Average rates of company tax across industries revisited

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This article updates estimates of the disparities in the Average Tax Rates (ATRs) of company tax across industries. It updates analysis conducted in 2010 for new data and changes in methodology. The updated results still show significant differences in ATRs across industries. Such differences may encourage the migration of resources into tax-favoured industries, at the expense of other industries.

These ATRs are more conceptually robust than those calculated in 2010. Despite changes in technique, the results are generally the same with a wide variation in ATRs across industries.

Some of the variation in ATRs can be explained by the impact of reconciliation items that alter the amount of tax paid. These items include tax offsets and rebates, the R&D tax concession, and so on.

However, after allowances are made for these reconciliation items, ATRs still vary widely across industries.

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Background

Economic Roundup, Winter 2010, *Disparities in average rates of company tax across industries* raised the possibility that the corporate tax system might impact differentially across industries — some sectors facing little apparent impact from company tax while others face a relatively higher impact. These disparities in tax treatment may distort the allocation or quality of investment, and thereby the economy's performance.

The article used the so called backward looking approach based on actual company tax return data from prior years, and calculated an Average Tax Rate (ATR) by dividing a numerator of the tax paid by a denominator of 'net operating income', by industry — being an estimate of the company economic income tax base.

Company tax data was sourced from the Australian Taxation Office (ATO) publication *Taxation Statistics 2004-05*.

Net operating income was calculated from data sourced from the Australian Bureau of Statistics (ABS) and ATO, starting with Gross Operating Surplus (GOS).

However, GOS is only one component of the company income tax base as it excludes income unrelated to production — such as property income, land and natural resource rents, net interest receipts, and capital gains or losses — which rightly forms part of company income and profits.

Accordingly, GOS was adjusted to take account of these excluded components of company income.

Chart 1 presents those ATRs by industry as a deviation from the economy-wide ATR.

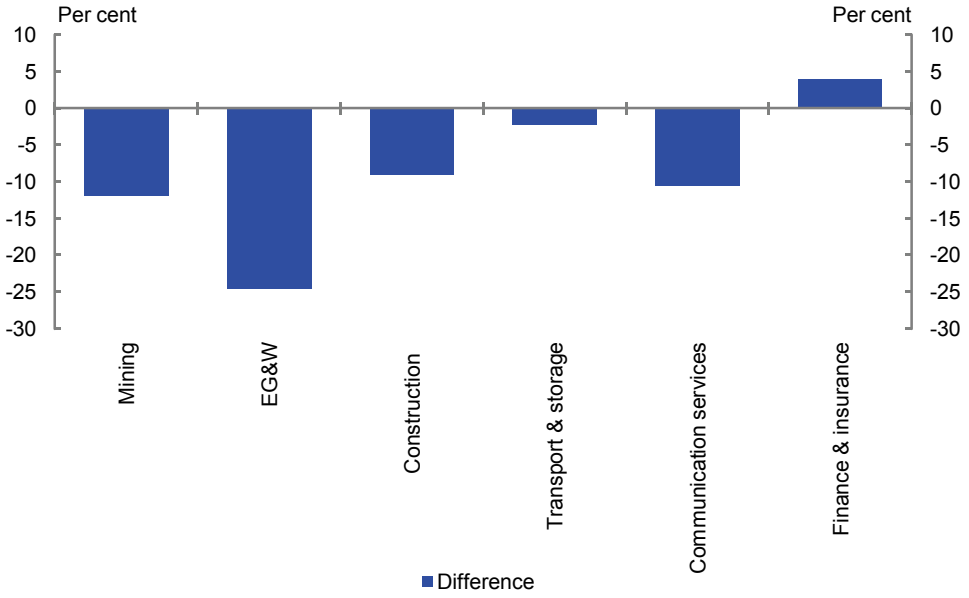
Differences in ATRs across industries may encourage the migration of resources into less-productive investments in tax-favoured industries, at the expense of more-productive investments in less-favoured industries. If this occurred, it would detract from economic growth.

Tax disparities could also influence the way in which the economy may respond to a lowering of the corporate tax rate. The effects of a tax cut in industries with an already low average tax rate would be less than those in industries with relatively high average rates.

It is important to note the clear distinction between statutory and average tax rates. The two differ due to differences between taxable income and net operating income. At the industry level, these differences arise from the differing impact of general tax

provisions as a consequence of the industry's characteristics, as well as industry-specific taxation measures.

Chart 1: 2004-05 Industry ATR deviations from the mean



Source: Treasury.

Updated average tax rates

In view of the potential for the wide dispersion of ATRs to influence the pattern of investment across industries, with adverse implications for growth, ATRs have been calculated for the period 2006-07 to 2008-09.

This analysis refines the approach in the 2010 Roundup Article in a number of ways, and is based on ABS and ATO data.

The ATR numerator is net tax, less tax losses, capital gains tax, and net foreign income. Tax losses, capital gains tax and net foreign income have now been excluded on conceptual grounds to ensure closer coherence between tax and related income. Tax losses have been excluded as they relate to a prior period of income — including losses would tend to depress the current year ATR for reasons unrelated to events in the current year. Capital gains tax and net foreign income are also excluded — on the grounds that there is no simple way of including an appropriate measure the income associated with these elements in the denominator.

The ATR denominator — which is an estimate of the company economic income tax base — is based on the ABS publication *Australian Industry* cat. no. 8155.0, with

adjustments for depreciation — which was calculated from ABS data on current price basis.

Chart 2 presents industry ATRs as a deviation from the economy-wide ATR average for the period 2006-07 to 2008-09.

It is important to note that there is greater uncertainty about the accuracy in measurement of industry ATRs than of an aggregate ATR. There is a reasonable level of certainty in relation to the totals of these variables. However, the need to distribute these variables across industries introduces the possibility of a misallocation error that does not exist at the aggregate level.

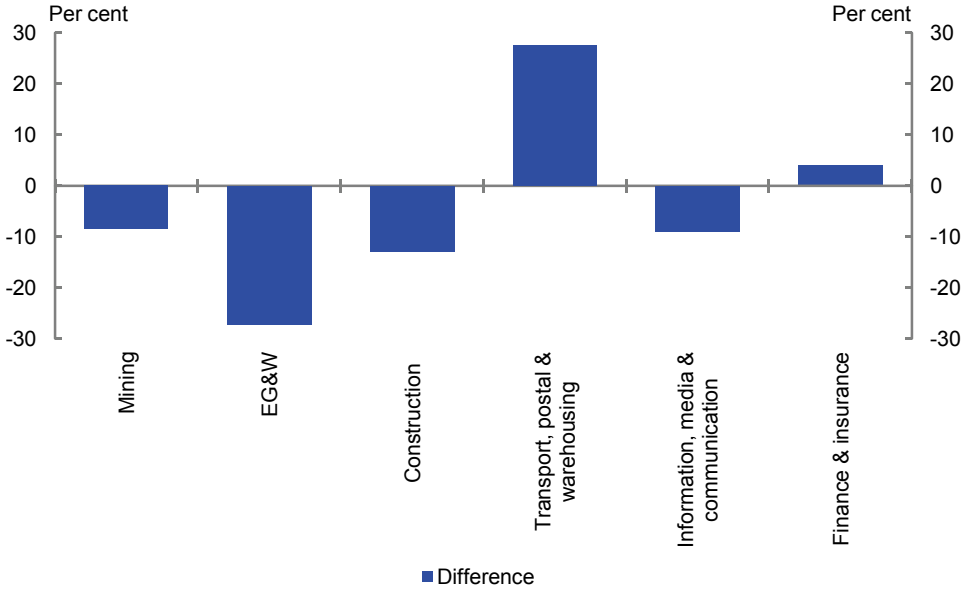
However, the objective of this paper is to investigate whether the corporate tax system impacts differently across industries, rather than focusing on the actual levels of average corporate tax rates.

Therefore for the purposes of the analysis, ATR estimates are presented and interpreted relative to the average ATR for all industries

The ATR of the electricity, gas and water (EG&W) industry (5 per cent) is the lowest in the chart and therefore has the largest deviation from the average ATR. The construction industry has the second lowest ATR (19 per cent), with information, media and communication industry the third lowest ATR. The mining industry ATR is 23 per cent.

The ATR of the finance and insurance industry (36 per cent) is above the economy-wide ATR average. The transport and storage industry ATR (59 per cent) is well above the economy-wide ATR average.

Chart 2: Industry ATR deviations from the mean, 2006-07 to 2008-09



Source: Treasury.

Consideration of Chart 1 and Chart 2 together indicate that transport, postal and warehousing ATR is the only material difference. In Chart 1 the ATR is just below average whereas in Chart 2 it is well above average. In fact, the transport and storage ATR is even above the statutory rate of company tax of 30 per cent. The reason for this result is unknown and is being further investigated. A possible explanation relates to the difference between economic and tax depreciation, which may have a significant impact on the tax paid by capital-intensive industries.

In all other respects the two charts show the same pattern to the deviations from the economy-wide ATR average, with the same industries with below average ATRs, and the finance and insurance industry with an above average ATR.

A different but related ratio of tax to income can be calculation solely from within tax return data. In this calculation, instead of using an estimate of economic income, company profit data as reported on tax returns was used as the denominator as an estimate of company income [2].

The advantage of this calculation is that it may be able to isolate specific drivers of tax outcomes, including tax concessions. The disadvantage is that, given the income is based only on tax returns, it is an incomplete measure of the theoretical economic income base. The industries used in this ATO based analysis do not completely match

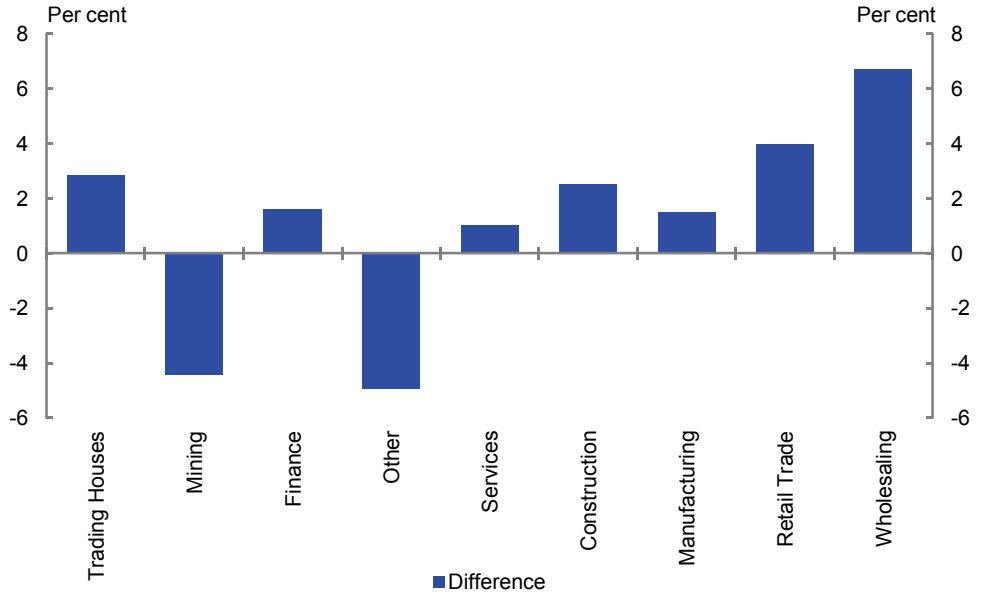
2 The authors acknowledge the contribution of the Revenue Analysis Branch in the ATO with Charts 3 and 4, and other data issues.

the industry classifications used in the rest of this paper. As a result, the ATRs in this section do not correspond to the other ATRs. Accordingly, caution should be exercised in the interpretation and use of these ATO based ATRs.

Nevertheless, these estimates give similar dispersions in ATRs across industries (Chart 3). This result shows that the dispersion in ATRs is robust to the choice between economic income and profit. This implies that any significant drivers of the dispersion are independent of the method of estimating company income.

On this construction, the lowest ATR (18 per cent) is from a combination of large infrastructure industries related to information, utilities and agriculture. The mining industry has the second lowest ATR (19 per cent). Wholesale trade has the highest ATR (30 per cent). ATRs of the remaining industries are not materially different, ranging between around 24 per cent to 27 per cent.

Chart 3: Industry ATRs calculated solely from tax returns, deviation from mean



Source: Australian Taxation Office and Treasury.

As already mentioned, there are good conceptual grounds to believe that the main calculation methodology used in this article represents an improvement over the approach in the 2010 Roundup Article.

Accordingly, the calculation supports the proposition in the 2010 Roundup Article that the company tax system may be distorting the allocation or quality of investment.

Of course, the dispersion of ATRs across industries may be explained by fundamental characteristics of the industry segments concerned, rather than the operation of the company tax system.

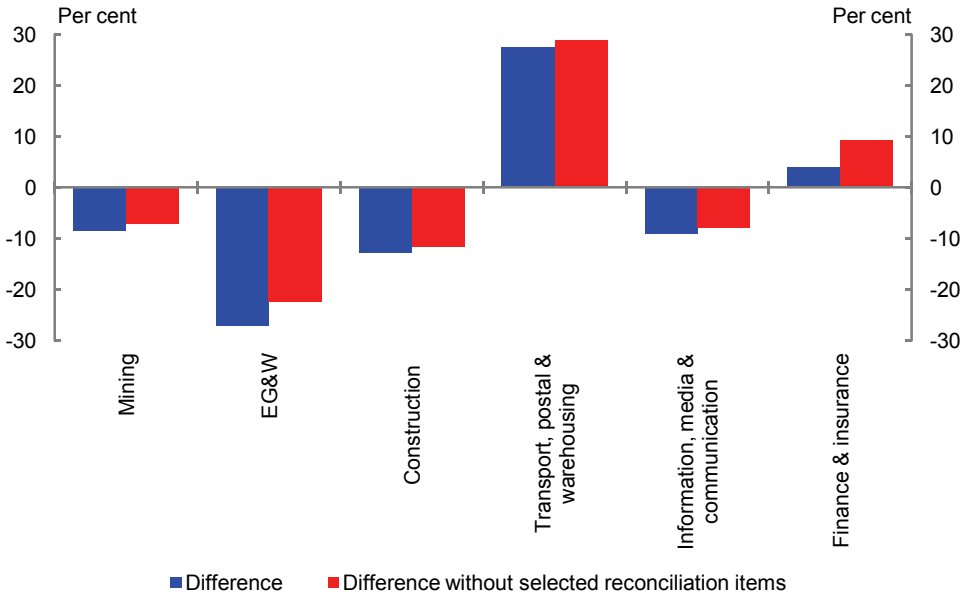
Reconciliation items

Reconciliation items are the differences between accounting profit and taxable income, and typically include capital gains and losses, R&D tax concessions, and exempt income. The impact of these items is to change the amount of tax paid. In addition, some offsets and rebates also have a similar function.

As reconciliation items are not uniformly distributed across industries, it is possible that they may be contributing to the dispersion of ATRs.

Chart 4 shows the impact of the main reconciliation items have on industry ATRs. For comparison purposes, the ATRs are shown both with and without these items. Note that the 'difference' – elements just reproduce Chart 2.

Chart 4: Industry ATR deviations from the mean



Source: Australian Taxation Office and Treasury.

While these items do have an impact on the ATRs, obviously some other influence or influences are causing the wide dispersion in ATRs across industries.

Other possible contributions to the dispersion in ATRs

As already mentioned, variations in ATRs across industries may have an influence on the pattern of investment, potentially having a negative impact on growth. If this is the

case, these distortions to investment are likely to be larger in capital intensive industries.

Further analysis of the quality, size and financing of investment may shed some light on the apparently wide range of ATRs in industries such as transport, EG&W and mining.

It is also possible that ownership issues may also have an influence on ATRs.

Some preliminary considerations are set out below.

Investment in intangible assets

Bilicka, Devereux and Fuest (2011) report that Australia investments in intangible assets are more heavily taxed than other investments. The study takes the corporate tax rate for each country in the G20 together with the rate of capital allowances for investment in broad classes of assets. Specifically it considers a specific investment in plant and machinery, buildings, and intangible assets, and calculates effective average tax rates (EATRs).

It is important to note that these EATRs are different from this article's ATRs. These EATRs are based on the present value of capital allowances whereas the ATRs are based on tax paid divided by a measure of company economic income.

To the extent that these EATRs reflect the NPV of capital allowances, this would be expected to result in more investment in buildings, and plant and equipment, relative to intangibles.

If this argument has some potency, it would be expected that Australian investment in intangible assets would be low by international experience.

The OECD (2010) reports that Australian business investment in intangibles is relatively low by OECD standards, at 5.9 per cent of GDP in 2006, lower than all but three of the 16 countries (Spain, Italy and Slovakia) for which this data was available, and substantially below the US (12.0 per cent), Japan (11.1 per cent), Canada (9.8 per cent) and the UK (9.7 per cent).

The finance and insurance industry has an above average ATR and is an above average investor in intangible assets, relative to other industries.

It is possible that the taxation treatment of intangibles, relative to other investments, is a contributor to the above average ATR of finance and insurance.

Size of investment

Industry comparisons highlight the correlation between capital intensive industries — such as EG&W, construction, mining, transport and communication services — and ATRs which differ significantly from the mean.

It is possible that differences between the treatment of depreciation for accounting and tax purposes, and economic depreciation may be a factor influencing the distribution of ATRs across industries.

It is important to note that capital intensity by itself does not necessarily explain below-average ATRs. For example, ATRs may fall in a capital intensitive industry following a relatively rapid growth in investment.

Investment financed by debt

Investments are financed by some combination of debt and equity. Sørenson and Johnson (2009) demonstrate that average marginal tax rates are strongly negative when debt financing is used as opposed to equity financing.

This raises the possibility that the distribution of debt funding across industries may have a material impact on ATRs.

Ownership issues including residency of investor

Another potential subject for further study would be to assess the extent to which ownership issues could be influencing ATRs. For example, a fully franked dividend has a tax treatment that depends on the residency of the shareholder. An Australian shareholder gets a credit for the tax the company has already paid. In contrast, a foreign shareholder is unable to get a credit of the tax the company has already paid.

Thus there is the potential for similar investments being treated differently for tax purposes — which may have an influence on the distribution of ATRs across industries. This is another area worthy of further investigation.

Conclusions

This article updates analysis conducted in 2010 in respect of the year 2004-05. These ATRs are now made on a more conceptually robust manner and cover the 2006-07 to 2008-09 period.

Despite these changes, the results are generally the same, showing a wide variation in ATRs across industries.

Some of the variation in ATRs can be explained by the impact of reconciliation items that alter the amount of tax paid. These include tax offsets and rebates, R&D tax concessions, and so on.

However, after allowances are made for these reconciliation items, it is clear that ATRs still vary widely across industries.

Therefore, it remains the case that it is possible that the corporate tax system might impact differentially across industries — some sectors facing little apparent impact from company tax while others face a relatively big impact. These disparities in tax treatment may distort the allocation or quality of investment, and thereby the economy's performance.

Accordingly, further investigations are warranted.

In particular, the tax treatment of intangibles should be investigated to establish whether this aspect is influencing the dispersion of ATRs across industries.

The potential impacts of debt versus equity financed investment, and ownership issues could also usefully be explored to assess their influence on ATRs.

Finally, it is possible there are differences between the treatment of depreciation for accounting and tax purposes, and economic depreciation and that may be influencing the distribution of ATRs across industries.

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