



THE MOUSE THAT ROARS:

COAL IN THE QUEENSLAND ECONOMY



OCTOBER 2014

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The **Australia Institute**

Research that matters.

The Mouse That Roars: Coal in the Queensland economy

October 2014
ISSN 1836-9014

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Summary

Queensland's economy is based on service industries. Service industries employ nearly three quarters of the Queensland workforce and make up two thirds of economic output.

99 per cent of Queenslanders do not work in the coal industry.

96 per cent of Queensland government revenue does not come from coal royalties.

93 per cent of Queensland's gross state product does not come from coal production.

Despite this, Queensland's leaders regularly exaggerate the role of coal in Queensland:

We are in the coal business. If you want decent hospitals, schools and police on the beat we all need to understand that.

Campbell Newman, current Queensland Premier, Liberal-National Party

[Proposals to] not approve any further coalmines [are]... just simply preposterous, they would spell economic and social catastrophe for Queensland and the national economy...

Anna Bligh, former Queensland Premier, Labor Party

We like to romanticise the complexities and sinews of our economy but we really have a very simple business plan – we survive on the charges we raise to allow people to dig up black rocks and red rocks: coal and iron ore.

Barnaby Joyce, former Queensland senator, National Party

The exaggerated claims made by political leaders, based on coal industry public relations campaigns, have resulted in a public perception of the coal industry that is unrelated to economic reality. Polling conducted for this report shows that Queenslanders think the coal industry:

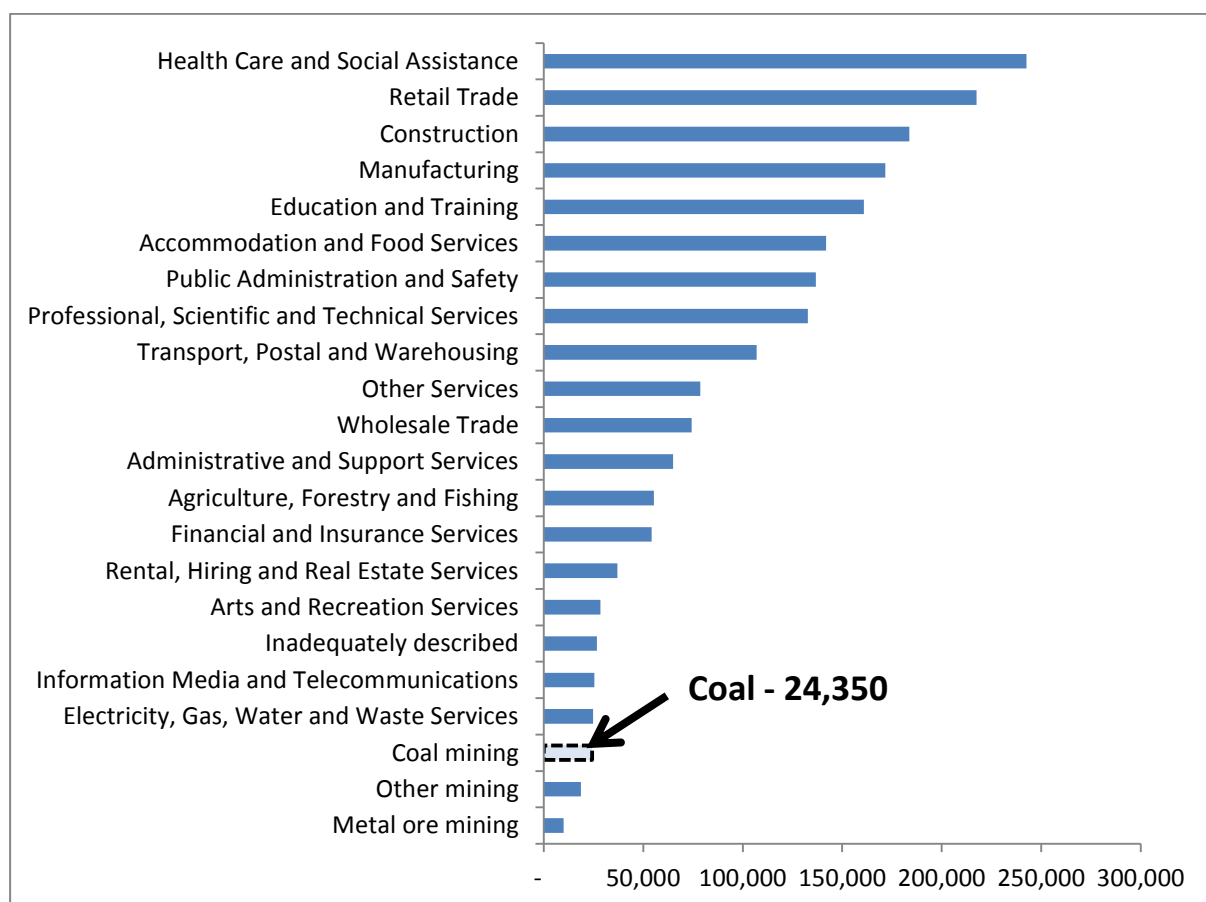
- Employs ten times more people than it really does; and
- Contributes five times as much revenue to the state budget than it does.

Despite the relatively small size of the coal industry, it is clearly able to make a lot of noise. In the Queensland economy, it is the mouse that roars.

Employment

The coal industry is one of the smallest employers in the Queensland economy, accounting for just 1.2 per cent of employment. As shown in the figure below, more people are employed in the Arts and Recreation sector:

Queensland employment by industry



Source: ABS 2011 census, accessed through TableBuilder Basic

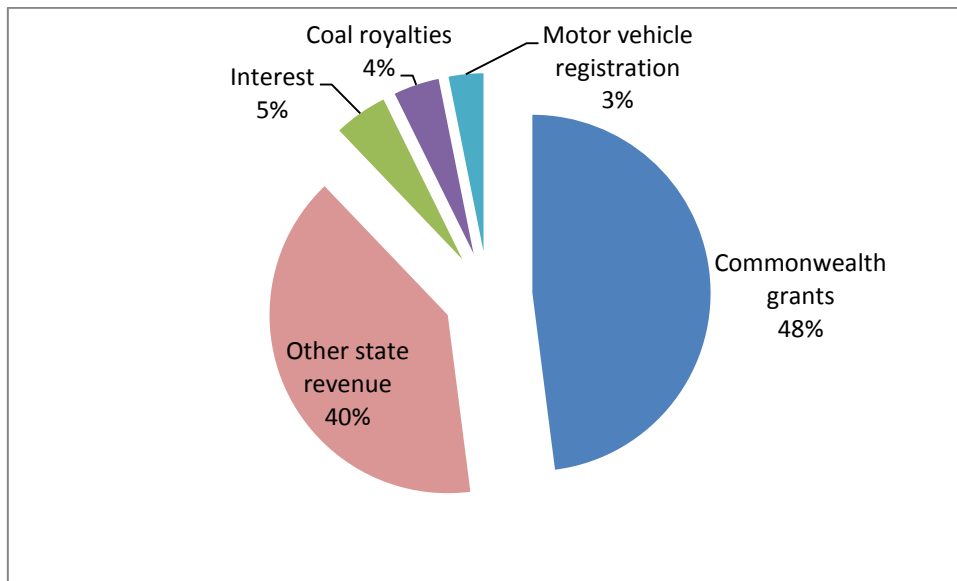
Because it is such a small employer, the industry regularly commissions economic reports to estimate its “indirect” economic effects. These reports are usually based on a form of economic modelling described as “biased” by the ABS and “abused” by the Productivity Commission. The assumptions in the models, such as an unlimited supply of skilled labour, ensure the coal industry’s impacts are overstated. A coal industry economist recently criticised these models in court, where misleading evidence could lead to serious penalties.

Industry claims of indirect employment are not supported by ABS Labour Force data. In the short term, ABS data shows that changes in mining employment often move in the opposite direction to changes in overall Queensland employment. Over the longer term, increases in mining employment have had little or no impact on Queensland’s overall employment.

State revenues

The coal industry will pay around \$2 billion in coal royalties to the Queensland government in 2014-15. Such a figure is not large in the context of running a state government. Coal royalties represent around four per cent of Queensland Government revenue. Similar amounts come from vehicle registrations and interest on funds saved for superannuation and long service leave entitlements, as shown in the figure below:

Queensland state government revenue 2014-15 (A\$50.1 billion in total)



Source: Queensland Treasury (2014) *Queensland State Budget 2014-15 Budget Paper 2 – Budget Strategy and Outlook, Part 3 Revenue*

While coal makes a modest contribution to the state budget, it is also a recipient of considerable assistance. Queensland government assistance to the coal sector over the last six budgets has totalled around \$8 billion. The latest budget papers show assistance measures worth hundreds of millions of dollars, spent on coal infrastructure projects. Queensland Treasury is explicit that this assistance reduces social spending:

Governments face budget constraints and spending on mining related infrastructure means less infrastructure spending in other areas, including social infrastructure such as hospitals and schools.

Impacts on other industries

While the coal industry makes modest contributions to Queensland's employment and state budget, it has negative impacts on other industries such as tourism, agriculture and manufacturing. The high exchange rate and competition for land, water, labour and other resources have had various effects on these industries, including:

- Hotel occupancy rates in leisure tourism areas have declined by up to 10 per cent.
- The Reserve Bank of Australia recently found that “*the largest [negative] impact of the [mining] boom... is on agriculture.*” Agricultural employment in Queensland has declined by nearly 21 thousand jobs in the last decade, or 28 per cent. Non-mining states such as NSW and Victoria have seen agricultural employment remain steady or increase during this period.
- Manufacturing in Queensland has broadly followed Australia-wide trends. Caution is required, however, as analysis commissioned by the China First mine proposal in the Galilee Basin suggests that project alone could reduce employment in manufacturing by over 2,000 positions.

Attitudes to the coal industry in Queensland

To understand attitudes to the coal industry we commissioned a survey of 1,014 Queenslanders. Results show that Queenslanders are strongly opposed to expansion of coal projects in agricultural and environmentally sensitive areas. Of the survey respondents:

- 63 per cent are opposed to projects that would increase port and shipping activities near the Great Barrier Reef; and
- 63 per cent are opposed to projects that would affect agricultural land and water resources.

It is important to remember that these responses are based on exaggerated impressions of the coal industry's economic importance. If Queenslanders better understood the actual size of the industry, and that it is 80% foreign owned, it is likely opposition would be greater still.

Coal industry advocates are aware of this fact – at the time of writing, the proponents of a huge mine in Queensland's Galilee Basin are running advertisements on television that claim their project would create 10,000 Queensland jobs and pay \$22 billion to the Queensland government. Both claims are heavily exaggerated, but for the coal industry it is not its real size that matters, but how loud it can roar.

Introduction

The Queensland economy is based on service industries such as health care, education and a host of other activities. The wider Australian economy and most developed economies all based on services. 74 per cent of the Queensland workforce is employed in service industries and they account for 60 per cent of the state's economic output.¹

Despite these facts, discussion of the Queensland economy often centres on the coal industry:

*We are in the coal business. If you want decent hospitals, schools and police on the beat we all need to understand that.*²

Campbell Newman, current Queensland Premier, Liberal-National Party

*[Proposals to] not approve any further coalmines [are]...just simply preposterous, they would spell economic and social catastrophe for Queensland and the national economy...*³

Anna Bligh, former Queensland Premier, Labor Party

The coal industry employs only 1.2 per cent of Queensland's workforce and produces only seven per cent of the state's economic output. The way such a small industry manages to dominate discussion of such a large economy recalls the 1955 novel *The Mouse That Roared*, about a tiny country that comes to dominate the world through luck and the ignorance of state leaders.

Premier Campbell Newman links the coal industry to the provision of essential services funded by the state government – health, education and law enforcement. But in fact, payments from the coal industry amount to only a small fraction of the state government's revenue base, and the industry is a major beneficiary of taxpayer spending. Similarly, it is surprising that former premier Anna Bligh would predict social catastrophe from placing limits on the growth of an industry that employs a small fraction of Queensland's workforce.

Simplifying the nature of the Queensland economy to focus on a small number of industries is convenient for politicians trying to communicate their messages. Premier Newman has expanded his view of the state's important industries to include not just the coal industry, but also agriculture, tourism and construction, in what he describes as the state's "four pillar economy"⁴.

This is also a gross simplification. The "four pillars" account for only 23 per cent of employment in the state and only 25 per cent of its economic output.⁵ Despite the fact that these sectors receive much attention from Queensland's leaders, the vast bulk of the state's economy is outside them. The reality is that Queensland has a diverse economy largely based on service industries.

¹ Australian Bureau of Statistics (ABS) (2011) *Census of population and housing*, accessed through TableBuilder Basic, ABS (2014) 5220.0 Australian National Accounts: State Accounts. Definition of service industries from ABS (2012) 1301.0 – *Year Book Australia, Service Industries*.

² News.com.au (2012) "We're in the coal business": Campbell Newman slams UNESCO Great Barrier Reef warning

³ Gillard & Bligh (2011) *Transcript of joint press conference, Gladstone*.

⁴ Queensland Government (2012) *Six month action plan July – December 2012*

⁵ ABS (2014) 6291.0.55.003 Labour Force, Australia, Detailed, Quarterly and ABS (2014) 5220.0 Australian National Accounts: State Accounts

Queensland's political leaders are not adept at explaining the diversity of the Queensland economy, and the role of coal mining in it. Public understanding of coal's economic role is not assisted by the mining industry itself. Mining lobby group the Queensland Resource Council regularly commissions economic reports that present an exaggerated impression of the size of their industry. Typically their reports rely on economic modelling that is mathematically certain to overstate their industry's importance, modelling which has been described as "biased" by the Australian Bureau of Statistics (ABS) and "abused" by the Productivity Commission.⁶ Such reports are the basis of exaggerated claims of economic importance, which are regularly repeated in media statements, but rarely questioned.

In this report we place the Queensland coal industry in the context of the broader Queensland economy, based on official statistics rather than industry-commissioned reports. What we find is that by world standards, Queensland has a large coal industry. That industry is, however, only a modest contributor to the state budget and a minor employer.

While the industry brings benefits to some – principally its foreign owners and well-paid employees – it has had a negative impact on other industries in the Queensland economy. The coal industry is quick to claim credit for indirect benefits it may create, but other industries, such as tourism, agriculture and manufacturing, are generally slow to recognise the harm that the mining boom has caused them due to the public relations strategies of the coal industry and the subtleties of the negative effects that affect them.

The political power of the coal industry is based not on its actual role in the Queensland economy, as shown by official statistics, but on the public perception of this role. In order to better understand this political power, we commissioned a survey of 1,014 Queensland residents and asked for their impressions of:

- Coal industry employment;
- Coal industry contributions to state government revenues;
- Proportion of coal used domestically and exported;
- Foreign ownership of coal projects; and
- Impacts of the coal industry on social and environmental issues.⁷

The survey results presented below show that Queenslanders have an inflated impression of the role of the coal industry. This suggests that industry economic reports, media statements and endorsements from political leaders are effective in influencing public perception of the size of the industry. But despite these inflated impressions, survey responses show strong concerns about the wider impacts of the coal industry.

This report provides the Queensland public with a view of the coal industry in its wider economic context, and that in so doing allow for public opinion and decision making in the state to be based on empirical data rather than on political impressions.

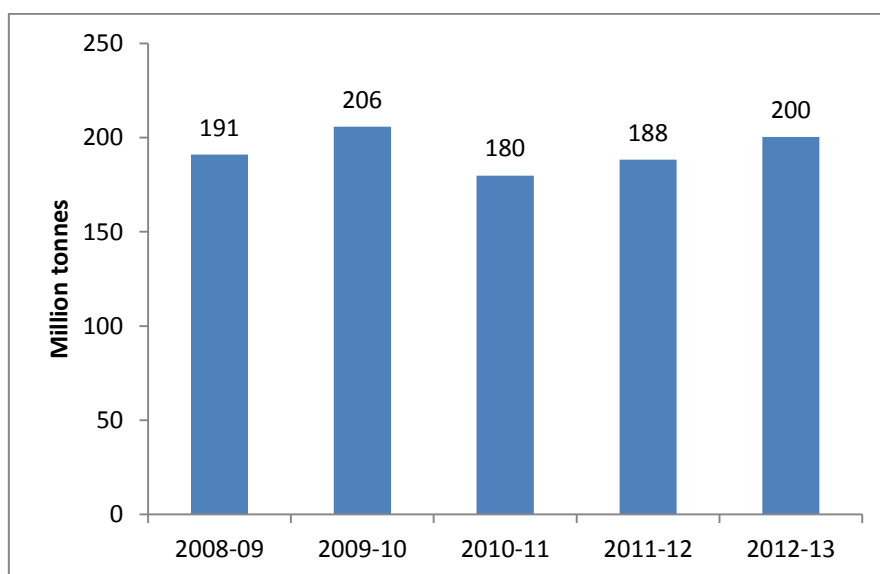
Queensland coal industry overview

Queensland produces a lot of coal. Between 2008-09 and 2012-13, Queensland produced 965 million tonnes of saleable coal, as shown in Figure 1 below:

⁶ For example, Lawrence Consulting (2013) *Economic impact of the minerals and energy sector on the Queensland economy*, which uses an input-output model, criticised in ABS (2011) *National Accounts: Input-output tables* and Gretton (2013) *On input-output tables: uses and abuses*

⁷ Survey questions are provided in the appendix. Polling was conducted online by a professional polling company. Quotas were applied so as to get a representative sample, and data have been post-weighted to reflect the broader adult Queensland population by age and gender.

Figure 1: Queensland coal production 2008-09 to 2012-13



Source: Queensland Department of Natural Resources and Mines (2014) *Queensland coal Industry 5 year summary 2012-13*

To put this in context, this amount of raw coal is enough to fill the Melbourne Cricket Ground 568 times or to make a band of coal one meter high and 24 meters wide, which would stretch all the way around the earth. It would take Queensland 43 years to consume this much coal at current rates.⁸

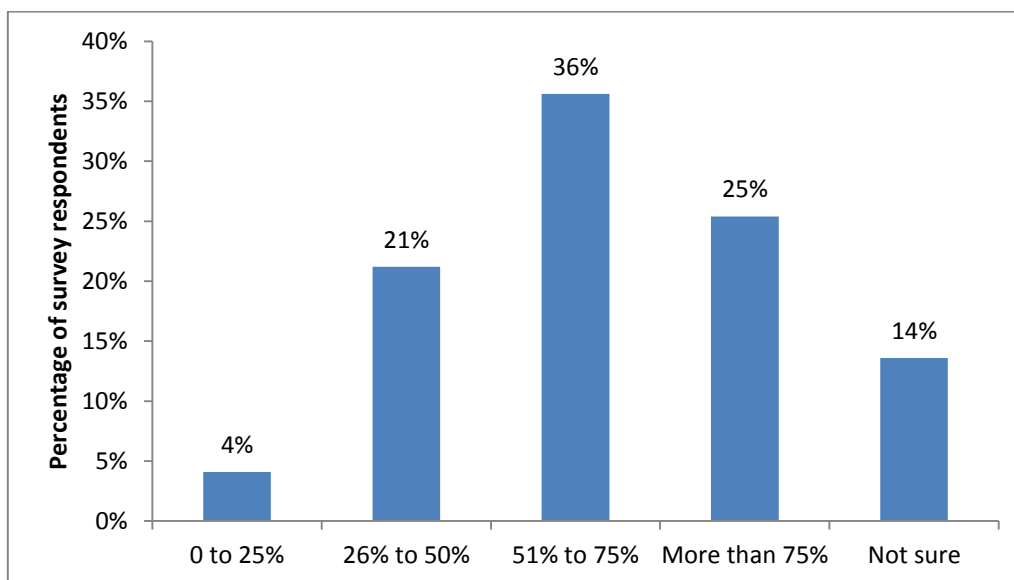
Queensland uses 20 to 25 million tonnes of coal per year, mainly for generation of electricity.⁹ The vast majority – 85 to 90 per cent – of the coal Queensland produces is exported.

The survey results presented below show that Queenslanders do not realise the extent of the coal industry's export focus. 61 per cent underestimated the portion of coal exported, with the most popular response being between 50 and 75 per cent, as shown in Figure 2 below:

⁸ MCG (n.d.) *MCG Facts and Figures*, Bureau of Resource and Energy Economics (2013) *Resource and Energy Statistics 2013*

⁹ Queensland Department of Natural Resources and Mines (2014) *Queensland coal Industry 5 year summary 2012-13*

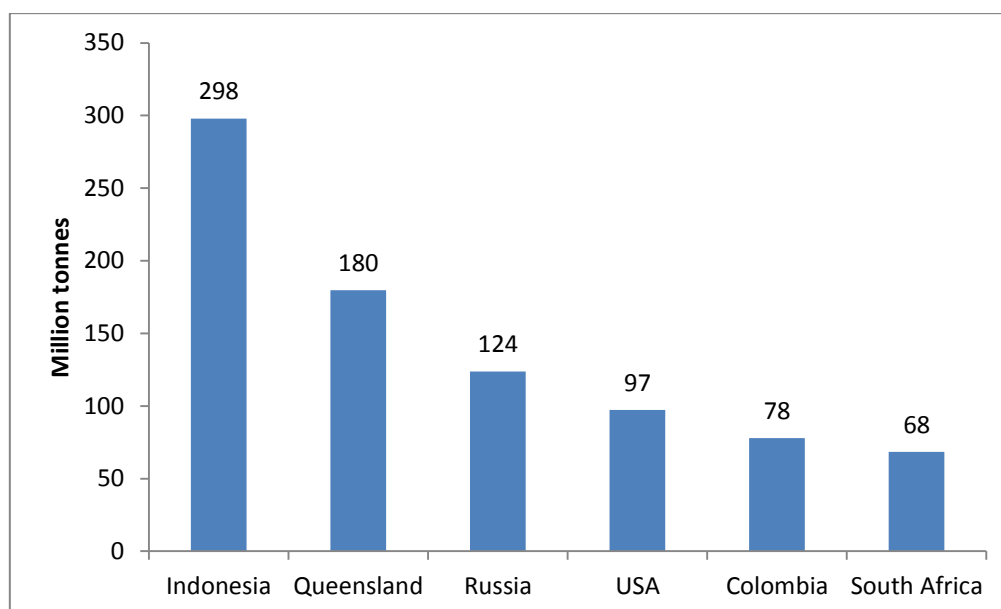
Figure 2: What percentage of Queensland coal production do you think is exported to other countries?



Source: The Australia Institute survey

Despite all of the political and media attention paid to Queensland's coal industry, it is surprising that so few Queenslanders understand the export focus of the industry. In fact, if Queensland were a country, it would export more coal than any country except for Indonesia, as shown in Figure 3 below:

Figure 3: Coal exports Queensland and various countries

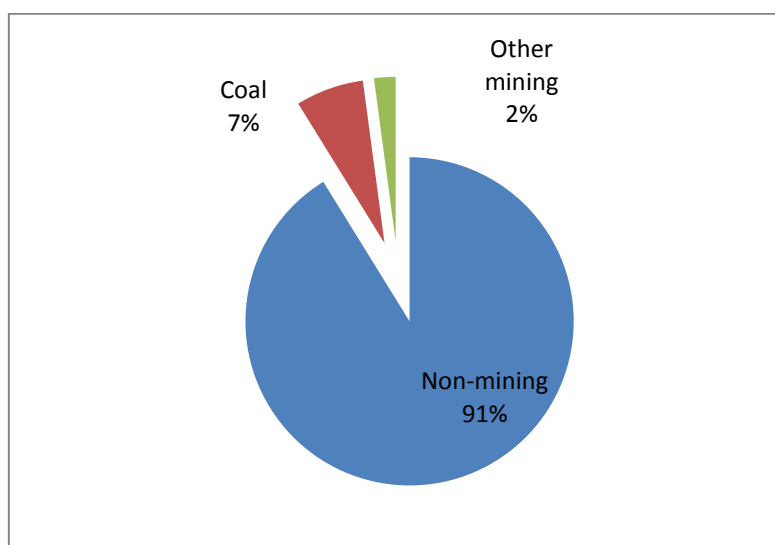


Source: Bureau of Resource and Energy Economics (2013) *Resource and Energy Statistics 2013*, Queensland Department of Natural Resources and Mines (2014) *Queensland coal Industry 5 year summary 2012-13*

Coal and the Queensland economy

The large amount of coal that Queensland produces and exports sells for correspondingly large amounts of money – revenue from coal amounts to around \$25 billion per year.¹⁰ This is a significant contribution to Queensland's economy, but one that should be viewed in the context of the size of that economy. Queensland's economy produced output worth \$290 billion in 2012-13, meaning the coal sector accounted for around 7 per cent of production by value, as shown in Figure 4 below:

Figure 4: Queensland gross state product, coal, other mining and non-mining sectors 2012-13



Source: ABS (2013) *Catalogue 5220.0 Australian National Accounts: State Accounts*. Note that coal and other mining sectors are not reported separately in this ABS publication. Here they have been separated on the basis of percentage of coal to other minerals as reported in Queensland Department of Natural Resources and Mines (2013) *Queensland annual mineral summary*.

Figure 4 shows that 93 per cent of the output of the Queensland economy is not from the coal industry. Like most modern economies, Queensland's is dominated by service industries, which account for 60 per cent of economic output. Other important contributions are from construction (ten per cent), manufacturing (seven per cent) and agriculture, forestry and fishing (three per cent).¹¹

Unlike many of these industries, the coal industry is largely foreign owned. Of the 49 operating mines in the state, only 22 have any Australian ownership and only seven appear to have an Australian stake of over 80 per cent. By volume, 80 per cent of Queensland's coal production is foreign owned.¹²

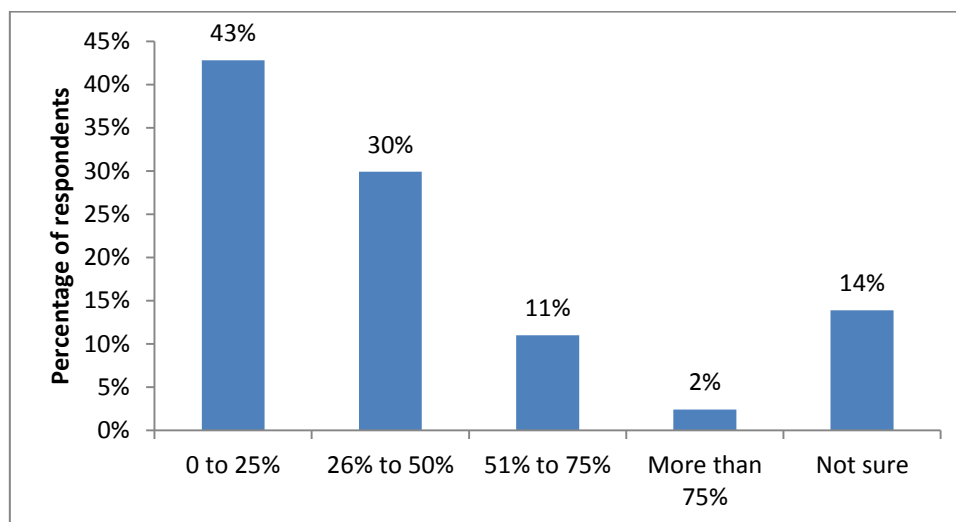
Our survey asked respondents to estimate what percentage of the Queensland's coal industry is Australian owned, as shown in Figure 5 below:

¹⁰ Queensland Department of Natural Resources and Mines (2013) *Queensland Annual Mineral Summary* gives the value of coal produced as \$22.8 billion in 2012-13 down from \$29.7 billion in 2011-12. Confusingly, the same department's (2014) *Queensland coal statistics report for the calendar year ended December 31 2013* lists coal export revenue as \$25.3 billion in 2012, \$24.6 billion in 2013, which would suggest overall value of production is slightly higher as domestic production would add to this figure.

¹¹ ABS (2014) *5220.0 Australian National Accounts: State Accounts 2012-13*

¹² Based on Department of Natural Resources and Mines (2013) *Queensland's coal – mines and advanced projects*, analysis of company websites and annual reports.

Figure 5: What percentage of coal companies operating in Queensland do you think are Australian owned?



Source: The Australia Institute survey

Figure 5 shows that large numbers of Queenslanders think that Australian ownership is substantially higher than it actually is. While the most popular response was for minimal Australian ownership, 43 per cent, the same portion of people gave responses that were higher.

The foreign ownership of the coal industry is important because it means that profits from the industry are paid to overseas owners. While some coal companies are currently experiencing financial difficulty, ABS data shows that coal has been very profitable. Coal accounts for ten per cent of 'gross operating surplus' – a broad measure of profit – in Queensland, even though it makes up seven per cent of economic output.¹³ This means that the coal industry pays out more to the owners of its capital than most other industries in Queensland. It is unfortunate for Queensland, therefore, that the coal industry is overwhelmingly foreign owned.

To summarise, Queensland has a large coal industry when assessed by volumes of coal produced, even compared to other coal producing countries. But while production volume is large, in the context of the entire Queensland economy it amounts to only 7 per cent of Queensland's economic output. The industry has been very profitable, but 80 per cent of this money is sent offshore to the foreign shareholders of mining companies.

As most coal industry profits are sent offshore, the important benefits of the industry to Queensland are employment and royalty revenue. In the following sections, we see that these contributions are surprisingly modest.

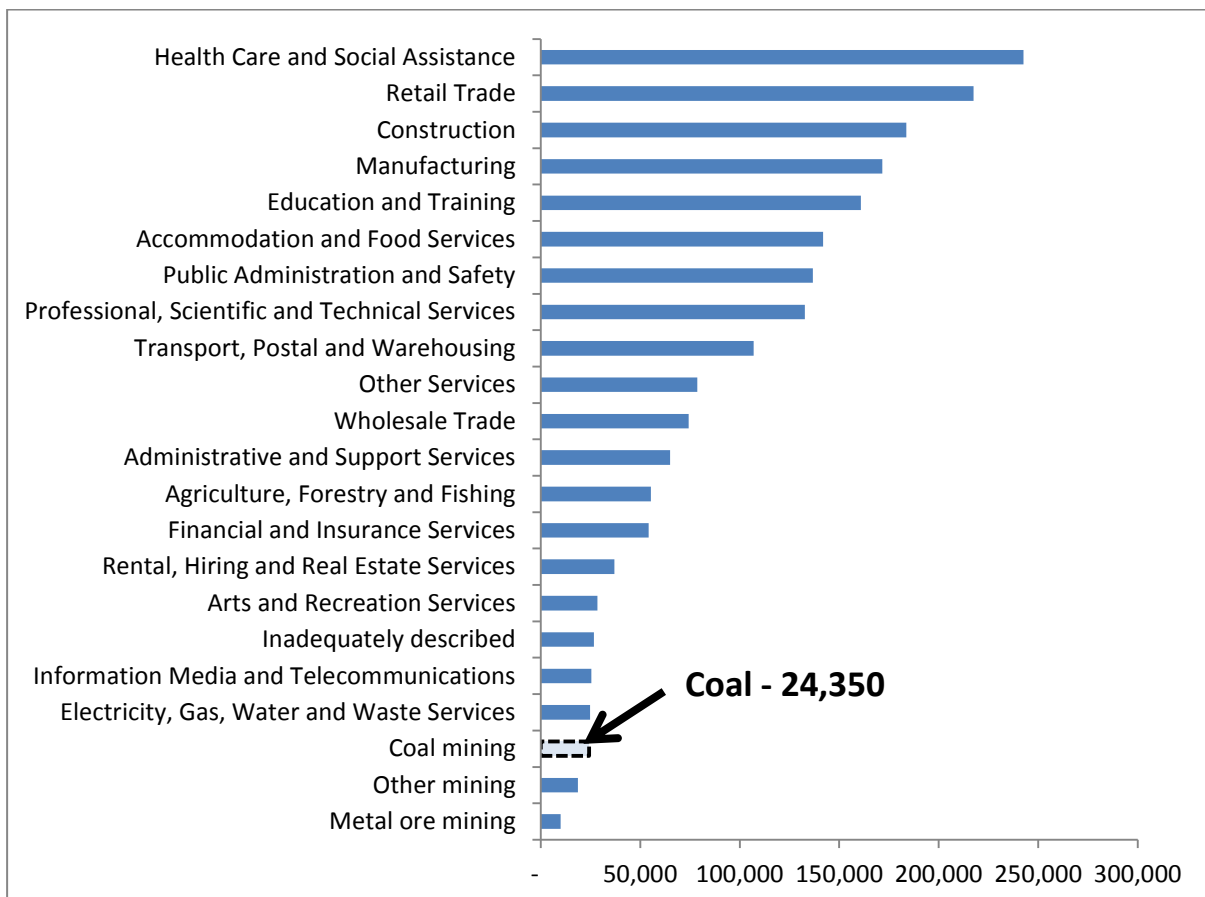
¹³ For a full explanation of gross operating surplus, see ABS (2000) 5216.0 – *Australian National Accounts: Concepts, Sources and Methods*

Employment in the Queensland coal industry

How many people work in coal mining?

At the 2011 census 24,350 people worked in the Queensland coal industry – just 1.2 per cent of Queensland’s 2 million strong workforce. It is one of the smallest industries by employment in the state. As mentioned above, employment is concentrated in service sectors, particularly health care and retail trade, as shown in Figure 6 below:

Figure 6: Queensland employment by industry



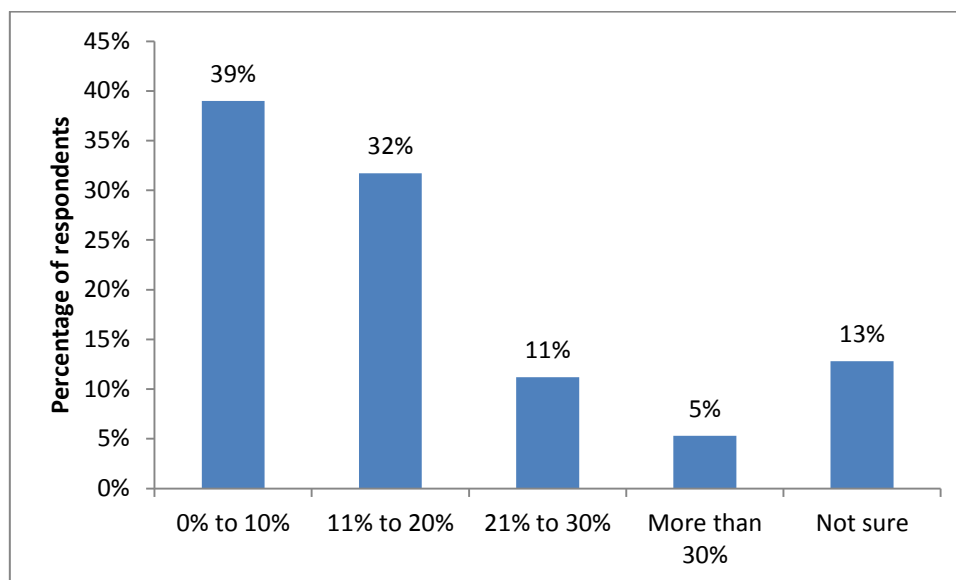
Source: ABS 2011 census, accessed through TableBuilder Basic

Figure 6 shows that more people are employed in the Arts and Recreational Service sector than are employed in coal mining. The Agriculture, Forestry and Fishing sector employs more than twice as many people as coal, while the manufacturing sector provides work for seven times as many people. Health care employs over 240,000 Queenslanders, ten times as many as coal mining.

Public perceptions of coal mining employment

Public perception is that employment in the coal industry is much more important than the numbers shown in the census. On average, respondents to our survey thought that 13 per cent of the Queensland workforce was employed in the coal industry – more than ten times the actual number. 48 per cent of people answered that coal mining employed over 10 per cent of the workforce, while 39 per cent answered correctly with less than 10 per cent, as shown in Figure 7 below:

Figure 7: What percentage of workers in Queensland work in the coal mining industry?



Source: The Australia Institute survey

Wages

While the coal sector employs only a small portion of Queensland's labour force, wages are high by community standards. The ABS estimates that mining companies in Queensland paid employees \$8.8 billion in 2012-13, an average wage of \$166,000 per year.¹⁴ Assuming the coal sector has the same wage structure as the overall mining industry, this means the coal sector paid 5 percent of Queensland wages although it only employed 1.2 per cent of the workforce.

Wages are high in the coal industry for several reasons. Jobs are often highly skilled – operating complex machinery, or requiring knowledge of geology, engineering and other specialist fields. The rapid expansion in mining projects over recent years drove up wages as demand for these workers increased faster than they were trained or entered the Australian labour market.

The high wages also reflect some of the downsides of mining work. Miners are often required to work long shifts or commute long distances, with many having to “fly-in-fly-out” (FIFO) or “drive-in-drive-out”, spending extended periods in the mining area away from their homes. Mining work can be insecure, with changes in coal prices resulting in layoffs, as has occurred in Queensland recently.¹⁵ Finally, the work can be dangerous – mining has one of the highest workplace fatality rates in Australia.¹⁶ So while wages paid are high relative to other industries, there are downsides to these payment levels.

¹⁴ ABS (2013) *Catalogue 5220.0 Australian National Accounts: State Accounts*.

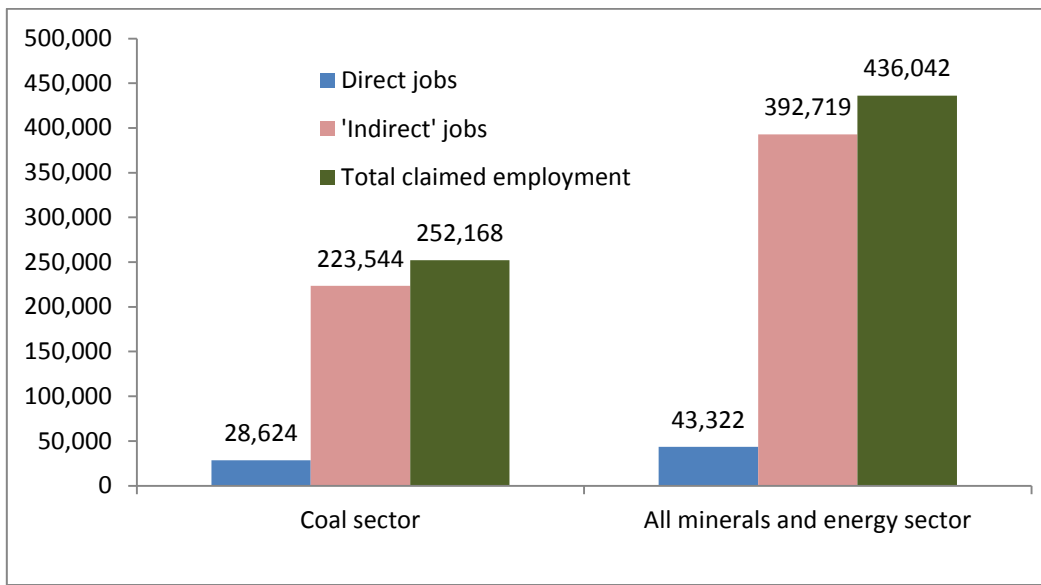
¹⁵ Saunders (2014) *700 Queensland coal mining jobs go at BHP's BMA joint venture*

¹⁶ ABS (2011) *Catalogue 4102.0 – Australian Social Trends*

Indirect employment claims

As employment in Queensland’s coal sector is relatively small, industry advocates prefer to emphasise ‘indirect’ or ‘downstream’ employment. These are jobs in other industries that the mining industry claims to have ‘created’ through its interaction with the wider economy. For example, the latest economic research commissioned by the Queensland Resource Council quantifies direct coal industry employment at levels similar to the ABS census (28,624 compared to 24,350), but claims a total impact on employment of over 250,000 for the coal sector and 436,000 for the minerals sector as a whole, as shown in Figure 8 below:

Figure 8: Industry claims of direct, indirect and total employment



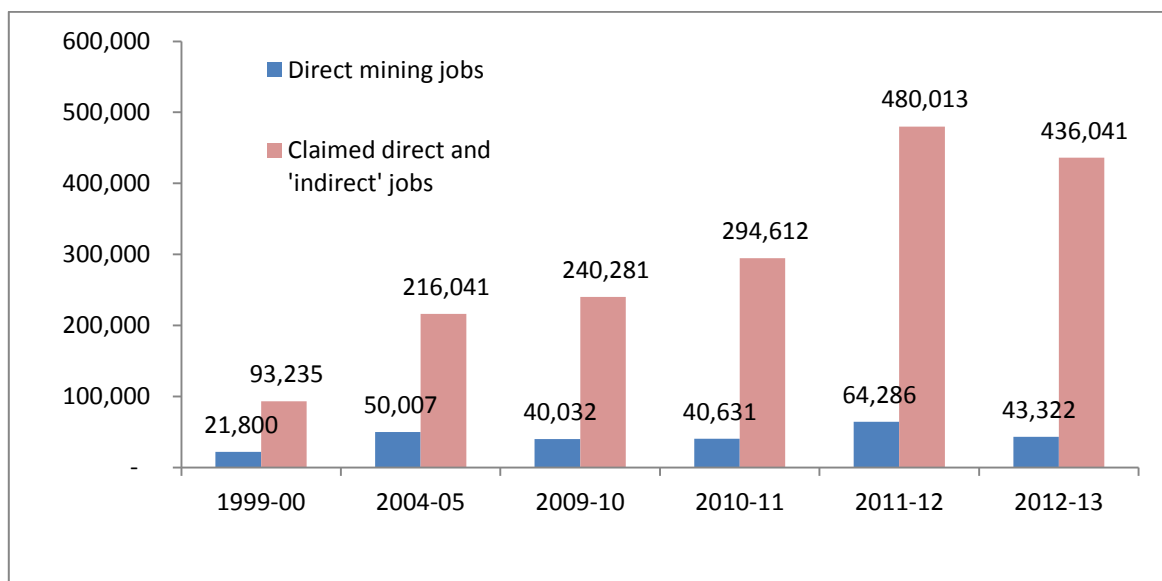
Source: Lawrence Consulting (2013) *Economic Impact of Minerals and Energy Sector on the Queensland Economy 2012/13*

This data suggests that each job in the mining sector ‘creates’ nine jobs in the rest of the economy and is the basis for industry claims to “support one in every five Queensland jobs.”¹⁷

The Queensland mining industry’s indirect job claims have been steadily increasing over time. In Figure 9 below, we see that claims at the start of the mining boom were that that one mining job ‘created’ four other jobs. In the latest Queensland Resource Council commissioned study, this has grown to almost ten ‘total’ jobs for each actual mining job:

¹⁷ Queensland Resource Council (2013) *What are Queensland resources worth to me?*

Figure 9: Industry claims of direct and 'total' mining employment 1999-00 to 2012-13

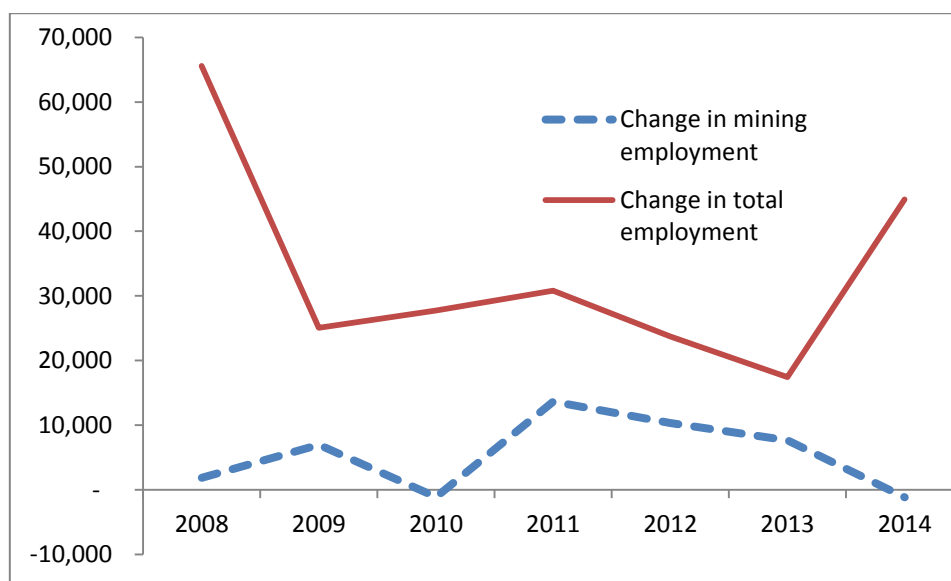


Sources: Queensland Department of Mines and Energy (2007) *Queensland mining industries: The economic significance of mining and mineral processing to Queensland Summary report*, Rolfe et al (2010) *Minerals and energy resources sector in Queensland: Economic impact study*, Lawrence Consulting (2011) *Economic Impact of Resources Sector on the Queensland Economy 2010/11*, Lawrence Consulting (2012) *Economic Impact of Resources Sector on the Queensland Economy 2011/12*, Lawrence Consulting (2013) *Economic Impact of Minerals and Energy Sector on the Queensland Economy 2012/13*.

No empirical basis for indirect employment claims

If the coal and wider mining sectors are really responsible for hundreds of thousands of jobs we would expect to see close correlation between changes in mining employment and changes in overall employment. However, ABS labour force data does not support this relationship, as shown in Figure 10 below:

Figure 10: Changes in mining and total Queensland employment

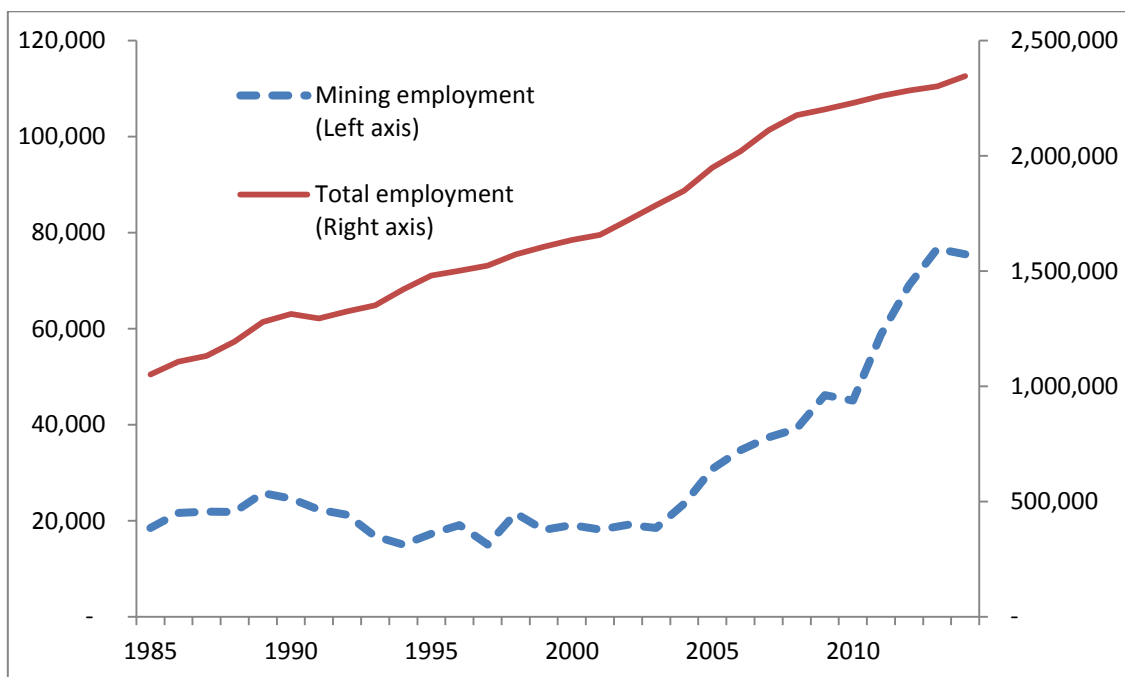


Source: ABS 2014 Catalogue 6291.0.55.003 – Labour Force, Australia, Detailed, Quarterly, August 2014

We see that while a very small number of jobs – less than 2,000 – were added to Queensland mining in 2008, overall Queensland employment increased by over 65,000. The following year, mining added greater numbers, just less than 7,000, while overall employment added far fewer, 25,000. In 2010 mining employment actually declined by 1,000, but far from shedding jobs, the Queensland economy added 28,000. The two series move together between 2011 and 2013 before diverging again in 2014 with mining employment down while Queensland’s overall employment growth has accelerated.

Looking at mining and total employment over a longer period also gives no support to mining lobby claims that mining jobs have a serious influence on overall Queensland employment, as shown in Figure 11 below. Note the two series are plotted on different axes:

Figure 11: Mining and overall Queensland employment 1985 – 2014



Source: ABS 2014 Catalogue 6291.0.55.003 – Labour Force, Australia, Detailed, Quarterly, August 2014

We see that between 1989 and 2003 mining employment in Queensland declined while overall Queensland employment grew strongly. Following the 2008 global financial crisis we see that around 30,000 jobs were added in the mining sector. However, Queensland’s overall employment growth has been slightly slower than usual in this period. If every mining job really did create nine ‘indirect’ jobs, there should have been an increase of 270,000 jobs overall in this period. Instead, there has been growth of only around 100,000, much of which is driven by other parts of the economy.

There is no empirical evidence to support the claim that mining is ‘indirectly’ responsible for significant numbers of jobs in the overall Queensland workforce. See Appendix 1 below for further analysis of this data, showing that mining job multipliers vary between a negative value and three, depending on the state of the wider economy.

Derivation of indirect jobs claims

The Queensland Resource Council claims of indirect job creation are not based on empirical data, but on “input-output” models – a type of economic modelling which the ABS considers to be “biased” and the Productivity Commission says is regularly “abused”.¹⁸

Because these models are known to produce unreliable results, coal industry economists do not rely on them in legal cases, where doing so could result in charges for misleading the court. For instance, Chinese coal company Yancoal used input-output modelling to evaluate their Ashton project in the Hunter Valley, NSW, and submitted these results to planning authorities. A local community group appealed the state’s approval of the project to the NSW Land and Environment Court in 2013. In court, Yancoal dismissed their input-output model. Their economist, Dr Jerome Fahrer, director of major economics consultancy ACIL Allen, explained why:

*Input-output modelling is fine for some purposes but it’s not the best technique ... for this kind of purpose [evaluating coal mines]. The reason is that input-output modelling takes no account of the fact that there are limited productive resources [in the economy] principally people to be employed. So it always makes the amount of output, income, jobs, bigger than would likely be the case.*¹⁹

In contrast to Yancoal’s earlier claims of major job creation, Dr Fahrer conceded coal projects like the Ashton mine are “not about jobs”. His model estimated that the Ashton mine would employ 162 people but create only two more net jobs in the wider economy.²⁰

The problems with input-output models are well known. Firstly, they assume that there are no resource constraints – that labour, capital, land, water and all other inputs are always available and can be used by one user without taking them away from another user. This shortcoming is acknowledged in the Queensland Resource Council’s study:

*In the static input-output model, there are no capacity constraints so that the supply of each good is perfectly elastic. Each industry can supply whatever quantity is demanded of it and there are no capital restrictions.*²¹

As input-output models assume that all inputs are available to all users without limit, this means that their price should never change. This means, for example that wages should not go up, regardless of how much a particular sector expands. Clearly this has not been the case in Queensland, where wages have increased greatly, particularly in mining areas. The mining-intensive Isaacs Local Government Area saw nominal annual wages go from an average of \$58,000 in 2005-06 to nearly \$80,000 in 2011-12, while the Queensland average wage is only \$45,000.²² While this is good news for workers in the mining industry, it has imposed costs on other industries as wages have been bid up. This effect is ignored in the Queensland Resource Council’s study, as it makes clear:

¹⁸ ABS (2011) Australian National Accounts: Input-Output Tables

Gretton (2013) On input-output tables: uses and abuses

¹⁹ NSW Land and Environment Court (2013) *Hunter Environment Lobby Inc v Minister for Planning and Infrastructure & Ashton Coal Operations*, p546

²⁰ Fahrer (2013) *Affidavit of Jerome Fahrer to NSW Land and Environment Court re Hunter Environment Lobby Inc v Minister for Planning and Infrastructure & Ashton Coal Operations*

²¹ Lawrence Consulting (2013) *Economic Impact of Minerals and Energy Sector on the Queensland Economy 2012/13* p5

²² ABS (2013) 5673.0.55.003 – Wage and Salary Earner Statistics for Small Areas, Time Series, 2005-06 to 2010-11.

The [model assumes that the] system is in equilibrium at given prices. This would not be the case in an economic system subject to external influences²³

A further difficulty with input-output models is outlined by the ABS:

Not applicable for small regions: *Multipliers that have been calculated from the national I–O table are not appropriate for use in economic impact analysis of projects in small regions. For small regions multipliers tend to be smaller than national multipliers since their inter–industry linkages are normally relatively shallow. Inter–industry linkages tend to be shallow in small regions since they usually don’t have the capacity to produce the wide range of goods used for inputs and consumption, instead importing a large proportion of these goods from other regions.²⁴*

The Queensland Resource Council’s research claims to have adjusted national input-output tables to account for the differences in the 13 regional economies they present:

All the necessary data for the regionalisation procedure were collected from the Australian Bureau of Statistics as well as other reliable sources for secondary data such as regional household expenditure patterns, income and productivity measures.²⁵

However, there are no references provided as to what these ABS and other reliable sources are and no discussion of how they were used other than being “based primarily on the *Generation of Regional Input-Output Tables (GRIT) technique*”.²⁶ This is unfortunate as robust regional input-output tables could be of use to economists and planners interested in many aspects of Queensland’s regional economy. Model results that are not supported empirically and are based on undisclosed working and data sources are of limited value to this discussion.

ABS data shows that coal mining is a very small employer in the Queensland economy, accounting for just 1.2 per cent of the workforce. Despite industry-funded ‘indirect’ employment studies it is clear that the industry has a minimal impact on overall employment, and is far less important for employment than service industries, manufacturing, agriculture and many others. Unfortunately, the Queensland public has a heavily inflated impression of the role of coal in employment. Similarly, the public’s impressions of coal’s importance to the state budget are strongly overstated.

Coal and the Queensland state budget

Coal is widely considered to be very important to the finances of the Queensland State Government. Coal in the ground is usually owned by the state, mining companies pay a ‘royalty’ to the state government for every tonne of coal they mine, effectively buying the coal from the state so they can sell it on to the wider market. As quoted in the Introduction, Premier Campbell Newman thinks that the coal industry is vital if Queensland is to have “decent hospitals, schools and police on the beat”.²⁷

²³ Lawrence Consulting (2013), p4

²⁴ ABS (2011) Emphasis in original

²⁵ Lawrence Consulting (2013), p6

²⁶ Lawrence Consulting (2013), p5

²⁷ News.com.au (2012)

Similarly, when Queensland Treasurer Tim Nicholls announced a larger than forecast budget deficit earlier this year, *The Australian* newspaper's headline claimed that falling coal royalties had "slammed" the budget and royalties were the first factor the Treasurer raised:

"There are a number of contributing factors, but one of the most significant is the write down of coal royalties by \$600m for 2014-15," [Mr Nicholls] said.²⁸

Similar sentiments were reported widely in the media:

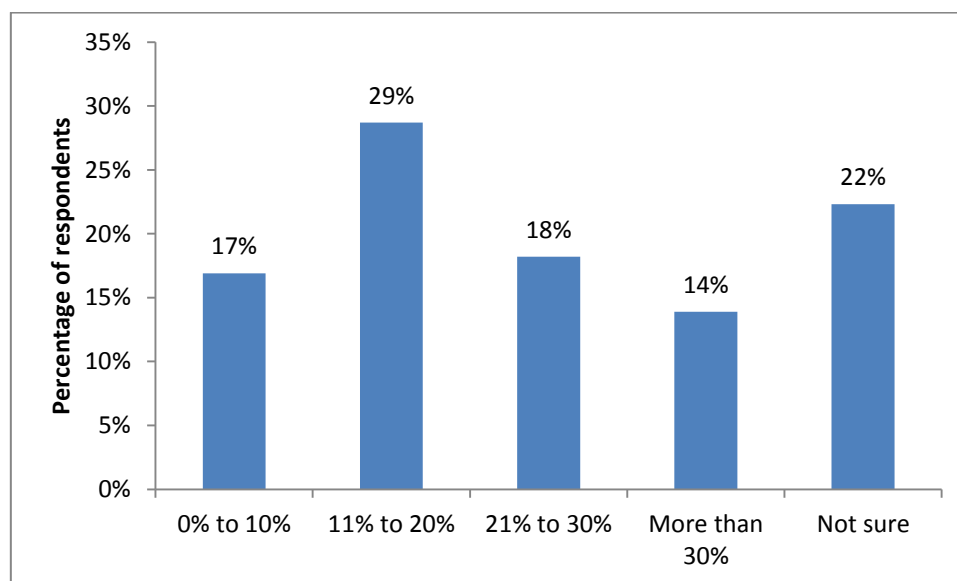
The government had already announced its deficit had quadrupled from \$664 million from the mid-year forecast to \$6.1 billion, due largely to a downturn in coal royalties and a delay in natural disaster relief payments from the Commonwealth.²⁹

Respondents to The Australia Institute's survey also had the impression that coal royalties are a central part of Queensland government revenue. Respondents were given a range of multiple choice responses to the following question:

Based on your general impressions, approximately what percentage of Queensland state government revenues are from coal royalties – the money companies pay to the government to access and sell coal?³⁰

The average response was 19 per cent, and the most popular answer was between 11 per cent and 20 per cent, as shown in Figure 12 below:

Figure 12: Public perception of the importance of coal to the Queensland state budget



Source: The Australia Institute survey

Despite the importance attached to coal by politicians, the media and the general public, coal royalties actually account for a small part of state government revenues. While the total value of royalties paid per year seems large, with \$2.1 billion budgeted in 2014-15, in the context of total state revenue this is a small component – only 4 per cent. Coal royalties are roughly as

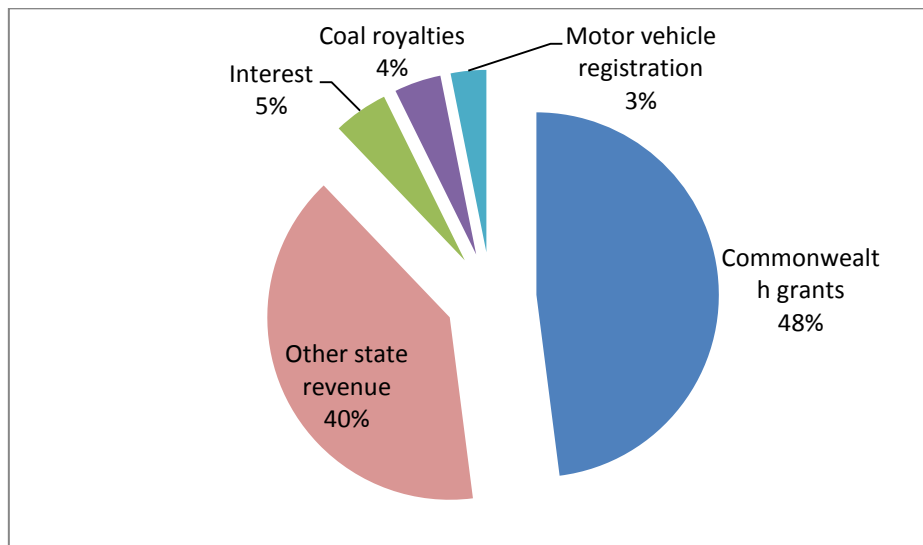
²⁸ McKenna (2014) *Royalties, federal cuts slam Nicholls deficit*

²⁹ Remeikis (2014) *Queensland budget 2014: Treasurer Tim Nicholls delivers no-frills budget*

³⁰ See appendix for full survey transcript

important to the Queensland state budget as either vehicle registrations or interest payments on funds held for superannuation and long service leave, as shown in Figure 13 below:

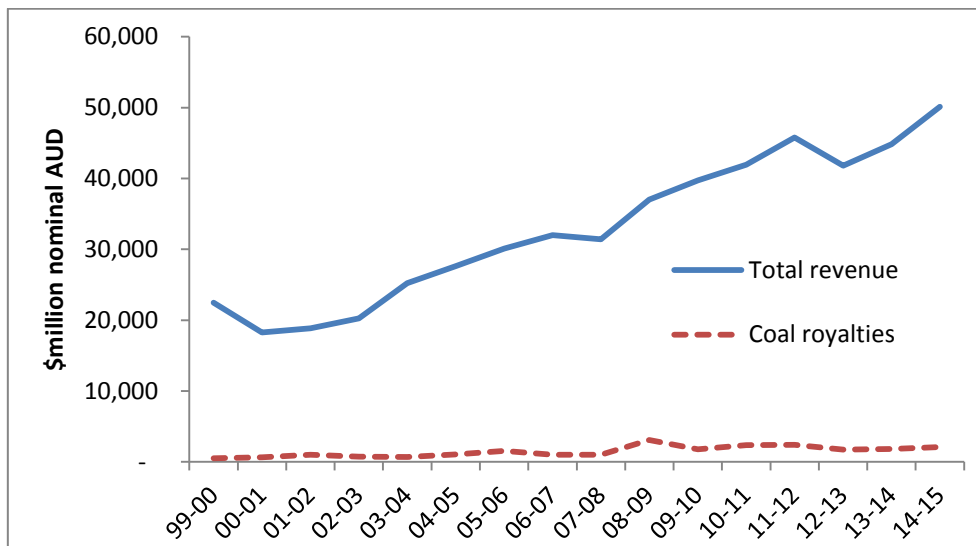
Figure 13: Queensland state government revenue 2014-15 (A\$50.1 billion in total)



Source: Queensland Treasury (2014) *Queensland State Budget 2014-15 Budget Paper 2*

We see that on average, Queensland residents think that coal royalties are nearly five times more important to the state government budget than they really are. This level of royalty is not unique to the current budget period. As shown in Figure 14 below, recent years have seen an increase in royalties relative to long term trends, but never an increase to a significant portion of government revenue:

Figure 14: Queensland government revenue and coal royalties 1999-2000 to 2014-15

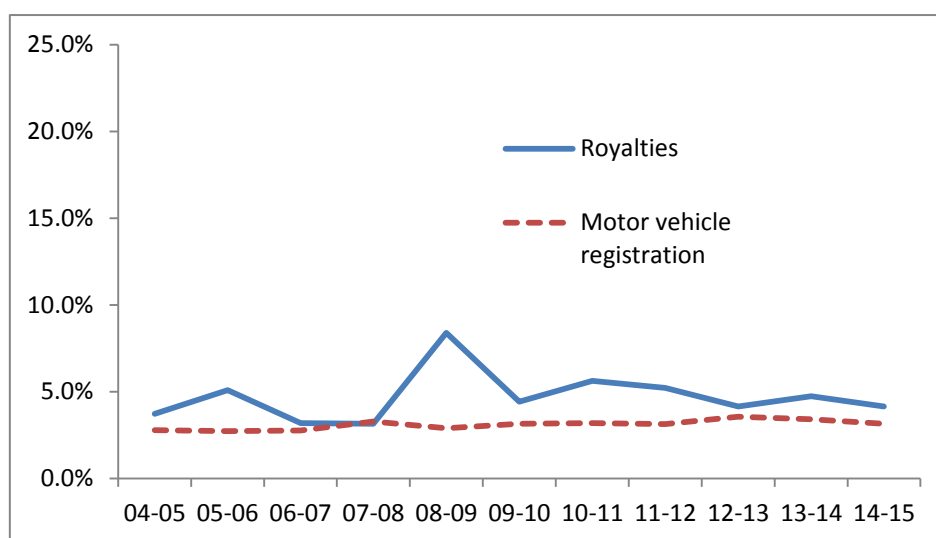


Source: Queensland Treasury (Various years) *Budget Papers*³¹

³¹ All budget papers available at <http://www.budget.qld.gov.au/previous-budgets/index.php> . Note that prior to 2004-05 coal royalties were not reported separately but were included in “Royalties and land rents”. Coal royalties were the largest portion of this item, but have not been separated out here, meaning these figures slightly overstate the value of coal royalties prior to 2004-05.

Through this period royalties have averaged 4.3 per cent of state government revenues, with a low of 2.3 per cent in 1999-00 and a peak of 8.4 per cent for 2008-09 in the wake of a major spike in coal prices prior to the global financial crisis. Although coal volumes have increased substantially since then, royalties have averaged just 4.7 per cent of state government revenue as prices have fallen. Motor vehicle registrations are of similar value, but less volatile, as shown in Figure 15 below:

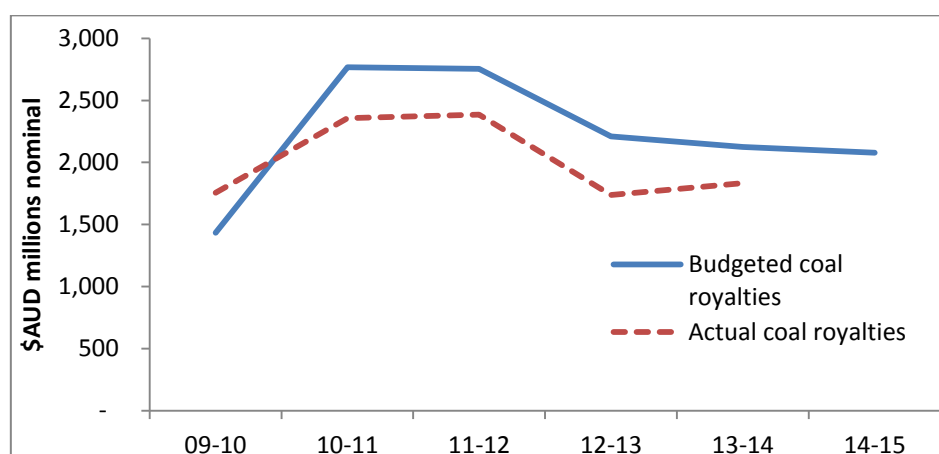
Figure 15: Coal royalties and motor vehicle registration as a percentage of Queensland government revenue 2004-05 to 2014-15



Source: Queensland Treasury (various years) *Budget Papers*

In the quote above, the Queensland Treasurer claimed that a significant increase in the budget deficit was “due largely to a downturn in coal royalties.” It should not have come as a surprise, however, that coal royalties were lower than forecast — the Queensland Treasury has overestimated coal royalties by an average of \$385 million in each of the past four budgets, as shown in Figure 16 below:

Figure 16: Actual and budgeted coal royalties 2009-10 to 2014-15



Source: Queensland Treasury (Various years) *Budget Papers*

As the Treasury has often been hundreds of millions of dollars out in its forecast of coal royalties, it is not clear why the Treasurer sees this as the primary cause of the recent budget

deficit. While coal royalties are clearly volatile, they can only play a minor role in a budget deficit of over \$6 billion. The Treasurer's comments exaggerate the economic importance of the coal industry and the importance of coal royalties to the state budget.

Subsidies to the Queensland coal industry

While the Queensland coal industry is a modest contributor to the state budget, it is also a significant beneficiary of taxpayer funding. The Queensland government provides assistance to the industry through a range of measures, particularly infrastructure provision and discounted access to rail lines. Analysis of state government budget papers by The Australia Institute shows that assistance to the coal industry between 2008-09 and 2013-14 amounted to over \$8 billion. In the 2013-14 state budget, assistance measures to the wider minerals and fossil fuel sector were worth \$1.5 billion, the vast majority of which accrued to the coal industry.³²

The latest state government budget shows that assistance to the coal industry continues unabated. Spending measures worth hundreds of millions of dollars are evident from even brief examination of the current budget papers. In Figures 17 to 19 below, we see funding of the Meandu coal mine, which supplies domestic power stations, worth over \$60 million, upgrades to Gladstone's RG Tanna coal terminal worth \$90 million, and funding for coal port projects inside the Great Barrier Reef through the North Queensland Bulk Ports Corporation worth \$24 million:

Figure 17: Queensland government spending on the Meandu coal mine 2014-15

Energy and Water Supply					
Project	Statistical Area	Total Estimated Cost \$'000	Expenditure to 30-06-14 \$'000	Budget 2014-15 \$'000	Post 2014-15 \$'000
Meandu Mine					
Coal Handling Processing Plant	319			1,681	Ongoing
Replacements and Upgrades					
Mine Exploration and Development	319			9,345	Ongoing
Mine Fleet Equipment	319			42,152	Ongoing
Replacement					
Other Sustaining Projects	319			7,907	Ongoing
Rehabilitation	319			1,881	Ongoing

Source: Queensland Treasury (2014b) Queensland State Budget 2014-15 Budget Paper 3 – Capital Statement, Part 3 Capital outlays by entity, p42

³² Peel, Campbell, & Denniss (2014) *Mining the age of entitlement: State government assistance to the minerals and fossil fuel sector*

Figure 18: Queensland government spending on the RG Tanna Coal Terminal 2014-15

Gladstone Ports Corporation Limited

In 2014-15, Gladstone Ports Corporation Limited has allocated \$120.3 million towards ongoing development at the Port of Gladstone, and additional works at the Port of Bundaberg and Port of Rockhampton.

Program Highlights (Property, Plant and Equipment)

- \$50.6 million towards continuing upgrades at the RG Tanna Coal Terminal at the Port of Gladstone, at a total cost of \$90.5 million.

Source: Queensland Treasury (2014b) Queensland State Budget 2014-15 Budget Paper 3 – Capital Statement, Part 3 Capital outlays by entity, p101

Figure 19: Queensland government spending on North Queensland Bulk Ports Corporation coal export facilities 2014-15

North Queensland Bulk Ports Corporation Limited

In 2014-15, North Queensland Bulk Ports Corporation Limited has allocated \$24 million to continue port planning and development initiatives to meet industry requirements for export coal facilities.

Source: Queensland Treasury (2014b) Queensland State Budget 2014-15 Budget Paper 3 – Capital Statement, Part 3 Capital outlays by entity, p102

We see that the Queensland government continues to allocate hundreds of millions of dollars' worth of assistance to the coal sector each year. This spending on coal infrastructure, and the cost of reduced fees collected from coal companies, directly reduces the amount of money the Queensland government can spend on health, education and other services.

Critics of The Australia Institute's research into state government assistance of the minerals and fossil fuel industries suggest that capital spending should not be considered a form of industry assistance, as such spending can generate a return:

Unfortunately, the report's claims aren't even wrong; they make no sense. Its approach is simple: it treats investments in state-owned utilities serving the mining industry as a cost; but it doesn't offset against those costs the revenues the utilities obtain from the services they provide. By ignoring revenues, every centime of expenditure becomes a loss: and hey presto, a colossal "subsidy" to mining, that supposedly reduces government's ability to spend on the disadvantaged, is conjured out of thin air.³³

Such criticism is contradicted by the Queensland Treasury. Treasury makes it clear that many subsidised investments do not recover the state's outlay and that they do indeed place significant constraints on spending on other services like hospitals and schools:

Some costs may also be recovered by the government over time if they are directly industry related. However, there is a real opportunity cost for governments in undertaking the initial capital expenditure. Governments face budget constraints and spending on mining related infrastructure means less infrastructure spending in other

³³ Ergas (2014) 'Costs' of mining add up to zilch

areas, including social infrastructure such as hospitals and schools. For many projects directly related to assisting mining industry development, such as land acquisitions for state development areas, the expected timeframes for cost recovery are extremely long (sometimes decades). The opportunity cost of this use of limited funds is a real cost to government and the community.³⁴

As Treasury points out, money that is spent on mining infrastructure cannot simultaneously be spent on other social services. While some funding of mining projects may be paid back through user charges, this repayment is uncertain and such spending imposes serious costs on the Queensland government.

The coal industry is vocal in pointing out the payments that it makes to the state government – for example, a recent report commissioned by the Minerals Council of Australia claimed mining companies paid \$2.2 billion dollars in royalties and taxes in 2012-13.³⁵ No mention is made of the public expenditures and tax breaks such as the federal diesel fuel rebate that were granted to the industry in helping to produce this return. It is important for the public to understand that while the coal industry does contribute to the Queensland state budget, it also receives considerable assistance.

Similarly, the industry likes to point to examples of its expansion benefiting other industries – the input-output studies discussed in the employment section above claim many benefits flow into other sectors. These studies and the industry's advocates ignore the negative impacts coal and the wider mining boom have had on other industries in Queensland, particularly tourism, agriculture and manufacturing.

Coal's impact on other Queensland industries

Previous sections have demonstrated that the expansion of the Queensland coal industry has had modest positive effects on employment and state government finances in recent years. However, the industry has also been responsible for negative effects on other parts of the Queensland economy. These effects include competition for resources such as labour, capital and services, and environmental impacts on agricultural land and the marine areas surrounding ports.

The macroeconomic impacts of the mining boom have also been significant for other industries, particularly the effect on the Australian dollar exchange rate. While the exchange rate is affected by many different factors, a recent study published by the Reserve Bank of Australia estimated that the mining boom was responsible for a 44 per cent rise in the exchange rate relative to what it would have been in the absence of the boom.³⁶ Clearly Queensland's coal industry is only a part of this rise, but it is a significant part nonetheless. The RBA's authors noted:

While mining, construction and importing industries have boomed, agriculture, manufacturing and other trade-exposed services have declined relative to their expected paths in the absence of the boom.³⁷

³⁴ Queensland Treasury (2013) *Queensland Treasury Response to Commonwealth Grants Commission*

³⁵ DAE (2014) *Estimated company tax, MRRT, carbon tax and royalties expenses for the minerals sector*

³⁶ Downes, Hanslow, & Tulip, (2014) *The Effect of the Mining Boom on the Australian Economy*

³⁷ Downes, Hanslow, & Tulip, (2014) p28

The main industries affected by these factors have been important ones for Queensland – tourism, agriculture and manufacturing.

Tourism

Tourism is a major industry in Queensland, employing 140,000 people, or 6 per cent of the workforce, six times as many as the coal industry.³⁸ Many of these jobs are lower skilled and outside of the main cities, making the industry particularly important in some regional areas.

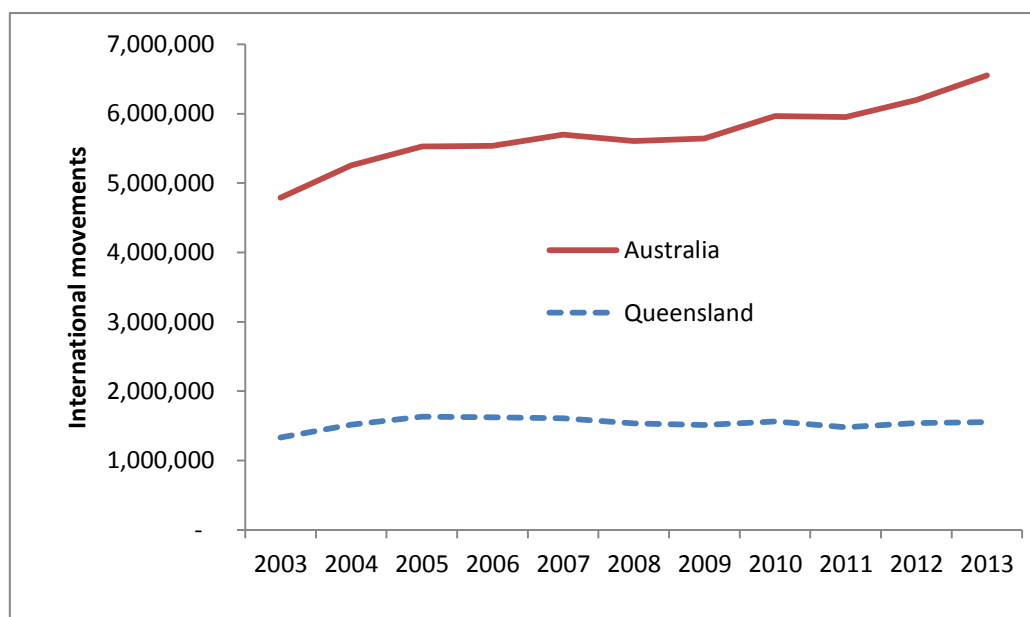
In recent years tourism has struggled because the high Australian dollar has meant foreign tourists are less likely to visit Australia as our prices become more expensive in their currency. Domestic tourists have also become more likely to travel abroad as other countries' prices have become relatively cheap.

High wages in the mining sector have also made life difficult for tourism operators. Tourism operators have had to increase wages to compete with mining wages and also to compensate employees for higher living costs in mining areas. These challenges are emphasised by Tourism Research Australia:

The mining boom was negatively impacting on [the tourism] sector, either directly through lower visitation and/or higher input costs or indirectly, through the reduced price competitiveness due to the higher Australian dollar.³⁹

This impact is particularly observable in Queensland, where international visitor arrivals have declined slightly, despite increases in Australia overall, as shown in Figure 20 below:

Figure 20: Queensland and Australia international short-term arrivals and departures



Source: ABS (2014) *3401.0 Overseas Arrivals and Departures, Australia*

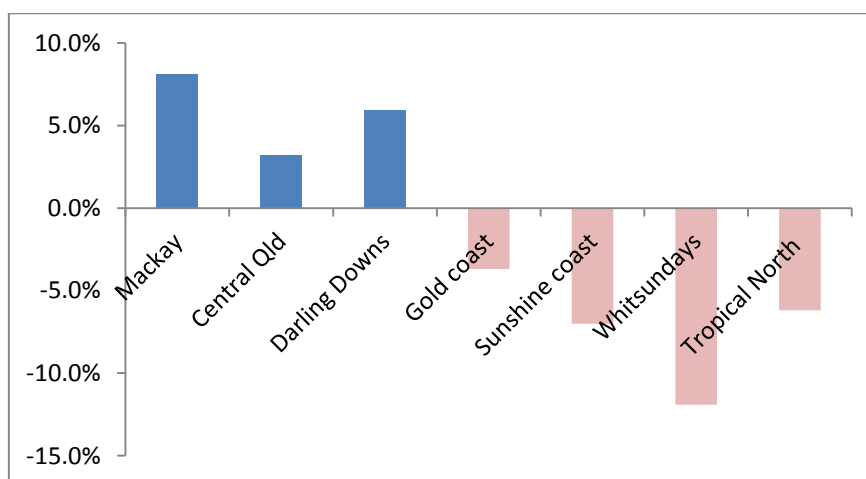
³⁸ Tourism Research Australia (2014) *State tourism satellite accounts 2012-13*. Note that as tourism involves parts of many industries, such as transport, accommodation, retail, etc, and so is not included as a single industry in most ABS publications, including those referred to in previous sections. A "Tourism Satellite Account" is prepared by the ABS to gain a picture of the tourism industry and this is the basis for Tourism Research Australia's statistics used here.

³⁹ Tourism Research Australia (2013) *The economic impact of the current mining boom on the Australian tourism industry*

Figure 20 shows that Australian international visitor movements have increased by 1.8 million, or 38 per cent, over the period from 2003 to 2013. However, between 2005 and 2013, Queensland experienced a small decline of 77,500. Domestic visitor nights have shown similar stagnation both in Queensland and overall, with Queensland showing a decline of 6 per cent, slightly worse than Australia overall, which declined by 5 per cent.⁴⁰ This reflects the findings of researchers who suggest that while household consumption has increased through the mining boom, and tourism has been a fairly steady ten per cent of household consumption, the portion spent on overseas tourism has increased substantially at the expense of domestic trips.⁴¹

Mining in Queensland has had a positive influence on some parts of the accommodation and travel industries, i.e. those servicing business travel in the mining regions. These areas have seen increases in accommodation occupancy rates, while areas devoted more to leisure tourism have declined. Mining-focused areas are the blue, darker bars in Figure 21 below, while leisure tourism-focused areas are the lighter, pink bars:

Figure 21: Change in accommodation occupancy rates 2005-2011, selected regions



Source: Tourism Research Australia (2013) *The economic impact of the current mining boom on the Australian tourism industry*

Note that Figure 21 shows changes in percentage terms, suggesting that the mining areas' gain has largely offset the loss of the leisure tourism areas. However, leisure tourism areas have far greater numbers of beds and accommodation employees than the mining regions. The mining areas in Figure 21 have only 25,178 beds employing 3,607 people. The leisure areas are far bigger, with 102,824 beds and 15,540 employees. The downturn in the leisure areas is of far greater magnitude than the upturn in the mining areas.⁴²

While accommodation and travel providers in mining regions like Mackay, Central Queensland and the Darling Downs have benefited from the boom, leisure tourism operators in the mining areas have been hit doubly hard. Not only do they need to manage the impacts of the high exchange rate and increases in service costs, but mining-related business travel also crowds out leisure tourists. Tourism Research Australia found:

Overall, the strong growth in demand for tourism infrastructure combined with lower growth in supply has meant that room tariffs and airfares have risen rapidly and fewer rooms and flights have been available for those outside the mining industry. Along

⁴⁰ Tourism Research Australia (2014) *National visitor survey: Domestic travel by Australians*

⁴¹ Tourism Research Australia (2013)

⁴² ABS (2013) *Tourist Accommodation, Small Area Data, Queensland, Jun 2013*

*with the displacement of tourists by commuting miners who tend to spend less on leisure activities, Australia's leisure tourism sector has been negatively impacted by higher costs, combined with the relatively low cost of travelling overseas.*⁴³

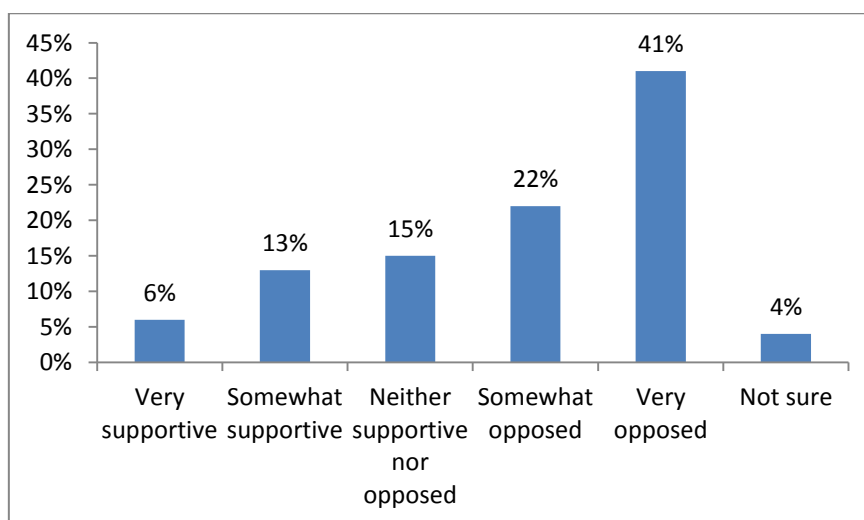
Tourism Australia notes that its research on the impacts of the mining boom on the tourism industry does not consider the impacts of “environmental conflicts,” such as controversy over expanding ports and coal shipping close to the Great Barrier Reef. These plans have concerned international bodies such as the United Nations Educational Scientific and Cultural Organisation (UNESCO) and attracted negative publicity about Queensland's management of the World Heritage-listed Great Barrier Reef.⁴⁴

Determining the effect of these controversies would be difficult. While some tourists may be deterred from coming to see environmental attractions that were not being well managed, in the short term others may be motivated to see the Great Barrier Reef before anticipated damage occurs. For example, such sentiments have been expressed by scuba divers:

*“As a diver, it makes me sad to see the destruction of a reef that has existed for centuries, if not longer,” says David Namoff. “It makes me anxious to see the Great Barrier Reef before this occurs.”*⁴⁵

Regardless of the effect of environmental conflict on tourism numbers, Queenslanders are overwhelmingly concerned about the impacts of the coal industry on the Great Barrier Reef. Our survey asked respondents to what degree they supported plans to expand ports and increase shipping through the Reef in order to increase coal exports, as shown in Figure 22 below:

Figure 22: What is your position on plans to increase port dredging and increase shipping through the Great Barrier Reef to expand the coal industry?



Source: The Australia Institute survey

Of all the questions in our survey, this question received the highest number of ‘very opposed’ responses and the lowest number of ‘not sure’ responses. Overall we see that 63

⁴³ (Tourism Research Australia, 2013) p6

⁴⁴ See for example Law (2014) *UNESCO smacks down Australia over its treatment of Great Barrier Reef*

⁴⁵ Abitbol (2011) *Will the Great Barrier Reef die by 2050?*

per cent of Queenslanders are opposed to increased port activity and shipping through the Great Barrier Reef, while only 19 per cent are supportive.

Agriculture

Agriculture employs twice as many people in Queensland as coal mining. Like tourism, agriculture has been affected by the higher exchange rate of the mining boom and through competition for resources such as skilled labour and access to services like transport and engineering. The recent RBA study found that:

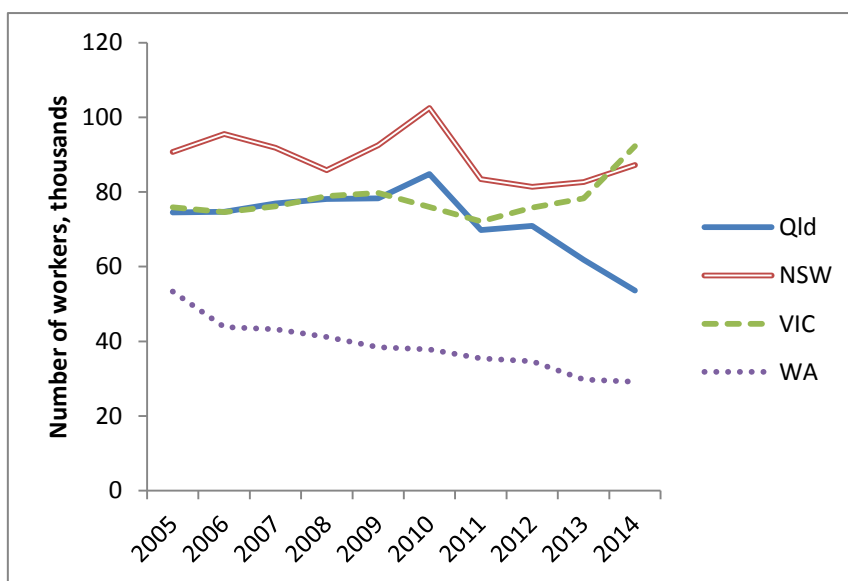
The largest impact of the boom, outside mining, is on agriculture. It is an industry heavily dependent on the export market and gains little benefit from the surge in domestic incomes and demand associated with the mining boom.

...

For agricultural exports, prices are reduced by the exchange rate appreciation, an effect that is partially offset by the assumed increase in world demand, the latter effect being relatively small. With lower profitability and investment, supply decreases and exports are about 20 per cent lower after a decade.⁴⁶

The RBA’s study is national in scope. Analysing data at a state level we see that agriculture is most heavily affected in the bigger mining states of Queensland and Western Australia. In Figure 23 below, we see that agricultural employment in Queensland has declined by nearly 21 thousand jobs in the last decade, or 28 per cent.

Figure 23: Employment in agriculture 2005-2014, selected states



Source: ABS (2014) 6291.0.55.003 Labour Force, Australia, Detailed, Quarterly

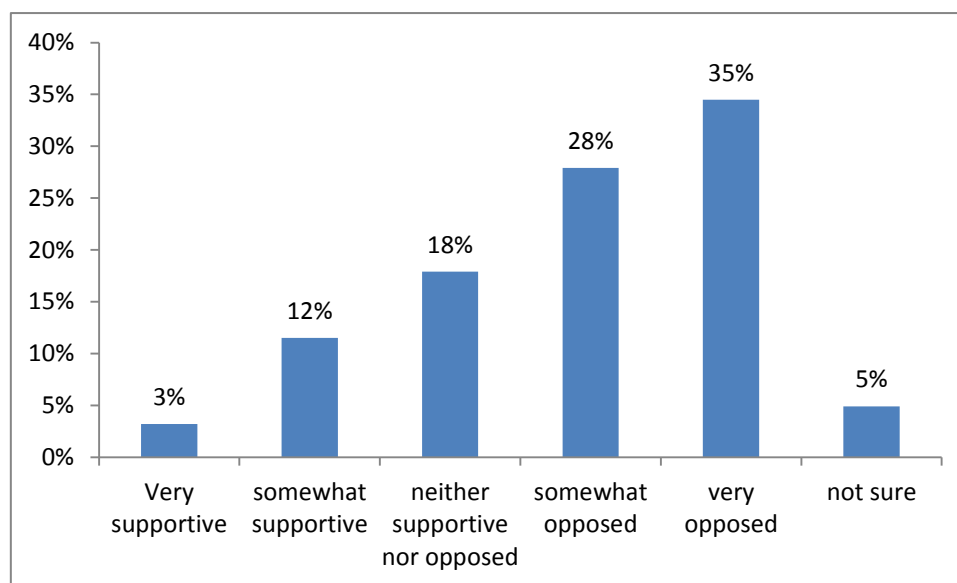
We see that agricultural employment in Western Australia has also declined heavily, by around 45 per cent. At the same time, NSW agricultural employment has oscillated around the same level, while Victoria’s has increased to levels not seen since the mid-1990s. In Queensland and Western Australia, not only are prices affected by the exchange rate, but

⁴⁶ Downes, Hanslow, & Tulip, (2014) p23 and p22

competition for land, water and services is also increased because of growth in the mining sector.

Conflict between the mining and agricultural industries over access to land and water has been an ongoing issue in Queensland. Respondents to our survey were strongly opposed to expansion of coal mining at the expense of agricultural industries, as shown in Figure 24 below:

Figure 24: What is your position on expansion of coal projects in agricultural areas or areas with sensitive water resources?



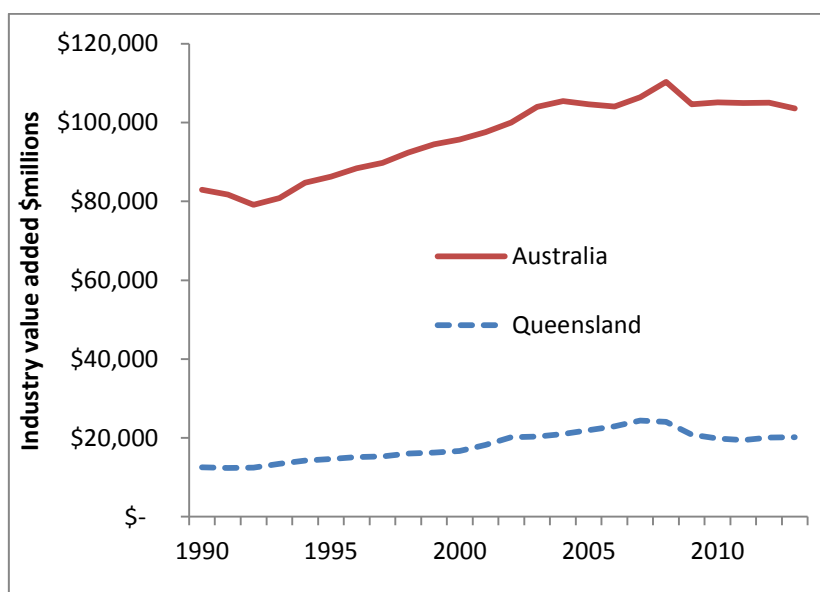
Source: The Australia Institute survey

Only 15 per cent of respondents were supportive of expansion of coal projects in agricultural areas. This was the lowest level of support of any question. 63 percent of respondents were opposed to expansion of coal projects in agricultural areas. Given that agriculture is a larger employer than coal mining and expansion of mining is unpopular, it is difficult to understand the high level political support for the expansion of coal mining.

Manufacturing

Manufacturing employs six times as many Queenslanders as coal mining. Like agriculture and tourism, manufacturing is affected by a high exchange rate and competes with the mining sectors for similar types of skilled labour. The manufacturing sector has seen many challenges in recent years, culminating in high-profile closures such as those experienced in the Australian car manufacturing industry. In Figure 25 below we see that the value of both the Australian and Queensland manufacturing sectors grew steadily until early in the 21st century, but have stagnated in the last decade:

Figure 25: Manufacturing output (value added) 1990-2013 Australia and Queensland



Sources: ABS 2014 5220.0 Australian National Accounts: State Accounts and ABS 2014 5206.0 Australian National Accounts: National Income, Expenditure and Product

Employment in manufacturing over this period has declined in Australia overall by over 100,000 people, or 10 per cent. In Queensland manufacturing employment has been steady.⁴⁷

To what extent the mining boom is responsible for negative effects on manufacturing in Australia is a topic of considerable debate. Analysis by the Grattan Institute suggests the impact is minor and will be easily recovered in the future.⁴⁸ The Australian Manufacturing Workers Union takes a different view, claiming:

*Unless Australian Mining starts putting back more into Australia, a million jobs face annihilation.*⁴⁹

The view of the recent RBA study is more ambiguous. Although claiming that:

*It would be wrong to conclude that the mining boom is the main source of the manufacturing sector's troubles... manufacturing has been declining as a share of the Australian economy for decades. The mining boom accentuates this trend, but its contribution is small compared to the changes that have come before.*⁵⁰

Indeed, manufacturing has been declining as a share of the Australian economy for decades. However, this reflects the rise of the services sector, not a decline in absolute output from manufacturing. The RBA's own modelling suggests, in fact, that the mining boom is responsible for a 20 per cent decline in manufacturing output relative to a baseline scenario.⁵¹

It is more difficult still to gauge a Queensland-specific effect of mining on manufacturing. The relative resilience of Queensland manufacturing output and employment suggests that the

⁴⁷ ABS (2014) 6291.0.55.003 *Labour Force, Australia, Detailed, Quarterly*

⁴⁸ Minifie et al (2013) *The mining boom: Impacts and prospects*

⁴⁹ AMWU (n.d.) *Australian Mining. This is the real story*

⁵⁰ Downes et al. (2014) p26

⁵¹ Downes et al. (2014) see Figure 18

effect of the mining sector demanding inputs from some sections of the manufacturing industry is at play, as suggested by the RBA. However, modelling commissioned by the proponents of the China First mine proposal in the Galilee Basin estimates that this project alone could reduce employment in manufacturing by over 2,200 jobs.⁵² With several projects of similar magnitude and nature proposed in the same region, the cumulative effects on Queensland manufacturing could be large.

To summarise, manufacturing as a whole is negatively affected by aspects of the mining industry. Some parts of the manufacturing sector, specifically those that service the mining sector, are likely to be positively impacted by development of the Queensland coal industry; however, manufacturers who are exposed to exchange rates and compete with mining for skilled labour will be negatively affected. Economists and decision makers should carefully assess the risk of long-term damage to the manufacturing sector from development of projects in the Galilee Basin and other areas.

Tourism, agriculture and manufacturing have been affected negatively by the expansion of the coal industry in Queensland. It is difficult to understand why these effects are not discussed more widely, as they have an impact on the jobs and lives of hundreds of thousands of Queenslanders. Why such large industries have been silenced by such a small industry, in terms of both employment and contribution to the state budget, is unclear. The Queensland mining industry is truly a mouse that roars.

Conclusion

The Queensland economy is large, diverse and based primarily on service industries. By world standards, Queensland has a large coal industry, but that industry is only a small part of the whole economy. Far more people in the state are employed in service industries, tourism, manufacturing and agriculture than by the coal industry.

The Queensland public has a deeply flawed view of the importance of the coal industry to the Queensland economy. Survey respondents thought that coal mining employs ten times more Queenslanders than it does, and that revenue from coal mining was nearly five times more important to the Queensland government than it really is. This misperception, while inconsistent with official statistics, is quite consistent with claims in mining industry public relations campaigns.

Despite these over-inflated impressions of what they get out of the coal industry, Queenslanders remain strongly opposed to developing coal projects that would affect the Great Barrier Reef and agricultural areas.

The question that must be asked is “How would Queenslanders feel about coal if they had a more realistic understanding of the role of the industry in their economy?” It is very likely they would be less likely to support projects such as the Carmichael mine, currently proposed for the Galilee Basin in north-central Queensland. The proponents of Carmichael, Indian conglomerate Adani, do not want the public to know the answer to this question.

At the time of writing, Adani are running advertisements on Queensland television that claim that their project would create 10,000 jobs and pay \$22 billion to the Queensland government. The 10,000 jobs claim is based on discredited economic modelling discussed in this report, while the \$22 billion claim is not based on any publicly available analysis and is

⁵² AEC group (2010) *Economic Impact Assessment for the China First mine EIS*

certainly overstated.⁵³ The project would require port expansion adjacent to the Great Barrier Reef, require more shipping and dredging, while also having a negative impact on sensitive water resources in the Great Artesian Basin.

This report goes some way to better informing the Queensland public about the role of coal in their economy and the trade-offs between the industry's modest contributions and considerable impacts on the environment and other industries. We hope this will lead better decision-making around coal projects in line with the public interest, rather than the coal industry's interests.

If Queenslanders can better understand the role of coal in their economy, hopefully they will pass this understanding on to our political leaders:

*We like to romanticise the complexities and sinews of our economy but we really have a very simple business plan – we survive on the charges we raise to allow people to dig up black rocks and red rocks: coal and iron ore.*⁵⁴

Barnaby Joyce, federal Member of Parliament and former Queensland Senator

*The people of Queensland have elected us as a Government based on developing our coal industry to supply the world markets and our processes need to allow us to do that.*⁵⁵

Jeff Seeney, Deputy Premier of Queensland

⁵³ For further discussion of the economics of the Carmichael mine see Campbell (2013) *Carmichael Coal Mine and Rail Project Supplementary Environmental Impact Statement Submission* and Buckley & Sanzillo (2013) *Remote Prospects: A financial analysis of Adani's coal gamble in Australia's Galilee Basin*

⁵⁴ (Franklin, 2011)

⁵⁵ Sturmer (2014) *Move to limit ideological objections to Qld mining projects*

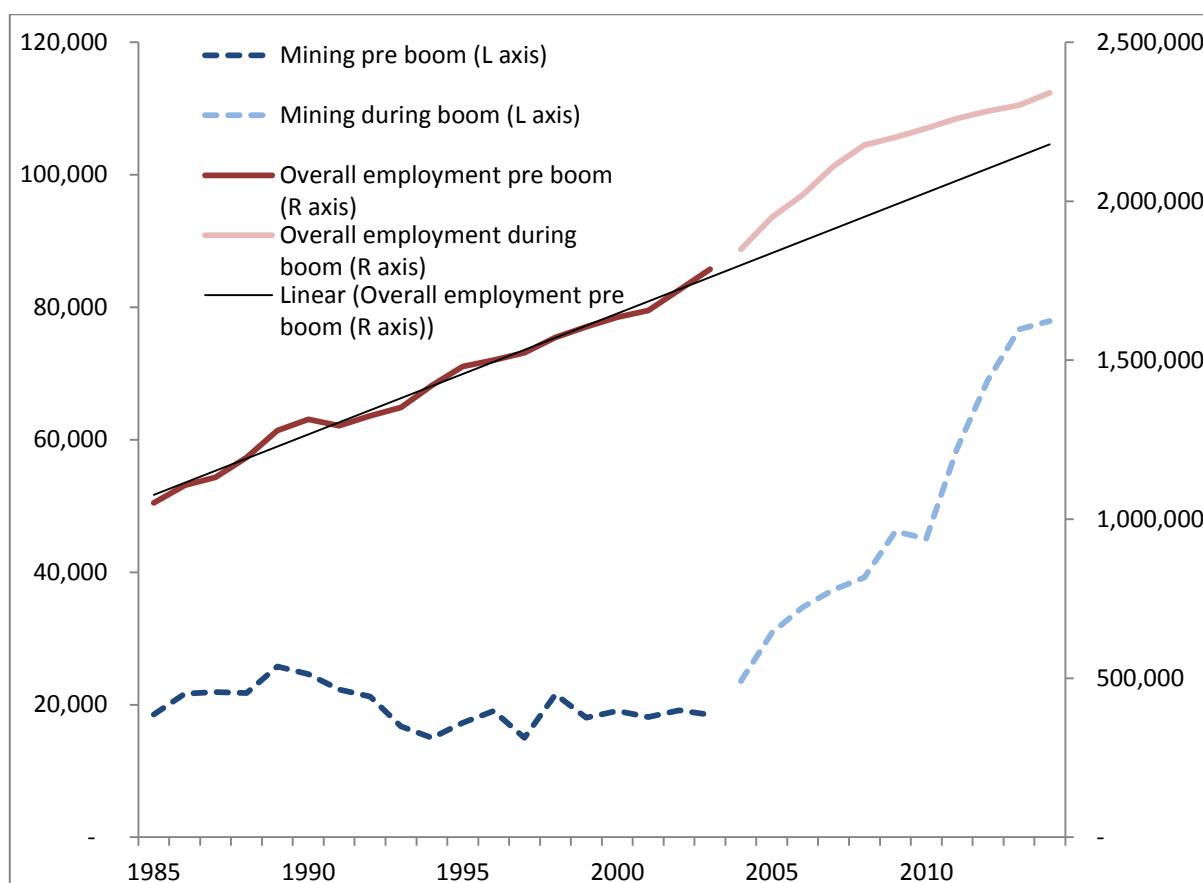
Appendix 1

Empirical assessment of indirect jobs

By examining ABS labour force data we can make a basic estimate of wider employment that has been generated by the mining boom. In Figure 26 below, we see that from the beginning of the data in 1985 to 2003, mining employment in Queensland was relatively steady – 18,500 people in both 1985 and 2003, shown in the dark dashed line. From 2004 this rose quickly, reaching 78,000 a decade later, shown in the light dashed line.

Despite minimal growth in mining employment, the Queensland economy consistently added around 38,000 jobs per year between 1985 and 2003, shown in the dark solid line. In Figure 26 below we see the same labour force data with a trend line through the growth in Queensland overall employment between 1985 and 2003:

Figure 26: Queensland Mining and overall employment, pre- and post-resource boom



Source: ABS 2014 Catalogue 6291.0.55.003 – Labour Force, Australia, Detailed, Quarterly, May 2014

Had trend growth in Queensland employment continued to 2014, total employment would currently be around 2,154,000 people, as shown in the thin black trend line in Figure 26 above.⁵⁶

However, from 2004 both mining employment and overall employment increased at a greater rate than predicted by the longer-term trend. Overall employment has increased to 2,341,000, which is around 188,000 higher than the earlier trend would have produced.

⁵⁶ Microsoft Excel plots this line as $y = 38,021x + 1,051,077$

59,000 of these jobs are the direct employment of the mining industry's expansion, as shown in the lighter dashed line of Figure 26 above. This leaves around 129,000 jobs above what trend growth would have produced.

During the 2004 to 2014 period, mining growth accounted for 33 per cent of Queensland's overall economic growth, a significant increase for a small industry.⁵⁷ Assuming that employment growth is caused by proportionately the same amounts as economic growth, this would result in the mining sector generating 42,000 additional jobs in other industries through this period, a multiplier effect of 0.7.

However, this estimate is a simplification of the data represented above. Looking more closely, we can see that both mining employment and overall employment grew strongly above trend in the first half of the boom, between 2004 and 2008. During this period around 20,000 mining jobs were added while overall employment grew to 180,000 above trend levels. At mining's 33 per cent share of economic growth through the period, this suggests mining generated around other 60,000 jobs, a multiplier effect of over 3.

The second half of this period, from 2009 to 2014, shows a different story. Aside from a brief dip following the global financial crisis, mining employment has grown at even stronger rates, adding nearly 32,000 since 2009. In contrast, general employment growth has been at a rate below the 1985 to 2003 trend – the slope of the light, solid line is slightly flatter than the trend line. Overall Queensland employment added only 112,000 jobs during this period when trend growth would have added 152,000. At mining's 33 per cent contribution to growth through the period, this would imply a multiplier effect of zero or slightly negative, suggesting mining growth was not contributing to wider employment, but was displacing or crowding out growth in other sectors.

These results make intuitive sense. During the early years of this period, prior to the financial crisis, economic inputs of capital and skilled labour were relatively abundant. Major mining projects could be pursued without taking away inputs from other parts of the economy and increasing demand for other sectors' goods and services. In the later part of the period, with credit markets tight and much labour tied up in existing construction, mining projects have only gone ahead at the expense of other parts of the economy.

Ultimately there is no simple answer to the question of how many 'indirect' jobs a mining job creates. The answer can be large or even negative depending on the state of the rest of the economy. Basic analysis of Queensland's labour force data suggests that every mining job correlates to a slightly negative number and three, centring on 0.7 'indirect' jobs per mining job. One thing that is certain is industry estimates of over 10 'indirect' jobs per mining job are in no way supported by empirical data and should not be relied upon.

Appendix 2

The Australia Institute commissioned a survey in May 2014, conducted online by a professional polling company. Quotas were applied so as to get a representative sample, and data have been post-weighted to reflect the broader adult Queensland population by age and gender.

Questions relevant to this report were:

⁵⁷ ABS (various years) 5220.0 – Australian National Accounts: State Accounts.

Based on your general impressions, approximately what percentage of workers in Queensland work in the coal mining industry? Approximately:

- 0% to 10%
- 11% to 20%
- 21% to 30%
- More than 30%
- Not sure

Based on your general impressions, approximately what percentage of Queensland state government revenues are from coal royalties - the money companies pay to the government to access and sell coal? Approximately:

- 0% to 10%
- 11% to 20%
- 21% to 30%
- More than 30%
- Not sure

Queensland's coal is used both domestically and exported. What percentage of Queensland coal production do you think is exported to other countries?

- 0 to 25%
- 26% to 50%
- 51% to 75%
- More than 75%
- Not sure

Queensland's coal industry involves both Australian and overseas investment. What percentage of coal companies operating in Queensland do you think are Australian owned?

- 0 to 25%
- 26% to 50%
- 51% to 75%
- More than 75%
- Not sure

Please rate your position in relation to these issues:

Plans to increase port dredging and increase shipping through the Great Barrier Reef to expand the coal industry.

- Very supportive

- Somewhat supportive
- Neither supportive nor opposed
- Somewhat opposed
- Very opposed
- Not sure

Expansion of coal projects in agricultural areas or areas with sensitive water resources.

- Very supportive
- Somewhat supportive
- Neither supportive nor opposed
- Somewhat opposed
- Very opposed
- Not sure

References:

Abitbol, C. (2011) Will the Great Barrier Reef die by 2050?, published on CNN Travel, 26 September 2011, accessed 4 September 2014, available at:
<http://travel.cnn.com/sydney/visit/will-great-barrier-reef-die-2050-192647>

ABS (2000) 5216.0 – Australian National Accounts: Concepts, Sources and Methods, available at:
<http://www.abs.gov.au/ausstats/abs@.nsf/0/AC6C11A0F11910FBCA2569A40006164B?opendocument>

ABS. (2011). Australian National Accounts: Input-Output Tables - Electronic Publication, Final release 2006-07 tables. Australian Bureau of Statistics. Retrieved from
[http://www.abs.gov.au/AUSSTATS/abs@.nsf/Previousproducts/5209.0.55.001MainFeatures4Final release 2006-07 tables?opendocument&tabname=Summary&prodno=5209.0.55.001&issue=Final release 2006-07 tables&num=&view=](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Previousproducts/5209.0.55.001MainFeatures4Final%20release%202006-07%20tables?opendocument&tabname=Summary&prodno=5209.0.55.001&issue=Final%20release%202006-07%20tables&num=&view=)

ABS (2011) Catalogue 4102.0 – Australian Social Trends, available at:
<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4102.0Main+Features20Jun+2011>

ABS (2013) 5673.0.55.003 – Wage and Salary Earner Statistics for Small Areas, Time Series, 2005-06 to 2010-11, available at:
<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/5673.0.55.003Main+Features12005-06%20to%202010-11?OpenDocument>

ABS (2013) Tourist Accommodation, Small Area Data, Queensland, Jun 2013, available at:
<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/8635.3.55.001Main+Features1Jun%202013?OpenDocument>

ABS (2014) 3401.0 Overseas Arrivals and Departures, Australia, available at
<http://www.abs.gov.au/ausstats/abs@.nsf/mf/3401.0/>

- ABS (2014) 6291.0.55.003 Labour Force, Australia, Detailed, Quarterly, available at: <http://www.abs.gov.au/ausstats/abs@.nsf/mf/6291.0.55.003>
- Australian Bureau of Statistics (2013) Catalogue 5220.0 Australian National Accounts: State Accounts, available at: <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/5220.02012-13?OpenDocument>
- ABS (Various Years) 5220.0 – Australian National Accounts: State Accounts. Available at: <http://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/E6765105B38FFF C6CA2568A9001393ED?opendocument>
- AEC group. (2010). Economic Impact Assessment for the China First Project EIS. *Assessment*. Retrieved from <http://www.deedi.qld.gov.au/cg/galilee-coal-project-northern-export-facility.html>
- AMWU (n.d.) Australian Mining. This is the real story, accessed 4 September 2014, available at: <http://thisistherealstory.com.au/index.php>
- BREE. (2013). *Resources and Energy Statistics 2013*. Bureau of Resources and Energy Economics, Canberra.
- Buckley, T., & Sanzillo, T. (2013). *Remote Prospects: A financial analysis of Adani's coal gamble in Australia's Galilee Basin*. Institute for Energy Economics and Financial Analysis. Retrieved from http://www.ieefa.org/adani_coal_report/
- Campbell, R. (2013) Carmichael Coal Mine and Rail Project Supplementary Environmental Impact Statement Submission, The Australia Institute, Canberra, available at: <http://tai.org.au/content/carmichael-coal-mine-and-rail-project-submission>
- DAE. (2014). *Estimated company tax, MRRT, carbon tax and royalties expenses for the minerals sector*. Report prepared for the Minerals Council of Australia by Deloitte Access Economics. Retrieved from [http://www.minerals.org.au/file_upload/files/reports/DAE_-_MCA_Royalty_and_company_tax_estimates_30_July_\(1\).pdf](http://www.minerals.org.au/file_upload/files/reports/DAE_-_MCA_Royalty_and_company_tax_estimates_30_July_(1).pdf)
- Downes, P., Hanslow, K., & Tulip, P. (2014). *The Effect of the Mining Boom on the Australian Economy*. Published by the Reserve Bank of Australia. Retrieved from <http://www.rba.gov.au/publications/rdp/2014/pdf/rdp2014-08.pdf>
- Ergas, H. (2014) 'Costs' of mining add up to zilch, *The Australian* 30 June 2014, available at: <http://www.theaustralian.com.au/opinion/columnists/costs-of-mining-add-up-to-zilch/story-fn7078da-1226971270142>
- Fahrer, J. (2013) Affidavit of Jerome Fahrer to NSW Land and Environment Court re Hunter Environment Lobby Inc v Minister for Planning and Infrastructure & Ashton Coal Operations, available on request or through the NSW Land and Environment Court.
- Franklin, M. (2011, May 26). Anna Bligh warns of "radical" Greens. *The Australian*. Retrieved from <http://www.theaustralian.com.au/national-affairs/anna-bligh-warns-of-radical-greens/story-fn59niix-1226063021965>

- Gillard, J., & Bligh, A. (2011). Transcript of joint press conference, Gladstone. *Parliament of Australia*. Retrieved July 15, 2014, from [http://parlinfo.aph.gov.au/parlInfo/download/media/pressrel/824213/upload_binary/824213.pdf;fileType=application%2Fpdf#search=%22PRIME MINISTER bligh, anna%22](http://parlinfo.aph.gov.au/parlInfo/download/media/pressrel/824213/upload_binary/824213.pdf;fileType=application%2Fpdf#search=%22PRIME%20MINISTER%20bligh,%20anna%22)
- Gretton, P. (2013). *On input-output tables: uses and abuses*. Staff Research Note, Productivity Commission, Canberra. Retrieved from http://www.pc.gov.au/__data/assets/pdf_file/0008/128294/input-output-tables.pdf
- Law, J. (2014) UNESCO smacks down Australia over its treatment of Great Barrier Reef, published on news.com.au, 19 June 2014, accessed 4 September 2014, available at: <http://www.news.com.au/technology/environment/unesco-smacks-down-australia-over-its-treatment-of-great-barrier-reef/story-fnjww010-1226959657462>
- Lawrence Consulting. (2011). *Economic Impact of Resources Sector on the Queensland Economy 2010/11*. Prepared for Queensland Resources Council. Retrieved from <http://www.mitarawip.com/wp-content/uploads/2013/11/Economic-Impact-of-Resources-Sector-on-Qld-Economy-2010-11-Final-Report.pdf>
- Lawrence Consulting. (2012). *Economic Impact of Resources Sector on the Queensland Economy 2011/12*. Prepared for Queensland Resources Council. Retrieved from <http://queenslandeconomy.com.au/images/stories/Economic-Impact-of-Resources-Sector-on-Qld-Economy-2011-12-Final-Report.pdf>
- Lawrence Consulting. (2013). *Economic Impact of Minerals and Energy Sector on the Queensland Economy 2012/13*. Prepared for Queensland Resources Council. Retrieved from <http://www.queenslandeconomy.com.au/wp-content/uploads/2013/12/Economic-Impact-of-Resources-Sector-on-Qld-Economy-2012-13-Final-Report.pdf>
- McKenna, M. (2014) Royalties, federal cuts slam Nicholls deficit, *The Australian*, 31 May 2014, available at: <http://www.theaustralian.com.au/national-affairs/state-politics/royalties-federal-cuts-slam-nicholls-deficit/story-e6frgczx-1226937797916>
- MCG. (n.d.). MCG Facts and Figures. *Melbourne Cricket Ground Website*. Retrieved February 13, 2014, from [http://www.mcg.org.au/The MCG Stadium/Facts and Figures.aspx](http://www.mcg.org.au/The%20MCG%20Stadium/Facts%20and%20Figures.aspx)
- Minifie, J., Cherastidham, I., Mullerworth, D., & Savage, J. (2013). *The mining boom: Impacts and prospects*. Grattan Institute, Melbourne. Retrieved from <http://grattan.edu.au/wp-content/uploads/2013/07/194-mining-boom-impacts-and-prospects.pdf>
- News.com.au. (2012). "We're in the coal business': Campbell Newman slams UNESCO Great Barrier Reef warning. *news.com.au*. Retrieved May 22, 2014, from <http://www.news.com.au/national/unesco-slams-great-barrier-reef-management-youve-got-eight-months-to-fix-it/story-e6frfkwo-1226381188474>
- NSW Land and Environment Court (2013) *Hunter Environment Lobby Inc v Minister for Planning and Infrastructure & Anor*, p546, available through <http://www.lec.justice.nsw.gov.au/lec/transcripts.html?s=1001,c=y>

- Peel, M., Campbell, R., & Denniss, R. (2014). *Mining the Age of Entitlement: State government assistance to the minerals and fossil fuel sector*. The Australia Institute, Technical Brief No. 31. Retrieved from www.tai.org.au
- Queensland Department of Natural Resources and Mines (2013) Queensland annual mineral summary, available at: <http://mines.industry.qld.gov.au/mining/mineral-metal-statistics.htm>
- Department of Natural Resources and Mines (2013) Queensland's coal – mines and advanced projects, available at <https://mines.industry.qld.gov.au/assets/coal-pdf/queensland-coal-mines-adv-projects-2013.pdf>
- Queensland Department of Natural Resources and Mines (2014) Queensland coal Industry 5 year summary 2012-13, available at: <http://mines.industry.qld.gov.au/mining/coal-statistics.htm>
- Queensland Department of Natural Resources and Mines (2014) Queensland coal statistics report for the calendar year ended December 31 2013, available at: <http://mines.industry.qld.gov.au/mining/coal-statistics.htm>
- Qld Dpt Mines and Energy. (2007). *Queensland mining industries: The economic significance of mining and mineral processing to Queensland Summary report*. Published by Queensland Department of Mines and Energy, based on modelling by Acil Tasman. Retrieved from http://s3.amazonaws.com/zanran_storage/svc115.wic512d.server-web.com/ContentPages/1146548826.pdf
- Queensland Government (2012) Six month action plan July – December 2012, available at <http://www.thepremier.qld.gov.au/plans-and-progress/plans/assets/6-month-action-plan.pdf>
- Queensland Resource Council (2012) Coal jobs pain for Queensland. Media release dated 20 November 2012, available at: https://www.qrc.org.au/01_cms/details.asp?ID=3188
- Queensland Resource Council (2013) What are Queensland resources worth to me? <http://www.queenslandeconomy.com.au/>
- Queensland Treasury. (2013). *Queensland Treasury Response to Commonwealth Grants Commission: Response to Terms of Reference for Commonwealth Grants Commission 2015 Methodology Review*. Retrieved from https://www.cgc.gov.au/index.php?option=com_attachments&task=download&id=1728
- Queensland Treasury. (2014a). *Queensland State Budget 2014-15 Budget Paper 2 - Budget Strategy and Outlook, Part 3 Revenue* (pp. 45–72). Retrieved from <http://www.budget.qld.gov.au/budget-papers/2014-15/bp2-3-2014-15.pdf>
- Queensland Treasury. (2014b). *Queensland State Budget 2014-15 Budget Paper 3 - Capital Statement, Part 3 Capital outlays by entity* (pp. 19–115). Retrieved from <http://www.budget.qld.gov.au/budget-papers/2014-15/bp3-3-2014-15.pdf>
- Remeikis, A. (2014) Queensland budget 2014: Treasurer Tim Nicholls delivers no-frills budget, Brisbane Times, 3 June 2014, available at:

<http://www.brisbanetimes.com.au/queensland/queensland-budget-2014-treasurer-tim-nicholls-delivers-nofrills-budget-20140603-zrw1x.html>

Rolfe, J., Lawrence, R., Gregg, D., Morrish, F., & Ivanova, G. (2010). *Minerals and energy resources sector in Queensland: Economic impact study*. Commissioned by the Queensland Resources Council, published by Eidos Institute. Retrieved from <http://www.mitarawip.com/wp-content/uploads/2013/11/Minerals-and-Energy-Resources-Sector-in-Queensland-Economy-Impact-Study-2009-10.pdf>

Saunders, A. (2014) 700 Queensland coal mining jobs go at BHP's BMA joint venture, Sydney Morning Herald 23 September, accessed 25 September 2014, available at: <http://www.smh.com.au/business/mining-and-resources/700-queensland-coal-mining-jobs-go-at-bhps-bma-joint-venture-20140923-10kqu5.html>

Tourism Research Australia. (2013). *The economic impact of the current mining boom on the Australian tourism industry*. Canberra. Retrieved from http://www.tra.gov.au/documents/Economic-Industry/Economic_Impact_of_the_Current_Mining_Boom_on_the_Australian_Tourism_Industry_FINAL.pdf

Tourism Research Australia (2014) National visitor survey: Domestic travel by Australians, available at: <http://www.tra.gov.au/statistics/domestic-travel-by-australians.html>

Tourism Research Australia. (2014). *State tourism satellite accounts 2012-13*. Retrieved from http://www.tra.gov.au/publications/tourism-and-the-australian-economy-State_Tourism_Satellite_Accounts.html