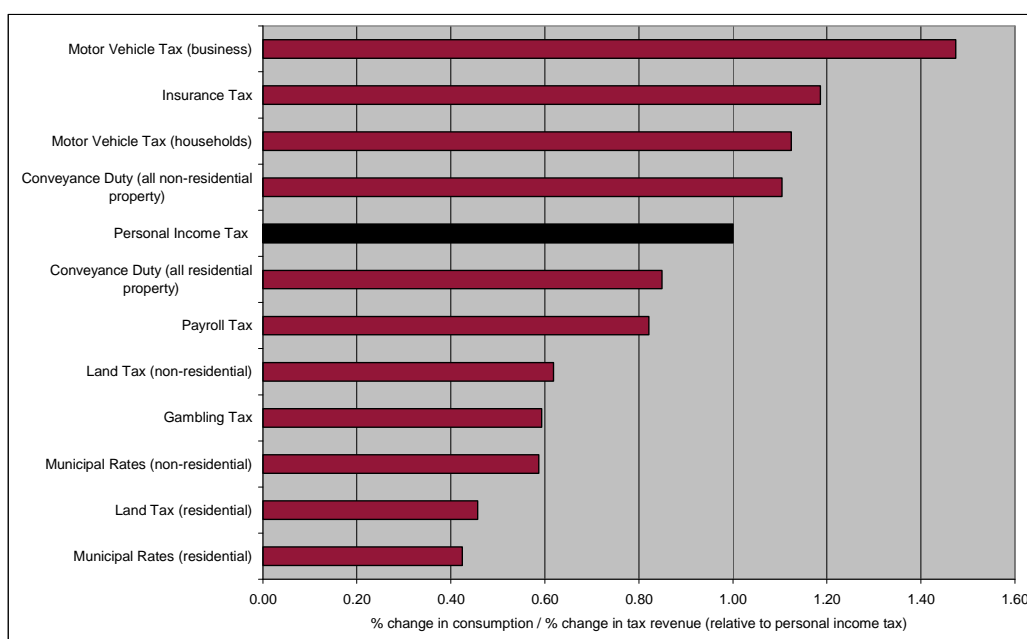
This is especially true for land based taxes (including municipal rates) which, in effect, fall on the rental price of immovable land. Empirical studies of markets for land find very low elasticities of demand and, especially, supply. Consequently, these are attractive markets from the perspective of efficient taxation arrangements since quantities are not very responsive to changes in price (or taxes) and thus the taxes involve relatively small distortions.

By contrast, less efficient taxes are often found in markets characterised by relatively elastic supply conditions. For example, the least efficient taxes presented in the above figure are motor vehicle taxes. In contrast to land, which has close to perfectly inelastic supply in the long-run, the supply of mobile capital, such as motor vehicles, is assumed to have perfectly elastic supply in the long-run. A similar argument applies to taxes on both general and life insurance.¹ In this case, supply has been assumed to be perfectly elastic and thus these taxes tend to be quite inefficient.

Conveyance duties on property apply to the combined value of land and buildings and as such can be regarded as a weighted average of a relatively efficient tax base (land) and an inefficient base (buildings). On average, conveyance duties tend to be more efficient than most businesses taxes since they are heavily weighted toward residential property transfers and that residential property is roughly equally divided between land and non-land (housing structures) capital. The land based component of residential conveyance duties offsets the relative inefficiency of the non-land based residential conveyance duty, which leaves the overall ranking in the middle.

The following figure provides a more disaggregated depiction of the rankings which allows the impact of conveyance duties on business to be separately identified from those on households. As noted above, taxes levied on business will tend to involve larger inefficiencies than the comparable tax levied on households.

¹ General and life insurance operate under distinct legislation and have differing GST treatment and stamp duty regimes. The Investment and Financial Services Association (IFSA) has argued over an extended period that the States should introduce a uniform stamp duty regime for life insurance. IFSA has argued that, in some States, the administrative costs of collecting stamp duty on life insurance exceeds the revenue collected.

FIGURE: DETAILED AUSTRALIAN-WIDE EFFICIENCY RANKING OF STATE/FEDERAL TAXES

The efficiency rankings reported in the figures above provide a basis for considering various options to reform State taxes. For example, State stamp duty on motor vehicles and insurance is amongst the least efficient of taxes, generating significant deadweight losses. Similarly, there are more efficient alternatives to property conveyance duty. Accordingly, the efficiency rankings provide *prima facie* evidence that shifting the mix of State taxes will yield economic benefits.

The welfare and revenue effects of selected reforms are considered. These involve shifting taxes away from State stamp duties with compensating increases in other taxes sufficient to achieve a revenue neutral outcome.

The actual taxes that have been selected in the policy options as an offset to the reduction in stamp duties are illustrative and do not take into account many practical and political issues that may arise. The taxes used in these scenarios have been chosen as **representative** of possible options to achieve budget-neutrality in the context of possible reforms. In particular, the scenarios involve offsetting the reduction in stamp duties revenues with either:

- a compensating increase in personal income taxes which is intended to act as a representative Commonwealth tax; or
- a compensating increase in municipal rates which may be regarded as illustrative of any broad-based land tax that could be applied at the State-level.

While the choice of tax used as an offset is deliberately illustrative, the various options serve to highlight three aspects of possible reform agendas that may be forthcoming, namely:

- the degree of inefficiencies inherent in State stamp duties, especially those imposed on business;
- the potential benefits that could be delivered by State Governments shifting their own-source revenues towards less distortionary, land-based taxes; and

- ❑ the potential benefits that could be delivered in the context of possible Commonwealth-State initiatives.²

A number of features of the policy options stand out:

- ❑ First, the potential gains in economic welfare are large. Depending on the source of revenue offsets, the abolition of all State stamp duties could increase Australian household consumption by between 1.1% and 1.8%, the equivalent of between \$6.1 billion and \$9.9 billion in 2005-06 prices:
 - These estimates are of a scale that ranks with major microeconomic reforms enacted over the past two decades.
- ❑ Secondly, shifting only the portion of State stamp duty levied on business generates a smaller absolute increase in welfare but generates a larger bang-for-the-buck. The cost to State revenue of removing the business levies is a little less than one third of the cost of removing all stamp duty (\$4.5 billion compared with \$15.2 billion). However, the associated benefit in terms of the increase in household consumption is roughly half the gain from removing all stamp duties (\$2.8 billion compared with \$6.1 billion):
 - As outlined earlier, the relatively large payoff from abolishing business stamp duties relative to abolishing those on households mainly reflects differences in the impact of each on exports and, through the cost of capital, investment and the productive capacity of the economy.
- ❑ Thirdly, the net benefits are greatest in those States that currently rely more on stamp duties. However, since these States would have to take additional measures to ensure that their budget positions were not compromised, the differences across States should be discounted.

Before any such reform option could be enacted, a range of policy objectives will need to be considered including the impact on equity (across individuals and households) and the simplicity of the system both for the perspective of administrators and, especially, compliance. Nevertheless, the benefits to economic efficiency indicate that task is worthwhile.

There are strong reasons for the Commonwealth Government to support such reforms:

- ❑ Commonwealth revenues would be directly boosted by any improvement to economic efficiency that accrues from the reform of State taxation.
- ❑ The Commonwealth Government has recognized that many future microeconomic reforms will require the intimate involvement of the States if they are to be successful. The further reform of State taxation is one area where the national benefits are large and where policy options involving the Commonwealth and States operating together are achievable.
- ❑ As has been seen over recent years, the Commonwealth revenues *tend* to benefit from windfalls associated with stronger economic conditions than do State own-sourced revenues. There would be merit in earmarking at least part of future windfalls to the reform of State taxation.

² Note that such initiatives need not involve any increase in Commonwealth revenue streams over the status quo but rather could be funded through revenues windfalls (as have occurred in recent years) or bracket creep and/or gradual adjustments to Commonwealth spending over a number of years.

1. INTRODUCTION

The Financial Industry Council of Australia (FICA) commissioned Access Economics to review State taxes and, especially, their impact on economic efficiency. FICA plans to use this study as part of their submissions to future reviews of State taxes.

In reviewing these taxes, Access Economics has drawn on theoretical and empirical analyses of each tax in isolation before considering the taxes in an integrated fashion using a multi-sector/multi-region general equilibrium model of the Australian economy. The analysis allows each of the main State taxes to be ranked on the basis of their varying (generally adverse) impacts on economic efficiency.

The efficiency rankings provide a basis for designing a number of options for the reform of State taxes. Coincident with, or following, the introduction of the GST, State Governments phased out a number of inefficient taxes, especially those that had been imposed on financial transactions. While the abolition of these taxes provided a useful impetus in terms of improving economic efficiency, other inefficient taxes remain.

Accordingly, this report presents a number of options for further reforms. In each case, estimates of the net impact on Government revenues (including the Commonwealth Government revenues) and economic welfare of selected tax reform scenarios are provided.

Section 2 discusses the underlying objectives that need to be considered in the design of tax systems. The core criteria include economic efficiency, equity (fairness) and simplicity.

Of these criteria, formal economic analysis is best placed to examine questions related to economic efficiency which is the main focus of the analysis presented in this report. The general equilibrium model applied here allows the various taxes to be assessed in a consistent and comprehensive manner, albeit subject to a number of simplifying assumptions. While complex, general equilibrium models are constructed from basic supply and demand relationships for each sector (or market) throughout the economy. The understanding of these relationships helps the interpretation of the efficiency rankings that are derived from the complete model. Accordingly, Section 3 discusses the main theoretical considerations that help the understanding of the final results.

The general equilibrium model used for this investigation is outlined in Appendix B. It allows the various taxes to be analysed for each State as well as for Australia as a whole. Section 4 summarises the reliance of each State to the various taxes that are considered.

The central results from this exercise – that is, the efficiency ranking of individual State taxes – are presented in Section 5. Each of the main results is considered in light of the theoretical considerations discussed earlier and how they affect the wider economy as depicted by the general equilibrium model. A number of features of the taxes are not able to be explicitly modelled and the qualitative impact of these features on the quantitative rankings is noted.

Section 6 analyses the revenue and welfare effects of shifting the tax mix away from State stamp duty. Scenarios are presented involving the removal of all stamp duties applied to business as well as the removal of stamp duties on both business and households. In order to consider options that are revenue neutral (for all levels of Government combined), the reduction in stamp duties is offset by increases in personal income taxes (as a representative Commonwealth tax) and, in order to illustrate the nature of land taxes, municipal rates. Results of the various reform options are reported by State and for Australia.

The main implications of the analysis for the future development of economic policy at both the Commonwealth and State level are discussed in the concluding section.

Details of the nature of the economic characteristics of the main State taxes, as well as how each is modelled in the general equilibrium model, are presented in three appendices.

2. TAX DESIGN CRITERIA

This section provides a general discussion of tax system design criteria. Three tax system design criteria are introduced, namely economic efficiency (which is sometimes referred to as optimal growth), equity (fairness) and simplicity.

These are widely-accepted criteria that have guided recent tax reform in Australia. For example, the 1999 Ralph Review of Federal business taxation recommended three national objectives for tax design consistent with these three criteria:

- ❑ *optimising economic growth;*
- ❑ *promoting equity; and*
- ❑ *promoting simplicity and certainty.*³

A discussion of each of these criteria and the potential for conflicts between the objectives follows.

2.1 EFFICIENCY

An economy has a limited amount of resources – natural resources, land, labour and capital – with which to satisfy all of society's needs and wants. However, the more efficient the allocation of these resources between competing uses, the greater the extent to which these needs and wants can be satisfied.

2.1.1 RESOURCE ALLOCATION

An efficient tax system raises revenue for the government without distorting the allocation of resources in the economy. For example, in an efficient system tax considerations would not alter the number of hours an individual chooses to work, and an investment would be equally attractive based on its before-tax rate of return or after-tax rate of return.

In reality, all tax systems distort the allocation of resources, thereby imposing a cost on society. This occurs because the imposition of a tax distorts the private cost (the price that consumers must pay for a good), so that it is higher than the social cost (the cost to society) of producing it. This causes the level of consumption to be below what it would otherwise have been without the tax. Since the social value (benefit to society) exceeds the social cost of the foregone consumption the tax causes a loss in economic welfare, which is typically referred to as a “deadweight” loss.

On occasion, the imposition of a specific tax can raise efficiency, by bring into alignment the private and social cost of a good.⁴ However, taken as a whole, tax systems typically reduce efficiency by distorting resource allocation. This implies that there is usually scope to reform the tax system in ways that enable stronger economic growth and higher living standards. This point was also made at the time of the Ralph Review:

³ Commonwealth Treasury (1999).

⁴ For example, a tax can be applied at a level that reflects the social costs of ‘negative externalities’ such as pollution. Such a tax can alter resource allocation in a manner that improves economic efficiency.

The business tax system can significantly influence the efficiency with which Australia's natural resources, capital and labour are used. Ultimately the living standards of all Australians are determined by how well we allocate and use those resources. Consequently the business tax system is an important influence on Australia's future economic growth.⁵

2.1.2 FLEXIBILITY AND STABILITY

Economic circumstances are fluid and tax reform needs to take account of this. Government revenues (and expenditures) change with cyclical fluctuations in economic growth. In the long-run, revenues need to keep pace with the speed of underlying economic growth to ensure the government can pay for its policies.

Ideally the efficiency of the tax system should be largely invariant to cyclical fluctuations and changes in the underlying growth rate of the economy. Systems that are not invariant will need to be changed to minimize deadweight losses. Changing tax rates can result in large economic costs because of:

- ❑ high administrative costs;
- ❑ the change may exacerbate swings in the government's budget position, due to lags⁶; and
- ❑ the change may be politically difficult.

In general, revenue from a broad-based tax system will be more stable than a narrowly-based system because volatility in different sectors will tend to cancel out overall. Similarly, taxes that are levied on relatively invariant bases will be more efficient.

2.2 EQUITY

Much of the criticism of tax systems revolves around whether or not they are equitable. The situation is complicated by the need for public provision of certain 'public goods' and services that the market-place is unable to efficiently deliver because of various market failures. Consequently perceptions of what is meant by paying a 'fair' share vary considerably.⁷

Four types of equity can be defined to make the problem of evaluating fairness more tractable:

- ❑ *Horizontal equity* involves treating taxpayers who are similar in all relevant respects in a similar way. In the sense that this principle decreases incentives for individuals to reduce their tax liability, this definition of equity can complement efficiency
- ❑ *Vertical equity* requires those in a position to pay higher taxes than others to do so. In Australia, the issue of vertical equity is mostly addressed through the personal income tax and welfare systems. However, this does create incentives for taxpayers to reduce their liability, to the detriment of economic efficiency.

⁵ Commonwealth Treasury (1999)

⁶ The time taken from recognizing the need to change a tax, through legislating the change, to collecting the revenue under the new rules.

⁷ For example, 'pure public goods' are non-excludable goods where individuals will have an incentive to pay as little as possible for their provision. This is referred to as the 'free-rider problem'

- ❑ *Administrative equity* entails applying the tax law fairly to everyone. Government has a 'responsibility' to not take advantage of uninformed tax payers. The tax system should be 'competitively neutral' and not discriminate between taxpayers.
- ❑ Changes in tax laws bring into question the notion of *transitional equity*. For example, if investors are already committed to a project, will a change in the tax system leave them worse off than they were under the old scheme?

2.3 SIMPLICITY AND CERTAINTY

In the often complex world of taxation, simplicity and certainty are, of themselves, worthwhile objectives. A simpler tax system will tend to involve lower compliance and administrative costs and, hence, help improve economic efficiency. The more certain the tax system, the easier it is for economic agents to make investment decisions with confidence which, again, can contribute to economic efficiency.⁸

There are direct costs to the government of running the tax system and indirect costs to the taxpayers of compliance. These costs will be affected by:

- ❑ record keeping requirements;
- ❑ the difficulty of assessing the taxpayers' liability;
- ❑ the complexity of the tax rules; and
- ❑ differential rates, that may encourage shifting to other, lower taxed, categories.

An important aspect of simplicity is the harmonisation of taxes across jurisdictions. In many instances, harmonisation is quite feasible without compromising individual jurisdictions' ability to raise sufficient revenue to meet what may be differing budgetary priorities. Applied to business taxes, harmonisation can both reduce compliance costs and limit non-productive 'jurisdiction shopping' where investments may not end up in their most efficient locations.

At the same time, it is important to move towards harmonised regimes carefully to minimise any unintended consequences. For example, recent moves by Victoria and NSW to harmonise their payroll tax regimes may result in some financial planners being subjected to payroll taxes for the first time, leading to a worsening of their competitive position within the market-place.

2.4 BALANCING COMPETING PRINCIPLES

The principles of efficiency, equity and simplicity may be in conflict with each other. For example:

- ❑ Replacing the personal income tax scales with a lump-sum tax levied equally on all individuals will make the tax system less distorting. However, by disregarding the large differences in income of individual taxpayers, the potential increase in economic efficiency would come at the cost of a (substantial) reduction in equity.

⁸ For convenience, most of the discussion of economic efficiency throughout this report concentrates on the distortions to price signals caused by the taxes and does not include either the impact of the complexity of the system on compliance and administrative costs or the effect of certainty on investment decisions.

- ❑ Another approach to minimising distortions in the system is to set tax rates inversely proportional to the magnitude of the distortion they cause.⁹ This ‘Ramsey tax’ system would result in a multitude of tax rates, require substantial information that is not always easy to obtain and, while theoretically efficient, would fail the simplicity test and may be unfair as it implies ‘necessities’ will be taxed more than ‘luxuries’.
- ❑ A system that promotes (vertical) equity by imposing a progressive personal income tax may generate large deadweight efficiency costs.
- ❑ Efforts to simplify a tax system, through the use of ‘one size fits all’ rules of thumb may compromise both efficiency and equity.

In practice, it is difficult to achieve balance. Even if there is agreement on the precise definition of efficiency, equity and simplicity, there is no objective basis for assigning weights to each of the three criteria.

Nevertheless, economic efficiency will always be a central consideration since improving efficiency will increase the size of the economic pie. While in some circumstances, the direct effect of improving efficiency may compromise an equity objective, often the equity and efficiency objectives will not be in conflict since the larger the pie, the easier it is to meet various (equity) objectives.¹⁰

This is especially apt in the case of business taxation – the focus of the current study – since the design of business taxes tend to have at most minor and indirect effects on equity. Consequently, efficiency and simplicity become the main principles of relevance to the design of business taxes and thus the analysis of policy options in this report.

The impact of policy options on economic efficiency – or ‘economic welfare’ – can be approximated by the impact of those options on total household spending on consumption of goods and services. Within this setting, an improvement to the tax system would be a change that did not alter the complexity of the system or relative consumption across households, while increasing total household consumption. This is the approach adopted in this study.

⁹ This approach to optimal taxation was proposed by Frank Ramsey in 1927. Based on certain simplifying assumptions, Ramsey taxes are levied so the quantity demanded of each commodity falls by the same percentage. In the jargon, each tax rate should be proportional to the sum of the reciprocals of the (compensated) elasticity of demand and elasticity of supply. In effect, this means applying a higher (lower) tax rate to goods and services that are less (more) sensitive to price changes.

¹⁰ It is sometimes argued that small business should be subject to a lower rate of taxation than large business on the basis of some notion of fairness. However, fairness can only be judged by examining the impact on people, in this case the owners of the respective assets. Attempts to meet equity objectives through taxing different types of businesses differently will be prone to inaccuracies and widespread anomalies.

3. ASSESSING THE EFFICIENCY OF TAXES

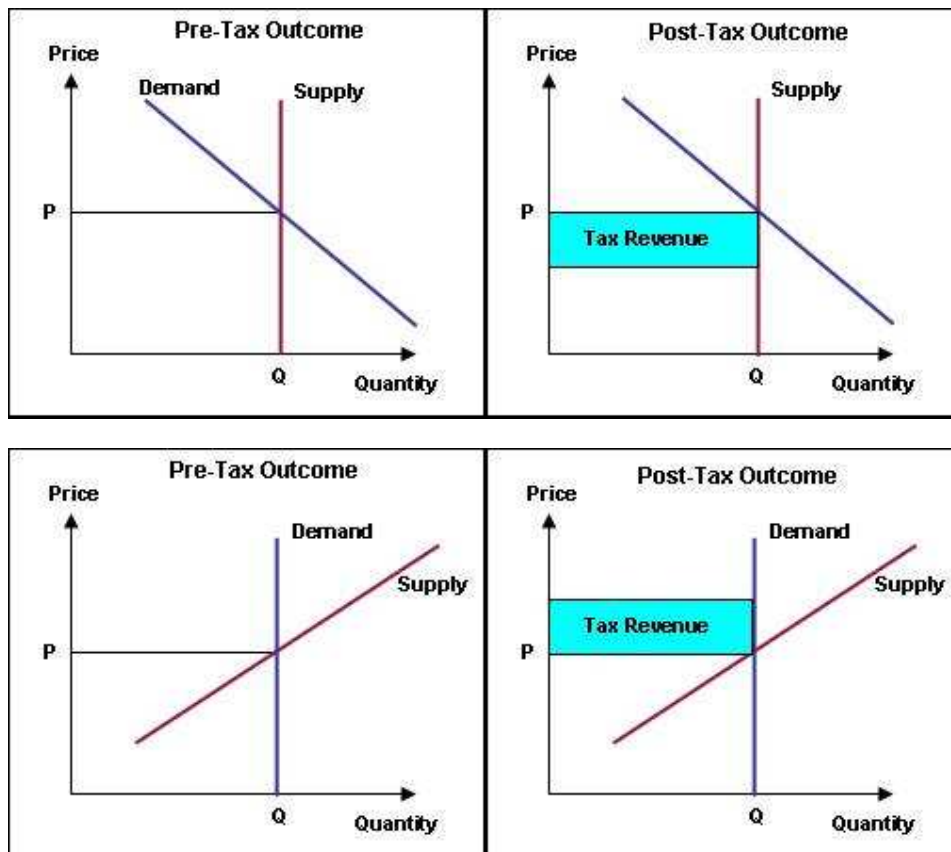
Because of the inherent limitations of economic modelling, it is not possible to consider all three tax design criteria discussed in Section 2. In fact, current models limit the quantitative ranking of individual taxes to their relative efficiency. This section, therefore, reports the efficiency ranking of individual State taxes and describes the methodology underlying the ranking. The ranking is intended to help tax reviewers identify cases where taxes could be collected more efficiently by shifting the legal (and economic) incidence to another tax base.

3.1 IDENTIFYING EFFICIENCY

The economic efficiency of taxes refers to the size of the distortion imposed by the taxes. Efficient taxes do not alter the allocation of economic resources – that is, how much of each good and service is produced and consumed in aggregate – while inefficient taxes have a significant impact on the allocation of resources. Note that while an efficient tax will not alter the total amount of a good or service produced, it may have distributional consequences.

The diagrams below present a *partial equilibrium* illustration of the basic issues. The markets depicted in Figure 1 below are very tax-efficient.

FIGURE 1: TAX-EFFICIENT MARKETS

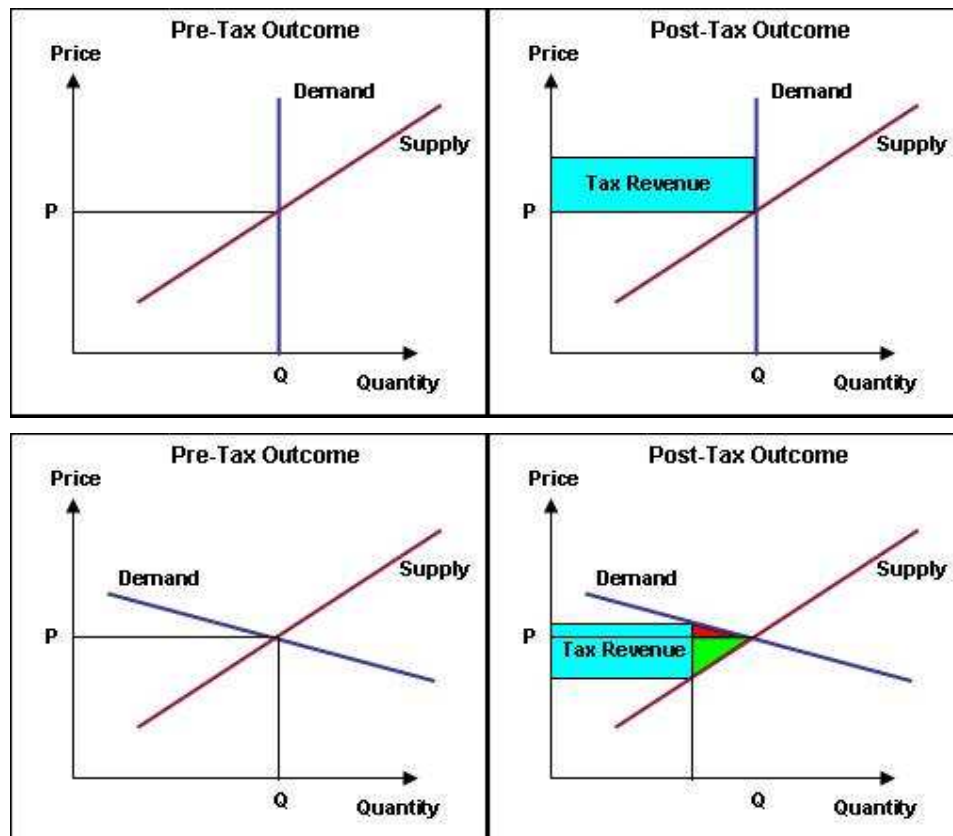


Both are ideal candidates for efficient taxes:

- In the first two sub-diagrams, supply is completely unresponsive to price, so a tax added to the price does not affect tax-*inclusive* market prices or quantities at all.
 - Prices paid by consumers are unchanged, so the tax lowers the price received by the producer. The economic incidence of the tax falls entirely on the producer.
 - If the tax is imposed on the producer in this market, the *formal* incidence and the *economic* incidence will be the same.
 - If the tax is imposed on a consumer in this market, the *formal* incidence and the *economic* incidence will differ.
- In the second two sub-diagrams, demand is completely unresponsive to price, so a tax added to the price does not affect tax-*exclusive* market prices or quantities at all.
 - The price received by the producer is unchanged, so the tax raises prices paid by consumers. The economic incidence of the tax falls entirely on the consumer.
 - If the tax is imposed on the producer in this market, the *formal* incidence and the *economic* incidence will be different.
 - If the tax is imposed on a consumer in this market, the *formal* incidence and the *economic* incidence will be the same.

Figure 2 depicts how *rising price-sensitivity of demand* lowers the efficiency of the tax and shifts the economic incidence of a tax from consumer to the producer.

FIGURE 2: HOW RISING PRICE-SENSITIVITY OF DEMAND AFFECTS TAX EFFICIENCY

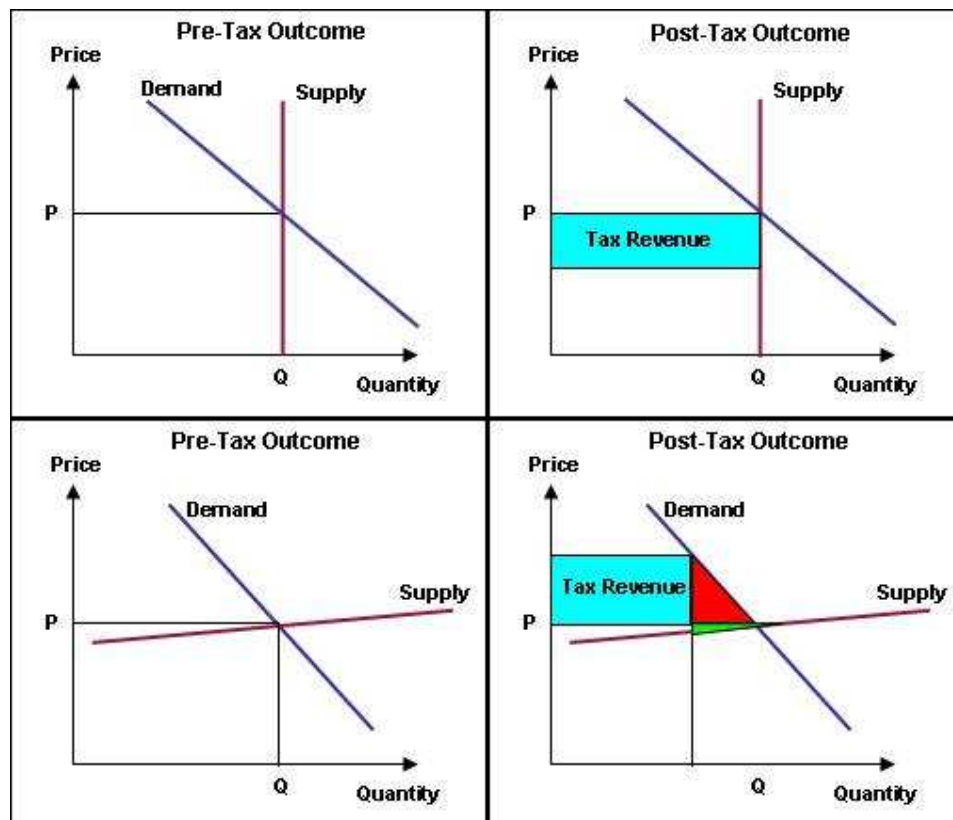


These diagrams indicate that:

- ❑ For any given responsiveness of supply to (tax-exclusive) prices, the more responsive is demand to (tax-inclusive) prices, the more quantity contracts as taxes drive a wedge between tax-exclusive and tax-inclusive prices.
- ❑ To the extent that distortions can be measured by the quantity contraction resulting from imposition of taxes, the more price-sensitive is demand, the more the imposition of taxes driving up the price of the product will distort markets and lose tax revenue.
- ❑ The efficiency or 'deadweight' loss induced by the imposition of taxes in these diagrams is represented by the red (consumer surplus losses) and green (producer surplus losses) triangles. As demand becomes more price sensitive the deadweight loss increases and the economic incidence of the tax shifts toward the producer.

Figure 3 illustrates how *rising price-sensitivity of supply* lowers the economic efficiency of the tax and shifts the economic incidence from the producer to the consumer.

FIGURE 3: HOW RISING PRICE-SENSITIVITY OF SUPPLY AFFECTS TAX EFFICIENCY



These diagrams indicate that:

- ❑ For any given responsiveness of demand to (tax-inclusive) prices, the more responsive is supply to (tax-exclusive) prices, the more quantity contracts as taxes drive a wedge between tax-exclusive and tax-inclusive prices.
- ❑ To the extent that distortions can be measured by the quantity contraction resulting from imposition of taxes, the more price-sensitive is supply, the more the imposition of taxes driving down the tax-exclusive price of the product will distort markets and lose tax revenue.

- ❑ The efficiency or 'deadweight' loss induced by the imposition of taxes in these diagrams is represented by the red (consumer surplus losses) and green (producer surplus loss) triangles. As supply becomes more price sensitive the deadweight loss increases and the economic incidence of the tax shifts toward the consumer.

In general, the more price sensitive are *both* demand and supply to tax-inclusive and tax-exclusive prices, respectively, the more likely are there to be:

- ❑ Large behavioural changes (distortions) to taxpayer behaviour as a result of imposing such taxes.
- ❑ Large revenue losses as a result of contraction of the intended tax bases as a result of the imposition of taxes.

In short, *price sensitive* products generally are not good candidates for efficient taxation.

3.2 MEASURING EFFICIENCY

The size of the deadweight loss caused by a given tax can be measured using a quantitative model of the economy. One direct measure of the efficiency of an individual tax is the change in household consumption that comes from raising an extra dollar of revenue via the tax while at the same time decreasing lump-sum taxes by a dollar (which is equivalent to raising government transfers by a dollar). The more efficient a tax is, the lower will be the change in consumption for a given dollar of extra revenue raised by the tax.¹¹ If the tax is as efficient as a lump-sum tax, then there is no change in consumption.

In previous analyses Access Economics has assessed the efficiency of State taxes by asking what the impact on consumption is from raising tax revenue by \$100 million.¹² A potential drawback of this approach is that it favours taxes with a broad tax base. This comes about because the change in the tax rate necessary to generate an additional \$100 million may be considerably smaller for a broad based tax than for a narrow based tax and the degree of inefficiency of any tax tends to increase with the size of the tax (or the size of the 'tax wedge').¹³ This potential weakness is addressed in this study by considering the impact of an equal proportionate increase in effective tax rates across all individual taxes of 1%.

¹¹ There is a range of alternative approaches that could be used. For example, instead of using offsetting increases by direct transfers, tax revenue changes could be matched by changes in the budget deficit or level of government spending. Adopting one of these alternative approaches may change the size of the efficiency estimates but are unlikely to have a major impact on efficiency rankings.

¹² Access Economics (2000).

¹³ As outlined earlier, the degree of inefficiency of any tax also depends on the demand and supply elasticities that apply in the particular markets. By considering proportionate increases in the various tax rates, the results will reflect, *inter alia*, the demand and supply conditions in the relevant markets and not be affected by the scale of the amount of revenue to be collected.

4. SOURCES OF STATE TAX REVENUE

In the wake of the introduction of the goods and services taxes (GST) in July 2000, a number of State taxes – especially financial services transactions taxes - have been abolished or soon will be abolished. This reform has narrowed the list of existing State-based taxes to:

- taxes on immovable property (land tax and municipal rates);
- stamp duty on property conveyances;
- payroll taxes;
- gambling taxes;
- motor vehicle fees;
- stamp duty on motor vehicle conveyances; and
- insurance taxes including fire service levies and health insurance levies.

TABLE 1: DISTRIBUTION OF STATE/TERRITORY TAX REVENUE 2005-06

Tax	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
	%	%	%	%	%	%	%	%
Payroll	29	25	22	22	22	24	30	26
Property	43	46	51	49	58	48	42	51
<i>Land tax</i>	10	6	5	8	5	5	0	8
<i>Municipal rates</i>	15	19	20	22	15	23	15	18
<i>Other levies</i>	0	1	4	4	3	3	0	2
<i>Conveyance duty</i>	18	20	23	15	34	17	27	23
Gambling	9	11	10	11	2	9	14	6
Insurance	8	8	4	8	5	6	5	5
<i>Fire service levy</i>	3	3	0	0	0	2	0	0
<i>Other insurance</i>	5	5	4	8	5	4	5	5
Motor vehicles	11	9	13	10	12	13	9	12
<i>Conveyance duty</i>	3	4	3	4	6	4	4	3
<i>Registration fees</i>	8	5	9	6	6	9	4	9
Total revenue	100	100	100	100	100	100	100	100

Source: Australian Bureau of Statistics cat 5506.0 Table 9.

Table 1 shows that States and Territories have very similar sources of tax revenues. Property based taxes (including municipal rates) typically make up about one half of all the tax revenue collected, with municipal rates and property conveyance duty accounting for the majority of property based taxes.¹⁴ This is followed by payroll taxes, which account for about one quarter of all State tax revenue. The remaining quarter is spread over gambling, insurance and motor vehicle taxes. There is considerable variation in the proportion of revenue coming from gambling and insurance, and, for the latter, in the way fire and emergency services are financed across States and Territories.

¹⁴ While not included in Table 1, developer charges are also based on property. If anything, developer charges tend to be more economically efficient than the various property based taxes considered here. Developer charges are discussed briefly in Appendix A.

5. RANKING STATE AND FEDERAL TAXES

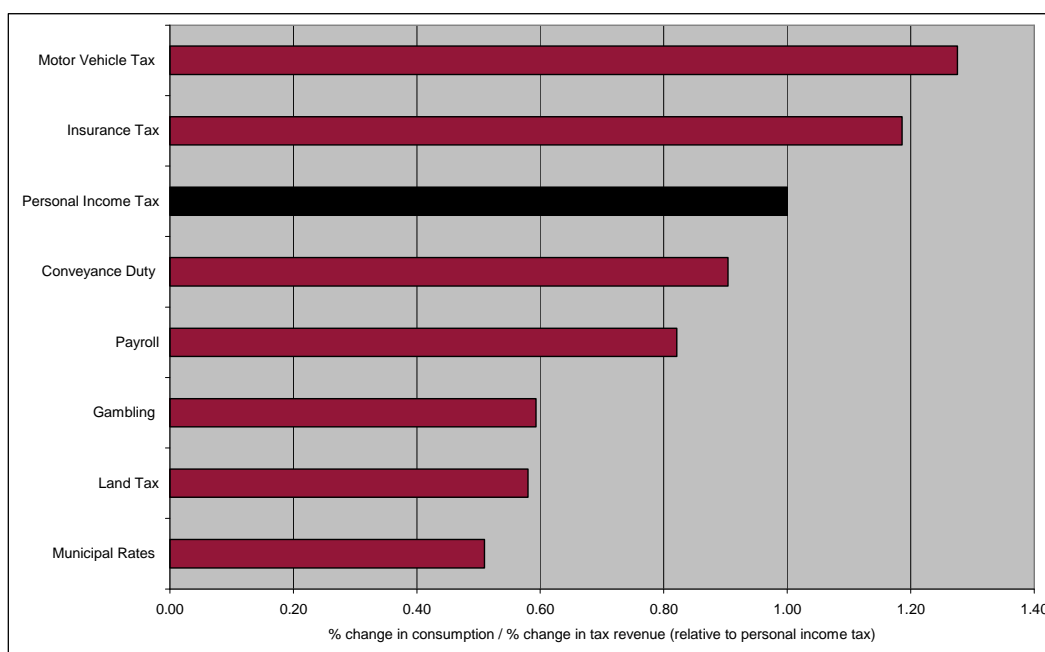
This section provides an overview of the efficiency analysis of State and Federal taxes. Additional detail is provided in Appendix A.

5.1 EFFICIENCY RANKING OF STATE AND FEDERAL TAXES

Figure 4 summarises the efficiency ranking of State and Federal taxes. The measures of efficiency relate to the impact on real consumption spending caused by raising an extra dollar of revenue via each tax, with the least efficient taxes causing the largest loss in terms of real consumption.

Taxes are ranked from least to most efficient with the most efficient of the taxes considered here, municipal rates, appearing at the bottom of the figure. Efficiency is reported relative to the efficiency of personal income taxes, with taxes that are less efficient than personal income taxes scoring an efficiency index greater than one and those that are more efficient scoring an efficiency index less than one.

FIGURE 4: AUSTRALIAN-WIDE EFFICIENCY RANKING OF STATE/FEDERAL TAXES



The efficiency rankings are based on the ratio of the *percentage* change in real consumption to the *percentage* change in tax revenue that is induced by changing each tax in turn. The ranking primarily reflects a combination of:

- ❑ the assumed differences in the elasticity of supply and demand in the relevant markets; and
- ❑ whether the taxes fall on businesses or households. Those that directly affect business tend to be less efficient since:
 - they have a proportionally larger impact on export industries which face very elastic demand; and

- they have second-round impacts through their effect on the cost of capital and, thus, investment decisions and the accumulation of capital.

The more efficient taxes are those that apply to markets with relatively less elastic supply and demand. This is especially true for land based taxes (including municipal rates) which, in effect, fall on the rental price of immovable land. Empirical studies of markets for land find very low elasticities of demand and, especially, supply. Consequently, these are attractive markets from the perspective of efficient taxation arrangements since quantities are not very responsive to changes in price (or taxes) and thus the taxes involve relatively small distortions.

Activities such as gambling are also relatively efficient markets in which to tax. The supply of legal gambling has a low supply elasticity due to the fact that the number of gaming machines, casinos and other vendors is regulated, while empirical estimates of the demand elasticity for legal gambling tend to be relatively low.

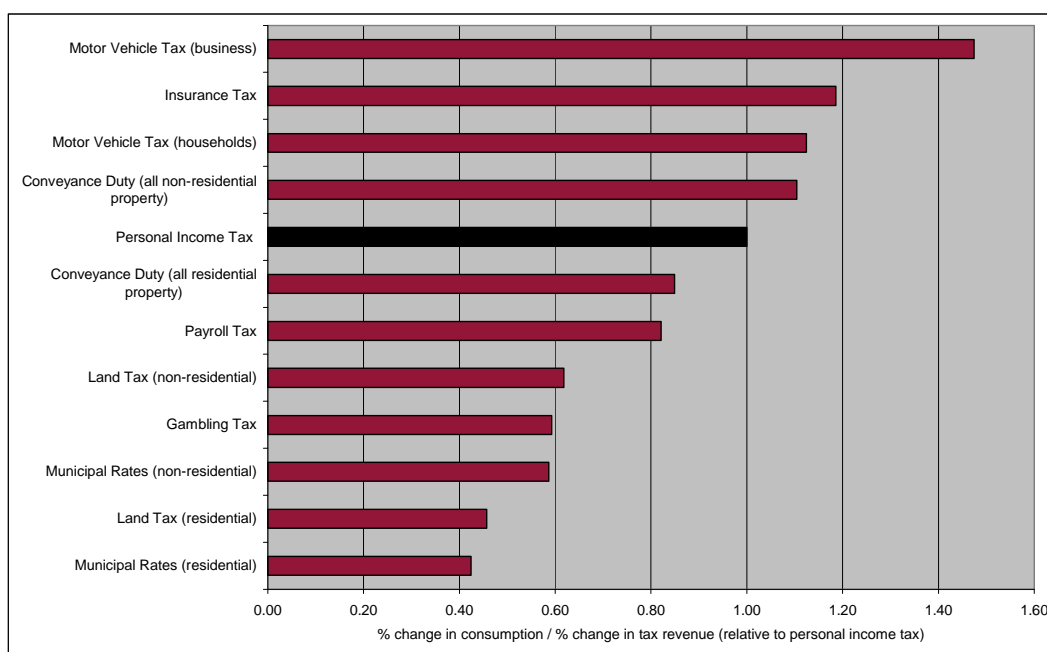
By contrast, less efficient taxes are often found in markets characterised by relatively elastic supply conditions. For example, the least efficient taxes presented in Figure 4 are motor vehicle taxes. In contrast to land, which has close to perfectly inelastic supply in the long-run, the supply of mobile capital, such as motor vehicles, is assumed to have perfectly elastic supply in the long-run.

A similar argument applies to taxes on both general and life insurance. In this case, supply has been assumed to be perfectly elastic and thus these taxes tend to be quite inefficient.

Conveyance duties apply to the combined value of land and buildings and as such can be regarded as a weighted average of a relatively efficient tax base (land) and an inefficient base (buildings). On average, conveyance duties tend to be more efficient than most businesses taxes since they are heavily weighted toward residential property transfers and that residential property is roughly equally divided between land and non-land (housing structures) capital. The land based component of residential conveyance duties offsets the relative inefficiency of the non-land based residential conveyance duty, which leaves the overall ranking in the middle.

5.1.1 DETAILED RANKINGS

In order to explore the efficiency ranking in more detail, Figure 5 separates conveyance duties, motor vehicle taxes and land taxes into those applying to household and business capital. In each case, taxes levied on business (non-residential property) are less efficient than the same tax levied on households (residential property).

FIGURE 5: DETAILED AUSTRALIAN-WIDE EFFICIENCY RANKING OF STATE/FEDERAL TAXES

As noted above, differences between business and household taxes largely reflect differences in the responsiveness of demand and the impact of the different taxes on the cost of capital and hence investment decisions. Holding other things constant, business demand is more responsive than household demand, since businesses can substitute across different factors of production, while households have more limited substitution possibilities. This is most pronounced in the case of export industries. Consequently, similar tax rate changes cause a greater response in the after tax prices and quantities demanded by businesses.

Another feature of the rankings is that personal income taxes tend to be more inefficient than payroll taxes despite the two affecting labour demand decisions. While there are a number of factors at play, the main reason for the difference is that personal income taxes have a direct impact on both the cost of labour and the cost of capital. Payroll taxes on the other hand, only have an indirect effect on the cost of capital via the cost of labour. Consequently, personal income taxes generate greater inefficiencies through their impact on investment and, over time, capital.

5.2 LIMITATIONS OF QUANTITATIVE RANKING

It is important to note the limitations of this quantitative analysis. The tax system is complex. Inevitably, numerous simplifying assumptions are needed to make any quantitative analysis tractable. The model that has been used here has been refined in numerous ways in order to better capture various features of the tax system, but it still does not capture all or the costs and benefits associated with some taxes. Factoring in these costs could affect the efficiency rankings reported in Figures 4 and 5.

First, as emphasised above, the results relate to comparisons between different steady state (and therefore long-run) scenarios. As such, they provide an appropriate basis for consideration of the long-term impact of different taxes but do not provide an indication of the nature and extent of any transitional costs.

Secondly, the focus in this report is on State taxes. The results presented for personal income taxes are for comparison purposes and only relate to average rates of taxes. Within the personal tax base there will be elements that are more (or less) efficient than the average.

Finally, a number of simplifying assumptions have been needed to make the analysis of the State taxes themselves tractable. For the most part these simplifying assumptions do not have a significant bearing on the results. However, there are a few cases in which limitations of the quantitative model warrant explicit discussion. This follows.

5.2.1 CONVEYANCE DUTIES

An important limitation of the model relates to conveyance duties. Any tax on the transactions of assets, including conveyance duties, runs the risk of impairing the functioning of markets by harming price discovery because trades that would have otherwise taken place do not and the ready transfer of assets to those businesses or individuals that place the highest value on the asset concerned. This can be a particularly severe problem in financial markets where turnover and high and transactions taxes can represent a material part of any margin involved in the trade.

Conveyance duties can affect the efficient functioning of property markets by reducing turnover and leaving assets to the ownership of businesses and/or individuals who are not best placed to make effective use of the assets. Neither of these features is captured directly by the model (which, as outlined above, compares two static situations involving different tax rates).

In particular, the model implicitly assumes that the rate of turnover of property is unaffected by changes in the conveyance duty rate. Allowing for some decline in the rate of property turnovers following an increase in the conveyance duty would lower the efficiency of all conveyance duties. Increased turnover responsiveness would imply a lower efficiency ranking.

The extent to which conveyance duties result in less efficient outcomes through inhibiting transactions will depend on how large the duty is relative to the full costs involved in the transaction. For example, the inefficiencies associated with conveyance duties on various financial transactions could be significant.

On the other hand, they may be less important for, say, conveyances on residential properties. In principle, conveyance duties could inhibit homeowners moving to a new region or State in pursuit of a higher standard of living. However, any such effect is likely to be minor because the conveyance cost is likely to be small when compared to the full costs, and potential benefits, of such a move.

5.2.2 MOTOR VEHICLE TAXES

Another limitation of the modelling is that it does not fully capture the benefits of 'use' taxes such as motor vehicle levies. These levies potentially lower congestion, thereby raising welfare and the taxes' economic efficiency, because they are used to improve roads and lower the number of vehicles on the road. Factoring in these benefits would raise the efficiency rankings of motor vehicle taxes over that estimated in Figure 4 and the related analysis. (That is, the ranking for motor vehicles would be shifted down a little in the figures.)

5.3 TAKING INTO ACCOUNT OTHER TAX DESIGN CRITERIA

Quantitative modelling does not take into account equity or simplicity of taxes. The ranking could change when the assessment includes these other tax design criteria.

5.3.1 SIMPLICITY

One of the challenges facing taxing authorities is the trade-off between simplicity and efficiency. From a practical efficiency standpoint it is generally desirable to have low rates applied across a broad base. In some cases, this efficiency goal may conflict with simplicity if the cost of compliance rises with the size of the base.

Compliance costs associated with the different State taxes outlined above vary considerably. Most of the compliance for State taxes is the responsibility of business with few taxes imposed directly on households. Each tax tends to represent a relatively small cost relative to the scale of most businesses and thus compliance may be thought to be of secondary importance. However, such an assessment needs to be heavily qualified by a number of factors:

- ❑ Compliance costs will be disproportionately higher for small and medium sized businesses.
- ❑ Businesses face a raft of taxes and taxing authorities thereby making compliance more onerous.
- ❑ Exemptions, multiple rate steps and special conditions on individual taxes complicate compliance.
- ❑ Just as taxes imposed on business tended to have a greater impact on economic efficiency than taxes imposed on households, the impact on economic efficiency of taxes imposed on business can be amplified relative to the scale of the tax itself.

Accordingly, it is important that, from the perspective of simplicity, the number of taxes be minimised and that taxes be designed in a manner that streamlines compliance as much as practicable. Indeed, tax is but one set of compliance burdens that business incurs.

As highlighted in the recent Government Taskforce on business regulation, compliance burdens have risen steadily over the past decade and more.¹⁵ Reforming how regulation is designed and implemented could form a central pillar of future microeconomic agendas and, if successful, deliver a substantial boost to economy-wide productivity. Tax regulation should be part of such an agenda.

5.3.2 EQUITY

The second criterion identified in Section 2 to be considered in designing the tax system is equity. Equity is a central element of many Federal taxes as illustrated by the progressivity of personal income tax rates.

For State taxes, however, equity should be a secondary consideration and of less relevance than simplicity and especially efficiency. This is because equity objectives are most naturally addressed directly at the level of the individual (or family) and through comprehensive taxes

¹⁵ See Taskforce on Reducing Regulatory Burdens on Business (2006).

rather than taxes that apply to a narrow section of the community. Most State taxes do not meet these conditions.

Nevertheless, among the motivations given for the design of some State taxes are notions of fairness or equity. For example, States exempt a number of businesses and households from paying particular tax.

Examples include payroll taxes where businesses are exempt from paying payroll tax if their wage bill falls below a threshold. To an extent, such exemptions may be warranted from the perspective of simplicity since the compliance costs to these small businesses from complying with payroll tax requirements may be relatively large when compared to the revenue collected by the State. However, such thresholds need to be set at levels appropriate to the compliance costs involved, and these will depend on how streamlined the collection system is.¹⁶

The foremost area where State Governments have designed taxes with an eye to equity objectives is residential property taxes. For example:

- ❑ a number of States have reduced or removed conveyance duties for first-home buyers; while
- ❑ more pervasively, land taxes of various forms vary with the value of the (improved or unimproved) property.

It may be that such design features do help to achieve the stated equity objectives they are meant to assist. However, this will not always be the case and it will be important to base any judgements not on the direct incidence of any such tax – that is, the party to whom it is applied – but rather on the likely ultimate incidence of the tax. Two examples illustrate how the ultimate incidence of a tax can differ markedly from the direct incidence and potentially have a significant impact on policy decisions:

- ❑ It is sometimes argued that a higher threshold for land taxes on owner-occupied houses than that for investment properties may be justified on equity grounds. However, the supply curve for investment properties may be relatively elastic given the alternative investment opportunities available. In these circumstances, the incidence of the tax will tend to fall relatively heavily on those purchasing the services from the investment properties, namely renters. Given renters are disproportionately poorer than owner-occupiers, equity objectives may be compromised.¹⁷
- ❑ An issue that has arisen in the context of the recent public debate over housing affordability is the impact that developer charges may have on affordability, i.e. the extent to which the incidence of the charge falls on home-buyers through developers passing on the charge. The costs of new homes may often be presented to buyers with the charges depicted as an add-on. However, under many circumstances, most of the incidence of the charge will be passed back to the existing landowner rather than onto the homebuyer, thus altering the consideration of the equity effects of the charge. In addition, as noted in Footnote 14, developer charges can be a relatively efficient method of raising revenue.

¹⁶ In particular, the main compliance costs that small business face relate to the BAS and PAYG systems and payroll tax tends to represent a relatively minor addition in terms of compliance.

¹⁷ The analysis of the incidence of taxes on investment properties is more complex than suggested here and would consider the interaction of a number of markets. However, the basic point that the tax is likely to have unintended detrimental effects on equity remains.

6. DEVELOPING OPTIONS FOR STATE TAX REFORM

The efficiency rankings reported in Figures 4 and 5 provide a basis for considering various options to reform State taxes. For example, State stamp duty on motor vehicles and insurance is amongst the least efficient of taxes, generating significant deadweight losses. Similarly, there are more efficient alternatives to property conveyance duty. Accordingly, the efficiency rankings provide *prima facie* evidence that shifting the mix of State taxes will yield economic benefits.

This section highlights the welfare and revenue effects of selected reforms to State taxes. The scenarios that have been selected involve shifting taxes away from State stamp duties with compensating increases in other taxes sufficient to achieve a revenue neutral outcome.

The actual taxes that have been selected in the policy options as an offset to the reduction in stamp duties are illustrative and do not take into account many practical and political issues that may arise. The taxes used in these scenarios have been chosen as **representative** of possible options to achieve budget-neutrality in the context of possible reforms. In particular, the scenarios involve offsetting the reduction in stamp duties revenues with either:

- ❑ a compensating increase in personal income taxes which is intended to be a representative Commonwealth tax; or
- ❑ a compensating increase in municipal rates which may be regarded as illustrative of any broad-based land tax that could be applied at the State-level.

While the choice of tax used as an offset is deliberately illustrative, the various options serve to highlight three aspects of possible reform agendas that may be forthcoming, namely:

- ❑ the degree of inefficiencies inherent in State stamp duties, especially those imposed on business;
- ❑ the potential benefits that could be delivered by State Governments shifting their own-source revenues towards less distortionary, land-based taxes (here illustrated by changing municipal rates); and
- ❑ the potential benefits that could be delivered in the context of possible Commonwealth-State initiatives.

6.1 REVENUE-NEUTRAL REFORM OPTIONS

The following presents four scenarios that are designed to be revenue neutral while increasing economic efficiency. The four scenarios are:

- ❑ replacing all State stamp duties (i.e. property conveyance duty, motor vehicle transfer duty and insurance stamp duty) with higher personal income taxes;
- ❑ replacing State stamp duties imposed on business with higher personal income taxes;
- ❑ replacing all State stamp duties with higher land taxes (applied here via municipal rates); and
- ❑ replacing State stamp duties imposed on business with higher land taxes (again applied to municipal rates).

Municipal rates have been chosen to illustrate the impact of using a base related to land since (i) they are applied to a more comprehensive base than some other land taxes; and (ii)

generally apply to land values only and not to capital improvements. Options using other taxes that have a land base will deliver slightly less efficient outcomes.

While these scenarios are intended to be illustrative of the possible benefits that could be delivered by redesigning the tax system, they are directly relevant for policy deliberations that could take place under different circumstances.

First, over the past decade, the Commonwealth Government in particular has been in receipt of large unexpected increases in revenues on a number of occasions. On the assumption that the extra revenue is not required to generate an increased surplus for fiscal policy reasons, a standard response to such a windfall may involve reducing various Commonwealth taxes including personal income taxes.

Accordingly, the first two scenarios may be viewed as indicative of the benefits that could be delivered by using the windfall to reduce or abolish some of the least efficient taxes:

- For such a policy to be enacted, it would be necessary for there to be an adjustment to Commonwealth-State financial relations.
- In fact, while all of the scenarios are designed to be revenue neutral for all levels of Government overall, the scenarios result in increases to Commonwealth revenues at the expense of State revenues.

In addition, for the purposes of the quantitative analysis, local government municipal rates are assumed to be collected by State Governments.

Secondly, the scenarios involving a switch from stamp duties to land taxes (in the form of municipal rates) can be viewed as providing an indication of the potential that could be delivered, over time, from reforms designed to minimize the efficiency losses from tax. In particular, in the efficiency rankings, municipal rates were deemed to be the most economically efficient – or, really, the least economically inefficient – of the taxes considered while stamp duties were the least efficient.

6.1.1 THE RESULTS: IMPACT ON REVENUE BASES

For each scenario, calculations have been made for:

- ❑ the first round change to revenue that results from removing all stamp duty and only business stamp duties (see Table 2);
- ❑ the second round impact on government revenues that results from the higher level of economic activity that flows from the reduction in stamp duties (see Table 3);
- ❑ the change to revenue that is necessary to make the four reform scenarios revenue neutral (see Table 4);
- ❑ the final or net impact on revenues from the four scenarios (see Table 5); and
- ❑ the impact on economic welfare or efficiency as measured by the effect of each scenario on real household consumption (see Table 6).

As noted earlier, the scenarios are dependent on the assumptions incorporated in the general equilibrium model that has been used for this analysis. They do not capture all the

inefficiencies associated with transactions taxes (as discussed in Section 5.2.1) nor do they allow for transitional costs.¹⁸

- Table 2 presents estimates of the ‘first round’ impact of the two stamp duty scenarios on tax revenues. For example, the central column shows that the abolition of all State stamp duties would cost the States a total of \$15.2 billion (with 2005-06 as a base). The reduction in revenue mainly comes from stamp duties on property with smaller contributions from stamp duties on insurance and motor vehicles.

TABLE 2: FIRST ROUND CHANGE TO REVENUE FROM STAMP DUTY REFORMS IN 2005-06 (\$MILLIONS)

State/ Territory	Abolish all State stamp duty	Abolish business State stamp duty
NSW	-4,321	-1,139
VIC	-3,935	-1,218
QLD	-2,567	-694
SA	-932	-306
WA	-2,764	-1,010
TAS	-243	-78
NT	-153	-53
ACT	-246	-59
Total all States	-15,160	-4,556
Property	-10,999	-2,380
Insurance	-2,239	-1,411
Gambling	0	0
Payroll	0	0
Motor Vehicle	-1,922	-766
Total	-15,160	-4,556

Table 2 also depicts differences across the States in their reliance on stamp duties including:

- Victoria relies more heavily on stamp duties – and especially, stamp duties on business – than does, say, NSW.
- Similarly, Western Australia would lose more revenue than Queensland, despite being a smaller economy, reflecting the greater importance of conveyances to the Western Australian Treasury’s revenue.

The fact that an inefficient tax in stamp duties is to be replaced by a more efficient (or less inefficient) tax means that the reforms will lead to a boost to economic activity which, in turn, provides a ‘revenue dividend’ to both the Commonwealth and the States. These ‘second round’ effects of removing stamp duties are shown in Table 3. It shows, for example, that there would be a substantial lift in Commonwealth revenues from the shift to more efficient taxing arrangements in the order of \$4.5 billion if the States abolished all stamp duties.¹⁹ The

¹⁸The welfare effects reported in Table 6 refer to the percentage change in consumption in moving from the initial steady state to the tax reform steady state. The estimates ignore the costs of transitioning from the initial to the reform steady state, which implicitly assumes that the costs of shifting from one steady state to another (typically referred to as ‘transition costs’) are trivial. Transition costs will in general be non-trivial in cases where tax reform has a significant impact on the rental rate of capital.

¹⁹ The equations for tax revenues in the model are relatively rudimentary relying on broad assumptions about the relationships between revenues and, say, the overall level of economic activity. It would be feasible to refine these equations to incorporate more direct drivers of revenues. However, this would not alter the general results presented here.

State revenue dividend from the all stamp duty reform is considerably smaller, at less than \$1.1 billion.

TABLE 3: SECOND ROUND CHANGE TO REVENUE FROM STAMP DUTY REFORMS IN 2005-06
(\$MILLIONS)

State/ Territory	Abolish all State stamp duty	Abolish business State stamp duty
NSW	334	171
VIC	304	180
QLD	199	121
SA	73	46
WA	163	139
TAS	18	12
NT	10	8
ACT	18	10
Total all States	1,118	686
Property	500	405
Insurance	107	96
Gambling	130	41
Payroll	298	115
Motor Vehicle	83	30
Total Federal	4,547	1,558
GST	760	240
Personal income	2,410	936
Corporate	1,377	383
Total	5,665	2,244

These second round impacts on (Commonwealth and State) revenues mean that the compensating changes to other taxes (here, either personal income tax rates or municipal rates depending on the scenario) that are required to make each scenario revenue-neutral are less than that implied by the first round reductions in stamp duties. The amount by which personal income taxes or municipal rates would have to be increased to achieve revenue neutrality is presented in Table 4.

For example, the first scenario involves a reduction of \$15.2 billion in stamp duties but the revenue dividends at the Commonwealth and State level mean that personal tax rates only need to be raised sufficiently to generate an increase of \$10.5 billion in personal income tax revenue to deliver a revenue neutral result across all levels of Government.

TABLE 4: CHANGE TO REVENUE TO MAKE STAMP DUTY REFORMS REVENUE NEUTRAL IN 2005-06
(\$MILLIONS)

State/ Territory	Abolish all State stamp duty and replace with personal income taxes	Abolish business State stamp duty and replace with personal income taxes	Abolish all State stamp duty and replace with municipal rates	Abolish business State stamp duty and replace with municipal rates
NSW	0	0	3,238	754
VIC	0	0	2,949	803
QLD	0	0	1,924	458
SA	0	0	698	202
WA	0	0	2,071	654
TAS	0	0	182	51
NT	0	0	115	34
ACT	0	0	184	39
Total all States	0	0	11,363	2,996
Property	0	0	11,363	2,996
Insurance	0	0	0	0
Gambling	0	0	0	0
Payroll	0	0	0	0
Motor Vehicle	0	0	0	0
Total Federal	10,450	2,565	0	0
GST	0	0	0	0
Personal income	10,450	2,565	0	0
Corporate	0	0	0	0
Total	10,450	2,565	11,363	2,996

Finally, Table 5 reports the final or net change in revenue under the final scenarios. As noted earlier, all of the scenarios involve a reduction in State stamp duties and an increase in Commonwealth personal income taxes or municipal rates to produce a revenue-neutral result overall:

- However, as can be seen in Table 5, the scenarios result in sizeable shifts in the composition of taxes between the Commonwealth and State Governments. The simulations highlight how the Commonwealth would receive a sizeable revenue dividend from reforms to State taxes. Some of the implications of this shift are discussed in the conclusion below.
- Also, the scenarios involve tax changes that do not affect all States proportionally. This, primarily, reflects differences in the reliance on various taxes across the States.

TABLE 5: FINAL CHANGE TO REVENUE FROM STAMP DUTY REFORMS IN 2005-06 (\$MILLIONS)

State/ Territory	Abolish all State stamp duty and replace with personal income taxes	Abolish business State stamp duty and replace with personal income taxes	Abolish all State stamp duty and replace with municipal rates	Abolish business State stamp duty and replace with municipal rates
NSW	-4,231	-1,030	-797	-282
VIC	-3,797	-1,079	-709	-312
QLD	-2,467	-598	-453	-153
SA	-900	-271	-173	-76
WA	-2,647	-882	-504	-276
TAS	-234	-68	-46	-19
NT	-149	-46	-28	-12
ACT	-245	-54	-46	-13
Total all States	-14,670	-4,026	-2,755	-1,142
Property	-10,997	-2,098	212	804
Insurance	-2,152	-1,320	-2,141	-1,321
Gambling	54	22	82	30
Payroll	323	120	190	90
Motor Vehicle	-1,897	-751	-1,097	-745
Total Federal	14,670	4,026	2,755	1,142
GST	452	162	443	168
Personal income	13,053	3,534	1,498	721
Corporate	1,165	330	814	253
Total	0	0	0	0

6.1.2 THE RESULTS: IMPACT ON ECONOMIC WELFARE

As explained in Section 3.2, the impact on economic welfare from each of the tax reform scenarios can be measured by the extent of the change in real household consumption that results from shifting the revenue mix. Table 6 presents the estimated impact of the scenarios on real household consumption in percentage terms while Table 7 presents the results in terms of 2005-06 dollars.

TABLE 6: PERCENTAGE CHANGE IN REAL HOUSEHOLD CONSUMPTION FROM STAMP DUTY REFORMS

State/ Territory	Abolish all State stamp duty and replace with personal income taxes	Abolish business State stamp duty and replace with personal income taxes	Abolish all State stamp duty and replace with municipal rates	Abolish business State stamp duty and replace with municipal rates
NSW	0.68	0.33	1.57	0.59
VIC	1.32	0.63	1.93	0.79
QLD	1.17	0.44	1.79	0.63
SA	0.79	0.56	1.66	0.76
WA	2.67	1.12	2.67	1.09
TAS	0.39	0.41	1.25	0.61
NT	0.89	0.55	1.41	0.65
ACT	0.20	0.17	1.55	0.55
Australia	1.12	0.52	1.81	0.71

TABLE 7: CHANGE IN REAL HOUSEHOLD CONSUMPTION FROM STAMP DUTY REFORMS IN 2005-06 (\$MILLIONS)

State/ Territory	Abolish all State stamp duty and replace with personal income taxes	Abolish business State stamp duty and replace with personal income taxes	Abolish all State stamp duty and replace with municipal rates	Abolish business State stamp duty and replace with municipal rates
NSW	1,279	615	2,945	1,100
VIC	1,832	874	2,680	1,101
QLD	1,199	444	1,825	638
SA	313	219	655	298
WA	1,396	585	1,393	568
TAS	44	46	140	68
NT	51	31	81	37
ACT	22	19	165	59
Australia	6,135	2,833	9,884	3,870

A number of features of these results stand out:

- First, the potential gains in economic welfare are large. Depending on the source of revenue offsets, the abolition of all State stamp duties could increase Australian

household consumption by between 1.1% and 1.8%, the equivalent of between \$6.1 billion and \$9.9 billion in 2005-06 prices:

- These estimates are of a scale that ranks with major microeconomic reforms enacted over the past two decades.
- Secondly, shifting only the portion of State stamp duty levied on business generates a smaller absolute increase in welfare, but potentially it delivers a larger bang-for-bucks. The cost to State revenue of removing the business levies is a little less than one third of the cost of removing all stamp duty (\$4.5 billion vs \$15.2 billion). However, the associated benefit in terms of the increase in household consumption is roughly half the gain from removing all stamp duties (\$2.8 billion vs \$6.1 billion):
 - As outlined earlier, the relatively large payoff from abolishing business stamp duties relative to abolishing those on households mainly reflects differences in the impact of each on exports and, through the cost of capital, investment and the productive capacity of the economy.
- Thirdly, the net benefits are greatest in those States that currently rely more on stamp duties. However, since these States would have to take additional measures to ensure that their budget positions were not compromised, the differences across States should be discounted.

7. CONCLUDING COMMENTS

The refinements that have been made to the general equilibrium used in this investigation represent an important advance in the analysis of the relative economic merits of different taxes. The efficiency rankings presented in Section 5 are based on empirical estimates of the main elements of each tax that could influence economic efficiency, and does so in a comprehensive and consistent fashion across all the taxes considered in this study.

The results highlight the inefficiencies associated with transactions-based taxes, especially when imposed on business. Importantly, while the direct incidence of such taxes fall on business, the ultimate 'economic incidence' tends to fall on households in a distortionary manner.

The efficiency rankings indicate the direction that future taxation reform could take in order to improve economic efficiency. In particular, the impact on economic welfare of abolishing some or all stamp duties and replacing the lost revenue through adjustments to either Commonwealth revenue (represented here by personal income taxes) or land taxes (as modeled here by municipal rates) are estimated. A number of conclusions can be drawn from this analysis:

- ❑ The potential gains from the reform of State taxation are large and rival the gains derived from past microeconomic reforms. The Australian economy has benefited significantly from microeconomic reforms of, especially, the 1980s and 1990s. However, the benefits of the past reforms are starting to wane as evidenced by the slowing in productivity growth in recent years. The establishment of new reform agendas would help to reinvigorate productivity growth. The results presented in this report indicate that State tax should be included on any such reform agenda. Net benefits each year to economic welfare in the long-term of between 1% and 2%, the equivalent of \$6 to 10 billion to household consumption, are possible.
- ❑ There are sizeable benefits for the States if they act unilaterally to shift their tax base away from as heavy reliance on stamp duties as is the case today. While their revenue bases are relatively narrow, the States do have scope to shift the mix of taxation towards a more efficient structure, possibly involving the replacement of stamp duties on at least business to a heavier reliance on land-related taxes. (The latter should exclude capital improvements.)
- ❑ There are sound reasons for a more comprehensive approach to the reform of State taxes including the involvement of the Commonwealth Government:
 - First, Commonwealth revenues would be directly boosted by any improvement to economic efficiency that accrues from the reform of State taxation. For the policy options considered in Section 6, Commonwealth revenues could be increased by between \$1.6 billion and \$4.7 billion a year depending the scenario, thereby providing increased funds that could be applied to helping to make the reforms revenue neutral.
 - Secondly, the Commonwealth Government has recognized that many future microeconomic reforms will require the intimate involvement of the States if they are to be successful. The further reform of State taxation is one area where the national benefits are large and where policy options involving the Commonwealth and States operating together are achievable. Reform in this area could assist in delivering reforms in other, potentially more difficult, areas.

- Thirdly, as has been seen over recent years, the Commonwealth revenues tend to benefit more from windfalls associated with stronger economic conditions than do State own-sourced revenues. There would be merit in earmarking at least part of future windfalls to the reform of State taxation.

In any such reforms, a range of policy objectives will need to be considered including the impact on equity (across individuals and households) and the simplicity of the system both for the perspective of administrators and, especially, compliance. Nevertheless, the benefits to economic efficiency indicate that task is worthwhile.

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APPENDIX A: ANALYSIS OF STATE AND FEDERAL TAXES

This appendix summarises the main considerations that need to be taken into account when assessing the incidence and efficiency of the individual State and Federal taxes that are analysed in this report.

The discussion in this appendix relates purely to factors specific to the particular market in which the tax applies. For example, for land taxes, it summarises the empirical evidence on the demand and supply elasticities for the relevant market and draws inferences about how this may be expected to affect the economic efficiency of the tax. This (partial) information has then been used in determining key parameters in, and structure of, the general equilibrium model that used to develop the comprehensive efficiency rankings and policy scenarios.

The appendix also highlights some of the limitations of the quantitative analysis underlying the efficiency ranking and tax reform scenarios.

Many of the details of each tax vary across States and thus the comments provided attempt to draw out the main elements of each tax without covering all variations. For details of individual taxes can be found in NSW Treasury (2007b).

STATE PROPERTY TAXES

Taxes on property fall under two general headings:

- taxes on ownership (including land tax and municipal rates); and
- taxes on transfers of ownership (conveyance duty).

LAND TAX

LEGAL INCIDENCE (RESIDENTIAL AND NON-RESIDENTIAL)

Incidence: Land tax is paid by the land owner based on the unimproved value of the land.

Exemptions: There are exemptions for land valued below certain thresholds and for the principal place of residence (except if owned by trust or company), crown land and land used for primary production (conditions may apply). There are also conditional exemptions for charitable, religious and educational bodies. Aged care facilities and caravan parks are also exempt in some States.²⁰

ECONOMIC EFFICIENCY (RESIDENTIAL)

The relevant market in which to analyse land taxes is that for housing services with a land tax being a tax on those services. The extent to which they raise the rental price of housing depends on the economic incidence of the tax.

²⁰ See NSW Treasury (2007b).

In simplified models of the market for housing services, supply is sometimes deemed to be perfectly inelastic (i.e. there is a fixed quantity of land, so supply cannot respond to price changes). This approach assumes that land is homogenous. In fact, land can be used for many different activities and rezoning, for example, can change the quantity of land available for a particular use. Notwithstanding this qualification, empirical evidence suggests that supply is quite inelastic. Similarly, empirical evidence indicates that demand is quite inelastic, although perhaps not to the extent of supply, with purchasers of the services derived from residential land being relatively insensitive to price.

Low demand and supply elasticities suggest that taxing residential land results in relatively low losses in economic efficiency since quantities are not very responsive to changes in price (or taxes), that is the tax induces small distortions in the allocation of resources. Whether the economic incidence of the tax falls mainly on the existing landowner or is passed through to potential buyers through higher prices will depend on whether supply is more inelastic than demand.

The Productivity Commission has estimated that the elasticity of housing service supply is 0.1. When combined with their estimate of demand for housing services elasticity (-0.2), this implies that the economic incidence on land taxes falls largely on owner of the land (with approximately 2/3 of the impact of a change in land tax falling on existing owners with the remainder resulting in higher prices.²¹

ECONOMIC EFFICIENCY (NON-RESIDENTIAL)

Non-residential land services are considered to have more elastic demand and supply than residential land. Elasticities used in general equilibrium modelling assumes higher demand and supply elasticity than used in residential case, while preserving roughly the 2/3rds economic incidence on land owner estimated by the Productivity Commission.

Again, the low demand and supply elasticities suggest that taxing non-residential land services will involve low losses in economic efficiency relative to taxes applied to markets where demand and supply is more sensitive to changes in price (or taxes). However, slightly higher elasticities of demand and supply imply that non-residential land taxes are less efficient than residential land taxes.

LIMITATIONS OF QUANTITATIVE ANALYSIS

See Appendix C for a detailed discussion of the limitations of the general equilibrium model used for the quantitative analysis of land/property taxes reported in earlier sections.

MUNICIPAL RATES (INCLUDING OTHER PROPERTY BASED LEVIES)

LEGAL INCIDENCE

Incidence: Municipal rates are paid by the land owner. The basis for determining municipal rates varies across jurisdictions. Rates are typically set so as to recover the cost to State and local governments of providing services, such as garbage removal. In some cases municipal rates also include levies to cover the cost of emergency and fire service levies. These additional levies typically do not alter with property values.

²¹ Productivity Commission (1998), p33.

Exemptions: Rates vary according to land use as well as property values.

ECONOMIC EFFICIENCY

Municipal rates are a variant of the land taxes analysed above. The main difference is that municipal rates are typically levied over a broader tax base than is the case for land taxes. For example, many owner-occupiers, mining and primary producers may be excluded from the land tax base but not municipal rates.

The demand elasticities of owner-occupiers, mining and primary producers are likely to be less elastic than the ownership base included in land taxes. This reflects the fact that land-tax base is biased toward investors, owners of second or holiday homes and commercial property users.

Holding constant the supply of land, lower elasticity of demand implies that municipal rates are more efficient than land taxes. Furthermore, the supply of land for owner-occupiers, mining and primary producers is also expected to be (slightly) less elastic than the land tax base, which again makes municipal rates a little less inefficient.

LIMITATIONS OF QUANTITATIVE ANALYSIS

See Appendix C for a detailed discussion of the limitations of the general equilibrium model used for the quantitative analysis of land/property taxes reported in earlier sections.

PROPERTY CONVEYANCE DUTY

LEGAL INCIDENCE (RESIDENTIAL)

Incidence: Property conveyance (transfer) duties are levied on the buyers of a residential property based on the assessed value of the transferred unimproved land and improvements to the land and structures.

Exemptions: There are exemptions and/or concessions for first home buyers in all States and Territories. Also, concessional rates apply in some States for principal places of residence and concession card holders.²²

LEGAL INCIDENCE (NON-RESIDENTIAL)

Incidence: Property conveyance (transfer) duties are levied on the buyer of a non-residential property based on the assessed value of the transferred property.

Exemptions: Most States are in the process of abolishing the transfer duty on non-real business assets while, in the future, some States may limit conveyance duty to land transfers.

ECONOMIC EFFICIENCY (RESIDENTIAL)

Decisions to buy or sell residential properties may reflect two sets of factors:

²² See NSW Treasury (2007b) for details on the various exemptions and concessions.

- ❑ factors related to changing needs as individuals and families at different point in their lives (called for convenience “life-cycle” effects); and
- ❑ factors that may lead to decisions to buy or sell because opportunities for financial gain are perceived in the market (called “different valuations”).

To the extent that transfer of residences occurs for life-cycle reasons, decisions may not be materially affected by changes to conveyance duties. In these circumstances, conveyance costs can be thought of as a user charge with the size of the user charge diminishing with the length of the holding period. In effect, this means that conveyance taxes on “life-cycle” transfers are a variant of a land tax or municipal rates.

In these circumstances, the main difference between the impact of conveyance duties and municipal rates arises from the fact that conveyance duties apply to the full value of the property whereas in many cases, municipal rates are based only on unimproved land values. While the supply of unimproved land may be quite inelastic (as discussed above), the supply for improvements will be very elastic in the long-run reflecting the situation in capital markets i.e. capital for improvements competes with capital for other investment opportunities.

Consequently, conveyance duties will be less efficient than other property taxes (including municipal rates) even where they are imposed on life-cycle transfers. Also, the economic incidence of conveyance duties will tend to fall more on the buyer given the more elastic supply conditions prevailing.

Conveyance duties applied to transfers related to “different valuations” are even less efficient than those related to life-cycle decisions. Not only conveyance duties in these circumstances affect the cost of capital (as described above for life-cycle decisions), they also inhibit the smooth functioning of markets.

In particular, the discussion to this point has ignored the possibility of agents having different preferences and entrepreneurial ability which can lead to different parties placing different values on the same asset.²³ With different valuations, property transfers will also occur when the buyer’s valuation exceeds the seller’s valuation, plus conveyance costs. If the conveyance cost exceeds the difference between buyer and seller valuations no transfer will take place.

A central tenet of economics (and market economies) is that welfare or efficiency will be improved by the transfer of an asset to someone who values it more highly. To the extent that taxes – or in this case, conveyance duties – place a wedge between the prices faced by buyer and seller and thereby inhibit trades, efficiency will be lessened.

LIMITATIONS OF QUANTITATIVE ANALYSIS

General equilibrium models of the type used to generate the quantitative estimates of the impact of taxes in this report cannot capture costs associated with “different valuations” since the primary assumption of these models is that agents are the same (homogeneous). Therefore, efficiency rankings reported here ignore the potentially large economic costs of conveyance duties due to the underutilisation of assets and should be treated as best case rankings.

²³ The differences between the valuations placed on a particular asset may reflect differences in the parties’ abilities to productively use the asset or differences in the utility the parties derive from owning the asset.

See also Appendix C for a detailed discussion of the limitations of the general equilibrium model used for the quantitative analysis of land/property taxes reported in earlier sections.

ECONOMIC EFFICIENCY (NON-RESIDENTIAL)

The formal analysis of non-residential property transfers is analogous to the residential transfers although there are important differences in the composition of the types of transfers resulting in conveyance duties on non-residential property being more inefficient than those on residential property. In particular:

- ❑ most of the transfers for non-residential property involve trades that are better viewed as being derived from differences in the valuations placed on the assets by investors than the equivalent of life-cycle transfers where the trade itself is not materially inhibited by the duties. As outlined above in the discussion on conveyance duties on residential properties, conveyance duties are especially inefficient taxes where they inhibit trades that are being driven by differences in valuations; and
- ❑ non-residential property is more heavily weighted toward non-land or movable capital. That means that more of the non-residential conveyance duty base is subject to a higher elasticity of supply than residential conveyances, resulting in greater distortions in terms of the allocation of resources arising.

LIMITATIONS OF QUANTITATIVE ANALYSIS

General equilibrium models of the type used to generate the quantitative estimates of the impact of taxes in this report cannot capture costs associated with “different valuations” since the primary assumption of these models is that agents are the same (homogeneous). Therefore, efficiency rankings reported here ignore the potentially large economic costs of conveyance duties due to the underutilisation of assets and should be treated as best case rankings.

See Appendix C for a detailed discussion of the limitations of the general equilibrium model used for the quantitative analysis of land/property taxes reported in earlier sections.

DEVELOPER CHARGES

LEGAL INCIDENCE

Developer charges are levied on developers. Funds are used in the provision of local or regional infrastructure associated with the development.

ECONOMIC EFFICIENCY

An infrastructure levy on developers can be attractive on the grounds of both efficiency and equity.²⁴ In many circumstances, such levies will be applied to markets characterised by very inelastic supply and quite elastic demand. This would be the case, for example, for new release areas for large cities since:

- ❑ supply is very inelastic if the alternative to the development going ahead were that the land not be rezoned for residential development. In this case, the value of the rezoned land would be expected to exceed the value of alternative uses without the rezoning.

²⁴ For example, see Productivity Commission (2004), Ch 7.

Thus, supply would be unchanged for a wide range of developer charges – i.e. it would be perfectly inelastic (as depicted in the second panel in Figure 1); while

- ❑ demand will be heavily influenced by conditions in the remainder of the regional housing market and thus it will be relatively elastic.

Given the supply conditions, developer charges will be a relatively economically efficient form of impost. This will be especially the case if the funds are, indeed, used to finance necessary infrastructure which will tend to raise property values for the area that benefits from the infrastructure, that is, it has characteristics of a beneficiary pays charge.

In addition, developer charges can be an equitable form of impost if they are accompanied by decisions to rezone. Landowners stand to make a windfall capital gain from the decision to rezone land in new release areas. The nature of the demand and supply conditions for land taxes in general imply that the levy will be passed back to the landowner; that is, such a levy will capture some of the windfall capital gain from the rezoning decision – i.e. it is equitable.

STATE GAMBLING TAXES

LEGAL INCIDENCE

Incidence: Gambling taxes are levied on the operator's profit (e.g. player loss).

ECONOMIC EFFICIENCY

The economic efficiency of gambling taxes will vary according to the design of the different taxes. In many cases, it is reasonable to assuming that gambling losses are a fixed proportion of total gambling in the long-run. Under these conditions, the incidence of gambling taxes can be analysed as a simple commodity tax on total gambling.

Legal gambling supply is assumed to have a low supply elasticity given the nature of the regulations surrounding the supply of, *inter alia*, gaming machines, casinos and other vendors. Empirical estimates for the demand for legal gambling also find a low demand elasticity.²⁵

The relative elasticity of supply and demand will determine whether the economic incidence of tax falls more on consumers or producers of gambling products. Assuming supply and demand are roughly equal in the long-run implies the tax incidence falls equally on the operator and gambler.

Low supply and demand elasticities of demand and supply imply gambling taxes are a relatively efficient.

LIMITATIONS OF QUANTITATIVE ANALYSIS

To an extent, the imposition of taxes on gambling may be motivated by a design to influence behaviour considered to be socially undesirable (or subject to negative 'externalities'). It is theoretically possible to design taxes to price such externalities and raise social welfare.

²⁵ See Productivity Commission (1999) and Smith (1999).

Such possibilities are not incorporated into the analysis presented here. That is, gambling taxes may be more economically efficient than the results presented in this report.

However, in practice, any such effect may be relatively minor because of the low elasticities of supply and demand that prevail. This means that gambling taxes may have little impact on curbing the level of gambling.

STATE PAYROLL TAXES

LEGAL INCIDENCE

Incidence: Payroll tax is paid by employers or group related businesses, based on their wage bill (typically including employer superannuation contributions, fringe benefits and eligible termination payments).

Exemptions: Employers or group related businesses are exempt below thresholds which vary across States.

ECONOMIC EFFICIENCY

Payroll taxes are a tax on labour services in production other goods. In the general equilibrium model used here, the long-run labour supply elasticity is assumed to be relatively low at around 0.2. This is consistent with most empirical studies which often struggle to find a statistically significant supply elasticity – i.e. it is close to zero.

Labour demand is assumed to be relatively more elastic than labour supply in the long-run at around 0.5. The fact that demand is more elastic than supply implies that the incidence of payroll taxes falls largely on those supplying the labour services, that is, employees.

The supply and demand elasticities underlying the analysis of labour services are higher than those employed in the analysis of land services. Accordingly, payroll taxes tend to be less efficient than many land based taxes especially where those taxes are not imposed on business (see Figure 5).

STATE INSURANCE TAXES

INSURANCE STAMP DUTY

LEGAL INCIDENCE

Incidence: Insurance duty is levied on the providers of a range of insurance products, including for life and general insurance (covering motor vehicles, disability, health, professional indemnity and home/contents). Duties are levied on the value of the annual premium or the number of policies issued.

Exemptions: There are numerous exemptions depending on the ownership of the property and type of risk.

ECONOMIC EFFICIENCY

The following analysis assumes that the demand and supply of insurance services is akin to the demand and supply of other goods or services which are subject to commodity taxes.

Ignoring other input costs (e.g., administration), theory implies the existence of scale economies in insurance provision. Insurance involves pooling risk. Under reasonable theoretical assumptions a larger risk pool lowers the variance of the average claim, which in turn lowers the premium required for the insurer to be profitable. Most empirical studies, however, do not find clear evidence in favour of scale economies in insurance provision.²⁶ This suggests that the effects of pooling are offset by rising marginal costs of other inputs. A reasonable assumption based on this empirical analysis is that the supply of insurance is close to perfectly elastic. This assumption has been adopted in the current study.

Excluding compulsory insurance (e.g. third party), demand is relatively elastic as substitutes are readily available (including to varying degrees self insurance and insurance provided another jurisdictions). For example, estimates of demand elasticity show consumers are sensitive to price changes for contents insurance, but relatively insensitive to changes in premiums for house insurance.²⁷

Given that demand is less price-sensitive than supply, this suggests that insurance taxes are largely borne by the insured. Moreover, relatively high supply and demand elasticities imply that insurance taxes are relatively inefficient. This means that small changes in insurance tax rates can have a large effect on the quantity of insurance. Higher insurance taxes will tend to increase the level of 'underinsurance' for different products.

INSURANCE PROTECTION TAX (NSW)

LEGAL INCIDENCE

The **Insurance Protection Tax Act 2001** was established by the NSW Government to set-up a fund to help builders warranty, and compulsory third party, policy holders affected by the collapse of HIH Insurance Limited.

Two types of taxpayers are liable:

- ❑ **Insurers** who write general and life insurance and are registered under the Commonwealth Insurance Act 1973 by the Australian Prudential Regulatory Authority (APRA). These insurers pay a proportion of \$65 million according to their market share of premiums. The assessed liability is paid in quarterly instalments.
- ❑ **Policyholders** who take out general and life insurance policies with non-registered insurers pay a one per cent tax on the value of the premium. Liability arises from 29 November 2001.

For NSW, general insurance includes insurance over property and/or risk in NSW and compulsory third party insurance. General insurance does not include life insurance, a life insurance rider or exempt insurance.

²⁶ See, for example, Doherty (1981).

²⁷ See Tooth (2007).

ECONOMIC EFFICIENCY

Since IPT are an additional tax levied on premiums, the economic incidence of the IPT and its efficiency ranking are identical to insurance duty.

LIMITATIONS OF QUANTITATIVE ANALYSIS

The IPT effectively acts as an insurance scheme for insurers. An alternative to imposing the IPT would be to improve the prudential regulation of insurers to avoid failures, such as HIH. Improved prudential regulation would serve as a tax on insurers that had inadequate prudential controls, thereby taxing the insurers most likely to fail. This would be an improvement over the IPT which taxes all insurers, irrespective of their risk profile.

INSURANCE BASED FIRE SERVICE AND HEALTH INSURANCE LEVIES (NSW AND VICTORIA)

LEGAL INCIDENCE

Incidence: Fire and emergency service levies (FSLs) are levied in NSW and Victoria as an additional tax on insurance premiums. Health insurance levies (HILs) are levied in NSW and the ACT based on based on the number of health insurance policies.

ECONOMIC EFFICIENCY

Since they represent an additional tax levied on premiums the economic incidence and efficiency of FSL and HIL can be analysed using the same commodity tax analysis model used in general and life insurance stamp duty.

Fire and emergency services are non-excludable public goods. The public finance literature argues that, to the extent feasible, the best way to provide non-excludable public goods is through uniform lump-sum taxes.

In NSW and Victoria, fire and emergency services are funded in part via taxes on insurance premiums. Insurance for the most part is not compulsory, so agents can choose to not insure. Uninsured agents do not contribute to the FSL, in NSW and Victoria, but this does not limit their access to fire services. In other words, uninsured agents are “free riders”. Ignoring the effects of levying contributions via taxes on insurance, this implies that the provision of fire services in NSW and Victoria is potentially below its socially desirable level because it is underfunded.

The impact on economic welfare is exacerbated by the fact that FSLs in NSW and Victoria are collected by taxing a price responsive good (insurance services).

A detailed analysis of insurance taxes has been present in a complementary report prepared for the Insurance Council of Australia prepared by Access Economics.

STATE MOTOR VEHICLE TAXES

Motor vehicles owners are liable for a range of imposts including annual registration fees, and stamp duties on the initial purchase and subsequent transfer of ownership.

MOTOR VEHICLE REGISTRATION FEES

LEGAL INCIDENCE

Incidence: Registration fees are levied as an annual lump sum based on vehicle size and insured risk.

ECONOMIC EFFICIENCY

Motor vehicle registration fees are a tax on the rental price of motor vehicles.

Demand for motor vehicle services is relatively elastic, since there is a range of transportation substitutes, including physical relocation.

Since motor vehicle services depend on movable pieces of capital their supply (as noted above) is perfectly elastic in the long-run. Consequently, the incidence of registration taxes falls on the vehicle user. The efficiency ranking of motor vehicle taxes is similar to that of conveyance duty on “life-cycle” transfer of non-residential non-land capital. That suggests that motor vehicle taxes are less efficient than conveyance duty on total non-residential capital, which includes relatively more efficient conveyance duties on land.

LIMITATIONS OF QUANTITATIVE ANALYSIS

A limitation of the modelling of motor vehicle taxes is that it does not fully capture the benefits of use taxes. These levies potentially lower congestion, thereby raising welfare and the taxes’ economic efficiency, because they are used to improve roads and lower the number of vehicles on the road. Factoring in these benefits would raise the efficiency rankings of motor vehicle taxes a little compared with the rankings presented in Figure 4.

Also, there is no household production of motor vehicle services in the general equilibrium model used in calculating the efficiency of motor vehicle taxes. Rather, household motor vehicle taxes are modelled as commodity taxes on the purchase of new motor vehicles. This may not be a problem if the long-run service flow from motor vehicles is a constant proportion of the stock of motor vehicles, since in the long run investment is a constant proportion of the capital stock, which implies the commodity tax on vehicle purchases is effectively a tax on vehicle services.

MOTOR VEHICLE CONVEYANCE DUTY

LEGAL INCIDENCE

Incidence: Motor vehicle conveyance duty is levied on the owner of the vehicle. The duty is based on the assessed value of the transferred vehicle.

Exemptions: There are a number of exemptions based the type of owner and the use of the use of the motor vehicle.

ECONOMIC EFFICIENCY

The analysis of motor vehicle conveyance duties can be conducted in the same framework as conveyance duties on other property transfers. As outlined above, the analysis can consider both the impact through the effect on the cost of capital (see the discussion on 'life-cycle' transfer in the section on conveyance duties for residential property) and the impact from inhibiting the transfer of assets to parties that may value the asset more highly.

In terms of the first of these effects, the efficiency ranking of motor vehicle taxes is similar to that of conveyance duty on 'life-cycle' transfer of non-residential non-land capital. That suggests that conveyance duties on motor vehicle taxes are less efficient than conveyance duty on total non-residential capital, which includes relatively more efficient conveyance duties on land.

The second effect – the impact on transfers associated with shifting assets to higher-value uses – makes conveyance duties on motor vehicles even less efficient.

LIMITATIONS OF QUANTITATIVE ANALYSIS

General equilibrium models of the type used to generate the quantitative estimates of the impact of taxes in this report cannot capture costs associated with transfers related to differences in valuations between parties since these models treat all agents the same. Therefore, efficiency rankings of motor vehicle conveyance duty reported here ignores the potentially large economic costs of conveyance duties due to the underutilisation of assets and should be treated as best case rankings.

OTHER STATE TAXES

PARKING SPACE LEVY

LEGAL INCIDENCE

Incidence: Parking levies take the form of a lump sum tax on owners of non-residential parking spaces. The amount of the levy varies by location.

Exemptions: There are numerous exemptions based on the type of vehicle and person or business using the parking space.

ECONOMIC EFFICIENCY

A parking space levy is a specific type of land tax, so they can be analysed using the land use model developed above.

Assuming the same elasticities as used in the general land tax case analysed above would imply the same incidence and deadweight loss.

LIMITATIONS OF QUANTITATIVE ANALYSIS

Parking space levies are used to develop public transport infrastructure. They were introduced to discourage car use in business districts by imposing a levy on off-street commercial and office parking spaces, including parking spaces in parking stations.

The revenue is directly used to finance, develop and maintain infrastructure that facilitates access to and encourages the use of public transport to and from the business districts where the levy applies.

These levies potentially lower congestion, thereby raising welfare and the taxes' economic efficiency, because they are used to improve roads and lower the number of vehicles on the road. Factoring in these benefits would raise the efficiency rankings of parking space levies over that estimated for general land taxes.

APPENDIX B: BRIEF DESCRIPTION OF GENERAL EQUILIBRIUM MODEL

Access Economics used the Monash Multi-Regional Forecasting model to construct the efficiency ranking of various State taxes and estimate the impact of the various taxation reforms. This model was developed by the Centre of Policy Studies at Monash University and recently released by the Productivity Commission in support of its work estimating the potential benefits of the National Reform Agenda.²⁸ The model used in that work was called the MMRF-NRA model.

MMRF-NRA is a computable general equilibrium (CGE) model of the Australian economy that captures detailed information for all States and Territories of Australia. The model projects changes in macroeconomic aggregates such as GDP (or GSP at the State level), employment, export volumes, investment and private consumption. At the sectoral level, detailed results such as output, exports, imports and employment are also produced.

The model is primarily based on input-output or social accounting matrices, as a means of describing how economies are linked through production, consumption, trade and investment flows. For example, the model considers:

- ❑ Direct linkages between industries and regions through purchases and sales of each other's goods and services.
- ❑ Indirect linkages through mechanisms such as the collective competition for available resources, such as labour, that operates an economy-wide context.

The base data used in the model are derived from the Australian input-output tables produced by the Australian Bureau of Statistics. The database relate to input-output details for 2001-02. These have been updated in this exercise to a 2005-06 base.

The database has been aggregated from its original 58 sectors used by the Productivity Commission, to the 19 sectors shown in Table 8 below. In performing this task, the taxation database in the model was fully upgraded to incorporate the most recent data available from the Australian Bureau of Statistics.

CGE models are widely used in estimating the economy-wide impacts of reforms, such as the taxation reform, because they capture the direct and indirect impacts of such changes. The model is based on a wide range of economic assumptions which are described in more detail in Adams, Horridge and Wittwear (2002).²⁹ The model is run in a long-run comparative static mode. This assumes enough time for changes in taxes to flow through the economy with full adjustment to factors such as labour and capital (around 10 years).

The model considers employment, production, consumption, investment and trade across the 19 sectors represented in each State and Territory of Australia. Interactions between industries are governed by the input-output data that underpin the model, which measures the various inputs required by each industry to produce a certain level of output.

²⁸ See Productivity Commission (2006).

²⁹ See Adams *et al* (2002).

Each sector, or industry, in the model is assumed to maximise profits by combining inputs such as labour, capital and intermediate inputs to minimise costs. Capital and labour are assumed to be mobile between sectors, and the supply of labour is responsive to real wage adjustments (with an assumed elasticity of labour supply to changes in real wages of 0.2). Output is sold in either the domestic market (to other firms, household, the government or as an investment good) or exported (internationally or to another State or Territory). In the domestic market, goods and services can either be sourced from domestic producers or imported. These sources of imports are treated as imperfect substitutes.

TABLE 8: SECTORS AND OCCUPATIONS IN MMRF-NRA

No.	Sectors
1	Agriculture
2	Mining
3	Food manufacturing
4	Light manufacturing, including foot wear, clothing, textiles, wood, paper products
5	Heavy manufacturing, including petrol chemical, transport equipment, metal products etc.
6	Construction
7	Utility including gas, water and electricity
8	Wholesale trade
9	Retail trade
10	Hotels and restaurants
11	Transport
12	Communications
13	Finance
14	Business Services
15	Dwellings
16	Government Service
17	Education
18	Health
19	Other Services

Consumption expenditure is allocated between goods and services based on a Klein-Rubin (or Stone-Geary) utility system. This allows consumption of each industry's output to be sensitive to price changes (own price elasticities). For each good and service in the consumption function there is a fixed, or 'autonomous', level of consumption and a 'discretionary' level. The latter adjusts to maximise utility. Changes in real consumption are then used to measure the economic welfare implications of various changes to taxes.

The model distinguishes between Commonwealth and local/State government sectors. Each level of government imposes a series of direct and indirect taxes.

Estimates of the effective tax rates in the model are primarily based on State and local government tax revenue estimates for 2005-06 from Australian Bureau of Statistics, Taxation Revenue, Cat 5506.0, with additional detail sourced from State budget papers for budget years 2005-06 and 2006-07.

APPENDIX C: LAND TAX CALIBRATION

MMRF-NRA does not separately identify land and other capital inputs, outside the agriculture sector. Land and other capital inputs have fundamentally different long-run supply responses, with the supply of land being less elastic (potentially perfectly inelastic) in the long-run than other capital, which has perfectly elastic supply in the long-run. These differences are captured by separately analysing land and non-land property tax scenarios.

Tax changes affecting non-land capital are fed into the model directly as the model's supply of capital is consistent with this type of capital.

Changes to land taxes are calibrated outside the model. The amount of pass through of the tax changes borne by the land user is equal to the ratio of the supply elasticity of land to the sum of the demand and supply elasticities of land (this ratio is one in the case of non-land capital, which implies the tax is wholly borne by the user). Based on available estimates, the supply elasticity used in the quantitative analysis is less than the demand elasticity, which means that a greater proportion of the tax incidence is borne by the capital owner. In general land users incur roughly 1/3 of the incidence of land based tax changes.

The calculations underlying this discussion are provided in the subsequent section.

CALIBRATION OF THE PASS THROUGH OF TAXES TO LAND USERS AND OWNERS

To simplify the analysis and mimic the approach of MMRF assume a log-linear system.

Demand:

$$\ln d = -\varepsilon \ln(p(1 + \tau)) + \alpha$$

$$\ln d = -\varepsilon \ln p - \varepsilon \ln(1 + \tau) + \alpha$$

where d is the quantity demanded, p is the before tax market rental price, ε is the elasticity of demand, τ is the land tax rate and α is a constant.

Supply:

$$\ln s = \mu \ln p + \lambda,$$

where s is the quantity supplied, μ is the elasticity of supply and λ is a constant.

Solve for the before tax market rental price:

$$-\varepsilon \ln p - \varepsilon \ln(1 + \tau) + \alpha = \mu \ln p + \lambda$$

Implies the before tax market rental price is:

$$\ln p = \frac{\alpha - \lambda - \varepsilon \ln(1 + \tau)}{\mu + \varepsilon}$$

and that the percentage change in the before tax market rental price is:

$$\frac{dp}{p} = \frac{-\varepsilon}{\mu + \varepsilon} \frac{d\tau}{(1 + \tau)}$$

Implies the after tax market rental price is:

$$\ln p^* = \ln p(1 + \tau) = \frac{\alpha - \lambda + \mu \ln(1 + \tau)}{\mu + \varepsilon}$$

and that the percentage change in the after tax market rental price is:

$$\frac{dp^*}{p^*} = \frac{\mu}{\mu + \varepsilon} \frac{d\tau}{(1 + \tau)}$$

In the case of perfectly elastic supply or perfectly inelastic demand

$$\frac{dp}{p} = 0, \frac{dp^*}{p^*} = \frac{d\tau}{(1 + \tau)}$$

In the case of perfectly inelastic supply or perfectly elastic demand

$$\frac{dp}{p} = \frac{-d\tau}{(1 + \tau)}, \frac{dp^*}{p^*} = 0$$

CALIBRATION OF LAND AND CAPITAL'S SHARE

It can be shown that capital's share is:

$$s_K = \frac{s_{iy}(1 - \beta(1 - \delta))}{\beta\delta}$$

where $\beta = (1/(1 + r))$ is the discount factor, δ is the depreciation rate of capital and s_{iy} is the ratio of investment expenditure to value-added. MMRF-NRA has a parameter for the cost share of combined capital and land (s_{K+L}), so land's cost share can be estimated as a residual:

$$s_L = s_{K+L} - s_K$$

The value of land and capital rental follows as from these land and capital shares and the total value of land and capital rental.