

Deloitte Access Economics

Minerals industry tax survey 2015

Minerals Council of
Australia

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Dear James

2015 Minerals industry tax survey

Please find attached our draft report presenting and analysing the key findings of the 2013-14 industry tax data collection.

Although world commodity prices continued a trend decline through 2013-14 as China's economy slowed and as miners around the globe boosted supply, that did not lead to a further fall in the profits of Australian miners. That is because a lower Australian dollar and continued cost cutting led to local profits rising in 2013-14 – albeit modestly so.

For that reason the trend of recent years – of effective tax ratios rising as profits fell – steadied in 2013-14. Across all minerals, the effective tax rate has remained at 46.8%. That is its equal highest recorded level in this survey, matching the revised outcome for 2012-13.

We hope this analysis proves useful to the MCA.

Please do not hesitate to contact me should you have any queries.

Yours sincerely,



Chris Richardson
Director
Deloitte Access Economics Pty Ltd

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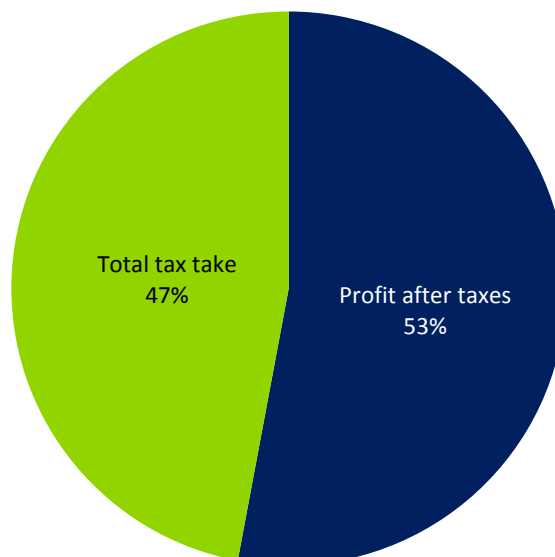
Executive Summary

The 2015 Minerals industry tax survey finds that, in the most recent survey year (2013-14), the minerals sector paid nearly half of every dollar of profit as royalties¹ and company tax to State and Federal Governments in Australia.

The total tax take ratio as calculated across all the surveyed miners was 46.8%.

The ratio refers only to company tax and royalties to allow ready comparison with survey results from previous years. It does not include other taxes, including the Minerals Resource Rent Tax (MRRT) and the carbon tax, which were also levied in 2012-13 and 2013-14.

Chart i: Total tax take ratio, 2013-14 (all minerals)



Source: MCA minerals tax survey, 2015

After two consecutive annual increases in the tax burden on the minerals sector, the ratio has stabilised over the last two survey periods at 46.8% (Chart ii).

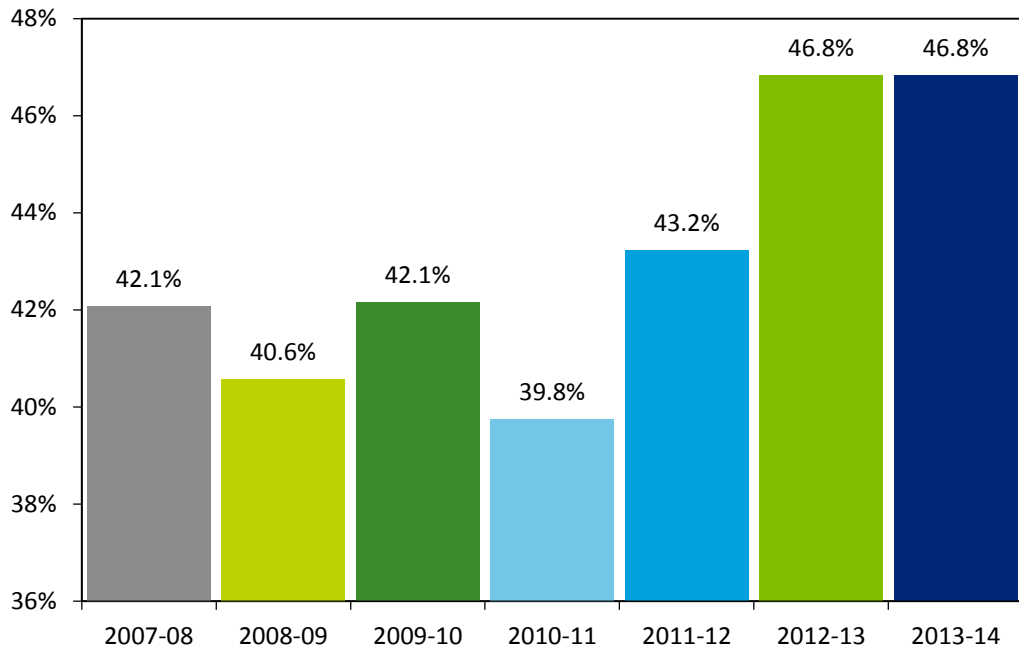
Those outcomes for 2012-13 and 2013-14 were equal record highs for this survey. The total tax take ratio for the industry has averaged 43.1% based on seven years of survey data from 2007-08 to 2013-14.

The survey also shows that the royalties ratio of 24.0% exceeded the company tax ratio for the second year in a row. Prior to that, company taxes exceeded royalties. The reason was

¹ In this report the term royalties refers only to those paid by the mining sector

simple – company tax is directly linked to profits (which fell in recent years and remained relatively low in 2013-14), whereas royalties are not.

Chart ii: Total tax take ratio 2007-08 to 2013-14 (all minerals)

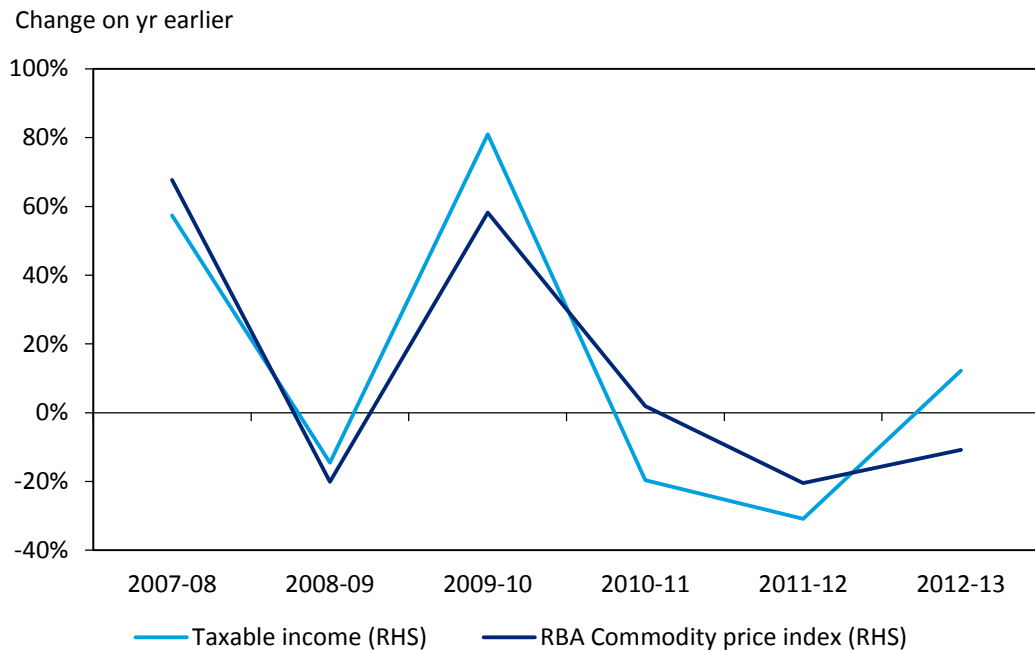


Source: MCA minerals tax survey, 2015 and earlier years

Note: Due to data revisions and sample changes estimates vary from year to year. Estimates for each year are taken from the most recent survey that provided data for that year.

Since 2010-11 this survey has told a relatively simple story: as Chart iii below shows, weakening world commodity prices were eating into profits. And although the company tax take fell alongside those profits, royalties did not, forcing up the overall tax take ratio.

Chart iii: Minerals profits and world bulk commodity prices



Source: MCA minerals tax survey, Reserve Bank of Australia

That story changed a little in 2013-14.

Although world commodity prices continued a trend decline through 2013-14 as China's economy slowed and as miners around the globe boosted supply, that did not lead to a further fall in the profits of Australian miners. That is because a lower Australian dollar and continued cost cutting led to local profits rising in 2013-14 – albeit modestly so.

For that reason the trend of recent years – of effective tax ratios rising as profits fell – steadied in 2013-14 (though not necessarily for all individual commodity groups). Across all minerals, the effective tax rate has remained at 46.8%. That is its equal highest recorded level in this survey, matching the revised outcome for 2012-13.

However, that looks likely to be a temporary reprieve. ABS data on profits before income tax of the mining sector (a wider industry definition, which includes oil and gas) fell 45% between 2013-14 and 2014-15.

The overall balance will depend on how much further the commodity price 'knife' has to fall, how successful mineral producers are at cutting costs, and the amount of prior years' losses still left to be utilised.

1 Introduction and context

1.1 Background to the survey

The minerals tax survey was inaugurated on behalf of the Minerals Council of Australia, with the first survey being conducted in 2011. The survey provides insight and analysis of the minerals industry's tax liabilities since 2007-08.

This year is the fifth such data collection. The survey is not intended to replicate other data sources, but rather to provide the MCA with its own independent and methodologically robust estimation of the minerals sector's tax burden.

The survey collects data for each of the three major commodity groups – coal, iron ore and gold mining – as well as for the total of Australian minerals operations.

1.2 Survey coverage

Company level production data were provided to the MCA by AME Mineral Economics. They were used to estimate the overall coverage of the survey in terms of percentage shares of total production.

Participation in the 2015 survey grew to 27 companies, with coverage for coal mining (one of the key commodities covered) increasing considerably. Coverage for gold mining fell owing to an estimated fall in individual companies' proportional contribution to overall Australian gold production.

Overall, the continued strong coverage of the survey gives us a strong degree of confidence that the estimates presented herein are reflective of the prevailing conditions in the minerals sector as a whole.

Table 1.1: Estimated MCA survey coverage

	Surveys received		Share of production	
	2015 survey	2014 survey	2015 survey	2014 survey
Coal	13	11	75%	68%
Iron ore	5	5	80%	80%
Gold	10	9	71%	77%
All other minerals	7	6	54%	56%
Total	27	24		

2 Industry tax survey results

2.1 Explanation of ratios

A key premise of this survey is that in considering the tax burden **it is best to focus on tax ratios rather than absolute tax dollars**. There are two key reasons for this

- First, although there have been ups and downs, over time absolute dollars have grown due to the enormous growth in the demand for and price of industrial commodities; and
- Second, ratios abstract from the size of the sector and allow debate to focus on tax rates and the associated tax burden rather than absolute dollar values.

Hence, the survey data are used primarily to calculate “tax take” ratios broadly comparable with those published by the Government from time to time.

Two ratios are presented: a total tax take ratio and a royalties ratio:

$$\text{Total tax take} = \frac{\text{Royalties from Australian mining operations} + \text{company tax}}{\text{Taxable income (or loss)} + \text{royalties}}$$

$$\text{Royalty take} = \frac{\text{Royalties from Australian mining operations}}{\text{Taxable income (or loss)} + \text{royalties}}$$

Adjusting the profit base (denominator) to account for royalties

The ‘original’ denominator of this calculation is taxable income. However, royalties are also considered to be the functional equivalent of a tax for the purposes of this survey (see Appendix A). Royalties, which ordinarily are expensed in a company’s accounts, are therefore added back to the denominator in order to calculate the tax ratios used in this survey. Failure to do this would mean that royalties are compared to a base from which they have already been deducted, leading to an overestimate of tax ratios.

The adjusted denominator is what we call *pre-tax taxable income*. Thus the ratios presented throughout this report express taxes (being company tax, royalties, and the sum of the two) as a percentage of *pre-tax taxable income*. The resulting company tax ratio is less than 30% solely on account of adjusting the profit base to include royalties.

2.2 Key results

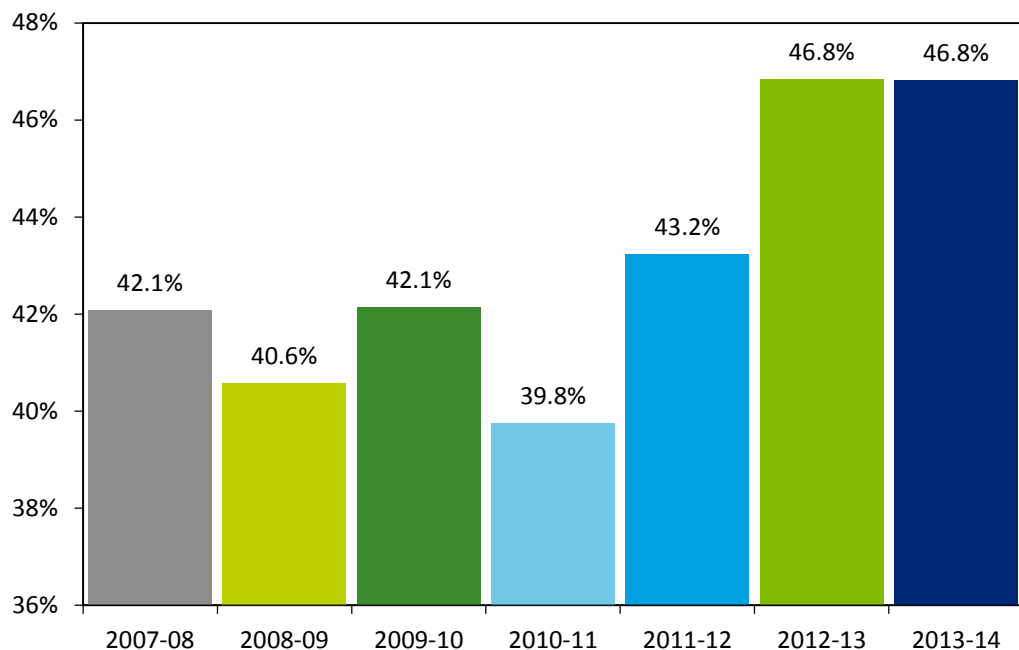
The total tax take ratio² increased between 2011-12 and 2012-13 to its highest recorded level, marking the second consecutive year of increases. Between 2012-13 and 2013-14, the ratio has stabilised at 46.8%.

The strong rise in the ratio between 2011-12 and 2012-13 was partly a revenue story – mostly attributable to falling commodity prices, which caused overall income to drop by 8% – and partly a cost story, with overall expenses growing by some 16%. The overall corporate profit base thus fell by some 32%, causing the total tax take ratio to jump sharply.

The 2013-14 results show more of a mixed bag:

- Total income stagnated (with lower world commodity prices essentially offset by a lower Australian dollar), while total expenses fell by 12% (as miners continued a phase of cost cutting).
- This balance of effects caused taxable income to rise, though the extent of that rise was offset to a degree by brought forward losses.
- All up, the minerals sector's taxable profits rose by 12% in 2013-14. (Noting though that this figure is an aggregate estimate, and as such does not explicitly consider commodity specific differences).
- Royalties also rose by approximately 12%, on the back of a 6% decline from 2011-12 to 2012-13.

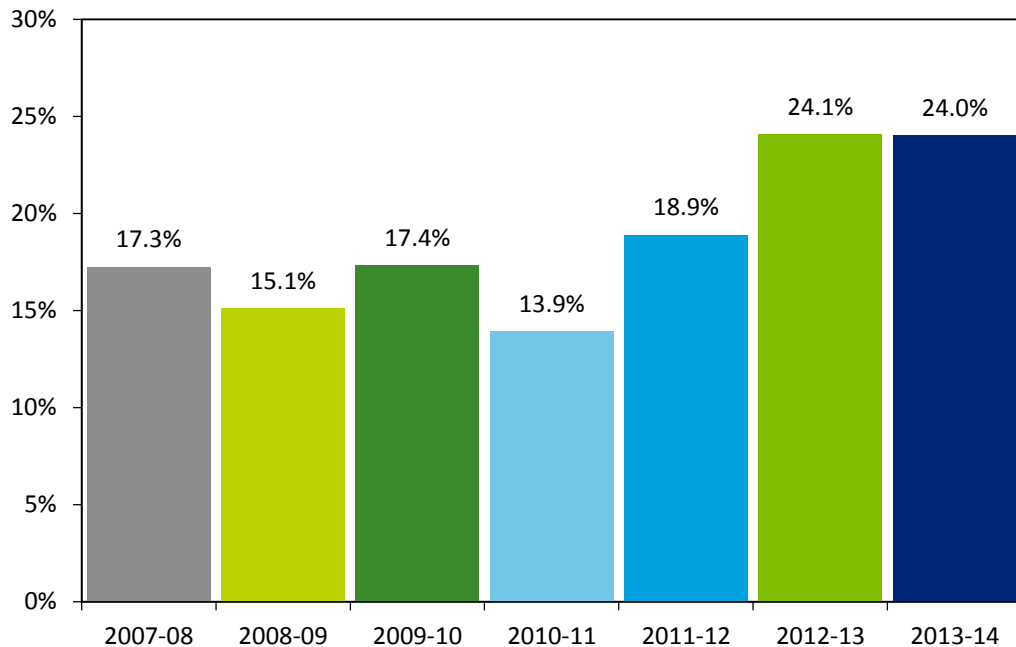
Chart 2.1: Total tax take ratio (all minerals)



² In this report, 'total' refers only to company tax and royalties. In 2012-13 minerals taxation also extended to other taxes, including the MRRT and carbon tax.

Source: 2015 MCA tax survey

Chart 2.2: Royalty tax take ratio (all minerals)



Source: 2015 MCA tax survey

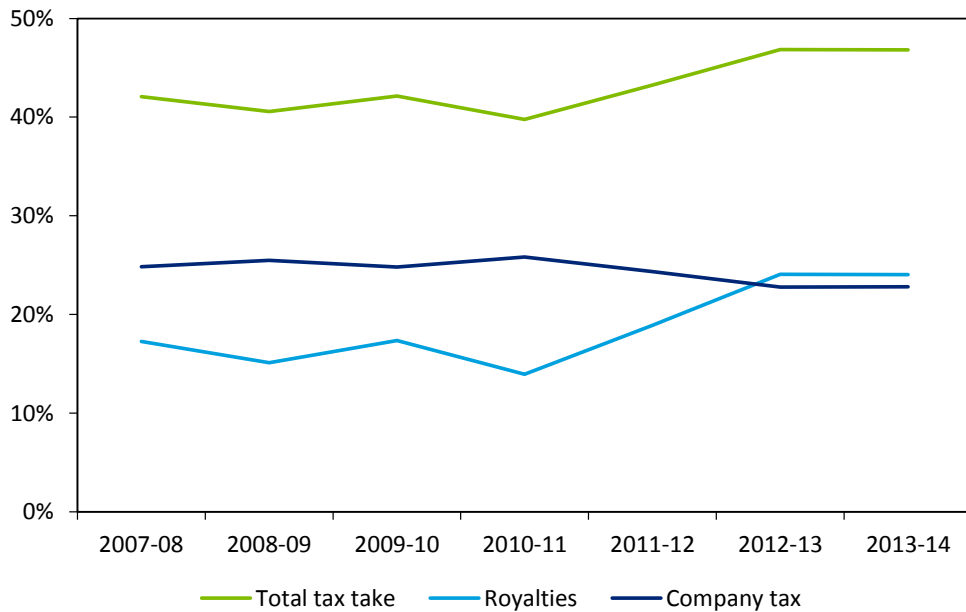
2.3 Trends

As shown in Chart 2.3, last year's survey (estimating data for the 2012-13 financial year) saw the effective royalty ratio exceed that of company tax for the first time since the survey began. The reason was simple – company tax is directly linked to profits (which fell), whereas royalties are not.³

This year's survey (estimating data for the 2013-14 financial year) shows a stabilisation of both ratios, with the royalties rate once again exceeding that of company tax.

³ Royalties used to be linked to output, but are now more likely to be a share of revenue. Company tax, by contrast, is a share of profits. As revenues are less cyclical than profits, royalties tend to form a higher share of profits when the latter are weak and a lower share of profits when the latter are strong.

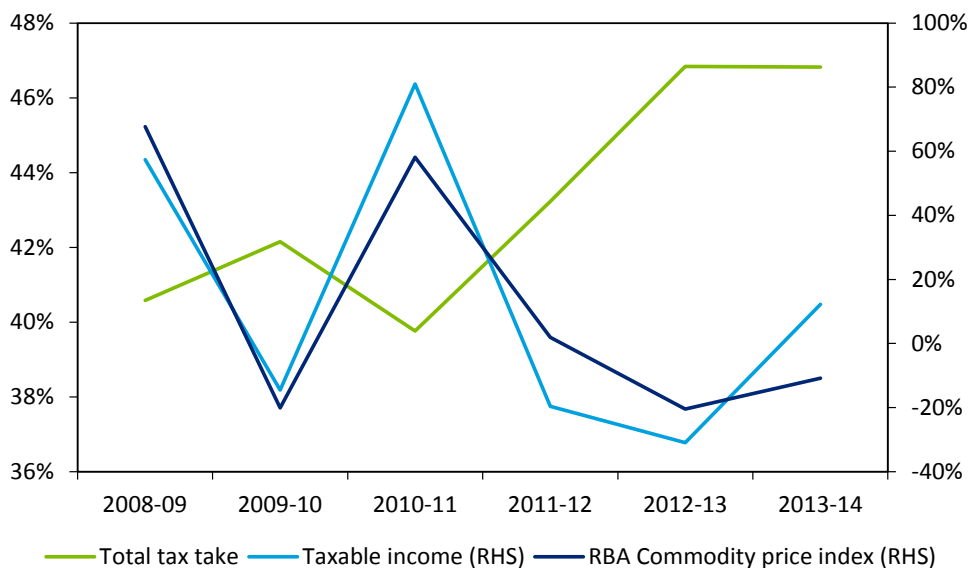
Chart 2.3: Comparison of tax ratios over time (all minerals)



Source: Deloitte Access Economics estimate

Chart 2.4 shows the tax ratio on the left axis, and the annual growth in taxable income on the right. Up until 2012-13 a clear counter-cyclical trend had emerged – that is, when times were good and profits were rising, the tax ratio would fall. However, when times were bad and profits were falling, the tax ratio would rise. This pattern is due to the counter-cyclical operation of royalties described above, and of course the falling profitability was mainly due to falling commodity prices.

Chart 2.4: Total tax take versus growth in commodity prices and taxable income



Source: MCA minerals tax survey, Reserve Bank of Australia bulk commodity prices in SDR terms

That story was more complicated in 2013-14. Although world commodity prices continued a trend decline through 2013-14 as China's economy slowed and as miners around the globe boosted supply, that did not lead to a further fall in the profits of Australian miners.

That is because a lower Australian dollar and continued cost cutting led to local profits rising in 2013-14 – albeit modestly so.

2.4 What drives the tax ratios?

2.4.1 Total income (commodity prices)

As shown in Chart 2.4 above, the RBA's commodity price index moved almost in tandem with the corporate profit base (after royalties) in the early years of the survey.

The significant growth in commodity prices experienced between 2003-04 and 2011-12 was driven by growing demand for raw materials from China, in particular coal and iron ore. Over time, global producers of resources have responded to the stronger price signals and increased supply. At the same time, demand growth from China itself has steadied as policymakers seek to rebalance growth and reduce excess credit.

Thus, since 2011-12 supply began catching up to demand and commodity prices cooled off. The fall between 2011-12 and 2012-13 was quite severe, and as was noted in last year's survey, had the expected effect on miners' overall incomes and profitability.

Yet while income fell, expenses continued to rise. The upshot was a dramatic fall in profitability – the accounting profits of surveyed companies fell by 57% between 2011-12 and 2012-13 (the closest matching ABS data indicate 52%), and taxable income fell by 35%.⁴

Over the latest period though – that is, from 2012-13 to 2013-14 – the linkage has become less apparent. While commodity prices continued to ease, the falls were not as sharp as in the year prior. At the same time two other factors were strongly in play:

- the \$A fell; and
- miners managed, by and large, to adjust their cost structures accordingly.

This is apparent because while overall incomes did not grow at all between 2012-13 and 2013-14, expenses fell by an estimated 12%.

2.4.2 Total expenses

The stabilisation of the tax ratios, coupled with the decline in expenses and concurrent stagnation in total incomes, suggest that the movement in the ratio this time around is more of a cost story (whereas by contrast, the sharp jump in the ratios between 2011-12 and 2012-13 were very much an income and commodity prices story).

⁴ The difference in accounting profit and taxable income arises due to reconciliation items, which are discussed in Appendix B.

In order to test this we compared total income (excluding interest) and total expense (excluding interest, royalties and depreciation) on a 'per unit' of output basis in 2013-14 relative to 2012-13.

For both iron ore and coal mining (which together account for around 80% of reported income in the survey database), expenses per tonne of production fell more than income between 2012-13 and 2013-14. This further indicates a degree of cost cutting among companies, as miners respond to an era of lower commodity prices by addressing their cost base.

Table 2.1: Change in income and expenses per unit of production, 2012-13 to 2013-14

	Income	Expenses
	<i>Change from 2012-13 to 2013-14</i>	
Coal	-9.2%	-9.4%
Iron ore	0.9%	-3.3%
Gold	-21.1%	-13.2%

Source: Deloitte Access Economics estimates

2.4.3 Taxable income (and adjustment items)

The corporate profit base (i.e. taxable income) is obviously a primary driver of the underlying tax ratios. As noted above, taxable income generally shows a counter-cyclical relationship with the tax ratios – higher taxable income means a lower denominator and thus a lower tax ratio, and vice versa.

Broadly speaking, the same income and expense aggregates that affect accounting profit will equally affect taxable income. Yet taxable income is not the same as accounting profit, so it is necessary to reconcile accounting profit or loss to taxable income or loss through the addition and subtraction of certain items:

- *'Addition items'* tend to increase taxable income relative to accounting profits. Examples of 'addition items' include franking credits, net capital gains, and expenses that are recorded in a company's accounts but are not deductible for tax purposes.
- *'Subtraction items'* tend to reduce taxable income relative to accounting profits. A prime example of a 'subtraction item' is prior year tax losses, which while not recorded on a company's financial statements, can be used to offset current year tax liabilities. Other examples include capital works deductions, small business and general business tax breaks, and non-taxable income.

The distinction between accounting profits and taxable income highlights the broader distinction between items which are 'tax' concepts and items which are 'accounting' concepts. Since the purpose of this survey is to collect tax data, the correct comparator for ratio purposes is the 'tax' concept of profits – that is, taxable income, or the corporate tax base – and not the 'accounting' concept of profits.

While the two should generally move in line with each other over the long term, occasionally cyclical factors will mean that the two may not shift in parallel, and as such ratios using accounting profits and not taxable income could potentially misstate the true tax burden of the sector.

2.4.4 Royalties

Royalties are levied on minerals companies' gross income, not their profits. This has generated the counter cyclical relationship between royalties and the corporate profit base (and hence overall tax take ratios) over the past few years. The large jump in the total tax ratio between 2011-12 and 2012-13, for example, was caused by a fall in the corporate profit base (taxable income before royalties) of around 26%, while at the same time royalties only fell by 6%.

More broadly, the following broad comment can be made regarding the relationship between overall tax take and royalties: as profits fall, the tax take ratio tends towards infinity, and royalties contribute a larger share of miners' overall tax contribution.

In other words, as profits fall, the overall tax take will also fall, but not by as much as profits, with the result that the total tax ratio calculated from the survey database will tend to rise.

2.5 Changes from last year's survey

This year's survey collected data for the 2012-13 and 2013-14 financial years. As with previous years, there is an overlap between the data provided last years for 2012-13 and that provided this year. Analysis of the difference provides us with an understanding of the overall voracity (and stability) of the underlying tax ratios.

Three factors explain the variation in 2012-13 data between this year's survey and last year's survey:

- First, some companies that participated in the 2014 survey did not participate in this year's survey.
- Second, some 2012-13 data were revised between this year's and last year's survey. This is especially the case for companies that report on a calendar year basis (that is, CY 2013 and CY 2014), as the CY 2013 data provided in last year's survey were often preliminary.
- Third, the 2015 survey saw a number of companies participate for the first time, providing both 2012-13 and 2013-14 data in doing so. The response this year has been the best so far, with a total of 27 companies participating, up from 24 last year.

Table 2.2 breaks down the differences in 2012-13 results from last year's and this year's survey into the three sources of change described above. The table shows that the effect of data revisions was by far the dominant driver of re-estimated 2012-13 results. Ultimately though, the combined effect of these revisions was negligible, with a less than one percentage point impact on the underlying tax ratios.

Table 2.2: Changes for 2012-13 between 2013 and 2014 surveys (all minerals)

	Change in key calculation items			
	Drop outs	Data revisions	Newcomers	Total change
Royalties	-0.77%	3.71%	2.36%	5.30%
Company tax	0.29%	5.12%	1.68%	7.09%
Total tax take	-0.26%	4.39%	2.03%	6.16%
Taxable income before royalties	0.03%	6.62%	0.00%	6.65%

	2012-13 tax ratios			
	Last year's estimate	After drop outs	After data revisions	Final estimate
Royalty tax take	24.37%	24.17%	23.52%	24.06%
Company tax take	22.69%	22.75%	22.42%	22.78%
Total tax take	47.06%	46.92%	45.94%	46.84%

Source: Deloitte Access Economics estimates

3 Industry-wide tax estimates

Deloitte Access Economics was separately commissioned by the MCA to provide estimates of the likely tax expense borne by the minerals sector. Table 3.1 provides a summary of our estimates.

Table 3.1: Estimated tax payments, minerals sector

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Royalties	3,160	3,583	4,054	7,471	5,742	8,644	9,090	8,338	10,370	8,366
Company tax	4,824	7,053	8,120	13,205	6,135	14,005	15,380	11,589	11,280	4,227
Total	7,984	10,637	12,174	20,676	11,878	22,648	24,471	19,926	21,795	12,594

Source: State and Federal Budget papers; ATO *Taxation Statistics*; ABS 5676; ABS 8415; BREE; Deloitte Access Economics

The figures highlighted in blue in the above table are a mix of official forecasts and Deloitte Access Economics estimates. All other figures are taken from official sources. Note that all the estimates in this report are on an accrual basis.

Deloitte Access Economics estimates the total tax burden on the minerals sector at \$12.6 billion in the financial year just ended. In absolute dollar terms, and as Chart 3.1 shows, that is the lowest level since 2009-10 – the year in which the GFC had the biggest impact on the profits of miners. On the other hand, the 2013-14 total tax burden remains above any year prior to the GFC.

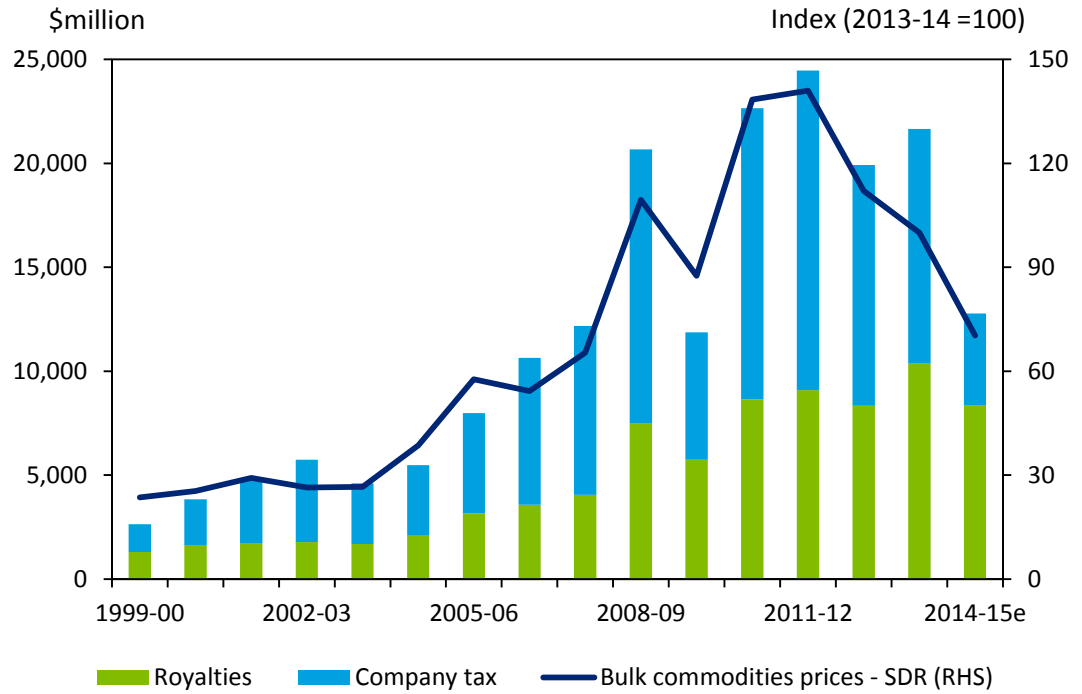
That chart also helps to illustrate the centrality of the commodity price story in driving the overall tax burden of the minerals sector – taxes generally rise and fall alongside the commodity price cycle.

The chart also brings home another general theme. Even with the lower commodity prices evident in 2013-14, there has been a relative switch towards royalties. In the main that reflects the higher royalty rates than now apply to key elements of the minerals sector. On the other hand the company tax dollars have eased not merely because commodity prices have done the same, but also:

- Investment spending by miners was very high in 2013-14 and the years prior to then, which has lifted the impact of depreciation as a deduction.
- As royalties are deductible costs when calculating company tax, the rise in the former has weighed on the latter.

More detail on the methodology and underlying drivers of the tax estimates are presented in Appendix D.

Chart 3.1: Royalties and company tax versus bulk commodity prices, 1999-00 to 2014-15



Source: Deloitte Access Economics, Reserve Bank of Australia

Appendix A: Are royalties taxes?

In the minerals tax debate of 2010 the charts released by the Treasury included royalties in with resource and other taxes in considering the mining sector's total contribution to the coffers of the public sector. Accordingly, Treasury referred to "Resource taxes (such as royalties, PRRT, crude oil excise and the RSPT)"⁵ in putting together its figures.

Yet some commentators have argued that royalties are not a tax, and so should not be included in ratios aimed at assessing the tax liabilities of the mining sector.⁶

So how many angels are dancing on the head of that particular pin? The debate over whether or not to classify royalties as a tax, a charge, a levy, or something else, is of little consequence. As the IMF puts it:

*"From the perspective of the investor, of course, it makes little difference whether a payment is called a royalty or a tax: the economic impact is the same. In terms of policy design too whether one thinks of a royalty as akin to a user fee or as an explicit tax, the determination of its proper level and time path reduces to the same question."*⁷

As the IMF also notes, what actually matters is the extent to which royalties share similar characteristics to taxes.

The primary purpose of royalties is to allow the community a return on the use of its raw mineral deposits. In that context to argue that royalties are not a tax is also to argue that the PRRT, MRRT, or the originally proposed RSPT, are not taxes either – despite all of them having 'tax' in their names.

A number of reputable commentators – including the Henry Review itself, ABARE, Ross Garnaut, Henry Ergas, Ben Smith and others – have all discussed the current royalties regime. Yet none of those contributors to the debate have countenanced the view that royalties do not form part of miners' total tax contributions.

Just like other taxes that affect miners, royalties are levied to ensure the community gets a slice of mining companies' revenue. And, just like other taxes, royalties themselves can be useful policy levers. In particular, royalties can help ensure the extraction of that resource occurs at an optimal rate (a point also made by the IMF in 2010).

⁵ See

http://www.aph.gov.au/~media/Estimates/Live/economics_ctte/estimates/bud_1011/Treasury/answers/BET6.ashx.

⁶ See for example this article in the *Sydney Morning Herald* in response to the latest MCA tax survey: <http://www.smh.com.au/business/a-taxing-tale-of-two-peak-bodies-20150101-12gcty.html>.

⁷ Phillip Daniel, Michael Keen and Charles McPherson, IMF (2010), *The taxation of petroleum and minerals: principles, problems and practice*, <https://www.imf.org/external/np/seminars/eng/2010/tax/090910.htm>.

The point here is simply that royalties:

- are an integral means of government revenue raising, and
- contribute to State Government programs (such as the 'Royalties for Regions' in Western Australia).

To suggest that royalties are not a tax is to overlook the many similarities that royalties share with other taxes.

Appendix B: Survey background

Background to the survey

In late 2010, the Minerals Council of Australia (MCA) recognised the importance of industry analysis and reporting of tax data for the purpose of current and future tax debates. An industry data collection was instigated, with the aim of generating tax ratios that are timely and transparent.

Deloitte Access Economics was engaged by the MCA to assist with conducting the survey. The first survey was undertaken in 2011. The survey collected financial information in relation to the direct resource taxes paid to Australian governments on account of the local mining operations of minerals companies. Results were publicly released in September 2011.

The current survey is the fifth tax data collection. It updates and extends on surveys from previous years, with data now available stretching back to 2007-08 (respondents in the first survey were asked to provide three years' worth of data; respondents in all other surveys are asked to provide the most recent two years' worth of data).

The focus of the survey is on the minerals sector (excluding oil and gas) and on mining operations (extraction) in particular – distinguishing between the main commodity groups of coal mining, iron ore mining, gold mining and other metals mining.⁸ Furthermore, this information is required only in relation to the mining of minerals in Australia.

The main data being collected relate to resource royalties and company tax, with the other financial data requested providing the basis for calculating a pre-tax "profit" figure against which to compare resource tax payments.

All the financial information collected is derived from a company's annual tax return – being information generally accessible (and dissectible) by a company's tax group. While the requisite information is readily available at the company level, completing the survey requires such information to be allocated across the key commodities/activities and across locations.

The focus of the survey is on mining operations (extraction). Fundamentally, this excludes the refining or smelting of minerals or ores (other than preliminary smelting of gold), or the manufacturing (processing) of products of mineral origin such as coke or cement. These excluded activities are in the nature of manufacturing, not mining.

The companies surveyed were also asked to exclude from the data they reported:

- all oil and gas activities, on the grounds that the MCA's focus is on minerals rather than petroleum products;

⁸ Mining can also involve the extraction of non-metallic minerals. This category was excluded from the survey on the grounds that it is not a significant category for resource taxation purposes.

- all offshore activities, on the grounds that the focus of the data collection is on taxes paid to Australian governments which, by their nature, do not reflect mining activities undertaken outside Australia;
- any exploration activity or other mining support activity, on the grounds that resource rents by their nature arise on account of extraction of minerals or ores rather than any preceding exploration activity or any downstream or support activities; and
- any non-mining activities.

The companies surveyed were asked to report data in relation to their mining operations for each State and/or Territory in which they operated.

The confidentiality undertaking signed by both the MCA and Deloitte Access Economics for the assurance of companies surveyed means that the survey data collected at an individual company level cannot be disclosed under any circumstances. Survey data have been analysed solely in aggregate form.

Calculating tax take ratios

The aim of the tax data collection is not to derive population estimates of total amounts (as is the purpose of ‘official’ minerals industry data published by the ABS). Rather, the aim is to derive **ratios** that convey an insight into the tax liabilities incurred in respect of Australian minerals operations.

A key premise of this approach is that in considering the tax burden **it is best to focus on tax rates rather than absolute tax dollars**:

- Although there have been ups and downs, over time absolute dollars have grown due to the enormous growth in the demand for and price of industrial commodities.
- Ratios provide a more accurate measure of tax burden. Ratios abstract from the size of the sector and allow debate to focus on tax rates and the associated tax burden.

Hence, the survey data are used primarily to calculate “tax take” ratios broadly comparable with those published by the Government from time to time.

Choice of denominator for the tax take ratios

Rather than comparing taxes paid with “resource rents” (which are unobservable), the analysis from this report instead compares dollar levels of tax collection with a more transparent and widely-accepted measure of corporate profits, namely the corporate tax base – the ATO’s measure of taxable income.

Specifically, it uses taxable income *plus* royalty expenses. The ‘original’ denominator is taxable income. However as noted in Chapter 1, royalties are also considered a tax for the purposes of this survey. Royalties, which ordinarily are expensed in a company’s accounts, are therefore added back to the denominator in order to calculate the ratios used in this survey. Failure to do this would mean that royalties are compared to a base from which they have already been deducted, leading to an overestimate of tax ratios.

Note that taxable income is not the same as accounting profit. Thus it is necessary to reconcile accounting profit or loss to taxable income or loss through the addition and subtraction of certain items:

- ‘*Addition items*’ tend to increase taxable income relative to accounting profits. Examples of ‘addition items’ include franking credits, net capital gains, and expenses that are recorded in a company’s accounts but are not deductible for tax purposes.
- ‘*Subtraction items*’ tend to reduce taxable income relative to accounting profits. A prime example of a ‘subtraction item’ is prior year tax losses, which while not recorded on a company’s financial statements, can be used to offset current year tax liabilities. Other examples include capital works deductions, small business and general business tax breaks, and non-taxable income.

The distinction between accounting profits and taxable income highlights the broader distinction between items which are ‘tax’ concepts and items which are ‘accounting’ concepts. Since the purpose of this survey is to collect tax data, the correct comparator for ratio purposes is the ‘tax’ concept of profits – that is, taxable income, or the corporate tax base – and not the ‘accounting’ concept of profits.

While the two should generally move in line with each other over the long term, occasionally cyclical factors will mean that the two may not shift in parallel, and as such ratios using accounting profits and not taxable income could potentially misstate the true tax burden of the sector.

Choice of numerator for the tax take ratios

The survey collects data for each of the following tax payment variables, which enable calculation of tax take ratios:

- Royalty expenses within Australia, as reported in the annual company tax return; this amount generally involves an accrual/payable amount.
- Australian gross company tax payable, being 30% of ‘taxable income’; this amount generally involves an accrual/payable amount. This is the figure used for company tax in the tax take ratios.
- Australian company tax *actually paid* during year; this amount reflects both cash payments made during a year, and any rebates/tax offsets and tax credits, and so can differ in any one year.

With regard to the second dot point above, note that the gross tax payable figure used in calculation of the tax ratios is not 30% of positive taxable income, but 30% of aggregate taxable income, and therefore is net of current year tax losses. Although current year tax losses have the effect of reducing *actual* tax payments in future periods, in accrual terms, their effect is to reduce the tax liability *with respect to the current period*.

With regard to the third dot point, on account of various rebates, tax offsets and credits, as well as potential timing effects, the amount of tax actually paid in any one year may differ substantially from gross company tax payable. This series can be highly volatile, and the effects of timing differences mean it cannot be ascertained for certain which period actual tax payments relate to.

For this reason the company tax figure that is used in the numerator for the tax ratios published in this report is gross company tax payable, not company tax actually paid.

Rather than just focussing on royalties and other resource-specific taxes, the reporting of the survey's findings is based on the premise that the minerals tax take should be measured as the combined impact of all taxes, including company tax.

The main fiscal instruments used to collect resource revenues in the minerals sector are mainly State and Territory royalties and Commonwealth company income tax.

The potential for errors

Over the years of its operation to date, the tax data collection survey has an established (and effective) procedure for ensuring that all companies' returns are as accurate as they can be. That said, some degree of error is inevitable in any survey.

This section discusses the potential for both sampling and non-sampling errors to occur, as well as the procedures in place to minimise the scope for such errors.

Sampling error

1. *Companies providing data on different reporting periods*

The methodology set out in Appendix C ensures that the data being reported relate only to the specific financial years in question, and hence relate only to market conditions that prevailed in the specific financial years under examination.

Each year, the survey asks companies to provide data in respect of their two most recent financial years – that is, the current survey sought data in relation to 2013 and 2014 (either calendar year or the equivalent financial year). For companies that reported on a calendar year basis, their returns were converted to a consistent financial year basis using the procedure detailed in Appendix C.

By definition, it is virtually impossible to ever truly assess the accuracy of the financial year estimates – put simply, a company which reports on a calendar year basis is unlikely to provide data on a financial year basis, meaning we are unlikely to ever know the 'true' financial year values for those companies.

An alternative would be to seek data in relation only to a specific reporting period. Preliminary consultations with some companies when the survey commenced indicated that the larger companies would likely be able to convert their own data to a consistent reporting period.

However, there are two issues with this:

- First, Deloitte Access Economics would effectively lose control (and knowledge) over the methodology employed by individual companies in converting their data. In our judgement, it is better to apply a consistent (and transparent) methodology for all companies, such that the methodology ultimately employed, and as set out in Appendix C, is a matter of public record.

- Second, we would likely sacrifice some sample size, since not all companies would be able (or willing) to convert their data to a consistent reporting period.

We estimate that companies who report on a calendar year basis represent roughly half of the total sales revenue of the survey sample, meaning that roughly half of the companies' sales data were converted into their financial year equivalents.

Also, one company provided data for the year ending 31 March. Given that this reporting period is really only one quarter 'out' on either side of the desired reporting period (that is, year ending 30 June), it was decided not to adjust this company's data, on the grounds that any attempt at adjusting that data risked creating more errors than it attempted to solve.

We remain confident in the soundness of our estimation methodology, and the fact that changes in the sample of companies surveyed has not, over time, generated significant increases or decreases in the ultimate ratios presented, gives us further empirical confidence that the survey results are accurate.

Non-sampling error

1. *Non-sampling error by respondents*

Inaccuracies in reporting by survey respondents can give rise to non-sampling errors. In particular, the survey very deliberately asks companies to exclude from any data they provide amounts that relate to non-mining activities, oil and gas activities, exploration or mining support activities, offshore activities, and the share of any joint venture amounts attributable to other companies.

To the extent that some amounts relating to the above items may inadvertently have been included in survey responses, some degree of non-sampling error is possible. That said, being in its fourth year, we are confident that respondents are fully aware of the specific requirements of the current survey.

A more likely source of non-sampling error from respondents lies in the requirement that data be separated into specific commodity groups (coal, iron ore, gold and all other minerals) that may not explicitly correspond with companies' internal reporting procedures. It should also be noted that in some cases amounts relating to gold may also include small amounts of other minerals – such as copper or silver – where such minerals are effectively a by-product of gold production.

Where companies indicated that their commodity level data breakdowns may be a cause for some concern, or where companies were unable to allocate some financial items across commodities or States, follow up correspondence with the relevant companies was conducted until a satisfactory conclusion was found.

More broadly, to minimise non-sampling error by respondents, considerable effort was allocated to manual 'checking' by Deloitte Access Economics of each company's survey return. This involved comparing reported data with published total where appropriate, as well as conducting a series of 'sense checks' on the data (for example, ensuring that returns were internally consistent). Any issues identified were followed up with individual companies.

2. *Non-sampling error by Deloitte Access Economics*

Where necessary, manual adjustments were made to survey returns to ensure consistency with totals or where the respondent (or Deloitte Access Economics) had concerns with the accuracy of a particular component of the survey. All such adjustments were discussed both internally and with the relevant company so as to ensure the appropriateness of the adjustment employed, and a record was kept of all adjustments made.

Deloitte Access Economics maintains internally documented procedures for all of the 'standard' estimation methodology in relation to this survey (such as the standard reporting period conversion discussed in Appendix C). Any and all adjustments made during the 'data checking' phase were recorded so that they can be reviewed in future surveys as necessary. A first step in the 'data checking' phase is to review the notes made last year in relation to any manual adjustments.

Appendix C: Estimating a standard reporting period

Companies participating in the survey differ in the reporting periods used for their financial data. As the annual period covered by official economic and financial statistics in Australia generally relates to the 12 months ending 30 June, for the sake of comparison it is most convenient if all data are converted on a standardised basis reflecting trading conditions in the 12 months ending 30 June.

One option is simply to aggregate data from both types of reporting periods. In this case, however, the estimates would reflect trading conditions prevailing in periods outside the 12 months ending 30 June in the relevant year.

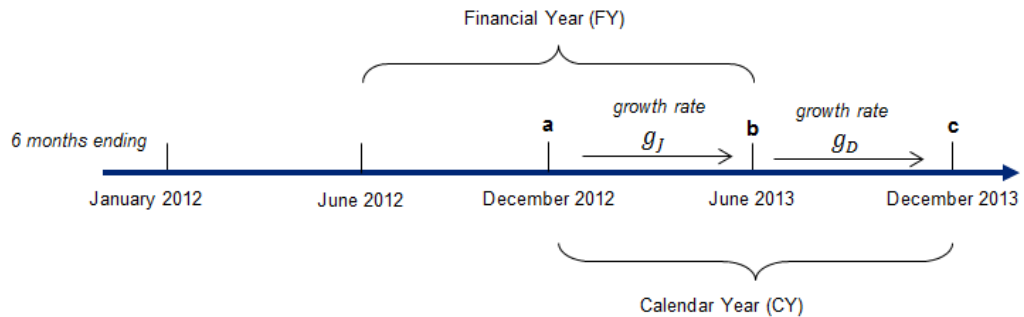
As an alternative, for a company providing calendar year financial information (CY), the arithmetic mean (or mid-point) of each pair of consecutive CY values could be used to approximate the associated amount for the financial year ending 30 June (FY). For example, for the series in the table below, the arithmetic mean of the 2011 CY and 2012 CY values (1,070 and 779 respectively) is 925. However, it is evident that this approach has limited merit as it can result in a FY estimate that is quite different to the actual value (with the observed FY value for the year ending 30 June 2012 in this example being 751 compared with the arithmetic mean of the 2011 CY and 2012 CY values of 925).

<u>irregular growth series</u>	2011	2011	2012	2012
	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec
series	597	473	278	501
half-yearly growth rates			-41%	80%
12 months ending 30 June (FY)			751	
12 months ending 31 December		1,070		779

If the half yearly growth rates for the relevant series were similar, then taking the arithmetic mean (in the table above, 925) would provide a reasonable approximation of the FY value. But in an industry as volatile as the minerals sector, the observed half yearly growth rates are rarely consistent, meaning the arithmetic mean is a less reliable guide than otherwise.

As an alternative, Deloitte Access Economics has derived a formula which takes into account differing half yearly growth rates and will, where the requisite growth rates are known, provide the correct FY value.

We begin by noting that the calendar year comprises the sum of two 6-month periods, b and c , while the financial year is made up of periods a and b (see the figure below).



The known growth rates between each of these 6-month periods (g_J and g_D) allow us to trace-back the calendar year data to arrive at a financial year estimate. First we start with,

$$\begin{aligned} CY &= b + c \\ &= b + (1 + g_D)b \\ &= b(1 + (1 + g_D)) \end{aligned}$$

Re-arranging,

$$b = \frac{CY}{1 + (1 + g_D)}$$

Now, turning to the 6-month period a ,

$$\begin{aligned} a &= \frac{b}{1 + g_J} \\ &= \frac{CY}{(1 + g_J)(1 + (1 + g_D))} \end{aligned}$$

Now it is possible to combine these results to express the financial year in terms of the calendar year value and the two half-yearly growth rates:

$$\begin{aligned} FY &= a + b \\ &= \frac{CY}{(1 + g_J)(1 + (1 + g_D))} + \frac{CY}{1 + (1 + g_D)} \end{aligned}$$

$$FY = CY \left(\frac{1 + (1 + g_J)}{(1 + g_J)(1 + (1 + g_D))} \right)$$

Of course, in estimating FY values for individual companies, the requisite half yearly growth rates are rarely known. As an alternative, we use the observed half yearly growth rate in either the company's volume or value of production, or, where such data are not available, the implied half yearly growth rates from BREE data.

The resulting estimates are then subject to a comprehensive internal 'sense check' to ensure the calculation has provided a reasonable figure. While not perfect, given the volatility in half yearly growth rates observed in the minerals sector, we are confident that

in normal circumstances, this is a superior methodology than the alternatives (that is, using a simple average or simply not converting data to a consistent reporting period).

Where companies' taxable income has switched from positive to negative over a given period however, the adjustment factor described above no longer holds. Where these conditions prevail, a simple average has been applied on the grounds that this is likely produce a more accurate result. The adjustment method in these circumstances will be reviewed and refined prior to the next survey.

Appendix D: Discussion of industry-wide tax estimates

Methodology for royalties estimates

The royalties data shown in Table D.1 below are essentially as estimated by State and Territory Governments. Some of the mineral splits are not available in the latest State and Territory Budget papers, and have been estimated by Deloitte Access Economics.

Table D.1: Estimated royalties, by commodity and State

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
	actual	actual	actual	actual	actual	actual	budget
Coal	4,290	2,678	3,541	3,786	3,000	3,224	2,835
Iron ore	1,988	1,857	3,701	3,833	3,915	5,564	3,945
Gold	193	244	253	303	304	313	317
Other minerals	1,001	964	1,149	1,169	1,118	1,268	1,270
Total minerals	7,471	5,742	8,644	9,090	8,338	10,370	8,366
WA	2,327	2,299	4,193	4,325	4,407	6,014	4,431
Qld	3,410	2,101	2,816	2,881	2,243	2,468	2,169
NSW	1,279	985	1,240	1,464	1,318	1,338	1,273
Other States	455	357	395	420	370	550	493

Source: State Budget papers, Deloitte Access Economics estimates

All the data included in the above table are from published State and Territory Treasury sources except where gaps have been filled by estimates made by Deloitte Access Economics.

As such, the royalty estimates and projections mostly reflect assumptions made by various State Treasuries:

- For **Western Australia** for the years 2013-14 and 2014-15, data are as reported in the 2015-16 Budget Paper No.3 (BP3) published on 14 May 2015. The data for 2012-13 were sourced from the 2014-15 Budget, those for 2011-12 were sourced from the 2013-14 BP3, those for 2010-11 were sourced from the 2012-13 BP2, while those for 2009-10 were sourced from the 2011-12 BP3, and those for 2008-09 from the 2010-11 BP3.
- For **Queensland** for the years 2013-14 and 2014-15, data are as reported in the 2015-16 Budget Paper No.2 (BP2) published on 14 July 2015. The 2012-13 data were sourced from the 2014-15 BP2. The data for both 2010-11 and 2011-12 were sourced from the 2013-14 BP2, while the data for 2009-10 were sourced from the 2011-12 BP2. The data for 2008-09 were sourced from the Queensland Department of Minerals and Energy website.

- For **NSW** for the years 2013-14 and 2014-15, all data on total royalties are as reported in the 2015-16 Budget Paper No.1 (BP1) published on 23 June 2015. The 2012-13 data were taken from the 2014-15 BP2. The 2010-11 and 2011-12 figures were both sourced from the 2013-14 BP2. The data for 2009-10 were sourced from the 2011-12 BP2, and those for 2008-09 from the 2009-10 BP2. The coal component of total royalties for 2014-15 was sourced from the 2015-16 BP1. For 2012-13 and 2013-14, those were sourced from the 2014-15 BP2, and for 2010-11 and 2011-12 were sourced from the 2013-14 BP2. The coal component of royalties has been 'backcast' prior to that by Deloitte Access Economics.
- The data for **Tasmania** for 2014-15 were sourced from the 2015-16 Budget Paper No.1 (BP1). The data for 2013-14 were sourced from 2014-15 BP1, while the data for 2011-12 and 2012-13 are as reported in the 2012-13 Annual Financial Report published on 31 October 2013, and prior to that are as in its earlier year Annual Financial Reports.
- For the **"Other" States**, the data for **Victoria, South Australia** and the **Northern Territory** for 2014-15 are as reported in the respective 2015-16 Budget Papers. For 2012-13 and 2013-14 they are as reported in the 2014-15 Budget Papers, and for 2010-11 and 2011-12 are as reported in the respective 2012-13 Budget Papers and their Annual Financial Reports for 2008-09. For South Australia, the commodity breakdown is as reported in the SA Department for Manufacturing, Innovation, Trade, Resources and Energy's MESA Journal issues 64, 68 and 72 published in March 2012, March 2013 and March 2014 and in prior year editions.

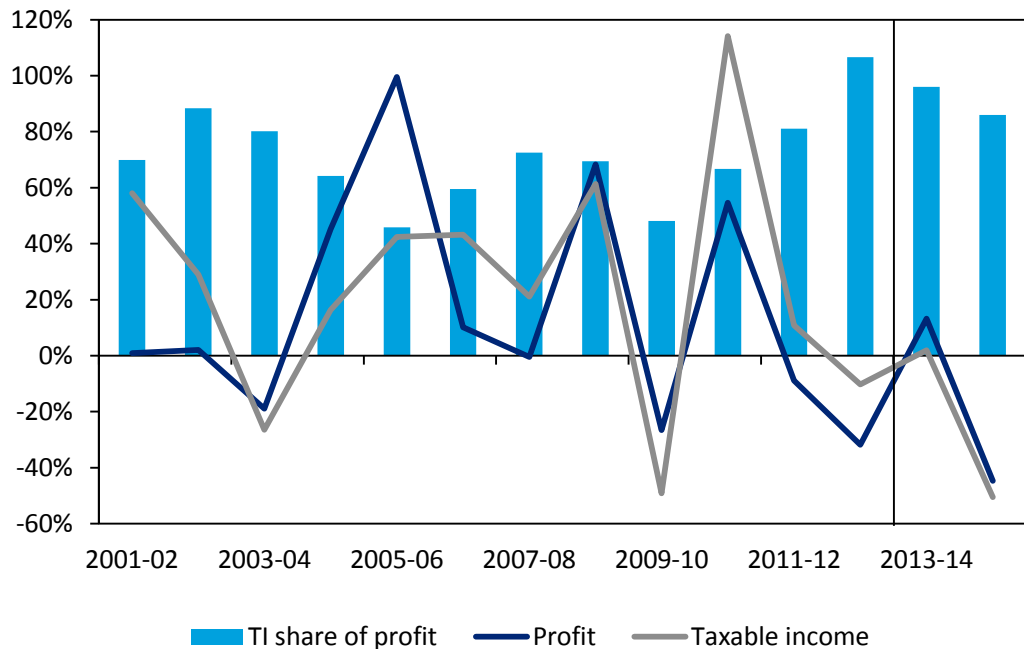
Methodology for company tax estimates

In brief, the company tax estimates are derived from Australian Taxation Office data available through to 2012-13, with Deloitte Access Economics estimates based on ABS numbers for profits before tax thereafter.

The most recent available profit data before tax from the official sector is from the Australian Bureau of Statistics' (ABS) *Business Indicators* publication (cat. 5676.0). This provides quarterly profits for the mining industry through to the September quarter 2015 (and hence covers all of 2014-15).

Last year, Deloitte Access Economics assumed that taxable income, as reported by the ATO, grew at the same rate as pre-tax operating profits for 2012-13 and 2013-14. Hence those growth rates were applied to 2011-12 taxable income to derive estimates of company tax paid for 2012-13 and 2013-14. This implied that the ratio of taxable income to pre-tax operating profits remained constant over three years.

Taxable income for 2012-13 was reported by the ATO at a level equivalent to 106% of pre-tax profits as reported by the ABS. This was well outside the bounds of historical experience. Therefore, Deloitte Access Economics has applied judgement to assume that the ratio of taxable income to pre-tax profits returns towards its historical average. Specifically, Deloitte Access Economics has assumed that the ratio declines by 10 percentage points per year (to 96% in 2013-14 and 86% in 2014-15). At 86%, this is still well above the historical average and, excluding the result in 2012-13 is close to the previous peak ratio of 88% reported in 2002-03.

Chart D.1: Profit/taxable income growth, taxable income (TI) share of profit

Taxable income data are available from the Australian Taxation Office to 2012-13. When comparing the growth in both profit and taxable income, as well as the 'taxable income share of profit' (see Chart D.1), two observations are worth making:

- When times are good, taxable income tends to grow more slowly than profit.
- When times are bad and profit is falling, taxable income tends to fall quicker than profit, as companies use past tax losses to reduce their tax liability.

The assumptions made by Deloitte Access Economics produce estimates that are consistent with these observations.

As Chart D.1 shows, these are broad tendencies rather than hard-and-fast rules, and a consistent pattern is not seen every year:

- In 2010-11, profit rebounded strongly after the global financial crisis (GFC), increasing by 53% in that year, while taxable income grew by 114%, 61 percentage points faster than profit. This gap occurred because net deductions grew less than profit. In other words, miners made relatively more tax deductions in 2009-10 than they did in 2010-11, and hence the gap between profit and taxable income narrowed between 2009-10 and 2010-11. That makes sense from an intuitive point of view – with taxable income falling more rapidly than profit during a downturn, next year's figures are starting from a lower base.
- In 2011-12, profit fell by 9% while taxable income grew by 11%. This outcome reflects a break in the general pattern observed that taxable income falls more quickly than profit in bad times, and is also inconsistent with the survey evidence showing a faster than normal drawdown of prior year tax losses. As such, 2011-12 represents an anomaly compared to earlier years. In part, this may reflect

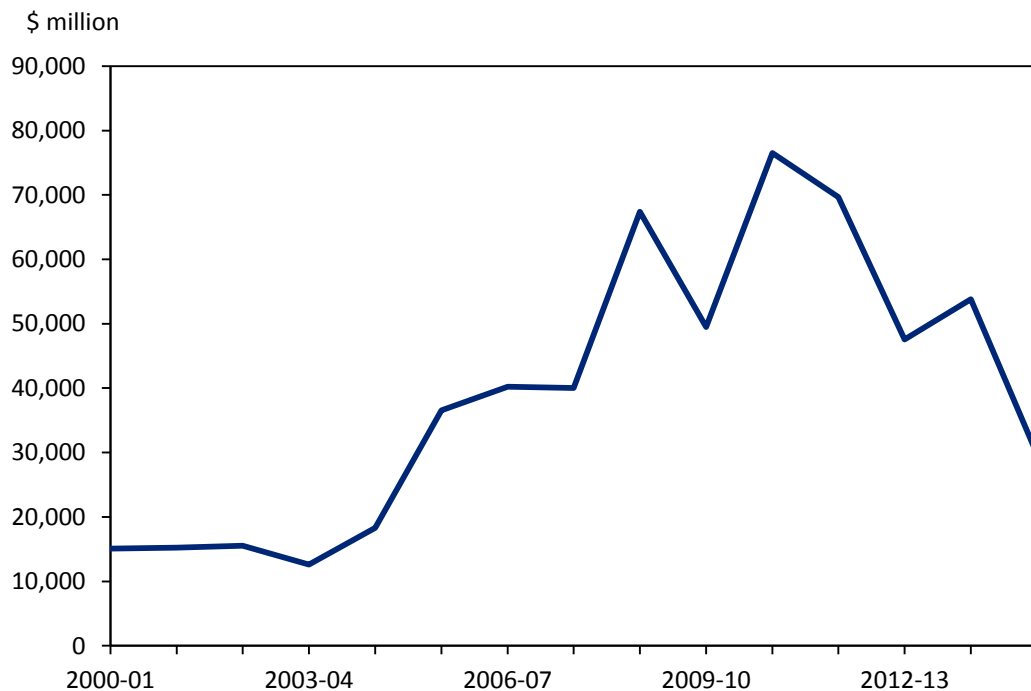
companies having used up the majority of their prior year tax losses, and this in combination with a decline in capital expenditure and related deductions may have caused a correction in taxable income relative to accounting profit.

- In 2012-13, profits fell by 31%, while taxable income only fell by 10%. This outcome also reflects a break in the general pattern.
- Given the outcomes for 2011-12 and 2012-13, taxable income is assumed to rise at a slower rate than profits in 2013-14 (1% vs 11%) and fall at a faster rate than profits in 2014-15 (-51% vs -46%).

To derive separate growth taxable income estimates for oil and gas and minerals for 2013-14 and 2014-15 (official data from the ATO is used for 2012-13 and earlier years), Deloitte Access Economics has increased taxable income for oil and gas by the rate of increase in the value of production for oil and gas implied by the latest BREE forecasts of export volumes and unit export prices. The remaining growth in mining taxable income is then attributed to minerals.

Gross tax for minerals and oil and gas is calculated as 30% of taxable income, with total mining tax being the sum of the two.

Chart D.2: Actual and estimated annual profits before income tax, total mining



Source: Australian Bureau of Statistics

Comparison with previous results

The MCA also commissioned Deloitte Access Economics to derive similar estimates in prior years. Comparing the current estimates versus those in last year’s matching report:

- **Royalties** have been revised slightly higher in 2013-14 following the incorporation of some additional commodity level data for that year, but are unchanged in earlier years.
- **Company tax** expenses have been revised, reflecting the latest data and economic developments. Actual taxable income for 2012-13 as reported by the ATO was higher than the 2012-13 taxable income estimate from last year based on mining profits data from the ABS. Hence, estimated company tax for the minerals sector is higher than previously estimated.

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