

# **The incorporation of company tax in price determinations**

**Other Industries — Discussion Paper**  
June 2011





Independent Pricing and Regulatory Tribunal

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## Invitation for submissions

IPART invites written comment on this document and encourages all interested parties to provide submissions addressing the matters discussed.

**Submissions are due by 12 August 2011.**

We would prefer to receive them by email <[wacc@ipart.nsw.gov.au](mailto:wacc@ipart.nsw.gov.au)>.

You can also send comments by fax to (02) 9290 2061, or by mail to:

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If you would like further information on making a submission, IPART's submission policy is available on our website.



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# 1 Introduction

In calculating a regulated business's costs for the purposes of setting prices, we allow an amount to reflect the tax paid by the business. Currently, this is done through estimating a pre-tax weighted average cost of capital and applying this to the capital base of the business. The tax rate used is the statutory tax rate.

## 1.1 Taxation and regulatory approaches

The prices charged for services provided by water and wastewater networks, electricity and gas distribution, transmission networks and transport operators in Australia are typically regulated. The main form of price regulation used in these sectors is a building block approach. This adds up the cost items required to provide the services in order to generate a notional revenue amount that is sufficient to recover these costs. Cost items included in the building block approach are operating costs, depreciation, a return on capital and expected tax liabilities.

Expected tax liabilities can be included in different ways:

- ▼ Tax liabilities can be incorporated into the return on capital through estimating the return on capital required to cover both tax and an appropriate post-tax return. This is called a pre-tax weighted average cost of capital.
- ▼ Tax liabilities can be incorporated as a separate building block rather than being part of the return on capital. In this case the return on capital is a post-tax weighted average cost of capital.

## 1.2 IPART's current approach

IPART currently incorporates tax through estimating a pre-tax rate of return on capital. Tax liabilities are hence not a separate building block.

In using this approach, IPART first estimates a post-tax weighted average cost of capital using the capital asset pricing model (CAPM). This is then 'grossed up' for tax to give a pre-tax weighted average cost of capital using the statutory rate of corporate taxation (currently 30%). Tax is only paid on the return to equity as interest is tax deductible so the grossing up only occurs for the equity component of the cost of capital.

In moving to a pre-tax weighted average cost of capital, IPART also takes account of the value of franking credits on profits distributed to shareholders.

The specific details of this approach are shown below.

$$r^{pre} = \frac{\left(1 + \left\{ \frac{R_e}{[1-t(1-\gamma)]} \times \left(\frac{E}{D+E}\right) + R_d \left(\frac{D}{D+E}\right) \right\}\right)}{(1+\Pi)} - 1$$

Where:

- ▼ Pre-tax WACC ( $r^{pre}$ )
- ▼ Cost of debt (nominal:  $R_d$ )
- ▼ Cost of equity (nominal:  $R_e$ )
- ▼ Statutory taxation rate ( $t$ )
- ▼ Adjustment for expected inflation ( $\Pi$ ).
- ▼ The level of gearing (D -debt, E - equity)
- ▼ The value of imputation credits ( $\gamma$  - gamma).

### 1.3 Why are we reviewing our methodology?

IPART has reviewed a number of the components of our method of estimating the cost of capital over the past several years to ensure that our approach is robust and reflects the best evidence and methods currently available. The review of our approach to the treatment of tax is a continuation of this process.

IPART is also aware that a number of other Australian and international regulators use different approaches to the treatment of tax (as discussed in detail later). As such, it is important that we consider the advantages and disadvantages of our approach against these from time to time.

### 1.4 Scope and timetable for the review

This review is focused on:

- ▼ the rate of taxation used in the calculations, and
- ▼ the approach to incorporating tax as a separate building block or through a pre-tax weighted average cost of capital.

We consider that at least in principle, these issues can be separated. In practice, regulators that have chosen to move away from a statutory rate of taxation have included tax as a separate building block.

It is also worth noting that most of the businesses that IPART regulates are government businesses. The taxation arrangements for government businesses are generally much simpler than for private companies, as private companies often involve multinational operations (and other Australian operations) that influence the overall tax paid by the company.

The timetable for the review is:

Release of Issues Paper	23 June 2011
Submissions due on Issues Paper	12 August 2011
Release of Final Report	31 August 2011

## 1.5 List of issues on which we seek comment

The following chapters identify and discuss the issues on which we seek comment. Stakeholders may address all or some of these issues in their submissions and may raise any other issues they consider relevant to this review. For convenience, a full list of the issues on which we seek comment is set out below, along with the page where we request such comment.

1	Are taxation statistics from the ATO useful for the purposes of considering industry-specific effective tax rates?	14
2	Are Bloomberg business specific effective tax rates a useful for source for comparison?	14
3	Are there other options IPART could consider that provide an accurate assessment of tax liabilities with low compliance costs?	23
4	What are the strengths and weaknesses of the options for incorporating tax into our regulatory decisions?	23
5	What are the information requirements and compliance costs of moving to incorporate tax as a separate building block?	23
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11	Should we use sectoral benchmarks of actual tax rates? If so, how could this be done to maintain a pre-tax real framework?	23
12	What would be the impact of changing the treatment of tax on regulated businesses, customers and prices?	26

## 1.6 What does the rest of this report cover?

The rest of this report is set out as follows.

- ▼ Chapter 2 sets out criteria for assessing alternative options for the treatment of tax.
- ▼ Chapter 3 sets out the differences between the actual tax that would be paid by a business against that allowed for in the calculation of regulatory revenue.
- ▼ Chapter 4 identifies how other Australian regulators incorporate tax into regulatory decisions.
- ▼ Chapter 5 identifies key elements that could be included in the assessment of tax and evaluates these against the criteria for a preferred approach.
- ▼ Chapter 6 undertakes preliminary assessment of the possible impacts of alternative methods for the amount of revenue allowed for regulated businesses.

## 2 Approach for review and criteria

Our approach to pricing regulation is that pricing should generate revenue that matches as closely as possible to that achievable by a similar, well-managed, privately owned business.<sup>1</sup> The outcomes should reflect those similar to a competitive market, if such a market were feasible.<sup>2</sup>

### 2.1 Objectives in determining a regulated business's revenue requirement

IPART's main objectives in setting the cost base and revenue requirement for a regulated business are that the cost base is:<sup>3</sup>

- ▼ determined for an industry and is not business-specific
- ▼ a commercial cost
- ▼ consistent with market conditions
- ▼ transparent and can be replicated.

These objectives ensure that the full commercial cost of providing a service is determined in a transparent way.

### 2.2 Criteria for assessing options

Reflecting the objectives above, we consider that the criteria set out below are important for determining our approach to the treatment of taxation:

- ▼ The approach should reflect the rate of taxation for an industry rather than being specific to a business.
- ▼ The approach should reflect the rate of taxation that would be levied on a private company operating solely to provide the services provided by the regulated business.

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<sup>1</sup> See previous Issues Papers such as *Developing the approach to estimating the debt margin*, November 2010, p 12 and *Alternative approaches to the determination of the cost of equity*, November 2009, p 5 for further expositions of the criteria that IPART considers when making decisions about the approach that it takes.

<sup>2</sup> Kahn, Alfred E (1988), *The Economics of Regulation, Principles and Institutions Volume I*, MIT, p 17.

<sup>3</sup> IPART, *Alternative approaches to the determination of the cost of equity*, November 2009, p 5.

- ▼ The approach should be internally consistent with other estimates forming part of the revenue requirement for a regulated business.
- ▼ Inputs into the approach should be clearly defined and available to all stakeholders.
- ▼ The approach should consider the regulatory costs imposed on businesses and the regulator – a simpler approach would be preferred unless the benefits of a more complex approach outweighed the additional regulatory costs.

## 3 Actual and regulatory taxation

Actual and regulatory taxation can deviate for a variety of reasons. These reasons reflect differences in the tax rate and differences in the tax base. This chapter sets out the differences between actual tax and regulatory tax allowances.

### 3.1 The tax rate and the tax base

The corporate tax paid by a business reflects its level of taxable income, the statutory corporate tax rate and the amount of tax rebates or offsets that the business can access.

IPART's current presumed regulatory tax reflects similar components. Regulatory income is defined as the real return on equity. The tax rate applied is the corporate statutory tax rate.

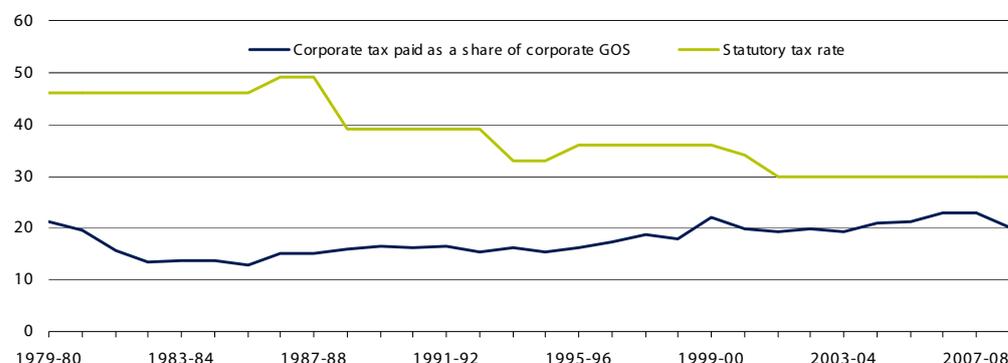
There are hence 2 main reasons why the allowed regulatory tax liability differs from the actual tax liability for a similar business:<sup>4</sup>

- ▼ Regulatory income is defined differently to taxable income.
- ▼ The regulatory tax calculation makes no allowance for tax rebates and offsets.

While sometimes ignored, the importance of this first difference is clear in Figure 3.1 This compares actual tax paid by Australian companies as a share of gross operating surplus to the statutory tax rate applying at the time. Gross operating surplus is similar to company profits before interest, tax and depreciation. Although it would not be expected that these tax rates would be at the same level, it would be expected that they would tend to go up and down together. The lack of such a relationship reflects that the tax base for company profits has become wider – a greater share of company profits is now subject to the corporate tax rate.

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<sup>4</sup> There are other possible issues related to a business being involved in multiple activities in Australia and overseas with tax implications. For businesses regulated by IPART there is also the issue that prices are often set to only recover a portion of costs. Nevertheless the appropriate cost base should still reflect tax payments.

**Figure 3.1 Statutory tax and actual tax as a share of GOS**

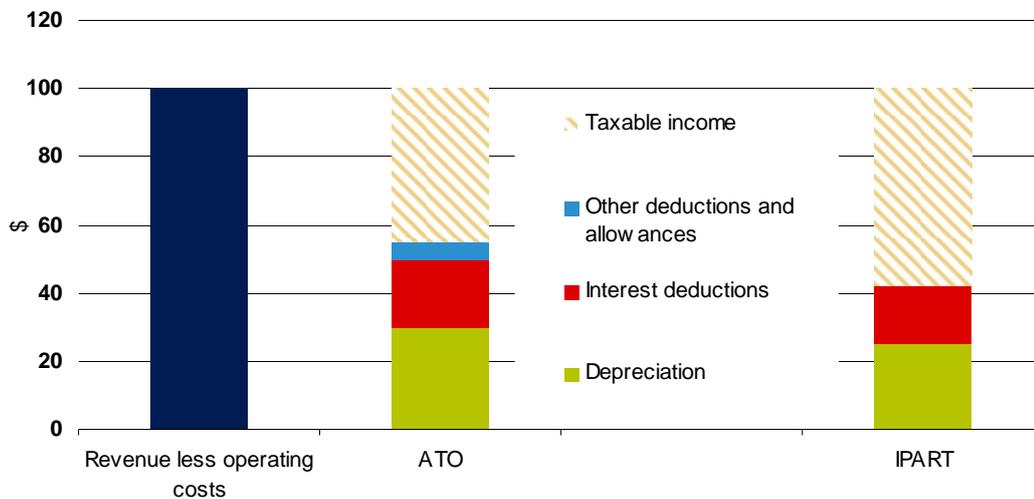
**Source:** Australian Treasury 2006, A brief history of Australia's tax system; Australian Bureau of Statistics 2011, Australian National Accounts, Cat. no. 5206.0, table 18; Australian Bureau of Statistics 2011, Australian National Accounts, Cat. no. 5206.0, table 32I IPART calculations.

### 3.2 Regulatory and taxable income

Regulatory income and taxable income are both best considered from the starting point of gross operating surplus, where gross operating surplus is the excess of revenue over operating expenses (Figure 3.2).

- ▼ IPART defines real regulatory income as profit less regulatory depreciation less real interest payments.
- ▼ The Australian Taxation Office (broadly) defines nominal taxable income as profit less tax depreciation less nominal interest payments.
- ▼ The ATO makes allowance for accumulated past tax losses.
- ▼ The ATO includes a number of other relatively minor deductions and additions (including foreign income tax, environmental protection, special tax write-offs etc).

These differences generally mean that IPART's definition of regulatory income is more generous than taxable income (Figure 3.2), although this may not be the case if the tax asset base used is substantially smaller than the regulatory asset base. Hence IPART likely allows for more tax in its revenue estimates that a well managed similar business would be expected to pay.

**Figure 3.2 Regulatory income and taxable income**

Source: IPART.

Depreciation is calculated on the asset base. The asset base for regulatory purposes can differ from the asset base for tax purposes. In addition, tax rules generally allow for faster depreciation than is allowed for by regulatory depreciation (see Box 3.1). This means that tax is saved now, but potentially paid later (although for a continuing business the net result can always be a lower level of tax). This has value in present value terms.

### Box 3.1 Tax depreciation

The Australian Taxation Office allows for 2 methods of treating depreciation for tax purposes.

- ▼ Prime cost method — this is effectively straight line depreciation, with the cost of the asset being depreciated in equal instalments of its effective life.
- ▼ Diminishing value method — this is accelerated relative to the prime cost method, with an asset being depreciated by its base value (cost less amount already depreciated) multiplied by 200% divided by its effective life. For assets purchased before 10 May 2006, a rate of 150% is allowed rather than 200%.

The asset lives used for tax purposes may also be shorter than the asset lives used for regulatory purposes.

Interest payments differ because:

- ▼ for taxation purposes, nominal interest expenses are tax deductible
- ▼ an actual business may have a different level of debt or interest expenses than assumed for the purposes of regulation.

The first is a difference in methodology, while the second reflects that regulators do not try to match a company's actual gearing level.

Accumulated tax losses reflect past tax losses that can be used to offset future profits.

### 3.3 Statutory and effective tax rate

The statutory tax rate is the 30% corporate tax rate. The effective tax rate can be defined in various ways depending on the purpose for which it is to be used. For our purposes, we define the effective tax rate as the net tax paid as a share of taxable income. This means that tax depreciation and interest expenses (and a variety of other smaller factors) have already been deducted.<sup>5</sup>

The main reason for the effective tax rate (defined in this way) to be lower than the statutory tax rate is that there are tax rebates and offsets, such as the R&D tax concession, other industry exemptions, foreign tax credits and a variety of other rebates.

There may also be abnormal items that reduce the tax payable on the underlying income stream.

### 3.4 Estimating the magnitude of tax differences

The differences between the actual tax paid by a benchmark business under taxation rules can be far below what is allowed for through our regulatory approach, reflecting the differences in the tax base and tax rate discussed above. In this section, the possible magnitudes of this tax gap are explored.

#### 3.4.1 Taxable income versus IPART's regulatory taxable income

The major differences in the tax base to which the ATO applies corporate taxation and the tax base we use are the use of different methods of depreciation and the use of nominal versus real accounting for interest payments.

The difference in the tax base using regulatory depreciation versus tax depreciation will depend on the regulatory versus tax asset base, the investment profile of the business and the tax rules applied. Tax rules can allow for depreciation of assets over a shorter life than allowed for in regulatory depreciation, as well as front-loading depreciation. In moving electricity distribution businesses to a post-tax framework (such as those previously regulated by IPART), the Australian Energy Regulator presented some analysis of the impacts.

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<sup>5</sup> The effective tax rate has been defined elsewhere as tax paid as a share of the return on and of capital (Australian Treasury, *International Comparison of Australia's Taxes*, 3 April 2006) and as tax paid as a share of the regulatory return on equity (Australian Energy Regulator, *Transition of energy businesses from pre-tax to post-tax regulation*, Issues paper, June 2007).

The tax paid as a share of the regulatory return on equity on a continuous investment would be over 4 percentage points lower than the statutory tax rate allowing for the regulatory asset base to be the same as the tax asset base (Table 3.1). This gap widens further where the ATO allows for shorter tax lives.

**Table 3.1 Actual tax as a share of regulatory return on equity**

Scenario	Economic life	Net tax	Actual tax as a share of regulatory return on equity <sup>a</sup>
	Years	Years	%
Constant investment	50	50	25.7
Constant investment	50	25	21.7

<sup>a</sup> Net present value over life of asset.

**Source:** Australian Energy Regulator, *Transition of energy businesses from pre-tax to post-tax regulation*, Issues paper, June 2007, Table 2.

The AER expected that the pre-tax framework had probably been compensating companies by too much in the order of over 1% of revenue.<sup>6</sup> While this seems small, it is more significant in the context of the rate of return for a regulated business.

The allowance for real interest deductions rather than nominal can also make significant differences to allowed regulatory taxation and revenue. A nominal interest rate shields roughly the level of inflation times the capital base times the debt share from the application of tax relative to a real interest rate. Depending on the capital intensity of the business, this could be equivalent to around a percentage point of revenue.<sup>7</sup>

### 3.4.2 Tax paid as a share of taxable income

As noted above, the tax paid on taxable income defined by the Australian Tax Office is typically less than the 30% corporate taxation rates, reflecting the variety of concessions available. Using data collected from the Australian Taxation office on incomes and tax paid, the effective tax rate paid by corporations (both public and private) across sectors can be calculated. The taxable income, net tax and effective tax rate for broad industry categories are shown in Table 3.2. This includes both public and private corporations.

There is significant variation in the effective tax rate paid across different sectors, ranging from a low of 22.3% for Financial and Insurance services to 29.6% for Public Administration and Safety. It is likely that the lower rate for the Financial and Insurance services industry reflects the fact that some companies within the life insurance industry are taxed at rates lower than the statutory rate of 30%. Across all

<sup>6</sup> Australian Energy Regulator, *Transition of energy businesses from pre-tax to post-tax regulation*, Issues paper, June 2007.

<sup>7</sup> This effect will change through time as the tax asset base and regulatory asset base move apart because of rolling forward the regulatory asset base for inflation between regulatory periods and incorporating inflation into prices within a regulatory period.

sectors, the effective tax rate is below the statutory tax rate. This same result has been reported in Marckle and Shackelford (2009).<sup>8</sup>

**Table 3.2 Effective tax rate by sector 2008-09**

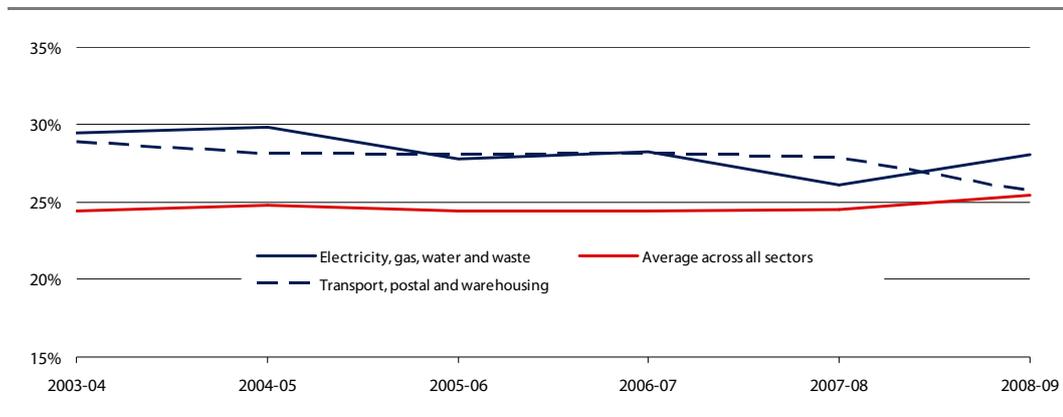
Sector	Taxable income \$	Net tax \$	Effective tax rate %
Agriculture, Forestry & Fishing	1,302,583,485	309,792,770	23.8
Mining	46,795,207,398	13,381,850,558	28.6
Manufacturing	15,938,488,274	4,318,604,599	27.1
Electricity, Gas, Water and Waste Services	1,881,944,751	528,184,331	28.1
Construction	8781,229,732	2,466,994,431	28.1
Wholesale Trade	19,088,881,461	5,406,666,302	28.3
Retail Trade	8,713,804,701	2,514,198,210	28.9
Accommodation and Food Services	1,693,325,466	484,048,165	28.6
Transport, Postal and Warehousing	4,441,114,234	1,141,530,992	25.7
Information Media and Telecommunications	7,273,676,879	1,879,741,435	25.8
Financial and Insurance Services	69,432,286,077	15,482,362,682	22.3
Rental, Hiring and Real Estate Services	6,812,593,795	1,610,271,259	23.6
Professional, Scientific and Technical Services	10,315,888,743	2,819,040,700	27.3
Administrative and Support Services	1,912,099,036	536,051,047	28.0
Public Administration and Safety	242,741,402	71,938,696	29.6
Education and Training	435,490,414	125,285,699	28.8
Health Care and Social Assistance	1,807,726,048	519,263,548	28.7
Arts and Recreation Services	1,093,655,004	304,850,259	27.9
Other Services	1,431,024,625	379,793,549	26.5
Other <sup>a</sup>	10,728,186,134	1,830,160,003	17.1

<sup>a</sup> Includes companies that did not state their industry, whose stated industry was unknown and/or companies registered under the government administration and defence industry code.

**Source:** Australian Taxation Office Taxation Statistics 2008-09; IPART calculations.

For IPART, key industries are utilities and transport. The effective tax rates for these industries have been broadly stable since 2003/04 averaging around 28% (Figure 3.3). This is higher than for all industries, which averaged an effective tax rate of 25% over the same period.

<sup>8</sup> Markle, K.S. and Shackelford, D., *Do multinationals or domestic firms face higher effective tax rates?*, National Bureau of Economic Research (NBER) Working Paper Series, Working paper 15091, 2009.

**Figure 3.3 Effective tax rates for selected industries**

**Source:** Australian Taxation Office Taxation Statistics, various years; IPART calculations.

### 3.4.3 Tax paid as a share of pre-tax profit

Data on the tax paid as a share of pre-tax profit for specific utility businesses is available from Bloomberg for 2009/10 – these businesses are largely electricity and gas network businesses.<sup>9</sup> Pre-tax profit is roughly equivalent to revenue less operating costs, depreciation of capital and interest expenses (see notes to Table 3.3). The depreciation that businesses use for this measure is not the same depreciation that they apply for tax purposes – hence this measure may be closer to IPART’s measure of regulatory income. Businesses may have additional factors such as capital gains or losses, rebates and tax offsets, foreign tax credits and liabilities and past losses that will affect the actual amount of tax paid.

**Table 3.3 Effective tax rates for utility businesses 2009/10**

Company	Bloomberg estimate of pre-tax profit <sup>a</sup> \$m	Bloomberg effective tax rate %
AGL	278	5.7
APA Group	57	27.8
DUET Group	40	2.7
Envestra	63	27.9
SP Ausnet	288	16.1
Profit-weighted		13.3
Simple average		16.0

<sup>a</sup> Pre-tax income (or losses) is net sales MINUS: cost of goods sold, selling, general, and administrative expenses, interest expense, foreign exchange losses, net non-operating losses, and reserve charges PLUS: foreign exchange gains, net non-operating gains, and reserve charges.

**Source:** Bloomberg.

<sup>9</sup> This data differs from the pre-tax income reported by the business as Bloomberg removes abnormal items.

The tax rates paid vary widely across the businesses (Table 3.3). The average across the businesses is 16% (simple) or 13.3% (weighted by company profits). The large variation between this figure and that of the ATO reflects that the ATO's taxable income already factors in accumulated tax losses, tax depreciation and additional items not included in Bloomberg's figures.

The overall differences in revenue from applying ATO net tax as a share of taxable income instead of the statutory rate would be relatively small for regulated businesses. If Bloomberg figures were used, which include a measure of depreciation more likely to be aligned with regulatory depreciation, then the reduction in revenue would be larger.

IPART seeks comments on the following

- 1 Are taxation statistics from the ATO useful for the purposes of considering industry-specific effective tax rates?
- 2 Are Bloomberg business-specific effective tax rates a useful for source for comparison?

## 4 | Precedents

### 4.1 Treatment of tax in other jurisdictions

Around Australia and the world there are various models for treating tax in regulatory decisions. These models can, in general, be categorised along a spectrum of business-specific to generic. The most business-specific models apply taxation rules to the particular gearing level and interest expenses of a regulated business giving an estimate of actual tax liabilities. This approach is taken for highly geared businesses in the UK by the water regulator, OFWAT, and the electricity and gas regulator, OFGEM.<sup>10</sup> This approach is applied both looking forward, to estimate future tax liabilities, and looking backwards, to claw-back tax gains businesses made from increasing their gearing. These issues were viewed as important by UK regulators reflecting the view that private businesses were undertaking highly-geared investment in regulated businesses as a tax minimisation strategy. Similar strategies have been employed by regulated businesses in Australia but have not had a similar response from regulators.

IPART's model is at the other extreme with no modelling of business tax liabilities under relevant tax rules. This model is also used by the Economic Regulation Authority (WA) and the Essential Services Commission of SA.

In between these are models that combine separation of regulatory and tax depreciation with benchmarks for the businesses gearing level (and interest payments) such as the ESC of Victoria and the Australian Energy Regulator.

Note that all regulators eventually apply the statutory tax rate in their model (although to different bases) rather than include the impact of rebates and offsets.

A summary of the components used by various regulators is shown in Table 4.1.

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<sup>10</sup> See for example OFWAT, *Setting price limits for 2010-15: framework and approach*; OFGEM 2004, *Electricity distribution final price control review: final proposals*, November 2009.

**Table 4.1 Tax treatment in other jurisdictions**

Regulator	Form of WACC	Depreciation allowance	Nominal or real tax liability	Gearing	Accumulated tax losses	Tax rate
<b>IPART</b>	Real pre-tax	Regulatory	Real	Benchmark	No	Statutory
<b>ESC<sup>a</sup></b>	Real post-tax	Tax	Nominal	Benchmark	Yes	Statutory
<b>AER<sup>b</sup></b>	Nominal Vanilla WACC (post-tax)	Tax	Nominal	Benchmark	No	Statutory
<b>ERA<sup>c</sup></b>	Real pre-tax	Regulatory	Real	Benchmark	No	Statutory
<b>QCA<sup>d</sup></b>	Nominal Vanilla WACC (post-tax)	Tax	Nominal	Benchmark	No	Statutory
<b>ESCOSA<sup>e</sup></b>	Real pre-tax	Regulatory	Real	Benchmark	No	Statutory
<b>NZ Comm. Commission<sup>f</sup></b>	Nominal post-tax WACC	Tax	Nominal	Benchmark	Yes, but limited	Statutory
<b>UK Ofgem<sup>g</sup></b>	Post-tax real	Tax	Nominal	Benchmark for low geared. Actual for highly geared		Statutory
<b>UK Ofwat<sup>h</sup></b>	Post-tax real	Tax	Nominal	Benchmark for low geared. Actual for highly geared		Statutory

<sup>a</sup> Melbourne metropolitan water review 2009. <sup>b</sup> Electricity transmission 2007; Electricity distribution 2009; NSW gas distribution 2010. <sup>c</sup> Access Arrangement for the Dampier to Bunbury Natural Gas Pipeline 2011 (draft). <sup>d</sup> Gladstone Area Water Board 2010; Dalrymple Bay Coal Terminal 2010. <sup>e</sup> Metropolitan and Regional Water and Wastewater Pricing Process 2009 <sup>f</sup> Airports Input Methodologies 2010; Transpower Input Methodologies 2010; Electricity and gas distribution services Input Methodologies 2010. <sup>g</sup> OFGEM, *Electricity distribution final price control review: final proposals*, November 2004. <sup>h</sup> OFWAT, *Setting price limits for 2010-15: framework and approach*, 2009.

**Note:** All regulators allow for dividend imputation.

**Source:** Final decisions as noted in table and notes.

## 4.2 Key decisions for regulators

Table 4.1 sets out the key differences between regulators in deciding on their treatment of tax. The major decisions are as follows:

- ▼ Whether to use the same gearing level for tax purposes as used for estimation of the WACC. Nearly all regulators have used the same gearing for both purposes. The exception is the UK where actual gearing is used for businesses with a level of gearing above the level used in setting the cost of capital. If a regulator uses the same level of gearing for tax purposes as for setting the WACC then the nominal cost of debt from the WACC is used for interest deductions for tax purposes.
- ▼ Whether to use regulatory depreciation or tax depreciation. The pre-tax real WACC framework implicitly uses regulatory depreciation for estimating the tax liability. If a decision is made to use tax depreciation then this is then modelled using nominal cashflows. Various levels of complexity are possible in modelling tax depreciation reflecting decisions about:
  - the tax asset base and whether this is the same as the regulatory asset base
  - the tax lives of assets
  - the complexity of allowed taxation depreciation methods.
- ▼ Whether to allow for accumulated tax losses (or losses from other part of the business that are not regulated). Treatment of this varies across regulators. Regulators could also include other tax deductions as discussed extensively in the context of New Zealand's tax system by the New Zealand Commerce Commission.<sup>11</sup>
- ▼ Whether to apply a statutory tax rate or make adjustments to this to reflect possible rebates and deductions. Regulators have all applied the statutory tax rate. Generally, tax rebates and offsets are not considered in detail and if they are would be added in specifically.

Many of the decisions above are linked. If a pre-tax real WACC is used, as we currently do, then this implicitly means that tax liabilities are based on regulatory depreciation, modelled in real terms using a benchmark gearing and no accumulated tax losses are applied.

Similarly, if a post-tax WACC is used then tax liabilities will be modelled using tax depreciation and a nominal approach to interest deductions.

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<sup>11</sup> NZ Commerce Commission, *Input Methodologies (Electricity Distribution and Gas Pipeline Services)*, Reasons Paper, 2010

## 5 Options and assessment

The range of options used in other jurisdictions suggests a ready range of options, or components of options that could be relevant for IPART. In this chapter we set out components of the actual treatment of taxable income and the tax rate that could be taken into account in our regulatory decisions.

### 5.1 Should the level of gearing reflect a benchmark or be specific to a business?

In the UK, regulators have been concerned that private businesses are gearing up to minimise tax liabilities. This has led them to move away from estimating tax based on benchmark gearing assumptions for businesses that are in reality highly geared or clawing back tax gains from higher gearing.<sup>12</sup> For businesses that have low levels of gearing, the benchmark gearing level is used.

The basis for this move is that the pre-tax weighted average cost of capital is likely to be relatively constant over a wide range of gearing assumptions. Hence higher gearing leads to a lower post-tax WACC reflecting the tax advantages of debt.<sup>13</sup> This is simply a transfer from the government to the business if not captured in the regulatory framework.

There is merit in the UK's approach given that the strategies that regulated business have undertaken. In Australia, some regulated businesses have undertaken the same strategies, but this has so far not generated a response from regulators. All of the businesses that IPART currently regulates are government business enterprises with low levels of debt, making this, at least for now, not a major issue for us. This suggests that to remain consistent with the weighted average cost of capital calculation, it would be preferable to adopt the benchmark gearing level used for this calculation.

Estimating tax directly is a much more heavy-handed form of regulation, with IPART required to consider and review more information on gearing and debt costs. While not necessarily the case, businesses are likely to argue that such an arrangement negates government policies used to promote investment in a particular

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<sup>12</sup> See for example OFWAT, *Setting price limits for 2010-15: framework and approach*; OFGEM 2004, *Electricity distribution final price control review: final proposals*, November 2009.

<sup>13</sup> Europe Economics, *Costs of capital and financeability at PR09*, prepared for OFWAT, 22 October 2009, p 62.

area, such as R&D tax incentives or interest deductibility, because the business would not receive the benefits from any such incentives.<sup>14</sup> This would likely only be the case for the incentive to gear up which may not be unintended.

## 5.2 Should we use tax depreciation or regulatory depreciation for estimating tax liabilities?

We currently apply regulatory depreciation as a building block component and implicitly for estimating tax liabilities. An alternative would be to estimate tax depreciation directly. This would involve:

- ▼ deciding on whether to use the current regulatory asset base as the starting asset base for tax purposes
- ▼ determining appropriate tax lives if different from regulatory asset lives, and
- ▼ applying optimal tax depreciation rules, which are different for assets created before 2006 versus after 2006.

This is done by both the ESC of Victoria and the AER in various ways.

The AER adopted a different starting tax base – typically around 60-70% of the regulatory asset base for NSW distribution businesses (see Table 5.1). Allowing a lower starting tax base than the regulatory asset base means that future depreciation is lower, tax liabilities are higher and hence allowable revenue is higher. This appears to allow regulatory businesses to get the benefits of a high tax component in the past because of low regulatory depreciation but to get benefits again in the future because of an effective writing down of assets when moving from regulatory depreciation to tax depreciation. However, there is also the difference in that the regulatory asset base is typically indexed to inflation while the tax asset base is not.

**Table 5.1 Comparison of RAB and tax asset base 2008/09**

Distributor	RAB	Tax asset base	Tax asset base as share of RAB
	\$m	\$m	%
Country Energy	4,319	2,699	62.5
Energy Australia	8,326	4,997	60.0
Integral Energy	3,690	2,429	65.8

Source: AER 2009, NSW Distribution Determination 2009-10 to 2013-14, pp 77-80, 208.

The ESC better accounts for the different methods available for depreciating assets, separating assets by class and pre and post 2006. The AER uses a relatively simple straight line depreciation method.

Both the ESC and AER use tax lives that are the same or shorter than economic lives.

<sup>14</sup> Businesses argued along similar lines in submissions to IPART, *Weighted Average Cost of Capital - Discussion Paper*, 2002, p 8.

Both the ESC and AER include capital contributions by customers as part of the revenue assessable for tax purposes and as part of the tax asset base available for depreciation.

Estimating tax depreciation directly rather than using regulatory depreciation for the purposes of tax has the advantage of better matching the profile of depreciation used by businesses. Using regulatory depreciation will tend to favour businesses as the available tax methods allow for faster rates of depreciation. This means that a business can earn greater profits now in return for smaller profits in the future, which will have a positive value once the time value of money is accounted for.<sup>15</sup> A regulated business would therefore earn a higher rate of return under IPART's model than is adequate for a similar well managed private business.

The other main advantage of modelling depreciation using taxation rules and in nominal terms is that it incorporates the reduction in tax arising from holding debt in nominal terms (as actually occurs) rather than in real terms as is done by our approach.

On the negative side, the AER and ESC approach requires a second set of accounts to be kept for tax depreciation and greater information about asset holdings and tax lives. Depreciation rules could be applied relatively simply to minimise these regulatory costs.

If the AER and ESC approach is followed then it would be sensible to move tax into the building block components as the work needed to do so would have been done rather than to maintain a pre-tax real WACC.

### 5.3 Should we allow for nominal interest deductibility?

Our current approach provides a tax deduction based on real interest payments. In practice, tax deductions are from nominal interest payments. If modelling depreciation as above, this is explicitly taken into account. The tax liability is then deflated for use in a real financial model.

Alternatively, the nominal adjustment could be taken into account by making an adjustment to the weighted average cost of capital calculation. The main difficulty with this approach is accounting for the complication of moving a deductible nominal interest payment into a real financial model.

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<sup>15</sup> Note that there is no such advantage in changing the regulatory depreciation schedule to be faster as the escalation and allowable rate of return will decline if regulatory depreciation is accelerated.

#### **5.4 Should we allow for accumulated tax losses?**

Some businesses regulated by IPART have accumulated tax losses that could be used to offset future income. These are deducted by the ESC in Victoria, reducing the tax component and allowable revenue.

The extent to which accumulated tax losses can be considered as representing what is available to a similar well managed private company is unclear. Similarly, if regulated businesses aiming for full cost recovery made a loss in one year it is unclear why they would be penalised with lower future revenues. Given this, we would not expect to account for accumulated tax losses.

#### **5.5 Should we use sectoral benchmarks of effective tax rates?**

In chapter 3 we presented sectoral benchmarks of effective tax rates. These could be used in place of the statutory rate and applied to regulated businesses in comparator sectors. This could be done regardless of whether depreciation was modelled using tax depreciation to give nominal tax liabilities, or was modelled using regulatory depreciation in a real framework.

Such an approach is appealing provided the underlying benchmarks are reliable and available to the types of businesses being regulated. If such an approach were to be followed, we would need a better understanding of the rebates and offsets that reduce the effective tax rate and the extent to which these would be available to a similar, well-managed, privately owned business.

Most businesses regulated by IPART fall into either the electricity, gas, water and waste services sector or the transport, postal and warehousing sector. Over the past five years the effective tax rate on these industries has been relatively constant, averaging around 28%.

This approach would not change the incentives facing businesses as the benchmark rate would not be impacted by the actions of the regulated business. It would pass the benefits of government tax rebates and offsets onto consumers as would be expected in a competitive industry.

#### **5.6 Should we use sectoral benchmarks of actual tax rates?**

The concept of benchmarking could potentially be applied more broadly than simply to take account of rebates and tax offsets that form the gap between what we have defined as the effective tax rate and the statutory tax rate.

For instance, the AER's figures for NSW electricity distribution businesses suggest a tax rate of 21 to 22% might give an equivalent revenue allowance as adjusting to use tax depreciation.<sup>16</sup> This would maintain our pre-tax real WACC approach but adjust the tax rate to provide a similar underlying revenue stream as provided by cashflow modelling of depreciation.

This approach has the advantage of being easy to incorporate into our current financial modelling framework. However, arriving at an appropriate tax rate would likely require many similar calculations as would be used if depreciation and cash flows were modelled directly to give a tax liability.

### **5.7 Are there simpler options for accurately reflecting tax liabilities?**

We would move to a new approach only if the benefits of a new potentially more complicated approach were expected to outweigh the additional costs imposed on regulated businesses and ourselves. If this is not the case then we would maintain our current approach.

There may be simpler options than those we have put forward or ways of minimising regulatory costs while achieving an accurate assessment of tax liabilities. We are interested in the views of regulated businesses on both the compliance costs of alternative options and other potential lower compliance cost options.

### **5.8 Summary**

If we maintain a pre-tax real WACC approach, it would be preferable to use a measure of effective tax rate than the statutory tax rate to better align with the amount of tax that would be incurred by a similar well managed business.

Alternatively, we could move to model the tax liability separately in nominal terms and then convert this into a real value for the financial model. This approach could be done as a side calculation to the financial model or could be embedded within the financial model. Such an approach could require additional information on tax lives and tax rules applicable to the assets.

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<sup>16</sup> Australian Energy Regulator, *Transition of energy businesses from pre-tax to post-tax regulation, Issues paper*, June 2007.

IPART seeks comments on the following

- 3 Are there other options IPART could consider that provide an accurate assessment of tax liabilities with low compliance costs?
- 4 What are the strengths and weaknesses of the options for incorporating tax into our regulatory decisions?
- 5 What are the information requirements and compliance costs of moving to incorporate tax as a separate building block?
- 6 Should the level of gearing reflect a benchmark or be specific to a business?
- 7 Should we use tax depreciation or regulatory depreciation for estimating tax liabilities?
- 8 Should we allow for nominal interest deductibility?
- 9 Should we allow for accumulated tax losses?
- 10 Should we use sectoral benchmarks of effective tax rates?
- 11 Should we use sectoral benchmarks of actual tax rates? If so, how could this be done to maintain a pre-tax real framework?

## 6 Impact on regulated prices

The impact of changing the treatment of tax on regulated businesses and regulated prices will depend on the capital intensity of a business, the assumptions about the level of gearing and the value for gamma.

- ▼ More capital intensive businesses will face greater reductions in revenue from moving to more accurately account for tax liabilities.
- ▼ Lower geared businesses will likely face greater reductions in revenue from moving to more accurately account for tax liabilities.
- ▼ A lower value of imputation credits (gamma) will increase the impact on revenue of moving to more accurately account for tax liabilities – at a gamma of 1, changes to the treatment of tax would make no difference to revenue.

We have based all our recent regulatory decisions on a notional gearing level of 60%. Hence gearing will not influence differences in impacts amongst regulated businesses.

The capital intensity of businesses differs across the businesses that we regulate (Table 6.1).

**Table 6.1 Recent regulatory decisions**

Decisions	Total revenue	Return on capital	Return on capital as a share of revenue	Debt share
	\$m	\$m	%	%
<i>Water</i>				
Sydney Water 2008	8,322	3,518	42.3	60
Sydney Catchment Authority 2009	759	328	43.2	60
State Water 2010	420	181	43.1	60
<i>Transport</i>				
CityRail 2008	11,424	2,320	20.3	60
Sydney buses 2009	3,148	329	10.4	60

**Note:** Total revenue and the return on capital are reported in dollars for the year in which they were reported in the relevant IPART final report, summed over the years covered by the regulatory determination.

**Sources:** Final decisions as noted in table

Over 40% of revenue from water businesses reflects a return on the capital base. For transport businesses this is smaller, as historical capital bases have to a large extent been written off. Transport businesses are also far from full cost recovery, so we are setting the appropriate share of costs to be provided by users rather than setting an amount of revenue for a business to provide its regulated services.

No explicit cashflow modelling has been undertaken to consider the impact on regulated businesses of moving to this type of model. The impact would depend on what decisions are taken on factors such as whether to model depreciation from a tax perspective in nominal terms and if so, to what the tax asset base should be set.

In Table 6.2 we present impacts from using different tax rates in the current pre-tax real WACC framework. Using a 10% tax rate would reduce the pre-tax real WACC by 60 basis points (under current parameter values). For a business that currently received 50% of its revenue from a return on capital, this would amount to a 4.4% reduction in revenue. For a business that currently received only 20% of its revenue from the return on capital component, the reduction in revenue would be 1.8%.

The AER indicated that a rate of 21% to 22% would be a better match for actual tax requirements for depreciation for NSW electricity distribution businesses. If this was true for other businesses then this would be expected to lead to a reduction in revenue of around 2% for water businesses, which have capital intensity of between 40% and 50%.

**Table 6.2 Impact of different tax rates on WACC and revenue**

Tax rate	Impact on WACC (relative to current approach)	Impact on revenue			
		Return on capital as a share of revenue			
		20%	30%	40%	50%
	% pts	%	%	%	%
10%	-0.6	-1.8	-2.6	-3.5	-4.4
15%	-0.5	-1.4	-2.0	-2.7	-3.4
20%	-0.3	-0.9	-1.4	-1.9	-2.4
25%	-0.2	-0.5	-0.7	-1.0	-1.2
30%	0.0	0.0	0.0	0.0	0.0

**Note:** WACC model parameters used are risk-free rate of 4.6%, CPI of 2.5%, market risk premium of 6.0%, debt margin of 3.3%, debt funding of 60%, gamma of 0.4 and equity beta of 0.9.

**Sources:** IPART calculations

These impacts would be larger under a lower gamma, such as the gamma of 0.25 determined by the Australian Competition Tribunal for electricity distribution businesses.<sup>17</sup> For example, a 10% tax rate would take 80 basis points off the WACC, although this would be from a higher initial level.

Note that any decision would not apply to retail electricity prices as the methodology for retail electricity prices is to be maintained until the end of the regulatory period. No continuation of regulation after this period is planned at this stage.

IPART seeks comments on the following

- 12 What would be the impact of changing the treatment of tax on regulated businesses, customers and prices?

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<sup>17</sup> Australian Competition Tribunal, *Decision on application by Energex Limited*, 12 May 2011.