



# Reform of State Taxes in Australia: Rationale and Options

**John Freebairn, Miranda Stewart  
and Pei Xuan Liu**

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### JOHN FREEBAIRN

John Freebairn holds the Ritchie Chair in Economics at the University of Melbourne. He has degrees from the University of New England and the University of California, Davis. Prior to joining Melbourne in 1996, his preceding career includes university appointments at the ANU, LaTrobe and Monash, and periods with the NSW Department of Agriculture and the Business Council of Australia. He has been Head of Department and Dean at Monash, and Head of Department and Director of the Melbourne Institute at Melbourne.

John is an applied microeconomist and economic policy analyst with current interests in taxation reform and environmental economics. In addition to academic publications he has been a consultant for the commonwealth and state governments, and is a regular contributor to media discussions of economic policy.



### MIRANDA STEWART

Miranda Stewart is Professor and Director of the Tax and Transfer Policy Institute, Crawford School of Public Policy at the Australian National University and is also a Professor at the Law School, University of Melbourne.

Miranda researches on a wide range of tax law and policy issues and on tax reform processes and institutions nationally and internationally. Recent books include as co-editor, *Not for Profits Law* (Cambridge University Press, 2014); *Sham Transactions* (Oxford University Press, 2013); *Tax, Law and Development* (Edward Elgar, 2013). Miranda is co-author of *Death and Taxes* (Thomson Reuters, 5th ed, 2012) and *Cooper Krever Vann's Income Taxation Commentary and Materials* (Thomson Reuters, 7th ed, 2012). She has worked in government and private practice as well as academia.



### PEI XUAN LIU

Pei Xuan is Research Assistant to Professor John Freebairn and Professor Miranda Stewart. She is a second year Juris Doctor candidate at the Melbourne Law School and is currently President of the Global Law Students Association.

Pei Xuan completed her Bachelor of Commerce degree at the University of Melbourne in 2013, majoring in Economics and Finance. Whilst completing her undergraduate degree, she also worked as Tax Cadet at Ernst & Young.

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The University of Melbourne  
School of Government  
Victoria 3010 Australia

**GOVERNMENT.UNIMELB.EDU.AU**

# Contents

<b>Abstract</b>	<b>4</b>
<b>1. Introduction</b>	<b>5</b>
<b>2. Previous reviews</b>	<b>7</b>
<b>3. A framework for assessing state taxes</b>	<b>8</b>
Revenue	8
Efficiency	9
Fairness	9
Simplicity and resilience	10
<b>4. Current state taxes</b>	<b>11</b>
<b>5. The payroll tax</b>	<b>13</b>
Current payroll tax	13
Reform proposals	14
<b>6. Taxes on land</b>	<b>16</b>
Current land tax	16
Conveyance (stamp) duty	17
Stamp duties on insurance	19
Reform of conveyance duties: replace conveyance duties	19
Reform of conveyance duties: remove stamp duty on insurance	21
Reform of the existing land tax	21
<b>7. Tax on motor vehicles</b>	<b>23</b>
Current taxes on motor vehicles	23
Rationalise taxes on motor vehicles	24
<b>8. Gambling taxes</b>	<b>27</b>
Current taxes on gambling	27
Reform: rethink taxes on gambling	27
<b>9. Mining royalties</b>	<b>29</b>
Reform of special taxes on mining	30
<b>10. Challenges to tax reform</b>	<b>31</b>
<b>References</b>	<b>33</b>
<b>Appendices: Economic Analysis</b>	<b>34</b>
Appendix 1: Payroll tax	34
Appendix 2: Land tax	37
Appendix 3: Conveyance duty	40
Appendix 4: Taxation of gambling	42
Appendix 5: Special taxes on mining	44
<b>Melbourne School of Government</b>	<b>47</b>

## Abstract

THIS PAPER DESCRIBES THE OPERATION OF EXISTING STATE TAXES; EVALUATES THE DIFFERENT TAXES IN TERMS OF THEIR EFFECTS ON REVENUE, EFFICIENCY, EQUITY AND SIMPLICITY; AND PROPOSES A NUMBER OF REFORM PACKAGES TO INCREASE NATIONAL PRODUCTIVITY AND IMPROVE SIMPLICITY.

The proposals are approximately revenue neutral in aggregate and minimize redistribution relative to the current economic incidence. The proposed reforms include: remove current exemptions to achieve comprehensive payroll and land tax bases, and apply flat rates with individual state rights to choose the rate and to vary it over time; remove the transaction taxes on conveyance and stamp duties on insurance; replace the current suite of Commonwealth and state taxes on the use of motor vehicles with a user charge and special indirect taxes to internalize the external costs of pollution and congestion; and, focus special taxes on gambling to collect a share of the economic rent generated by government restrictions on supply.

*Key words: taxation reform; state taxes; payroll tax; stamp duty; royalties; land tax; federalism; vertical fiscal imbalance; road charges; gambling tax*

# 1. Introduction

The Commonwealth Government is engaged in a review of the federation, for which a Green (options) Paper is expected to be delivered towards the end of 2015 after consultation with the States and potentially a White Paper after that.<sup>1</sup> The Commonwealth is also engaged in a White Paper on taxation reform.<sup>2</sup>

This paper addresses reform of State taxes with the goal of making a useful contribution to both reviews.<sup>3</sup> In its Tax Discussion Paper, *Re:think* (Treasury 2015), the government discusses aspects of State, territory and local taxes but focuses most attention on Commonwealth taxes. This paper evaluates the current suite of State taxes in terms of their revenue collection; efficiency including distortions to decisions or deadweight costs; equity or fairness; and simplicity and resilience of the tax. The paper then provides a set of reform options. We suggest that reforming State taxes is important for enhancing future economic prosperity for Australia as a whole, as well as for the prosperity of individual States. That is, State tax reform is not just one component of reforming the federation or the Australian tax system – it is a *key* component. The proposed reforms offer considerable gains in efficiency and transparency, and some gains in simplicity. At the same time, we suggest that State reform packages can be designed to generate approximately the same revenue and with minimum redistribution effects in the longer run.

In the federation review process, five issues papers have been released, focusing on areas including housing, health, education and federal financial relations, and a draft discussion paper has also been released. According to its terms of reference, the federation review process is committed to refining and redefining the roles and

responsibilities of the States so that Australia's federation – now 114 years old – can operate in a more efficient and effective manner when faced with the challenges of an increasingly global economy and mobile population. Issues Paper 5 released by the Federation Task Force addresses federal financial relations.

The Commonwealth currently accesses revenue in excess of its needs and the States have responsibilities for service delivery that are in excess of their own-source revenues. This 'vertical fiscal imbalance' (VFI) is "relatively high" compared with other federations which suggests that "a high degree of VFI creates perverse incentives for both levels of government" (DPMC 2015, p. 3). This may be hindering the effectiveness and efficiency of Australia's federation, with associated costs of fiscal irresponsibility, blame-shifting and lack of accountability to voters at both State and Commonwealth levels.

Much debate about reforming fiscal federalism concerns potential reform of the Commonwealth income tax and the Goods and Services Tax (GST), and the potential for reallocation or sharing of these tax bases between the States and the Commonwealth. We do not address those issues here, although they will be an important element in any overall reform package. *Re:Think* discusses State taxes but neither the Federation papers nor *Re:Think* address State tax reform in detail. However, the *Re:Think* paper asks in the Consultation Questions:

Question 52: What are the relative priorities for state and local tax reform and why? In considering reform opportunities for particular state taxes, what are the broader considerations that need to be taken into account to balance equity, efficiency and transitional costs?

There is a risk that in the federation and tax reform debates currently underway, the problems and challenges for reform of State taxes may be lost. Consequently, this paper sets out the basic economic case for analysis and reform of State taxes, which we argue

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1 See [www.dpmc.federation.gov.au](http://www.dpmc.federation.gov.au).

2 See <http://bettertax.gov.au>.

3 We refer to "States" hereinafter to include both States and territories unless specifically stated otherwise.

is critical to Australia's future prosperity and government revenues. This paper considers some reform options to improve efficiency and simplicity which are approximately revenue neutral. A more technical economic analysis of the different taxes and reform options is in the Appendices.

The paper is organised as follows. Part 2 summarises previous reviews and reform proposals. Part 3 outlines the criteria for assessing State taxes. Part 4 broadly surveys current State taxes. Parts 5 to 9 evaluate taxes on payrolls, land, stamp duties, motor vehicles, gambling and minerals and propose a set of reform options on these taxes. This set of reform options can be compared to those recommended by the Henry Review, which have also been provided in Parts 5 to 9. In conclusion, Part 10 returns to the challenges for State tax reform and the need for a federal solution.

## 2. Previous reviews

The most recent comprehensive review of Australian taxation is the Review of Australia's Future Tax System (Henry et al, 2009) ("*Henry Review*"). The Henry Review examined all tax bases in detail and recommended significant tax reforms at Commonwealth, State and local levels (see further Stewart et al 2015). The Review argued for state taxing powers to be negotiated on a cooperative basis in order to facilitate tax reform that will benefit Australia as a whole.

There have also been numerous State tax reviews that have been conducted in the last few years. These include the Victorian Review of State Business Taxes (Victorian Treasury, 2001), the WA State Tax Review (WA Treasury, 2007) and the IPART Review of State Taxation (IPART, 2008). Most of these reviews have not led to major reform. However, recently, the ACT Taxation Review (ACT Government, 2012) has led to a significant and positive tax reform package in the ACT.<sup>4</sup> This year, the South Australian government has released the South Australia Discussion Paper (SA Treasury, 2015) although it is not clear whether that government is willing to carry out a major reform. Numerous academic and other studies have reviewed state taxation and proposed reforms. Examples include Gabbittas and Eldridge (1998), Crowe (1996), Freebairn (2002), and Warren (2010).

In brief summary, proposals for reform for State taxes from the Henry Review and the State Reviews include:

- Payroll tax be broadened (including removing thresholds) to capture value added by labour in all (or most) businesses.
- Stamp duties on property conveyance duties be abolished and replaced with a reformed comprehensive land tax and/or an enlarged consumption tax (the latter is likely to require an increase in the GST rate or base).
- Other stamp duties, including on insurance premiums, be replaced with a larger GST
- State motor taxes, along with Commonwealth excise on petroleum, be replaced with road user charges or transport taxes and explicit congestion and pollution charges
- Gambling taxes be reviewed in light of fiscal and social policy considerations.
- State royalties be replaced with an economic rent tax.

Some of these proposed measures, such as the payroll tax proposal, include uniformity of the tax base across the states, but with the option for each state to choose a different tax rate.

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<sup>4</sup> See <http://apps.treasury.act.gov.au/taxreform>.

### 3. A framework for assessing state taxes

Overall, tax reform should aim to support adequate revenue collection, economic prosperity, fairness and a stable, resilient tax system. In this part, we follow convention in assessing current state taxes and reform options in terms of revenue collected, efficiency, equity and simplicity.

#### REVENUE

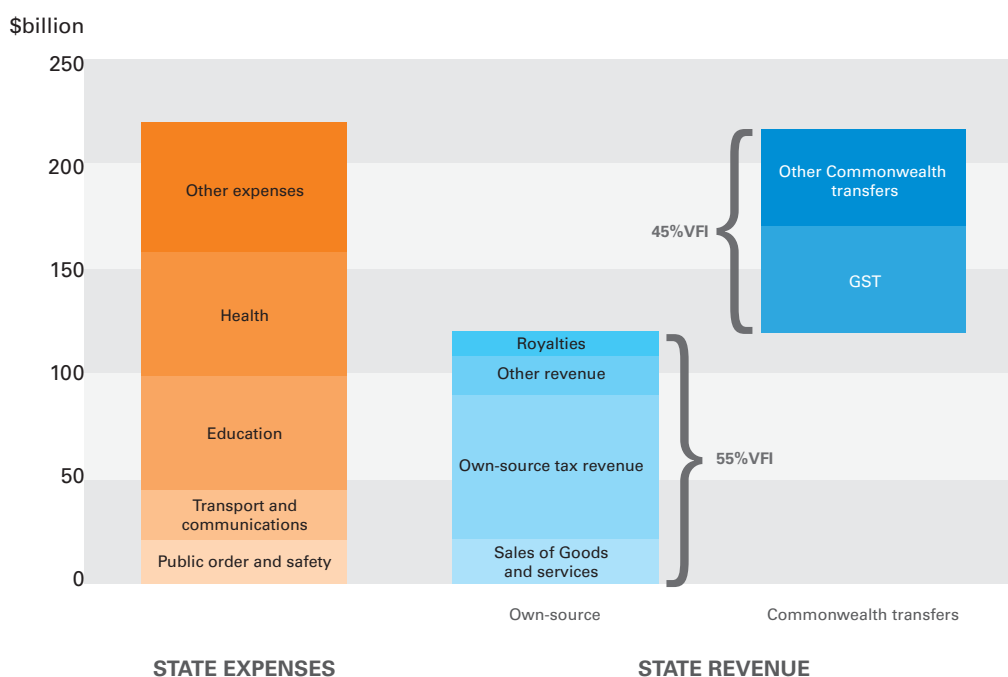
A key role for taxation is to transfer revenue from private use to what are considered relatively more valuable uses by government. In effect, taxation revenue is a proxy for the transfer of limited society labour, capital and natural resources from the production of private sector goods and services, such as food and entertainment, to government provided goods and services, such as law and order and education, and for redistribution to meet society equity goals. Clearly, there is an on-going debate, and a contentious debate with many alternative legitimate positions, about the relative magnitudes of market failure versus government failure, about the valuation of non-market goods and service, and about vertical and distributional equity which have a bearing on the share of government in the economy, and then the taxation revenue sought.

In the context of the Australian federation, there is another set of arguments about the allocation of government expenditure tasks between the different levels of government. Similarly, there is a set of arguments about the more appropriate taxes to be collected by the different levels of government. In general the less the geographical mobility of activities associated with a particular tax base, with land the prime example, the more appropriate the tax for state use to collect revenue.

Inevitably, there is an outcome of vertical fiscal imbalance (VFI). In Australia, as an aggregate, the States depend on transfers from the Commonwealth for about half of their revenue, and state administered taxes represent about a third of state expenditure. The relative reliance on various taxes by State and local governments, relative to expenditures, Commonwealth grants and the GST is illustrated in Figure 1 below, drawn from the draft Discussion Paper released by the Federalism task force (2015; a similar chart is in *Re:Think*).

Figure 1: VFI – State spending, taxes and Commonwealth transfers 2013-14.

Source: State budget papers; ABS. cat. no. 5512.0 and Commonwealth Final Budget Outcome 2013-14. 2013-14 data.





In a context where we have a high degree of VFI, greater state government accountability requires a “hard budget constraint” (Bird and Smart, 2010). By this it is meant that if a state government proposes to increase or decrease an expenditure of \$x million, it funds that change with an addition to, or reduction of, its own taxation of \$x million. State responsibility for funding marginal expenditure changes requires that states have access to taxes for which they can change the rates and/or base; other conditions for a hard budget constraint include transparent Commonwealth transfers, and state government limitations on budget deficits. In this paper, we do not address other potential reforms that could include revenue sharing of the income tax with the States.

## EFFICIENCY

Taxes generally involve costs to society larger than the dollar for dollar transfer. Most taxes change relative prices, which in turn lead households and businesses to change their decisions in a way which results in less household utility and business profits. Taxes change decisions in labour markets, in the aggregate levels and composition of saving and investment, the organization of business, and so forth. These changed decisions result in a misallocation of economic resources when compared with the pre-tax decisions.

The measure of efficiency used in this paper is the marginal excess burden (Gabbitas and Eldridge, 1998; see also *Re:think*, 2015 and Treasury, 2015). This measures the efficiency cost of raising an additional dollar of revenue.

Amongst other factors, the efficiency of State taxes is affected by:

1. The tax base, and special exemptions and deductions from each tax base;
2. The tax rate;
3. The price responsiveness of demand and supply; and
4. The presence of Commonwealth taxation.

## FAIRNESS

All taxes have distributional consequences, both for vertical and horizontal equity. It has been argued that taxes with redistributive objectives should be levied by the Commonwealth, rather than by the State or local tiers. However, it is necessary for the States to pay attention to the equity effects of the taxes they choose to employ. A key principle of tax fairness for States is a benefit theory that ensures contributions on the basis of capacity in exchange for government services provided by the State government. It is necessary to adjust for low income households, but this may be done both at State level and, in an overall reform package, may involve addressing regressive effects of some taxes with improved progressivity in others, including federal taxes, or in transfers from one level of government.

An independent study conducted by Gabbitas and Eldridge (1998) found that although many State taxes appear to be fair since the rate of taxation increases with the size of taxable transaction, many rate poorly on the fairness scale in terms of actual effect. State taxes tend to be regressive or at best neutral both from the perspective of horizontal and vertical equity.

The inequities in the State tax system are attributable in part to the following factors:

1. States are only able to levy a limited range of taxes. This contributes to the overall regressive nature of the State tax system.
2. Tax bases are less than comprehensive so that similar activities are taxed differently. In practice, many State taxes have narrowed their tax bases through a wide range of exemptions or concessional arrangements. This is a major source of horizontal inequity and has arisen in part from competitive bidding by the states.
3. Incomplete coverage and implementation, which can cause vertical inequities within the tax system.
4. Most State taxes do not have progressive rates, or even when they do, those rates have only minor progressive effects.

Assessment of the distributional effects of taxes should consider the time frame and distinguish between statutory tax incidence, or who writes the tax cheque to government, and economic incidence, or who bears the cost of the tax after households and businesses change their decisions in response to the taxes and a new equilibrium is reached. Ultimately, all taxes are born by households as a combination of lower take-home wages, lower returns on capital income earned on savings, higher prices of goods and services, or a combination. Tax changes alter relative prices, for example income tax falls on hours worked but not on non-market work or leisure, and it affects market produced goods and services but less so home produced alternatives. The final or economic incidence of a tax is determined by the changed equilibrium prices and quantities. Often the adjustment period to the new equilibrium can be many years.

## **SIMPLICITY AND RESILIENCE**

The complexity or simplicity of a tax determines its associated administration and compliance costs. It is also important to analyse the extent to which a State tax base is resilient to dramatic changes taking place in work, business and commercial practices in Australia, and to tax planning.

The complexity of state taxes and its associated compliance costs continue to impact upon businesses operating nationally. Despite some harmonization of tax bases that have been carried out under the 1999 Intergovernmental Agreements, State governments continue to levy a large number of different taxes with different structures, bases and rates (see, eg Business Council of Australia, 2008).

## 4. Current State Taxes

In 2012-13 State and Territory governments collected \$63.5 billion in State taxes, equal to 4% of GDP, plus another \$10.6 billion in royalties on the mining industry (ABS, 2014). Although states have a broad constitutional power to tax, they currently impose a limited range of taxes that are often said to be less than optimal (Stewart, 2011). Most state taxes have been criticised for exhibiting one or more of the classic characteristics of 'bad taxation': they have been said to be complex, inefficient (for levying on narrower than necessary bases) and responsible for distorting behaviour, thereby generating high deadweight losses (Carling, 2006). Despite these criticisms, states have largely retained their narrow, inefficient and regressive taxes. They have for example, resisted recommendations to abolish duties on property transfers and insurance and been reluctant to extend the base of land taxes to cover homes and reform its rate structure (Carling, 2006).

Since federation in 1901, changes in the State taxation system have been inextricably linked to and shaped by changes in intergovernmental financial relations including a shift in taxing power from the states to the Commonwealth. This shift has largely been driven by a series of High Court decisions, State and Commonwealth political decisions and broader social and political pressures, especially pressures for increased taxation in wartime and to fund the welfare state (Stewart, 2011; Smith, 1993). The High Court's increasingly expansive interpretation of federal taxing powers over time has led to the point where now, 114 years after federation, major tax fields are fully occupied by the Commonwealth government which levies the income tax, goods and services tax (GST), fringe benefits tax and duties of customs and excise. In contrast, the States levy a limited range of taxes. Although there are many state taxes, inter-state competition has meant that the base for the important revenue raising taxes is essentially narrow with a growing list of special exemptions and deductions (Stewart, 2011).

TABLE 1: STATE GOVERNMENT TAXATION, 2012-13		
TAX CATEGORY	\$BILLION	PERCENTAGE OF TOTAL STATE TAXES (%)
Payroll tax	20.8	32.8
Land tax	6.2	9.8
Stamp Duty		
Conveyances	12.8	20.2
Insurance	4.2	6.6
Motor vehicles	2.5	3.9
Other motor vehicle	6.1	9.6
Gambling	5.5	8.7
Total	<b>63.5</b>	100
Mineral Royalties	10.6	16.7

Source: ABS, *Taxation Revenue, 2012-13, Cat 5506.0 (May 2014)*, and *State budget papers*.

Council rates raised \$13.2 billion in 2012-13 (ABS 2014). The revenues from conveyance duty and royalties have exhibited considerable volatility over the last decade, while revenues from payroll tax, land tax and Council rates are fairly stable (PBO 2015, Figure 2-5).

A summary of the tax bases, or taxable sums, and tax rate schedules for the main taxes are provided in Table 2 overleaf.

The next five Parts of this paper address each of the main tax bases for States: payroll tax; land tax; stamp duty; vehicle taxes, gambling taxes and royalties.

**TABLE 2: BASE AND RATE SCHEDULES FOR SELECTED STATE TAXES, 2012-13**

TAX CATEGORY	TAX BASE	TAX RATES
Payroll	Wages and salaries, employer super, eligible termination payments, grossed up value of fringe benefits. Some special exemptions for charitable and religious institutions, government departments and public hospitals and schools. Some rebates available for employers with an annual payroll below a particular threshold.	A small business exemption ranging from \$550,000 per year in Vic to \$1,750,000 per year in ACT. Then a flat rate varying from 4.75% in Qld to 6.85% in ACT.
Land*	Unimproved land value. Main exemptions include principal place of residence, primary producers, charitable religious and educational bodies.	Progressive rate schedule, with different thresholds and rates across the states.  For a few States, different tax rates apply for companies and trustees.  For a few States, a Metropolitan Region Improvement Tax is also levied on the unimproved value of land situated in a metropolitan region.
Conveyance Duty	Turnover tax. Duty is payable on the conveyance of residential and commercial immovable (real) property, by sale or gift, and on the transfer of interests in land-rich trusts. Duty is usually payable by the purchaser, calculated on the sale price of the property (or market value if higher).  Exemptions and concessions exist for first home buyers.	Progressive rate schedule, including a tax free threshold, which varies across the States. Top rate varies from 4.50% from sale of \$3,000,000 and above in NT to 5.75% from sale of \$1,000,000 and above in Qld.
Stamp Duty on Insurance	Premiums paid. Exemptions, including workers' compensation and others with variance across States.	Flat rate. Varies from 6% in ACT to 11% in SA.  Concessional rates available in NSW.
Taxes on Motor Vehicles		
(a) Registration Fee	Turnover tax.	Flat fee varies across the States based on the type of motor vehicle (car, cycle, lorry) and/or type of fee (traffic improvement fee, plate fee)
(b) Motor vehicle tax	Charged annually; varies by State: may be based on weight, engine capacity or number of cylinders.	Varies for private vehicles, business vehicles, heavy vehicles and motor cycles.
(c) Driver's license fee	Concessions available for pensioners	Flat fee that varies by State, according to duration of license.
(d) Transfer fee.		Flat fee that varies by State based on type of motor vehicle (car, cycle, lorry).
Taxes on Gambling	Usually gross turnover, but some per unit activity.	A wide range of rates on different forms of gambling including racing, gaming machine, casinos and lotteries.
Mineral Royalties	In terms of share of revenue collected, for most minerals, and in particular the export products, an ad valorem levy is imposed on the value of sales, except for the NT which uses a profit base measure, Most lower value minerals used in the construction industry face a specific levy per tonne.	A wide range of ad valorem rates ranging from zero for Vic gold up to 12.5% for QLD coal when prices very high. Rates vary by mineral, by level of processing, by state, and in some cases by mining method. Some key ad valorem rates for the large revenue earners are 5-7.5% for WA iron ore, 7-12.5% for QLD coal, 6.2-8% for NSW coal, 3.5 5% for SA, and other metals 2-3%. NT profit tax rate of 20%

\*Not imposed in NT. Source: NSW Treasury, *Interstate Comparison of Taxes 2013-14*, for royalties, Government of Western Australia (2015), *Mineral Royalty Rate Analysis: Final Report, 2015*, drawing on state budget papers.

## 5. The payroll tax

The payroll tax was introduced by the federal government in 1941 to fund the national child endowment, a widespread welfare payment. It was intended to operate to a significant degree as a 'benefit tax' intended to be borne by wage-earners to fund social services, although the revenues were never hypothecated to this purpose. This was similar to the social security taxes that continue to be levied on wage-earners (by deduction from the employer) in many other countries including the US, Canada and much of Europe.

In 1971, the federal government handed over its 'least favourite' tax base to the states (Smith, 1993). Since then, the payroll tax has been one of the highest revenue-raising taxes for the states, becoming the most important state tax in terms of revenue collection. It raises more revenue in the most populous and industrialised states of NSW and Victoria than in smaller, agricultural or resource-rich states (Smith, 1993). In the shift to States, the link to welfare benefits was lost, as expenditures on child endowment and other welfare payments remained with the Commonwealth.

### CURRENT PAYROLL TAX

Payroll tax is levied on employers. Payroll tax collected \$20.75 billion in 2012-13, just under a third of all state taxation revenue.

The basic law applicable to the payroll tax base has been successfully harmonized across the states and the payroll tax can be viewed as the tax base which has been the most successfully harmonized between the States. In most states, except Queensland, a single flat rate is applied, but with different rates. However, tax competition has increasingly crept into the payroll tax base. Most popular calls for reform of the payroll tax seek its abolition or reduction of the rate, as it is perceived to fall on business. Indeed, the economic incidence of payroll tax has been a topic of contention.

In general, a comprehensive labour remuneration base is used, including wages and salaries, employer superannuation

contributions, eligible termination payments, and some fringe benefit payments. Special exemptions are made for charitable and educational institutions, and sometimes as a component of particular state government strategies to help attract "footloose" firms to locate in a State for "special" projects.

The biggest deduction from a comprehensive payroll tax base is the small firm exemption. The definition of an exempt business varies widely from State to State. The minimum threshold effectively means that most small businesses are exempt from payroll tax. Current state payroll taxes exempt about a half of a comprehensive base of labour remuneration. All states exempt small businesses, with the exemption ranging from an annual payroll of \$550,000 for Victoria to \$1.75 million for the ACT. The threshold is not automatically indexed for inflation or wages in any state but it is common for the states to adjust the threshold upwards by an arbitrary amount every few years.

For those firms subject to payroll tax, beyond a tax free threshold a flat rate applies but at different rates across the states, ranging from 4.75% in Queensland to 6.85% in the ACT. A single flat rate of payroll tax on the taxable sum is applied in all states except Queensland and the Northern Territory. It is now levied on largely the same tax base at a single rate in all States except Queensland and the Northern Territory. Queensland and the Northern Territory set their payroll tax rate to recapture revenue lost by the threshold exemption. As with the base, the rate of payroll tax is adjusted over time, and generally downward over history.

The ability and observed willingness of state governments to change the payroll tax base and tax rate over time indicates that payroll tax is a discretionary source of state tax revenue, and therefore an important component of a state hard budget constraint. This also suggests that, while it is an important base, steps may be needed to prevent harmful tax competition.

A comprehensive payroll tax would be a relatively efficient tax for the states, and certainly remove some of the distortion costs of the present system. In the long run, a reform package with a comprehensive base and a lower flat rate which approximately is aggregate revenue would have fairly minor redistributive effects on employees.

The exemptions in current payroll taxes distort the choices of business structure, organisation and employment, thereby distorting the productive allocation of labour in the economy. Thresholds exert a downward bias on firm sizes and significant dead-weight losses may arise from these threshold-induced reductions in firm size (Dixon et al., 2004; Freebairn, 2009).

Many, and in particular business organisations, often assert that payroll tax is an impost on business rather than a payment by workers. However, as argued in **Appendix 1**, a comprehensive payroll tax as a tax on labour demand has a similar incidence as PAYG tax levied on labour supply. With labour demand much more elastic than labour supply, the economic incidence of both primarily falls on employees as lower take-home pay than otherwise.

The long term incidence and distributional effects of the selective payroll tax are very different to the statutory incidence. Large businesses pay the tax to government. The adjustment of the wage cost and of employment mean that most of the tax in a long run equilibrium is passed back to employees of both large and small businesses as a lower market wage than otherwise (or lower rate of wage increase over time). That is, all employees, including those employed by small business, bear most of the payroll tax levied on large business.

## REFORM PROPOSALS

There are three elements to the design or structure of payroll tax reform proposed by this paper:

- 1.** Comprehensive base with minimal exemptions. Harmonise the base across all states.
- 2.** Flat rate. But, each state has the right to set a different rate and to vary the rate over time for a “hard budget” constraint.
- 3.** Use Commonwealth PAYG or state workers’ compensation base.

### HENRY REVIEW RECOMMENDATION ON PAYROLL TAX

#### Recommendation 57

State payroll taxes should eventually be replaced with revenue from more efficient broad-based taxes that capture the value-add of labour.

These reforms would:

- 1.** Remove distortions to the choice of business organisation, and generate efficiency gains
- 2.** Like a labour income tax and the GST, payroll tax distorts labour market decisions. But, like the GST a payroll tax involves minimal capital market distortions affecting decisions on the aggregate levels and composition of saving and investment.
- 3.** Simplify tax administration and compliance
- 4.** If a revenue neutral broader base and lower rate package, the reform package will have similar effects on the take-home wages for employees of both large and small businesses.

In terms of effects of reform of payroll tax on aggregate revenue there are two options:

- 1.** Generate the same revenue but create less labour market distortions by a package with a comprehensive base and lower rate.
- 2.** Increase revenue from a relatively efficient tax in order to replace other taxes.

There remains the issue of tax competition in the federation. It may be possible to consider returning to a nationally defined base and rate, or harmonisation of the base (including exemptions) and mandating a single base rate. It is also possible to consider collection of payroll tax on the Pay-As-You-Go wage tax base which applies to most workers.

On the other hand, a further argument for a larger state payroll tax with coverage of all workers is its potential contribution to a hard budget constraint for better state budget decisions. As a relatively efficient tax with a low marginal cost, the payroll tax rate can be changed at the margin by each state to fund changes in state expenditure. This has potential to return it to be a tax on wages to fund the benefit of government services in a broad sense in that state. A State population that sought better services may be willing to have a higher payroll tax. A larger payroll tax would be a state tax option to reduce vertical fiscal imbalance, and probably as a component of a wider tax reform package including adjustments to other taxes and to Commonwealth-state financial arrangements.

A larger revenue payroll tax package would mean a lower effective wage to employees and a small fall in employment by both large and small businesses and in aggregate.

To the extent that minimum wages are a binding constraint for some low wage employees, some of the adjustment will be an increase in unemployment. It is likely that the unemployment response will be more important for small business employees. A complete general equilibrium assessment of the redistribution effects of a larger revenue payroll tax reform would require details of the use of the additional payroll tax revenue as reductions in other taxes and/or increases in government expenditure as an offset to the lower take-home wage.

One payroll tax reform option is to combine a comprehensive payroll tax base and a lower rate in an approximate revenue neutral reform package. Payroll tax rates on a comprehensive base with a rate between 2.5 and 3.5 per cent, depending on the state, would generate about the same revenue. Simplicity, and associated low tax administration and compliance costs, including for small business, could be gained by using as the comprehensive payroll tax base either the existing state workers' compensation base or the existing Commonwealth PAYG labour income tax base. Such a package would have minimal redistributive effects on employees, and by removing distortions to the choice of business type it would result in a net gain for society.

## 6. Taxes on land

Taxes on land were advocated as early as the 1840s and introduced in most Australian colonies before federation in 1901. Early land taxes were tools of social justice and wealth redistribution designed to 'unlock the land' for the 'poor man' (Smith, 1993). In 1910, the federal government levied a land tax at steeply progressive tax rates. This tax was successful in raising federal tax revenue, but it was less clear whether it successfully redistributed wealth (Smith, 1993). The federal land tax continued to be levied until 1952 when the Commonwealth government vacated the land tax, leaving it for the states to levy.

### CURRENT LAND TAX

Land tax levied at a flat rate on a comprehensive base can be one of the most efficient taxes, a relatively easy and low cost tax to administer and comply with, and to have reasonable distribution effects, particularly as part of a broader tax reform package. However, current state (and territory) land taxes and conveyance duties with extensive special exemptions and progressive rate schedules distort important decisions, generate smaller own-source revenues for the states than they could, and their economic incidence has some undesirable redistributive effects. Local government rates provide a good foundation for a reformed state land tax.

All States, except the Northern Territory, impose a land tax that is levied on the assessed unimproved value of land. The tax rate is specified with reference to the asset stock value. There are exemptions for the primary residence, primary producers, charitable, religious and educational institutions and some others. All States have a progressive rate schedule, but with wide differences across the States in the thresholds and rates.

The state land tax base exempts most owner occupied housing and primary production land. In aggregate, the exemptions represent at least 80 per cent of a comprehensive land tax base. There are other exemptions for other levels of government, some not-for-profit owners, and special exemptions.

In most cases the unimproved land value is used as the tax base. A progressive rate schedule applies to each registered property owner; and in general without automatic indexation of the thresholds. The top rate applied to the asset value varies from 1.5 per cent in Tasmania through to 3.7 per cent in SA.

The progressive rate tax schedule on land which is taxed results in a second and additional set of distortions to the efficient use of the taxed land resource. Aggregate land tax can be minimised by having many landowners with small by value parcels of land, as opposed to a smaller number of owners with larger parcels of land paying much higher marginal and average land tax rates. Efficiency losses with a progressive land tax rate schedule as now in use arise from the tax disincentives to exploit economies of scale and of scope available with the management of larger land parcels.

Together, the base exemption and the progressive rate schedule have turned the state land tax into an inefficient tax, and the exemption adds to the regressive redistribution of the tax burden. The municipal rates tax by comparison approaches the efficient comprehensive base and flat rate land tax.

Municipal rates are imposed on broad measures of property asset value at a flat rate. NSW, QLD, NT and the ACT use unimproved land value. WA uses capital improved value. A mix of unimproved and improved capital values are used by different councils in Vic, SA and Tas. Across the nation, capital improvements, mainly buildings, are about the same value as unimproved land.

Revenue collected from the different taxes in 2012-13 (from ABS 5506.0):

- State land tax: \$6.192 billion
- State conveyance duty: \$12.841 billion
- Local government municipal rates: \$14.192 billion



As unimproved land is the least mobile of all tax bases, land tax has negligible effects on the level and composition of economic activity. Current land taxes are underutilised and there are opportunities for both the expansion and simplification of land taxes. The base exemptions create distortions to the efficient allocation of land across the taxed and exempt uses. Also, some of the tax burden is passed forward as higher costs for consumers of the higher tax rate land uses.

## CONVEYANCE (STAMP) DUTY

Stamp duties are taxes on transactions (originally, documents) and can be designed to tax a number of aspects of economic life. Early stamp duties were levied on cheques and similar financial documents. States began introducing stamp duties on personal and commercial transactions in the 1960s, taxing all business receipts and in addition to the existing duties on cheques and other transactions (Smith, 1993). This pattern of taxing documents through stamp duties also led the states into the area of taxing financial services.

Stamp duties are levied on transfers of land, land improvements and buildings. A progressive rate schedule is applied to each transaction. Progressive rate schedules are used, but with differences in thresholds and rates across the states, and for example with top rates of between 5 and 7 per cent.

As a transaction tax, stamp duties distort the reallocation of land from lower value to higher value uses (Davidoff and Leigh, 2013, and Re:think, 2015). For example, changes in technology and markets alter the comparative advantages for the location of different industries and firms within each industry; and changes in family demographics and incomes, and of employment, change the preferred type of building and location for households.

The Campbell Inquiry (Committee of Inquiry, 1981) labelled State stamp duties as inefficient taxes; however, States have continued to rely heavily on two specific stamp duties, primarily on real property and insurance. The Campbell Inquiry deemed that such taxes affected the efficiency of Australia's financial system by distorting the pattern of financial transactions. As a result, in 1982 states such as NSW and Victoria replaced a number of taxes on bank and

financial transactions with a single 'financial institutions duty' ('FID'). This duty, along with other duties such as that on share transfers and mortgages & loans, was removed as part of the Commonwealth tax reforms in 2000, that introduced the GST to replace stamp duties and other more distorting indirect taxes. Some stamp duties were also removed as part of the Commonwealth 2000 tax reforms that introduced the GST. Stamp duties that have been removed include those on share transfers, mortgages and loans, hiring arrangements and rental duties and the financial institutions duty (FID) and bank account debits tax (BAD) on bank transactions. In all states, stamp duties remain on property conveyance, insurance and motor vehicles.

Conveyance duty paid on the transfer of most non-residential and residential property is a form of transaction tax; if a person sells or gifts the property then tax is paid, but if that person continues ownership, no tax is paid. In 2012-13 conveyance duty collected \$12.8 billion.

States (except NT) impose an annual fire and emergency services levy. While most states tag the levy onto the municipal rates tax base (most recently, Victoria has implemented this change), NSW and Tasmania still use a transactions tax or stamp duty to insurance premiums on property. The ACT has begun an extended transition process to replace its stamp duty with a higher flat rate of land tax using the municipal rates base.

Conveyance duty is usually payable by the purchaser calculated on the sale price of the property (or market value if higher). Duty rates are progressive, with each State adopting a different progressive rate schedule with different thresholds and rates. Buildings and improvements, in addition to the unimproved land value (used for land tax) are all included in the base. Duty revenues over the last decade have significantly increased in all States as house prices have risen substantially in many locations. Some concessions apply for first home buyers although there is broad consensus amongst economists that this largely benefits existing land owners through increased house prices (Gabbitas and Eldridge, 1998).

Current conveyance duties are levied at a progressive rate on transfers of property, with property including land value and buildings. Conveyance duties are among the most inefficient taxes; they are an additional indirect tax on a specific product, buildings and they distort the reallocation of residential and commercial property. The current tax design is inequitable to frequent property transferees and is the most volatile of state revenue sources.

The progressive conveyance duty tax rate schedule suggests a progressive element in the sense that higher value property faces a higher average conveyance duty tax rate than lower value property. On the other hand, to the extent that expenditure on property falls as a share of income (with expenditure directly in the provision of housing accommodation services and indirectly in the provision of other goods and services provided by property intensive business production methods), conveyance duty has a regressive element.

Also, conveyance duty might be treated as horizontally inequitable. It imposes a greater tax burden on households with similar incomes who allocate relatively more of their income to property than on other goods and services. Those who buy and sell property more frequently pay more conveyance duty than those who buy and sell property infrequently. For example, the Henry Review (2010) quotes that while about 18 per cent of the population have bought within the last three years, and have recently borne conveyance duty, 26 per cent have stayed in the same property for more than 25 years and have paid no conveyance duty.

Some socially beneficial transfers of property between different business users warranted by changes in product demands, technology and other evolutionary business circumstances will be deterred by the conveyance duty which can be avoided by non-sale and persistence with a less valued use of the property.

The portion of conveyance duty which falls on property improvements and on buildings, but not on land, is a form of additional indirect tax on a specific business input, buildings, and on a specific form of consumption, residential housing.<sup>5</sup> Given some elasticity of supply of resources reallocated from other parts of the economy to land improvements and to buildings, together with the absence of a clear and documented market failure in the production and consumption of these products, the extra indirect tax results in too small a quantity of production and consumption of land improvements and to buildings.

On the positive side, conveyance duty is a simple tax with low costs of both tax administration and of tax compliance since it uses readily available market data. However, as noted above, conveyance duty is a highly volatile source of State revenue. It has a strong cyclical pattern with downfalls in both quantity and prices during recessions, and increases in both price and quantity in boom phases of the economic cycle. The revenue volatility adds to the budget challenges, especially for much more stable funding requirements over the longer term outlays on education, health and law and order. While ongoing valuation of land may be perceived to be an administrative challenge, it is conducted for local council rates purposes and from the perspective of resilience, a regular land tax is much more stable and predictable to fund ongoing government spending, and would help prevent State governments from dealing with pressures to spend available funds in good times, but also to balance the budget.

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<sup>5</sup> This in addition to the GST which is imposed on new buildings as a proxy for the present value of the future stream of housing services provided by buildings.

## STAMP DUTIES ON INSURANCE

Stamp duties at a flat rate from 6% to 11% of the gross premiums (in ACT and South Australia respectively) is payable on most forms of insurance. A range of exemptions are available across the States, including (but not limited to) exemptions for annuities, workers compensation and hospital or medical benefits. In 2012-13 stamp duties on insurance collected \$4.2 billion, or just over 6 per cent of state taxation revenue.

Stamp duties on insurance are in effect an extra indirect tax on a specific product. There is no market failure reason, or other logical argument to justify an additional level of indirect on insurance above the general consumption tax, GST. The relatively high aggregate indirect tax burden on insurance leads to both non-insurance and under-insurance. Anecdotal evidence indicates that for household and contents insurance, the incidence of non- and under-insurance is more frequent among the less well-off. That is, stamp duties on insurance have significant adverse equity and efficiency effects.

## REFORM OF CONVEYANCE DUTIES: REPLACE CONVEYANCE DUTIES

Conveyance duty has been placed on the list for reform by a number of state tax reviews (for example, Harvey et al., 2001, IPART, 2008, ACT, 2012, and SA, 2015) and the Henry Review (Henry, et al., 2010). While an important revenue raiser, conveyance duty, or stamp duty on the transfer of property, is a transaction tax. It is a selective additional indirect tax on buildings with no logical market failure correction argument. Conveyance duty distorts the reallocation of property from lower value to higher value uses when circumstances change. It is the most volatile source of state revenue. A challenge for reform is a revenue replacement. In the long run, an augmented state land tax on a comprehensive base, such as the current municipal rate base, with a flat rate would have large efficiency gains and limited redistribution effects.

However, the choice of transition arrangements to minimise actual and perceived redistribution effects requires careful design.

Along with the preceding reviews of state taxation and AFTS, this paper suggests that introducing a replacement land tax with a broader base and higher rate will have similar long run equity effects, and remove most of the efficiency costs.

A challenge for reform is a revenue replacement. In the long run, an augmented state land tax would have large efficiency gains and limited redistribution effects, however the choice of transition arrangements to minimise actual and perceived redistribution effects requires careful design. If this reform was introduced in conjunction with a doubling of local tax rates, the replacement land tax would have an approximately neutral revenue effect. However, the political cost and distributional effects in the short run should not be underestimated and there would likely be vocal opposition from infrequent property sellers and the asset rich and income poor, including many age pensioners. A long transition process, such as the ACT strategy, may be necessary.

In practice to achieve political support, a number of details may be considered. Different incremental land tax rates, TI, might be chosen for different categories of land and land use by application of (14) to, say, residential property, commercial property and primary production property, or by geographic area such CBD, city-urban and rural. Another option could be to start first with a particular sector, such as commercial property, almost as a demonstration and trial.

There will be redistribution effects of a larger broad based land tax replacement for conveyance duty reform package. But, the magnitudes of change are easy to exaggerate, and they will be less if a longer run time period is considered. The shift from a property tax base to a land tax base, with land being a subset of the larger property asset, will have some redistributive effects.

The increase in tax burden on land and land owners reflects a lower tax burden on both the current owners of buildings and improvements and on the supply industry for future investment in improvements and buildings. Current property owners whose property assets are more heavily weighted to the value of buildings will gain relative to those with a relatively high ratio of land to other property assets.

For the aggregate population, the proposed reform package means on average there is no overall loss, and with the efficiency gains there will be a net society benefit. In particular there will be minimal changes in property asset values. However, around this long run average net gain, there will be individual losers, and also winners, especially in the short run. Frequent buyers and sellers of property will be winners, while infrequent buyers and sellers whose average conveyance duty payment over time is below the average will be losers. Granted the power of the status quo distribution and politics, the ethical case against redistribution from those who transfer property infrequently to those who buy and sell more often seems weak.

Timing of the transition from conveyance duty to a land tax replacement will bring winners and losers. Those who have recently purchased property and paid conveyance duty, and those with no plans to sell over the next few years, likely will regard themselves as facing a higher tax burden; and those who planned a transfer in the near future will be silent winners. To meet these types of concerns, the ACT reform package involves a staged process of steps to reduce the conveyance tax rate with steps in raising the land tax rate, and granting credit for recent payments of conveyance duty.

Some asset rich and income poor households will be troubled by a land tax for conveyance duty reform package. New Zealand has enacted a deferred rates payment scheme that could assist (DFPNI, 2008). As an alternative, government provision of reverse mortgage facilities, perhaps only as a default option, may be included in the reform package (see Productivity Commission, 2014).

## REFORM OF CONVEYANCE DUTIES: REMOVE STAMP DUTY ON INSURANCE

For equity and efficiency reasons, removal of stamp duties on insurance should be a high priority. There is no obvious replacement tax for these duties. Possible replacements for a neutral aggregate revenue neutral tax reform package, and also at the state government level, include:

1. Larger land tax
2. Larger payroll tax
3. Larger GST
4. Access to the income tax levied by the Commonwealth

Design of the reform package, and in particular an aggregate revenue neutral package, needs to consider efficiency and equity implications of the package. Given that estimates of the marginal excess burden for stamp duty on insurance exceeds that for the suggested replacement taxes, a net gain of efficiency is assured.

A bigger challenge is the design of a reform package where the gains of lower insurance premiums are approximately matched by the distribution of the tax burden of a larger land tax, payroll tax, GST, income tax, or combination. Clearly, retaining approximate distribution neutrality will be feasible only for broad categories of households classified by income and demography, with winners and losers within each category.

## REFORM OF THE EXISTING LAND TAX

This paper proposes reforms to the tax base and rate schedules of current land taxes. There are four elements to reform:

1. Comprehensive base of unimproved value with minimum exemptions
2. A single flat rate with the right for individual states to vary the rate
3. Integration of the operation of land tax with local government rates
4. A revenue neutral package would require a doubling of local government rates; alternatively, additional revenue could be raised from other sources.

Such a reform package would remove the current distortions and efficiency costs described above associated with the base exemptions and progressive rate schedule. The reform would simplify the tax and remove incentives and rewards for socially wasteful tax avoidance schemes.

Assessing the equity or redistribution effects of land taxes should be considered in a broader context than just land tax. For business investors in property, both individuals and corporations, land tax is a deductible expense in measuring taxable business income. For individuals, other than land for owner occupied buildings, rent income is included in taxable income and is subject to the progressive income tax.<sup>6</sup> Corporate income tax, including on rent income, serves as a withholding tax against the personal income of shareholders. For individuals, rent income is only one component of income, and land assets are only one component of wealth.

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*6 In Australia, the income taxation of investment income from property, including a land rent component, often involves debate about the concessional capital gains tax and about the ability to use property expenses, including borrowing costs, as a deduction against other sources of income. Note also that investment in owner occupied housing incurs no income tax on imputed rent or on capital gains, but also there are no deductions for expenses.*

To meet social equity objectives and to assess ability to pay tax for equity, it is more direct and better targeted to consider all income and/or all wealth rather than just the land component. While land ownership, especially associated with owner occupied homes, is widespread in Australia, other than for the retired, rent income is relatively unimportant for most in the bottom two income and asset quintiles.

It should be noted that although the current exemption of the principal place of residence and primary production from the tax base reflects history rather than good tax design principles, the political cost associated with removing these exemptions should not be underestimated.

An approximate revenue neutral land tax reform package would have the effect of removing distortions to the efficient allocation of land among different uses; and it would have relatively small net redistribution effects as one-off windfall changes in some land asset values.

## **HENRY REVIEW RECOMMENDATIONS ON REFORM OF LAND TAX AND STAMP DUTY**

### **Recommendation 51**

Ideally, there would be no role for any stamp duties, including conveyancing stamp duties, in a modern Australian tax system. Recognising the revenue needs of the States, the removal of stamp duty should be achieved through a switch to more efficient taxes, such as those levied on broad consumption or land bases. Increasing land tax at the same time as reducing stamp duty has the additional benefit of some offsetting impacts on asset prices.

### **Recommendation 52**

Given the efficiency benefits of a broad land tax, it should be levied on as broad a base as possible. In order to tax more valuable land at higher rates, consideration should be given to levying land tax using an increasing marginal rate schedule, with the lowest rate being zero, with thresholds determined by the per-square-metre value.

### **Recommendation 53**

In the long run, the land tax base should be broadened to eventually include all land. If this occurs, low-value land, such as most agricultural land, would not face a land tax liability where its value per square metre is below the lowest rate threshold.

### **Recommendation 54**

There are a number of incremental reforms that could potentially improve the operation of land tax, including:

- ensuring that land tax applies per land holding, not on an entity's total holding, in order to promote investment in land development;
- eliminating stamp duties on commercial and industrial properties in return for a broad land tax on those properties; and
- investigating various transitional arrangements necessary to achieve a broader land tax.

### **Recommendation 120**

States should allow local governments a substantial degree of autonomy to set the tax rate applicable to property within their municipality.

## 7. Tax on motor vehicles

Tax on motor vehicles was adopted by the states in the 1920s and was initially conceived of as a luxury levy. However, as motor vehicles became more commonplace, taxes on motor vehicles became a lucrative mass consumption levy. At its peak in the 1960s, the motor vehicle tax accounted for around a fifth of state taxation. Since then, however, rising petrol prices have hindered proposals to raise motor taxes (Smith, 1993).

As a mass tax, motor taxes such as registration and licence fees are typically regressive and are especially burdensome for lower income groups. Due to this effect, states have not used their motor vehicle taxes to fully charge motor users for their economic benefit from the services provided by government expenditures on road construction and maintenance. In addition to the regressive impact of the motor vehicle tax, there are also practical difficulties to motor vehicle taxes playing a more prominent role as an economic tool. It is difficult to pin down the costs and benefits of motor cars, and existing tax structures historically have had difficulty in attributing the costs of motoring to the major beneficiaries of motor usage. Further, existing motor taxes do not account for wider costs imposed on society by motor cars, such as the cost from traffic congestion, accidents and pollution.

### CURRENT TAXES ON MOTOR VEHICLES

There are a number of different state taxes on motor vehicles.

Four are described in Table 2: registration fee, an annual motor vehicle tax, transfer fees, stamp duty on the transfer of vehicles, and driver's license fees. For each of the taxes on motor vehicles, the bases and rates vary across the States. These State taxes apply in addition to the 10% GST and petroleum excise levied by the Commonwealth. Combined, these charges collect more revenue than government expenditure on investments in new roads and maintenance of roads.

The Commonwealth petroleum excise often is advanced as a crude form of user pays fee for government investment in, and maintenance of, roads, bridges, and other transport infrastructure. Most fuel used for off road purposes is exempt. There is a loose relationship between fuel use and distances travelled. However, there is a low correlation between fuel use and road damage. A portion of local government rates are used to fund the maintenance of local roads.

Collectively, federal, state and a portion of local government rates generate more revenue than in aggregate is spent by the three levels of government on investment in and maintenance of roads. However, while current taxes are a charge on the use of motor vehicles, these charges are poorly correlated with road damage caused, with the external costs of congestion, and with the external costs of pollution. There is little collected as a crude charge for the external costs of pollution and congestion.

There is no formal justification and logic for the chosen bases and rates for the current State motor vehicle taxes. The taxes are neither charges for the use of government provided infrastructure nor charges for the external costs associated with pollution and congestion. Revenue raising seems to be the primary rationale.

In principle, economic efficiency of special taxes on the use of motor vehicles would be enhanced by specific taxes for pollution, for congestion, and as a user pay fee for government-provided road infrastructure and associated services, including police and emergency services. The current tax bases and rates do not follow in a rational way from these principles.

## RATIONALISE TAXES ON MOTOR VEHICLES

Logical argued reform of the special taxation of motor vehicles is provided in the Henry Review (2010, chapter E3). There it is argued to replace the current Commonwealth excise on fuel and the state taxes with a user charge for vehicle use of roads and associated services, a pollution tax to internalize the external costs of motor vehicle use, and a congestion charge for some roads during peak-hour travel times. A comprehensive reform package would seek to more closely align price signals faced by motorists with the social costs they cause by replacing the current set of government taxes and charges with these three charges.

The reforms recommended by this paper with respect to the taxation of motor vehicles are broadly aligned with those proposed by the Henry Review. Explicit indirect taxes or charges for the operation of motor vehicles would involve three components for:

1. Road construction and maintenance by a use charge
2. Congestion by road and time of day
3. Pollution to internalise external cost

The first two charges would be levied by the States and final charge by the Commonwealth. Important questions with the reform package to be resolved include (i) the allocation of responsibility for administration of the three categories of motor vehicles charges, and (ii) the allocation of the revenue collected between the three levels of government. The importance of interstate vehicle use points to national uniform tax bases for simplicity. On the other hand, differences in state preferences, and the potential gains from competitive federalism, favour some delegation in the choice of rates to the states and local governments.

### *Charges for road construction and maintenance, and associated services*

An appropriate form and structure of an augmented registration fee would internalise the costs to motorists for their use of government provided road infrastructure and associated services, such as police and emergency services. Setting a fee to recover the costs of government investment in and maintenance of road infrastructure for efficiency would be linked to the marginal cost per vehicle. Consideration of weight per axle, and in a sophisticated model conditional on type of road travelled, and distance travelled would be considered. Efficiency would set price at short run marginal cost. However, the importance of overhead and fixed costs may require also an annual registration fee for fiscal sustainability.

Alternatively, with continued expansion of the demand for road transport with increases in population and economic growth, an efficiency argument could be made for setting a road user charge at the long run marginal cost. This reform option would, at the same time, generate enough revenue for financial viability.

The current annual registration fee and stamp duties could be combined as a single road user charge. The base for this user charge would be redesigned to more closely reflect the marginal costs incurred in vehicle road damage, that is include reference to kilometers travelled and estimated road damage per kilometer by vehicle type.



## HENRY REVIEW RECOMMENDATIONS ON ROAD TRANSPORT TAXES

### Recommendation 61

Governments should analyse the potential network-wide benefits and costs of introducing variable congestion pricing on existing tolled roads (or lanes), and consider extending existing technology across heavily congested parts of the road network.

Beyond that, new technologies may further enable wider application of road pricing if proven cost-effective. In general, congestion charges should apply to all registered vehicles using congested roads. The use of revenues should be transparent to the community and subject to further institutional reform.

### Recommendation 62

The Council of Australian Governments (COAG) should accelerate the development of mass-distance-location pricing for heavy vehicles, to ensure that heavy vehicles pay for their specific marginal road-wear costs. Revenue from road-wear charges should be allocated to the owner of the affected road, which should be maintained in accordance with an asset management plan. Differentiated compliance regimes to enforce this pricing policy may need to be considered to balance efficiency benefits from pricing against the costs of administration and compliance for some road users.

### Recommendation 63

States should improve compulsory third party insurance to better reflect individual risks.

### Recommendation 64

On routes where road freight is in direct competition with rail that is required to recover its capital costs, heavy vehicles should face an additional charge on a comparable basis, where this improves the efficient allocation of freight between transport modes.

### Recommendation 65

Revenue from fuel tax imposed for general government purposes should be replaced over time with revenue from more efficient broad-based taxes. If a decision were made to recover costs of roads from road users through fuel tax, it should be linked to the cost of efficiently financing the road network, less costs that can be charged directly to road users or collected through a network access charge. Fuel tax should apply to all fuels used in road transport on the basis of energy content, and be indexed to the CPI.

Heavy vehicles should be exempt from fuel tax and the network access component of registration fees if full replacement charges are introduced.

### Recommendation 66

The revenue-raising component of State taxes on motor vehicle ownership and use should be made explicit, and over time only be used to recover those costs related to road provision. The administrative costs of providing government services should be recovered through user charges where applicable. Quantity limits on taxi licences should be phased out.

### Recommendation 67

Governments should continue to reform road infrastructure provision, applying economic assessment to investments comparable to that for other forms of infrastructure.

### Recommendation 68

COAG should develop a National Road Transport Agreement to establish objectives, outcomes, outputs and incentives to guide governments in the use and supply of road infrastructure. COAG should nominate a single institution to lead road tax reform, and ensure implementation of this agreement.

### *Charges for congestion*

Road congestion is a serious market failure only for some city roads during peak hours. The congestion fee needs to recognise the marginal social cost. Modern information technology provides a relatively low cost technology for a time and road based congestion fee, with the fee set at the marginal external cost of congestion. There remain challenges with concerns about privacy.

Congestion costs depend on location and time of day. New technology including E-Tags, geographic information systems (GIS) and hubometers are arriving at lower costs. This will likely revolutionise the actual charging bases that are feasible and cost effective in the future.

At a minimum, in the case of existing and proposed toll roads, state governments should facilitate a toll rate structure which depends on the state of congestion. An initial step would have the toll rate vary in a pre-announced way by time of day. A more sophisticated reform would use available information on congestion to regularly revise the toll rate, with this information available to motorists via apps, etc.

More specifically, a congestion charge could be implemented by individual states. This includes a more focused strategy of time of use charging in allowable contracts for the tolls charged by current and proposed toll ways. The proposed congestion charge would replace also the current city parking levy as a more direct fee.

### *Charges for pollution*

Pollution includes quite localised effects such as particulates and smog through to global effects attributable to greenhouse gas (GHG) emissions and climate change. Given the difficulty of measuring pollution by individual vehicle, a pollution tax on the principal input, petroleum products, may be a reasonable compromise. The special tax rate(s) would be the marginal external cost of the pollution. This practical pollution externality tax would best come under the Commonwealth excise.

The carbon tax, if broadly applied as opposed to the many exemptions under the Gillard government Clean Energy Future package of 2012-14, provided an example of a reform involving a specific tax to internalize the external cost of greenhouse gas pollution. More region specific external cost correction taxes may be warranted for pollution of particulates and other local pollution, including noise. Ideally, the pollution taxes would be set at the marginal external cost. Simplicity may lead to use of fuel or processes as the tax base where there is a high correlation with a more direct measure of the pollution by-product.

A much more moderate first step reform of state special taxation of motor vehicles would combine stamp duty on the transfer of ownership of motor vehicles with registration fees and charges, into a larger annual registration fee that falls equally on all vehicles. The current stamp duty discriminates against the sale and purchase of new vehicles in favour of retaining ownership and operation of older vehicles.

## 8. Gambling taxes

Together with taxes on tobacco and alcohol, tax on gambling is considered one of the 'sin taxes'. Whilst taxes on tobacco and alcohol are levied at the Federal level, taxes on gambling are levied at the State level. Taxes on gambling were first introduced by states in the 1940s, following World War Two. Since then, there has been an uneasy marriage between the government's dual roles as a regulator of societal behaviour and as a collector of 'sin' taxes. This has placed conflicting pressures on the state government to both discourage and encourage gambling (Smith, 1993).

### CURRENT TAXES ON GAMBLING

Gambling taxes became an increasingly important revenue-raiser to state governments during the 1990s, after gambling tax revenues increased dramatically due to the gambling deregulation and privatization. Taxation of gambling represents an important source of state government taxation revenue, collecting \$5.5 billion in 2012-13, or 8.7 per cent of all state taxation revenue. It is questionable whether the state government's fiscal stake in the gambling industry has affected its role of regulating and reducing gambling. Further, the gambling tax base is under increasing threat from on-line, offshore gambling via websites that are hard to tax in Australia.

The current taxes on gambling are widely diverse. Different bases and different rates are applied by each of the states to different gambling activities generally categorised into wagering, gaming machines, casino gambling and lotteries. Tax rates differ markedly without clear reason (NSW Treasury, 2014). The tax system varies from a percentage of turnover, a specific tax per production unit, through to a profits-based tax.

In some cases the gambling taxes are designed to share the scarcity rent created by government restrictions on supply (e.g., in the cases of casinos and gaming machines). In other cases the tax seeks to internalise some of the external costs associated with problem gambling. In most cases, however, the overwhelming rationale for gambling taxes is as a revenue-raiser on a non-essential product with a low elasticity of demand.

A combination of arguments for special taxation of gambling, in addition to the GST, income tax and other state taxes. These include collecting some of the economic rent on government limited supply, a charge to internalise some of the external costs associated with problem gambling, and as a source of hypothecated funds for the horse racing industry and some social services (associated with problem gambling and alcohol related problems). However, as argued in the Henry Tax Review (Henry, et al., 2010, chapter E7), while special taxation of gambling may be warranted, the current system is ad hoc and complicated rather than a logical system.

### REFORM: RETHINK TAXES ON GAMBLING

Government restrictions on the supply of some gambling services, implemented through licensing arrangements, mean that some gambling businesses can earn excess profits, or economic rent. As economic rent is an efficient tax base, it should be appropriated by the government either through licence fees or taxation. Thus, specific taxes imposed on gambling should be designed to capture any economic rents that have not been captured by licence fees. Simplicity would place a standard rate of tax on different forms of gambling. A particular example of simplicity would replace the current array of different rates of tax on different wagering options with a single rate.

## HENRY REVIEW RECOMMENDATIONS ON GAMBLING TAXES

### Recommendation 76

Gambling taxes should be reviewed to ensure that they are focused on recouping economic rent generated by government restrictions on the supply of gambling services or are being used efficiently to impose such restrictions.

### Recommendation 77

Governments should eliminate gambling tax concessions for particular types of gambling business, such as clubs. If governments wish to subsidise particular types of businesses, they should do so through direct expenditures.

### Recommendation 78

Governments should consider the allocation of responsibilities for the regulation and taxation of gambling, with a view to minimising conflicts in policy-making between revenue-raising and addressing problem gambling.

Alternatively, if, as many argue, demand is non-price responsive, then taxation on gambling is an efficient tax. A Ramsey theorist would vary the tax rate by form of gambling according to the elasticity of demand to minimise efficiency cost. In the absence of compelling data on different demand elasticities for different forms of gambling, simplicity and equity favours a flat rate for all gambling taxes.

A logical argument for special taxation of those forms of gambling where government policy restricts the quantity of supply, and in

particular casinos and gaming machines, is government taxation of the economic rent or the auctioning of licenses is an efficient form of taxation, and one with acceptable distribution effects. The economic rent tax is a non-distorting transfer from the licensed supplier to government, with no effect on the market price of gambling or tax burden on the gambler.

For those forms of gambling not subject to supply control, including wagering and lotteries, a second argument for special taxation of gambling is to reduce the quantity of gambling. Here, the tax seeks to internalise the external costs of problem gambling. This argument is problematic for two reasons. The majority of gamblers are not problem gamblers, but rather, gambling is an alternative recreation choice. There is compelling evidence that the elasticity of demand for many problem gamblers is very low, and much lower than for non-problem gamblers (Productivity Commission, 1999, 2010).

As a result, a tax on gambling applying to all distorts the decisions of non-problem gamblers with efficiency costs, and at the same time it has a limited effect on reducing the quantity of gambling by problem gamblers. There is limited evidence that the current taxes are effective in deterring problem gambling. It is not clear how problem gamblers react to higher taxes and in some forms of gambling, the price of gambling is not easily observable (Productivity Commission, 2010).

It should be recognised that because gambling taxes constitute an important source of State government revenues, in the absence of a package of changes involving increased revenue from other taxes, the states will be reluctant to reduce the amount of revenue collected from gambling.

## 9. Mining royalties

In addition to the income, payroll, indirect and other taxes levied at similar rates across all industries, States currently apply a range of additional taxes or royalties on mining. These additional charges include a fixed rate per unit (e.g., tonne) of production, ad valorem royalties as a percentage of value or price of resources, or profit-based royalties.<sup>7</sup> In terms of revenue collected, royalties are the dominant form of special taxation of mining levied by state governments. Although not as big as the State taxes on conveyance duty and payrolls, royalties are particularly important revenue sources in the resource-rich states of Western Australia and Queensland.

As sovereign owners of resources in their jurisdiction, states levy a variety of mineral resource royalties. These royalties are not taxes, but operate pre-tax and are levied as a price for accessing a non-renewable resource owned by the states on behalf of their citizens. Mining royalties are significant not only because of the revenue raised, but because they affect economic efficiency and the Australian mining industry. In 2012-13, state royalties generated \$9.3 billion of revenue. Since royalties are a deductible expense in the calculation of corporate income tax, the effective royalty rate is 0.7 times the royalty rate ( $= 1 - \text{corporate income tax rate}$ ). A change in royalty payments flow through to a smaller and opposite change in Commonwealth corporate income tax revenue.

The allocation of mineral rights between the Commonwealth and States has been a sensitive issue, with the Commonwealth government choosing at times to contest states' claim to taxing the mining industry. Joint occupancy of a field, such as the federal crude oil levy of 1975, has generated considerable conflict between the two tiers of government and hindered the development of an efficient taxation policy. A resource rent tax – a federal tax levied on the economic

rent, or 'unearned increment', in mining was floated in 1975 but abandoned in 1977 by the Fraser government and again in 1984 by the Hawke government in the face of strong opposition from state governments. The Hawke government introduced the petroleum resource rent tax (PRRT) for some off-shore oil and gas deposits in the mid-1980s and this was extended onshore to cover oil and gas.

The Henry Review paid particular attention to State royalties, identifying over 60 different and complex royalty arrangements. The Review recommended replacing royalties, essentially an ad valorem tax, with an economic rent tax, and specifically the allowance for corporate equity model. The Rudd Labor government relabeled this tax as a 'resource super profits tax'. The Gillard Labor government in 2012 enacted a version of the proposed resource rent tax, building on the PRRT model, to apply in addition to state royalties, but with a credit for the royalty cost, in the name of the mineral resource rent tax (MRRT) for iron ore and coal and a number of other design features. The Abbott Coalition government repealed the MRRT in 2014. It had raised very little revenue.

Royalties are a tax per unit of production, and in most cases the rate is an ad valorem rate rather than a fixed sum per unit quantity. The royalty rate varies by type of mineral, and in the case of NSW coal by type of mine and for QLD coal by market price. Often, there are different rates for the same mineral in different states. Royalty rates vary from zero for gold in Victoria through 7 per cent for WA iron ore and up to 12.5 per cent for QLD coal for a coal price above \$100/tonne.

Both low cost and high cost mines face the same royalty rate. Industry data indicates that the average cost per unit of output of the low cost mines is from 30 to 50 per cent below the average cost of the marginal mines. The former generate large economic rents, while marginal mines generate very little or no economic rent, and especially during commodity price downturns.

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<sup>7</sup> In terms of legislation, and reporting by ABS government accounts, royalties are treated not as a tax but a charge.

## REFORM OF SPECIAL TAXES ON MINING

There are a number of related arguments to support special taxes on resources.

First, they are a fee for, or income in exchange for, the transfer of community owned natural resources for use by private mining investors to generate private income.

Second, with about 80 per cent of the Australian mining industry owned by non-resident investors, the special taxes are a transfer of income from non-residents to Australians.

Third, some natural deposits have favoured attributes such as lower over-burdens, larger and purer deposits, easier access to available transport and other key mining inputs that result in relatively low costs of production and larger economic rents. Taxation of economic rents is a relatively non-distorting and efficient method of taxation compared with alternative state taxes.

Fourth, since the natural resources are non-renewable resources, for society to sustain living standards for future generations the economic rent return component should be reinvested in other productive investments. Government expenditures on education and infrastructure meet this sustainability requirement.

Reform of the current set of special mining taxes levied by the States should be on the agenda. The present structure of special taxes levied on the mining industries by the states is ad hoc, with different royalty rates on different minerals in different states. While the Henry Review recommended replacing royalties with an economic rent tax, and specifically an allowance for corporate capital version of the cash flow tax, to date, implementation has been ineffectual. Further, the importance of investments in exploration, technology and management to expand known reserves and to lower production costs both complicates and questions the ability to measure economic rent.

There is an on-going debate about the relative merits of the dominant royalty system versus an economic rent base tax such as the petroleum resource rent tax (PRRT) now used by the Commonwealth for off-shore oil and gas and the MRRT that applied to iron ore and coal over 2011-14.

Royalty payments are the same across mines with very different cost structures reflecting different natural resource deposit characteristics; those with favourable characteristics such as small and easy to remove over-burdens, large and rich mineral deposits, and easy access to transport) pay the same dollars per unit output as mines with less favoured natural deposits and much higher costs of production. In addition to reducing the rewards from mining and reducing some mining investment and production, royalties can be considered unfair with less favoured deposits taxed at the same rate as favoured deposits with lower production costs.

By contrast, under an economic rent tax, the low cost mines generate a larger economic rent and pay a larger resource rent tax, while the higher cost mines pay less, and the marginal mines close to zero. If the measured economic rent is a Ricardian rent for fixed in supply natural resource deposits, the resource rent tax model clearly is more efficient, and generally would be considered a more equitable special tax. However, even for the special case in which measured economic rent equals Ricardian rent, governments may prefer a royalty because it is easier to measure, and/or because the royalty revenue stream over time in a world of fluctuating commodity prices is more stable.

In reality, some of the measured economic rent is a return to investments in exploration to discover new reserves, and in investments in technology, management and so forth which reduces production costs and converts some deposits from commercially unviable to viable. Many of these investment inputs over the longer term have alternative uses and are mobile, including investment in mining in other countries and investment to increase productivity in other industries. Additional resource rent taxes on employment of these mobile inputs in Australian mining, but not in their alternative uses, would reduce the rate of outwards shift of the Australian mining supply curve. This may also make a resource rent tax, based on a measure of profits, more vulnerable to profit shifting or tax planning than a royalty.

## 10. Challenges to tax reform

This paper has described the operation of existing state taxes; evaluated the different taxes in terms of their effects on revenue, efficiency, equity and simplicity; and proposed a number of reform packages to increase national productivity and improve simplicity.

The reform proposals are approximately revenue neutral in aggregate and minimize redistribution relative to the current economic incidence. The proposed reforms include: remove current exemptions to achieve comprehensive payroll and land tax bases, and apply flat rates with individual State rights to choose the rate and to vary it over time; remove the transaction taxes on conveyance and stamp duties on insurance; replace the current suite of Commonwealth and State taxes on the use of motor vehicles with a user charge and special indirect taxes to internalize the external costs of pollution and congestion; and, focus special taxes on gambling to collect a share of the economic rent generating by government restrictions on supply. The paper does not address the important question of revenue or tax base sharing in the income tax and GST.

Major tax reform is infrequent, and once enacted the tax system may – indeed, should – attain a quasi-constitutional basis to ensure stability. Taxation reform confronts the usual challenges, but State taxation reform, and particularly by an individual state, faces additional challenges. Overcoming the additional challenges will require cooperation between the Commonwealth and states and revision of federal-state financial arrangements. These challenges include a combination of balancing inevitable losers who effectively voice their concerns against the silent winners, uncertainty about the magnitudes of changes, and sometimes also about the directions of changes, and the difficulty of convincing a sceptical electorate of the longer efficiency gains with a net positive-sum game outcome.

First, a large share of the national benefits of taxation reform by an individual state accrues to the Commonwealth and to other states rather than to the reforming state. Tax reform means a more efficient and larger economy with larger income and GST tax bases. The Commonwealth benefit from higher income tax receipts. Other states gain a share of the larger GST receipts via the CGC distribution formula. The reforming state bears all of the political and transition costs and risks of the reform, but it receives only some of the benefits. A cooperative tax reform strategy across all the states only partly redresses the challenges, as the Commonwealth still is a winner. Further, achieving cooperation among the states seldom is easy.

Second, reform of state taxes by an individual state, even if revenue neutral for that state's finances, generally influences the CGC's formula allocation of the GST to different states (Warren, 2010). And, a particular state can lose some of its share of the GST. There may be other second round repercussions on the magnitudes of tied grants from the Commonwealth.

Third, some of the state tax reform opportunities we have discussed are interrelated with Commonwealth taxes, including the taxation of motor vehicles, special taxes on the mining industry and pollution taxes. In other cases, revenue replacement options include Commonwealth taxes, such as a larger GST or a share of income tax to fund replacement of stamp duties on insurance and some of conveyance duty on property transfers. Clearly, cooperative negotiations and agreements to change federal-state financial arrangements are a necessary component for these areas of state tax reform.

Fourth, redistributive effects and transition issues are not insubstantial in any tax reform. In the aggregate and over the long term, we argue that these reforms would contribute substantially to greater wellbeing and the redistributive consequences are not as great as they may appear.

However, short-term effects and transition need to be addressed in any reform. Often a tax reform package involving changes to Commonwealth and state taxes to meet multiple goals of efficiency, equity and revenue is critical.

Finally, debate about tax reform is taking place in an era when more revenue is likely to be needed (not less), and redistribution or compensation for “losers” may be difficult. The Australian national fiscal position (across the Commonwealth and States) has deteriorated in the last decade, while government spending as a share of national income is projected to increase in future. While the fiscal position is on the mend and State fiscal positions are better than that of the Commonwealth, projected recovery in revenues is uncertain (PBO 2015, vi). Projections depend on optimistic growth forecasts and the projected recovery in fiscal balance at State level does not fully account for planned reductions in Commonwealth funding for hospitals and schools, which likely puts upward pressure on State spending.

Any meaningful reform will require federal and state cooperation, including revised federal-state financial relations. This highlights the importance of the Federal government’s promised White Papers in 2016.



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## Appendices: Economic Analysis

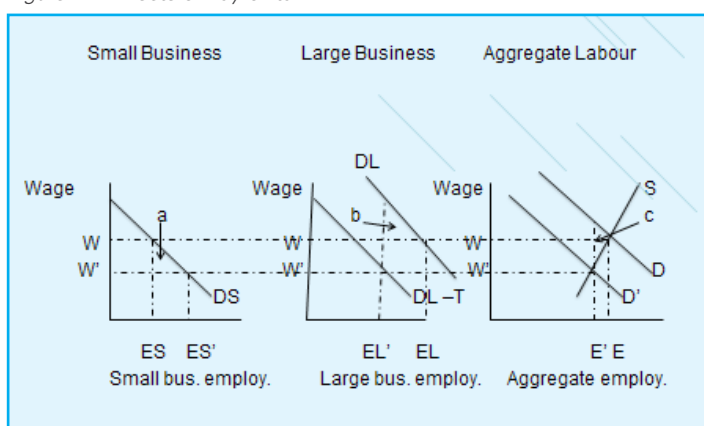
### APPENDIX 1: PAYROLL TAX

#### Economic Effects of Current State Payroll Tax

A simple model of the labour market illustrates the longer term effects of the current payroll tax on wages and employment, distortions to decisions and efficiency, and distribution of the tax burden; and later to assess a reform package with a comprehensive tax base.

Figure 1.1 shows the market for labour with disaggregation for payroll tax exempt employment, primarily small businesses below the threshold, and payroll taxed businesses, and for aggregate employment. Labour demand for exempt and taxed businesses is represented as  $DS$  and  $DL$ , with aggregate labour demand  $D = DS + DL$ .

Figure 1.1: Effects of Payroll tax



For simplicity and some loss of realism, demand by the two business categories are shown as depending only on the own-sector market wage, rather than a more complex and realistic dependence on own- and cross-price wage rates. Also,  $D$  would be much less elastic than either  $DS$  or  $DL$ . Aggregate labour supply is represented by the supply curve  $S$ , which generally is considered to be inelastic and much less so than aggregate labour demand. Wages adjust in the long run to equate labour demand and supply, or more generally to achieve a similar long run unemployment rate for structural and frictional unemployment. Simplicity assumes that any second round general equilibrium effects of different payroll tax regimes on

aggregate income and its distribution have relatively small effects on the market clearing wage rate(s).

In the absence of payroll tax, the market would set a wage rate of  $W$ , with employment of  $ES$  by small business,  $EL$  by large business and  $E = ES + EL$  in aggregate. In the absence of market failures, these outcomes also are efficient in terms of aggregate employment and its distribution between small and large firms. This efficiency position assumes small firms are no better or worse than large firms in generating employment, innovation, productivity, and other measures of economic performance. Finding logical reasons to contradict this assumption are difficult. But, this is not to deny the assertions of special interest groups that somehow small businesses are the key economy drivers. The reality is that both

small and large businesses have pluses and minuses which vary by industry and over time.

Suppose a payroll tax at rate  $T$  is imposed only on large business, as is the case of the current state payroll tax. In Figure 1.1, the selective payroll tax drives down the large business labour demand curve from  $DL$  to  $DL - T$ , no effect on the labour demand curve for the exempt small business, and a shift down of the aggregate labour demand from  $D$  to  $D'$ .

Relative to the before payroll tax equilibrium, imposition of the selective business payroll tax results in a small fall in aggregate employment from  $E$  to  $E'$  and a larger fall in the market wage; given the assumption that aggregate labour demand is more elastic than supply. With the lower market wage, employment in the untaxed small business increases from  $ES$  to  $ES'$ , while the higher labour cost to large business of  $W' + T > W$  causes them to reduce employment from  $EL$  to  $EL'$ . That is, in a long run equilibrium the selective payroll tax requires a reallocation of labour from the taxed large business to the exempt small business.

Long term redistribution effects of the selective payroll tax are very different to the statutory incidence. Large businesses pay the tax to government. But, the adjustment of the wage cost and of employment mean that most of the tax in a long run equilibrium is passed back to employees of both large and small businesses as a lower market wage than otherwise (or a lower rate of wage increase over time). That is, all employees, including those employed by small business, bear most of the payroll tax levied on large business.

Figure 1.1 also provides information on the efficiency costs of the selective payroll tax. In terms of the aggregate labour market, the reduction of aggregate employment from  $E$  to  $E'$  involves an efficiency loss of the triangle  $c$  shown in the third panel, with the lower wage reducing take-home pay and the incentive to work (taxed) versus leisure (not taxed) and to earn income (taxed) to purchase market goods and services versus home production (not taxed). However, because a payroll tax is a tax on labour income, but not on capital income, payroll tax does not distort decisions on saving and investment as does an income tax which falls on both capital income and labour income.

Second, the selective payroll tax distorts the mix of employment between large business and small business. The distortion cost to the most efficient employment mix is given by the sum of triangles  $a$  and  $b$  in Figure 1.1. The efficiency losses represent differences in the marginal product of labour as measured by the  $DS$  and  $DL$  curves reallocated from the taxed large business to the untaxed small business. An alternative measure of the efficiency cost of the distortion within the labour market and mix of small and large businesses is given by Dixon et al. (2004).

Approximate measures of the magnitudes of the effects of the current narrow base payroll tax system employed by the states can be provided with information on the slopes or elasticities of the labour demand and supply curves in Figure 1.1. The fall in the market wage rate from  $W$  to  $W'$  for the payroll tax of  $T$  on large business is given by

$$W - W' = [(A / (A + B + C))] T \quad (8)$$

where,  $A$  is the (absolute value of the) slope of the small business labour demand curve ( $A = -dDS/dW = E_s EL/W$ , with  $E_s$  the absolute

value of the labour demand elasticity for small business),  $B$  is the (absolute value of the) slope of the large business labour demand curve ( $B = -dDL / dW = E_l EL / W$ , with  $E_l$  the absolute value of the elasticity of demand for labour by large business),  $C$  is the slope of the aggregate labour supply curve ( $C = dS / dL = E_s E / W$ , with  $E_s$  the elasticity of aggregate labour supply).

The efficiency cost of payroll tax exemptions from a comprehensive base, and in particular the small business exemption for over 80 per cent of businesses and about a half of employees,  $E_{loss}$ , is approximately<sup>8</sup> given by

$$E_{loss} \approx 0.5 [A B / (A + B)] T^2 \quad (9)$$

where, all terms are defined as above. The efficiency cost of the payroll tax distortion to the mix of business type employment increases with the square of the payroll tax rate,  $T$  (and more generally the difference in the payroll tax rates on different business types), and with the price responsiveness,  $A$  and  $B$ , or labour demand elasticities for both small and large business employers.

### Reform Options

One payroll tax reform option is to combine a comprehensive payroll tax base and a lower rate in an approximate revenue neutral reform package. Payroll tax rates on a comprehensive base with a rate between 2.5 and 3.5 per cent, depending on the state, would generate about the same revenue. Simplicity, and associated low tax administration and compliance costs, including for small business, could be gained by using as the comprehensive payroll tax base either the existing state workers' compensation base or the existing Commonwealth PAYG labour income tax base. Such a package would have minimal redistributive effects on employees, and by removing distortions to the choice of business type it would result in a net gain for society.

Given the current payroll tax system with a less than comprehensive base  $E_l' = E' - E_s'$  and tax rate  $T$  which generates revenue  $R'$ , an approximately aggregate revenue neutral reform package with a comprehensive base

<sup>8</sup> The approximation assumes the reallocation of employment from large to small businesses is balanced, when in reality as shown in Figure 1.1 there is a small net fall in aggregate employment.

of approximately  $E'$  and lower tax rate  $T'$  means

$$T' = T \{ E' / (E' + E_s') \} \quad (10)$$

$T'$  would vary between 2.5 and 3.5 per cent by state. The broad based payroll tax,  $T'$ , shifts down both the DL and DS curves in Figure 1.1; but, for large business by a smaller amount than DL – T shown for the narrow base tax case. The lower payroll tax rate on a comprehensive base in a long run equilibrium would result in a lower market wage for all employees of  $W''$  relative to the before tax equilibrium wage  $W$  of

$$W - W'' = [(A + B) / (A + B + C)] T' \quad (11)$$

where, all terms are defined above. The allocation of labour between small and large business would approximate the efficient pre-payroll tax division.

Combining (8), (10) and (11), the difference between the market wage rate received by all employees under the current narrow base payroll tax,  $W'$ , with the market wage received by all employees with a lower rate and comprehensive base approximate revenue neutral package payroll tax,  $W''$ , can be assessed. The long run equilibrium employee wage will be unchanged if

$W' = W''$ , or if

$$A / (A + B) = QI / (QI + Q) \quad (12)$$

with all terms defined above. Then, with the far right hand term approximately equal to a half, (12) holds if the slopes of the small business and large business employment demand functions are about the same.

This seems likely given the limited available econometric evidence on labour demand by firm size. Then, from an employee equity or distribution perspective, the wage return to employees is unlikely to be significantly affected by the reform package.

There would be a net gain to society with the reform package from removal of the distortion to the mix of business structures given by (9). A similar distortion to the aggregate labour market, represented by triangle c in Figure 1.1 would remain.

A more ambitious tax reform would involve a comprehensive payroll tax base plus a rate above  $T'$  to generate a larger aggregate revenue. Two related arguments support

a larger revenue payroll tax reform. First, a broad based tax on labour income, such as a payroll tax, has similar low distortion costs as a broad based consumption tax, such as the GST.<sup>9</sup> Neither tax affects capital, saving and investment decisions. In the long run equilibrium, the labour tax exempts capital income earned on saving and the consumption tax exempts income allocated to saving, and sometimes is referred to as a pre-paid consumption tax. Both taxes reduce the effective purchasing power from an hour of employment. For a given market wage,  $W$ , paid by employers which results in full employment (or an equilibrium unemployment rate for structural and frictional unemployment), the effective employee purchasing power from work, EPP, is

$$EPP = W (1 - Tl) / (1 + Tc) \quad (13)$$

where,  $W$  is the market clearing labour cost to employers,  $Tl$  is the labour income or payroll tax rate and  $Tc$  is the consumption or GST tax rate. Then, both taxes impose similar distortions to labour market decisions.

With Australia as an open net international capital importer country, combined with a relatively inelastic supply of labour, optimal tax theory says place most of the tax burden on the factor in relative inelastic supply, namely labour, and that the final incidence of tax on either capital income or labour income is shifted to labour (Henry Review, 2010, and references therein, and illustrated here for payroll tax).

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<sup>9</sup> Note that this similarity proposition for the two taxes is contrary to the estimated costs of the labour income, payroll tax and GST reported in the Henry Review (Henry, et al., 2010, page 13). Re;think (2015) and The Treasury (2015) with more recent estimates draw on the similarity of effects of a comprehensive base and flat rate GST and payroll tax. However, there are important differences in the short run and transition period effects of the two taxes. A payroll tax has an origin base, and the GST a destination base, which the payroll tax option requires a currency depreciation to achieve a long run equilibrium. A GST essentially double taxes previous income saved, while payroll tax does not tax past savings.

A larger revenue payroll tax package would mean a lower effective wage to employees and a small fall in employment by both large and small businesses and in aggregate. To the extent that minimum wages are a binding constraint for some low wage employees, some of the adjustment will be an increase in unemployment. It is likely that the unemployment response will be more important for small business employees. A complete general equilibrium assessment of the redistribution effects of a larger revenue payroll tax reform would require details of the use of the additional payroll tax revenue as reductions in other taxes and/or increases in government expenditure as an offset to the lower take-home wage.

## APPENDIX 2: LAND TAX

### *Ideal Land Taxation*

A flat rate tax on a comprehensive base of rent income has minimal distorting effects on decisions affecting the use of the land. In the context of a perfectly inelastic supply of land, not only in aggregate but also for particular parcels of land according to such characteristics as location, climate, soil fertility, minerals, and so forth, demand by different uses and users determines the economic rent. The market rent reflects the scarcity value of the characteristics offered by each land parcel.

A flat rate broad based rent tax does not change the market rent price of the land to buyers. This result means the tax does not change the allocation of land across the different uses and users. Land tax revenue is a non-distorting transfer of a share of the economic rent from the landowner to government.

In principle, land tax would use the flow of rent income as the tax base. In practice, to minimise operating costs most land taxes are assessed as a rate on the asset or stock value of land. The two can be closely related. As seems reasonable in theory and from observed data, the land asset market value,  $A$ , is given by the present value of the future stream of after tax rental income flows,  $R_t(1 - Tr)$ , where  $R_t$  is the market rate rent return per year and  $Tr$  is the tax rate on market determined rent income.

Formally

$$A = \sum R_t(1 - Tr) / (1 + d)^t \quad (1)$$

where,  $d$  is the discount rate. Then, as shown in the Henry Review (2010, page 270), a revenue neutral land tax assessed on the market rent income,  $Tr$ , is linked to a land tax assessed on the market value of the land asset,  $TI$ , and the discount rate,  $d$ , as

$$Tr = TI / (TI + d) \quad (2)$$

For example, for a 5 per cent discount rate, a 1 per cent land asset tax rate of  $TI$ , is equivalent to a 17 per cent rent income tax rate of  $Tr$ .

A further observation from (1) and (2) concerns the redistribution effects of a land tax. An increase in either  $Tr$  or  $TI$  quickly becomes reflected in a one-off change in the asset value  $A$ . Investors arbitrage in allocating their savings across land, shares and other investment options to approximately equate the after tax returns across the different investment options. Then, an increase (decrease) in either a land asset tax or a rent income tax, all other taxes unchanged, will result in a one-off decrease (increase) of the land asset value. The changed asset value becomes a one-off windfall capital loss (or gain) for existing land owners to restore the after tax income return. After the asset price adjustment, investors will be indifferent between placing their savings in land at the adjusted asset price or the other available investment options.

### *Assessment of Current State Land Taxes*

Effects of the exemptions from a comprehensive land tax base on the allocation of land, rent prices and returns, distribution of the land tax burden, and efficiency costs can be illustrated with a simple model. This model also can assess the effects of an approximate revenue neutral reform package with a comprehensive base and a lower rate. The simple model assumes: two uses of a fixed supply of residential land, namely owner occupied homes now exempt from land tax, and rental properties subject to a flat rate of land tax on rent income; a demand curve for each use represented by a negative own price effect; and, rent prices adjust to a long run competitive equilibrium.

The simple model can be expanded and generalized without changing the directions of effects and the order of magnitudes, but clearly changing the actual magnitudes of changes. Other uses of land, such as taxed commercial land and untaxed primary production property can be considered in addition to the two categories of residential land. Both direct and cross price terms can be included in the demand functions, A progressive rate schedule, rather than the simplification of a flat rate schedule, adds additional efficiency costs. A progressive rate schedule would alter the distribution effects to favour owners of small land assets by value at the expense of holders of larger and higher value assets.

Figure 2.1 illustrates the simple model. The fixed supply of residential land is represented on the horizontal axis as  $Q^{\wedge}$ . Demand of owner occupied homes for land is represented by the curve  $DO$  drawn from the right hand vertical axis, with demand for land for rental housing  $DR$  drawn from the left hand vertical axis. In the absence of a tax on rent income, a competitive market equates the two demand curves at a rent rate of  $R$  and with the split of land at  $Q$ . In the absence of market failures,  $Q$  represents an efficient allocation of land between the two uses. Given the fixed aggregate supply of land, both owner occupied home owners and owners of rental property land receive the market rent income at rate  $R$ .

Effects of the narrow base state land tax which exempts land used for owner occupied dwellings and falls on land used for rental property is illustrated with the tax at rate  $T$ .

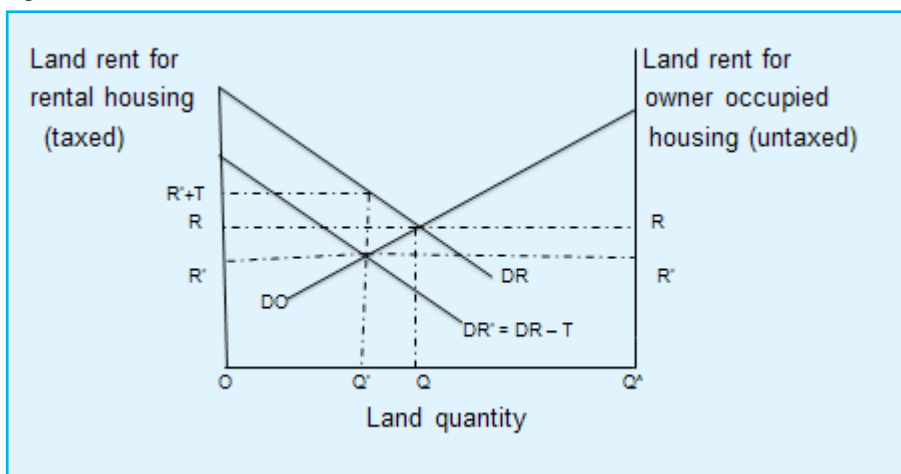
Initially, the narrow base land tax shifts the demand for land for rental housing down by the tax from  $DR$  to  $DR' = DR - T$ . The new market equilibrium is a lower market rent rate of  $R'$ , and  $Q'Q$  land is reallocated from the taxed rental housing to the tax exempt owner occupied housing. With current demands and taxation the observed allocation of residential land at  $Q'$  represents about 75 per cent to owner occupied housing (Henry Review, 2010, p. 261).

The redistribution effects of the concessions to the land tax base are on average regressive. Owner occupiers lose rent income with the lower market rent rate, but at the same time they regain it via lower cost housing services. Owners of land used for rental housing receive a lower after tax rent return of  $R'$ , but they are able to pass forward some of the tax to buyers of rental accommodation with a higher after tax rent cost of  $R' + T > R$ . Those who rent housing are a relatively larger share of the lower income population than those who own rental property. Also, renters represent a larger share of the low income population than those who own homes, especially if retirees are excluded.

There is an efficiency loss from the tax difference on the two optional uses of land given by the triangle of economic surplus between the two demand curves  $DR$  and  $DO$  for the reallocated land  $Q'Q$  (representing the lower marginal benefit of land allocated to owner occupied housing compared with rental housing).

Approximate measures of the magnitudes of effects of the current state land tax system

Figure 2.1: Effects of a Selective Land Tax



described in Figure 2.1 can be expressed in terms of the price slopes or elasticities of the demand for land functions and of the tax rate. The fall in market rent rate from  $R$  to  $R'$  is given by

$$R - R' = (b / (b + \beta)) T \quad (3)$$

where,  $b$  is the absolute value of the slope of the owner occupied housing demand for land ( $b = -dQ/dR = E_o Q'/R$ , with  $E_o$  being the absolute value of the elasticity of demand for land by owner occupied),  $\beta$  is the absolute value of the slope of the rental housing demand for land ( $\beta = -dQ/dR = E_r (Q^{\wedge} - Q)/R$ , with  $E_r$  being the absolute value of the elasticity of demand for land for rental housing), and  $T$  is the tax rate on rent received for land allocated to rental housing. The proportion of the selective land tax passed forward to buyers of rental housing increases the less price responsive the rental housing demand for land relative to the price response for owner occupied land.

A measure of the efficiency cost of the selective land tax distortion to the allocation of land between the two uses is given by

$$\text{Efficiency loss} = 0.5 T^2 (b\beta) / (b + \beta) \quad (4)$$

where, all terms are defined as above. The efficiency cost of the distortion rises with the square of the selective land use tax rate,  $T$ , and it is larger the more price responsive the demand for land use functions,  $b$  and  $\beta$ .

The progressive rate tax schedule on land which is taxed results in a second and additional set of distortions to the efficient use of the taxed land resource. Aggregate land tax can be minimised by having many landowners with small by value parcels of land, as opposed to a smaller number of owners with larger parcels of land paying much higher marginal and average land tax rates. Efficiency losses with a progressive land tax rate schedule as now in use arise from the tax disincentives to exploit economies of scale and of scope available with the management of larger land parcels.

Together, the base exemption and the progressive rate schedule have turned the state land tax into an inefficient tax, and the exemption adds to the regressive redistribution of the tax burden. The municipal rates tax by comparison approaches the efficient comprehensive base and flat rate land tax.

## Reform Options

Suppose a state land tax reform which replaces the current narrow base with a comprehensive base and a flat rate tax,  $T'$ , and which generates about the same aggregate land tax revenue. In Figure 2.1, both  $DR$  and  $DO$  are shifted down by  $T'$ . A simple and low cost strategy would piggy-back the reformed state land tax on the current municipal rate base, with a streamlined collection of the two via a common agency.

The revenue neutral broad base rate of  $T'$  relates to the narrow base tax rate  $T$  by

$$T' = T (Q' / Q^{\wedge}) \quad (5)$$

or, lower by the current base as a proportion of the enlarged comprehensive base. In terms of current practices, the new broad base tax rate  $T'$  would be about 25 per cent lower than the current average state land tax rate, and it would require less than a 50 per cent increase in current municipal rates for approximate revenue neutrality.

Some distributional effects of the comprehensive land base reform option relative to the current narrow State land tax are as follows. The market rate of rent would remain at the pre-tax rate  $R$  for both rental housing and for owner occupied housing. This represents a gain for occupiers of rental housing, and they are over-represented among the lower income households. The fall of the after tax rent rate to  $R''$  becomes

$$R - R'' = R - T' = R - T (Q' / Q^{\wedge}) \quad (6)$$

Comparing  $R'$  of (3), the after tax return to rental property landowners with the current narrow tax base, with  $R''$  of (6), the after tax return to rental property landowners with the comprehensive tax base,

$$R' - R'' = Q' / Q - b / (b + \beta) \quad (7)$$

If the price slopes of the two demand curves are about the same, and there is scant information to the contrary, so that  $b / (b + \beta) = 0.5$ , and under current arrangements with  $Q' / Q^{\wedge}$  about 0.75, the after tax rent return to rental property landlords falls in a shift to a broad base, but only by about a quarter of the new broad base land tax rate.

A comprehensive base and flat rate land tax brings efficiency gains from the removal of distortions to the allocation of land between different uses, quantified in (4), and from removal of distortions associated with different tax rates of the progressive rate schedule for different scales of operation. These gains provide a positive sum opportunity for benefits to all.

## APPENDIX 3 CONVEYANCE DUTY

### Evaluation of Conveyance Duty

This appendix considers the distribution, efficiency and simplicity effects of stamp duty as a tax on the transfer of property between buyers and sellers.

Figure 3.1 provides a simple picture of the market for transferring property from current owners to potential buyers. WTS shows the supply curve of current property owners willing to sell more at a higher price, or a measure of the marginal value to them of continued ownership. The marginal value of purchasing property by new users or for new uses is shown by the WTP curve, or willingness to pay. For simplicity assume a fixed aggregate quantity of property,  $Q^A$ ; which is valid for land, but the supply of buildings would increase with price. A competitive market would transfer  $Q$  property and establish a market price of  $P$  to equate WTS with WTP. In the absence of market failures, and that seems a reasonable assumption, this also is an efficient quantity of property transfer.

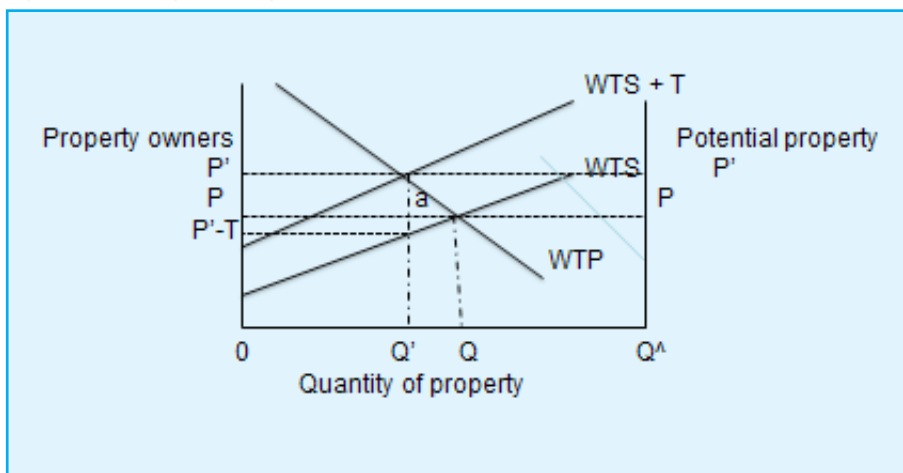
Then, impose a conveyance duty on the transfer of property, and initially have the seller pay the stamp duty. The transfer tax of  $T$  forces the property seller willingness to sell function upwards by  $T$  from WTS to  $WTS + T$ . A new market equilibrium involves a smaller quantity sold of  $Q' < Q$ , and a rise in the market price of property to  $P' > P$ , but a fall in the value of property after tax to  $P'-T < P$ .

Distributional effects of the conveyance duty are as follows. While sellers write the tax cheque to government, some of the tax is passed forward to property buyers as higher prices, while all current property owners face a fall in property value. Relative elasticities of the WTS and WTP curves determine the share passed to property buyers and sellers, with similar elasticities generating a 50:50 split.

Figure 3.1 illustrates a significant distortion of conveyance duty to the most efficient allocation of property among different users. As a transactions tax, conveyance duty places a wedge between the net price paid by a potential buyer and the net return received by a potential seller; in addition to other transaction costs of buying and selling. The result is a smaller number of property transfers,  $Q'$  rather than  $Q$ , and a loss of economic welfare represented by the triangle  $a$ .

Davidoff and Leigh (2013) estimate that the 37 per cent increase in average conveyance duty rates over the 1993 to 2005 period reduced property sales by around 11 per cent, with an annual welfare loss of between \$0.3 and \$0.8 billion.

Figure 3.1: Conveyance Duty





Re-think (2015) and the associated Treasury Working Paper (Cao, et al., 2015) estimate the marginal excess burden of conveyance duty at 72 cents per dollar tax revenue (compared with a small negative burden for a flat rate comprehensive base land tax).

### Reform Options

A common reform option proposal is to replace most if not all of the current conveyance duty with a broad based land tax at a flat rate. An available base is the current municipal rate base which covers the land component of all residential, commercial and primary production property subject to conveyance duty. For an approximate revenue neutral reform package, the average increase in the land tax rate would be of the order

$$TI = (T_{con}/A) (VP/VL) \quad (14)$$

where, TI is the additional average land tax rate, Tcon is the current average conveyance rate and A is the average number of years property is held so that Tcon/A is an annualised average conveyance tax rate, VP is the value of property, including value of land, VL, improvements and buildings, so that VP/VL is the share of land value in property value. Using aggregate numbers for 2012-13 for conveyance duty revenue of \$12.8 billion and municipal rates of \$14.2 billion, doubling the current municipal rate would provide an approximate neutral revenue reform package.

A broader reform package would replace conveyance duty and the current state land tax with a comprehensive base land tax at a flat rate. Ideally the base would be unimproved land. However, use of the current municipal rate base, with some councils using capital improved value rather than unimproved value, may be simpler and with limited additional efficiency losses.

A larger flat rate land tax for conveyance duty reform package would provide significant efficiency benefits. First, distortions to the transfer of property from lower value to higher value uses would be removed, namely area a of Figure 3.1.

Using estimated marginal efficiency costs from Re;think (2015) implies gains as large as 70 cents per dollar of revenue. Each unit of land faces the same tax burden, regardless of whether it is retained in its current use or transferred for another and higher value

use. Second, shifting the tax burden to a comprehensive land tax base which is perfectly inelastic in supply from that part of the conveyance duty falling on investments in improvements and buildings which have a positive elasticity of supply removes a distortion cost to the price sensitive investments.

Certainly there will be redistribution effects of a larger broad based land tax replacement for conveyance duty reform package; and also if the reform package replaces the current state land taxes. But, the magnitudes of change are easy to exaggerate, and they will be less if a longer run time period is considered.

For the aggregate population, and where the focus is on property asset value, the package design of (14) means on average there is no overall loss, and with the efficiency gains there will be a net society benefit. Overall, with a similar aggregate tax burden on property, the reform package will not change the average after tax annual rent return, and so no change in asset value given by the present value of the expected future stream of after tax rents.

However, around this long run average net gain, there will be individual losers, and also there will be winners, especially in the short run. Frequent buyers and sellers of property will be winners, while infrequent buyers and sellers whose average conveyance duty payment over time is below the average will be losers. Granted the power of the status quo distribution and politics, the ethical case against redistribution from those who transfer property infrequently to those who buy and sell more often seems weak. Arguably, this redistribution is an improvement in horizontal equity. But, noting from Figure 3.1 that some of the burden of conveyance duty is passed back to all property owners as lower asset prices than otherwise, the magnitude of the loss easily can be exaggerated.

The shift from a property tax base to a land tax base, with land being a subset of the larger property asset, will have some redistributive effects. The increase in tax burden on land and land owners reflects a lower tax burden on both the current owners of buildings and improvements and on the supply industry for future investment in improvements and buildings.

Current property owners whose property assets are more heavily weighted to the value of buildings will gain relative to those with a relatively high ratio of land to other property assets (i.e. those with a relatively high VP/VL in (14) will gain).

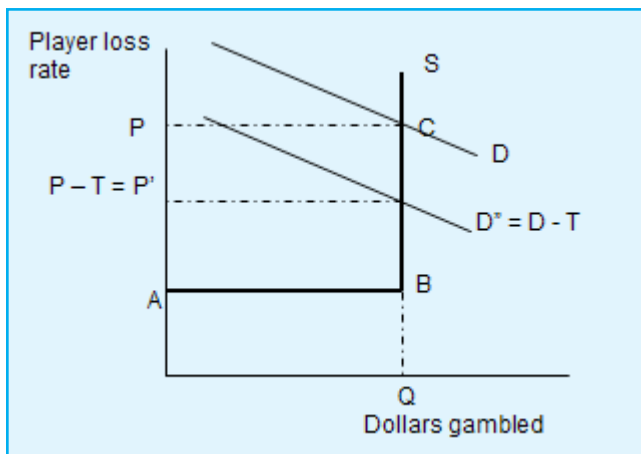
## APPENDIX 4 TAXATION OF GAMBLING

### Evaluating gambling taxes

A logical argument exists for special taxation of those forms of gambling where government policy restricts the quantity of supply, and in particular casinos and gaming machines. In this case, government taxation of the economic rent or the auctioning of licenses is an efficient form of taxation, and one with acceptable distribution effects.

To illustrate consider Figure 4.1 for the supply and demand for a government restricted supply gambling product. Note that there is some ambiguity as to what is represented on the horizontal and vertical axis. Quantity is shown as dollars gambled, which could mean gross dollars gambled or net gambler dollars lost, or it might represent measures of number of gaming machines, or casino space, for example. The vertical axis, or price of gambling, might represent average percentage dollar loss, dollar loss per hour or average gamble event, for example. Demand is given by  $D$ .

Figure 4.1: Taxation of Gambling



Assume a constant marginal cost and then a maximum allowed quantity  $Q$  giving the supply curve  $ABS$ . Market price  $P$  and quantity  $Q$  results. The fixed supply generates an economic rent of  $ABCP$ .

Taxation of the economic rent might be collected by a regular tax per unit quantity of regulated supply, including gaming machine and casino annual licence fees, or by auctioning the limited in supply licences. Alternatively, a tax per unit of gambling, such as  $T$  in Figure 4.1, could be used. Important attributes of these economic rent taxes is no effect on the gambling quantity or on the price paid by the gambler. The later means a zero redistributive effect on the population of gamblers.

In principle, revenue collected from the licence holder could be as high as 100 per cent of the rent. However, imperfect information and risk aversion are likely to result in a lower rate. Granted these practical considerations, it is likely that state governments could raise more revenue on taxing economic rents earned by gambling operators than with current practice.

A second argument for special taxation of gambling is to reduce the quantity of gambling, particularly for those forms of gambling not subject to supply control, including wagering and lotteries. A tax seeks to internalise the external costs of problem gambling. This argument is problematic for two reasons. The majority of gamblers are not problem gamblers, but rather treat gambling as an alternative recreation choice. There is compelling evidence that the elasticity of demand for many problem gamblers is very low, and much lower than for non-problem gamblers (Productivity Commission, 1999, 2010). As a result, a tax on gambling applying to all gamblers distorts the decisions of non-problem gamblers, and at the same time it has a limited effect on the quantity of gambling by problem gamblers.

Figure 4.2: Taxation of Gambling

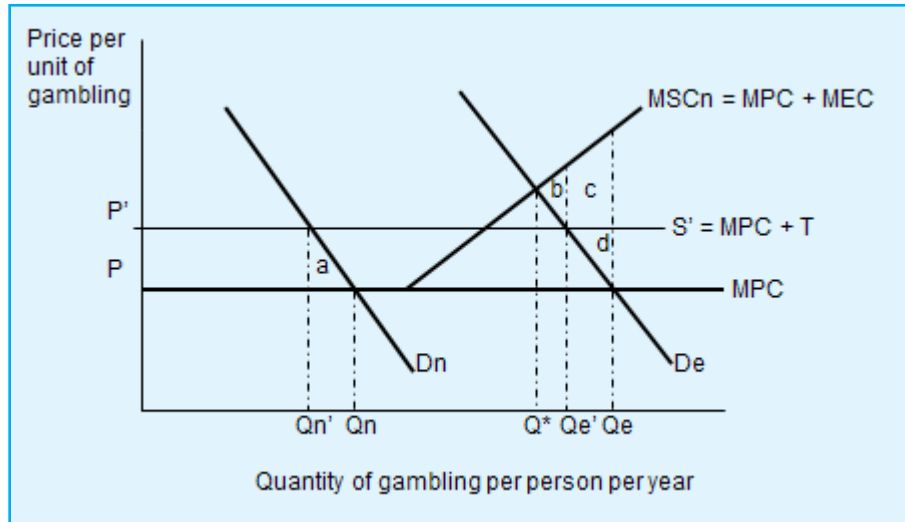


Figure 4.2 illustrates. For simplicity assume a perfectly elastic supply at marginal private cost, MPC, with two categories of gambling consumers, non-problem gamblers with demand  $D_n$  and no external costs, and problem gamblers with a net marginal private benefit  $D_e$  and a marginal external cost, MEC. Compared to the market quantities of price  $P = MPC$  and quantities of  $Q_n$  for non-problem gamblers and  $Q_e$  for problem gamblers, the society efficient quantity would reduce problem gamblers to quantity  $Q^*$  for an efficiency gain of triangle  $b + c + d$ .

Instead, suppose government imposes a flat tax on all gamblers of  $T$ . The higher cost of gambling relative to a market situation with no tax reduces consumption by both non-problem and problem gamblers to  $Q_n'$  and  $Q_e'$ . While the tax reduces problem gambling, but likely not much because of the relatively low demand elasticity, and internalises some of the external cost, the higher price on non-problem gamblers brings an efficiency cost of triangle  $a$ . The net efficiency gain, namely

areas  $c + d - a$ , may be very small, and even negative. This type of analysis lies behind the Henry Review (2010) recommendation to seek more direct policy means to reduce the problem gambling rather than a general tax instrument.

Note also that in Figure 4.2 with a perfectly elastic supply curve, all of the tax is born by the gambler. More generally, with supply more elastic than demand, most of a per unit gambling tax will be passed forward as a higher price to the consumer. Given that gambling expenditure in general falls as a share of income, this form of taxation is a regressive tax.

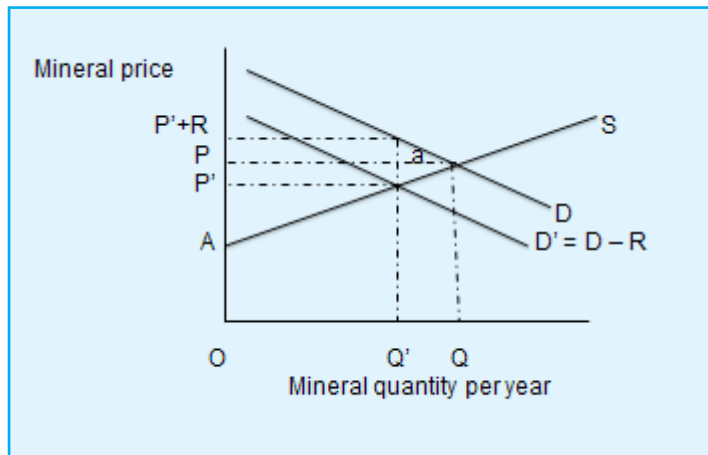
A similar model to that of Figure 4.2 can be used to challenge the current set of state taxes on gambling which place very different tax rates on different forms of gambling. There is no supporting evidence that the current set of higher rates of tax are levied on forms of gambling with higher proportions of problem gamblers or with higher rates of marginal external costs per problem gambler.

## APPENDIX 5 SPECIAL TAXES ON MINING

### Effects of a royalty

Figure 5.1 illustrates the effects of a state royalty on a mineral market. Demand, with export demand dominating for most minerals, is shown with the downward sloping curve  $D$ , and the upward sloping curve  $S$  shows the cost function for all non-natural resource deposit inputs, including equipment, labour and materials, and taxes applying generally to all industries. Point  $A$  shows the lowest cost mine with the most favoured natural resource endowment, with costs increasing for less favoured mines and for extending existing mines into less favoured deposits. In the absence of a royalty, market equilibrium would be at price  $P$  and quantity  $Q$ . Also, the area above the supply curve and below the price line can be regarded as a measure of the economic rent.

Figure 5.1: Royalty



A royalty at rate  $R$  shifts the demand curve for Australian minerals in Figure A6 down from  $D$  to  $D' = D - R$ . The royalty causes a fall of output to  $Q' < Q$ , a higher market price of  $P' + R > P$ , and a lower return to miners of  $P' < P$ . The royalty tax revenue of  $R$  times  $Q'$  is partly paid by buyers as higher prices and partly by miners as lower returns than before. Since exports account for the majority of sales, and non-resident shareholders represent about 80 per cent of Australian mining company shareholders, most of the royalty revenue represents a transfer from non-residents to state governments.

Relative to a royalty free world, the royalty induced reduction in production and consumption of Australian minerals results in an efficiency loss from the global perspective of the triangle  $a$ . Note that most of this efficiency loss falls on non-residents. Given the royalty rate, and the net return from mining of  $P'$ , miners have an incentive to invest in exploration, technology and better management practices, with the reward of all lower costs passed on as higher profits per unit output. This is in contrast to the economic rent tax discussed next.

### Effects of Economic Rent Tax

Consider next in Figure 5.2 the resource rent tax. In its ideal form, the resource rent tax would fall only on Ricardian rents. Ricardian rents are the returns in excess of payments for labour, capital and materials. These payments are measures of the opportunity cost of relocating these inputs from other sectors of the economy to mining. Ricardian

rents are a measure of the scarcity value of known non-renewable natural resource deposits. They are larger for the lower cost mines with relatively higher quality natural deposits (with lower over burdens, richer and larger mineral reserves, close to available transport and low value alternative uses of the mining sites), which are assumed to be perfectly inelastic in supply. As for Figure 5.1, the demand for and supply of minerals are represented by  $D$  and  $S$ . In the absence of special taxes

on the mining industry, the market chooses quantity  $Q$  and price  $P$ , with Ricardian rent of the triangle between the price line  $P$  and the supply curve  $S$ .

A tax on the Ricardian rent shown in Figure 5.2 would take a share, namely  $PE/PA$ , of the economic rent. Such a pure rent tax would not distort or change market outcomes, which remain at price  $P$  and quantity  $Q$ . In principle, the Ricardian tax rate could be as high as 100 per cent. Relative to a royalty which places a similar tax on all mines, an economic rent tax increases the tax burden on the more favoured deposits and a much lower burden,

approaching zero, on the less favoured deposits. Note that all of the tax represents a transfer from miners, and ultimately their shareholders, to the Australian government.

No country has applied a 100 per cent economic rent tax. In Australia, the PRRT rate is 40 per cent, and the now rescinded MRRT rate was 22.5 per cent. Two sets of reasons are given for a lower rate. First, there are significant measurement problems in assessing the economic rent at the mine level. Most mines have integrated supply chains involving some processing and transport, as well as mineral extraction. The majority of mining companies by share of production operate a number of mines, often for different minerals and across different countries.

Second, and of potentially greater importance, is that available measures of the economic rent include not only Ricardian rent, but also quasi-rents. Quasi-rents are above normal returns (that is, over and above the opportunity costs of drawing inputs from outside the mining sector into mining) gained from investment of labour, capital and R&D for exploration to increase the known available supply of natural resource deposits, and into technology and improved management and work practices to lower the costs per unit of extraction. Often these inputs and resulting technologies are fixed in supply in the short run and so they can earn economic rents. But, with the passage of time supply becomes more price responsive and market pressures drive down their

returns to yield normal returns, or income falls to cover only opportunity costs.

Measurement of the resource rent tax does not distinguish Ricardian rents from quasi-rents.<sup>10</sup> The basic economic rent tax base measure is the cash flow or Brown tax. Here, economic rent is measured as receipts less cash outlays on labour, equipment and buildings (or full and immediate depreciation), materials and services. The deductions represent the opportunity cost of resources drawn from other sectors of the economic. The residual cash flow represents an above normal return or economic rent.

The resource rent tax (RRT) is a variant of the cash flow tax. Rather than a symmetric treatment of positive and negative cash flows which would involve government writing a cheque to miners for negative cash flows, negative cash flows are carried forward and indexed. Relative to the pure cash flow tax, the RRT introduces some distortions with (i) the choice of the index rate for negative cash flows carried forward, and (ii) the failure to pay a share of an accumulated negative cash flow. The Henry Review (2010) discusses other variants of the cash flow tax, including the allowance for capital and the allowance for corporate equity models, which were the framework of the ill-fated resource super profits tax (RSPT).

<sup>10</sup> In principle, economic rent could include also monopoly profits. They are assumed to be negligible for the mining industry, given its global dimensions and the observed volatility of commodity prices.

Figure 5.2: Economic Rent Tax

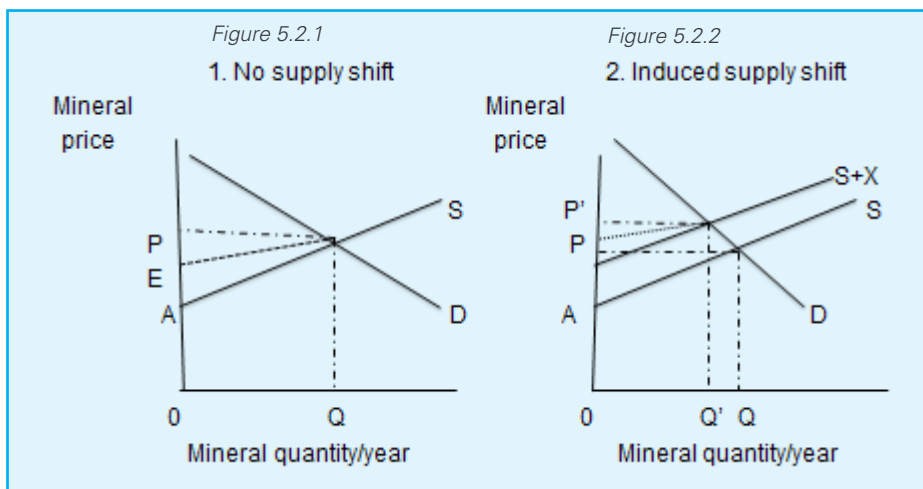


Figure 5.2.1 illustrates the direction of effects on the Australian mining industry of a measure of economic rents using the RRT or RSPT which includes both Ricardian rents and on quasi-rents. Suppose some of the scarce resources required for investment in exploration, and for improving technology, management and work practices to lower production costs for existing and potentially new mines, or for extending the life and production of existing mines, have the options of location with other sectors of the Australian economy or to mining in other countries. An additional tax on the quasi-rents generated by these activities if located with Australian mining rather than elsewhere will result in a smaller investment in these supply curve shifting investments, as some relocate to another country or industry where only the general income taxes apply. Or, the economic rent tax results in a delay in the application of funds for exploration in Australia, or for the adaption of general technology to the specific circumstances of the Australian mining industry. In effect, the before tax industry supply curve  $S$  in Figure 5.2 will be higher at  $S + X$ , with  $X$  representing the effects of smaller and/or delayed investments in exploration and investment activities to reduce production costs because of the extra tax burden for the Australian mining industry location relative to other parts of the economy and mining in other countries.

The higher supply curve than otherwise, that is  $S+X$  rather than  $S$  in Figure 5.2.1, means the resource rent tax results in a fall in production and a higher market price. There is an efficiency loss of too little production, much like the royalty. Potentially more important, also there is a rectangle of foregone production cost savings represented by the rectangle  $X$  times  $Q'$ . This later productivity loss could mean inferiority of the resource rent tax relative to a royalty.

It remains a challenge to obtain the data to estimate the magnitude of effect of the resource rent tax on the Australian mining industry supply curve. Required information includes the relative importance of Ricardian rent and quasi-rents in the resource rent tax measure, the elasticities of supply of resources generating quasi-rents to the Australian mining industry, and the effects of the Australian resource rent tax rate on this supply.

Differences in the relative stability of the royalty versus an economic rent tax have important implications for industry and for government revenue. In the real world of fluctuating mining product prices, a royalty system provides a more stable flow over time of royalty income compared with economic rent income; with the opposite effect for industry.

For these reasons, there must be uncertainty about the relative superiority of a resource rent tax over a royalty which generates similar government revenue over time.

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## RESEARCH COLLABORATION

Leanne McDonald, Research Development Manager

Phone: +613 9035 7677

Email: [l.mcdonald@unimelb.edu.au](mailto:l.mcdonald@unimelb.edu.au)



@Government\_UoM

[GOVERNMENT.UNIMELB.EDU.AU](http://GOVERNMENT.UNIMELB.EDU.AU)