

## **1. Experts Details & Qualifications**

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### **1.1 Name**

My name is Marcus Robert Brown.

### **1.2 Address**

My business address is:

Economic Associates Pty Ltd  
6/220 Boundary Street  
Spring Hill Qld 4000

### **1.3 Qualifications**

1. I hold the following qualifications:
  - (a) Bachelor of Economics (Hons); and
  - (b) Master of Business Administration.

## **2. Opinion and Findings**

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2. This supplementary report seeks to expand on and/or respond to disagreements noted in the Joint Expert Report (JER) prepared by Roderick Duncan and me.
3. Primarily I wish to address the following points:
  - (a) Roderick Duncan's assertion that, "...the opinion of Marcus Brown that the mining boom has had no impact on the manufacturing sector runs counter to most economic analysis, including the recently released Grattan Institute report..."
  - (b) Roderick Duncan's assertion that, "...The assumption of perfect elasticity of supply for materials means that the additional materials for the Alpha mine can be supplied with zero cost for any other industry or firm in Queensland. This assumes that the orders of materials for Alpha mine can be met without delaying materials for any other project in Queensland."
  - (c) Roderick Duncan's assertion that, "The skilled labour required for mining operations is not a type of labour in abundance in Australia, or those workers would not be earning the average annual income of over \$100,000 that the ABS records workers in the sector as earning."
  - (d) The relevance or scenario analysis in the preparation of the EIS.

### **The Mining Boom and its Impact on the Tradables (or Trade Exposed) Sector**

4. At page 8 of the JER Roderick Duncan stated, "...the opinion of Marcus Brown that the mining boom has had no impact on the manufacturing sector runs counter to most economic analysis, including the recently released Grattan Institute report..."

5. To be clear, at no point in either my first individual statement nor in the JER did I contend that the mining boom had no impact on the manufacturing sector (or on other tradables sectors more broadly speaking). Rather I contended that:
- “It is my view that the decline in non-mining sectors over the last five years is likely more attributable to broader global factors than to the mining industry per se” (Subparagraph (c), page 4 of the JER)
- “It is my view that based on available economic data that broader global factors have been primarily attributable to the poor performance of Australian non-mining sectors over the last five years...” (Subparagraph (e), page 5 of the JER)
- “I do not believe that the reduction in manufacturing employment post 2008 is entirely attributable to the growth in mining employment.” (Subparagraph (i), page 5 of the JER)
6. To clarify, it is my view that the decline in the manufacturing sector is primarily being driven by factors apart from the recent mining boom. The mining boom has had some impact on the manufacturing sector, but it has been a secondary influence. Furthermore, the mining investment boom is generally considered to have commenced around 2004 and has now ended. This is not to say that the mining sector will not continue to expand, rather that it is likely to grow at levels more in line with whole-of-economy growth. The Alpha Coal Mine is a post-boom project.
7. As indicated in the JER, the Australian economy began to experience capacity constraints in 2007 as reflected by the unemployment rate approaching 4%. However, with the onset of the Global Financial Crisis in the first half of 2008, unemployment increased and industry experienced significant declines in capacity utilization.
8. The impact of the mining sector on other tradables (or trade exposed) sectors has been overstated by some commentators. For example, Gary Banks, the former Chairman of the Productivity Commission<sup>1</sup> acknowledges that the mining boom has had some effect on other sectors, however points out:
9. “But the pressures being placed on our traded goods sector are mainly due to us being richer than we were, and consuming more goods and (especially) services, rather than because mining draws labour or capital from manufacturing and agriculture.” (page 2)
- Banks later went on to say:
- “Delving a bit further into the manufacturing employment story reveals that, in the recent ‘two speed’ years, the main causalities in employment terms within that sector have been the relatively highly assisted motor vehicle and TCF (Textiles, Clothing & Footwear) industries.” (page 4)
- In addition, Banks commented that:

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<sup>1</sup> Gary Banks, Chairman, Productivity Commission “Address to the Melbourne Institute and the Australian Economic and Social Outlook Conference,” 30 June 2011.

“Those longer term trends – the relative rise of the services sector and the decline of manufacturing and agriculture – are a manifestation of the process of advanced economic development, observable in all OECD countries.” (page 5)

10. I note that Roderick Duncan cited the recent Grattan Institute Report, “The Mining Boom: Impacts and Prospects, July 2013” in support of his proposition that I have ignored the impact of the mining boom on other sectors. In fact, the Grattan Institute report makes similar arguments to those made by the former Chairman of the Productivity Commission and by me, stating:

“The high exchange rate has hurt many trade-exposed businesses, including manufacturing. But it would be wrong to conclude that the boom is primarily responsible for the relative decline of the manufacturing sector, or for the sharper declines of individual industries, such as car manufacturing. Longer-term trends are at work.

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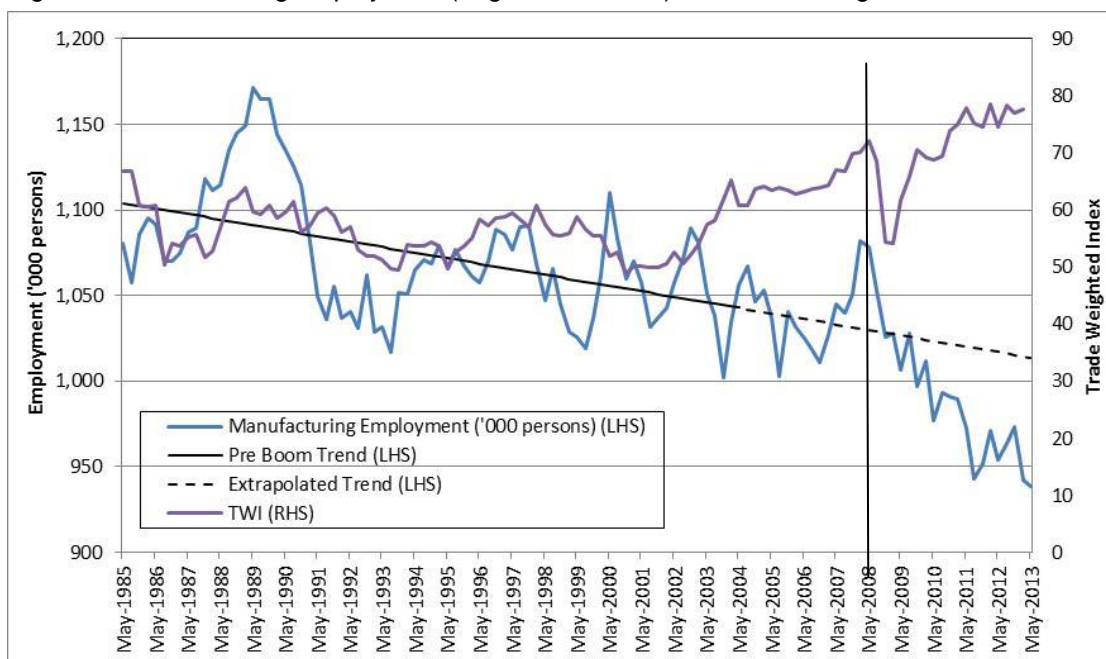
In the 2000s, manufacturing’s relative decline continued even in economies that did not experience Australia’s exchange rate appreciation.” (Grattan Institute, page 23)

11. Figure 1 below illustrates the historic decline of manufacturing employment since the mid-1980s through to the most recent available data in May 2013. I have calculated a trend line for the decline in manufacturing employment from May 1985 to May 2004 (the start of the mining boom). I have extrapolated that trend from May 2004 to May 2013 to identify what would be the trend decline of the sector in the absence of the mining boom. The graph also shows the movement of the Trade Weighted Index (a measure of the strength of the Australian dollar against a basket of currencies of our major trading partners). Figure 1 shows that in the period between May 2004 and May 2008 (onset of GFC), manufacturing employment followed the long term trend. That is, the sector experienced decline consistent with historical trends despite the mining boom.
12. Figure 1 shows that it was not until after the GFC that manufacturing employment collapsed, as shown by the divergence of the actual employment from the extrapolated trendline. As I have stated in previous reports this was a trend across most developed countries. Notably, the Trade Weighted Index rebounded after its significant fall at the onset of the GFC to levels previously not experienced in our trend horizon. The high Trade Weighted Index (reflected in a high Australian dollar) would have had some impact on the Australian manufacturing industry; however as stated by the IMF<sup>2</sup>, the Australian dollar was inflated well above levels explained by Australia’s trading performance (by 10% to 20%). Excluding that 10%-20% premium on the value of the Australian dollar estimated by the IMF, the Trade Weighted Index would have been below the levels recorded prior to May 2008.

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<sup>2</sup> International Monetary Fund (2012) “Australia: 2012 Article IV Consultation—Staff Report”, IMF Country Report No. 12/305

Figure 1: Manufacturing employment (original and trend) and Trade Weighted Index



13. I note Roderick Duncan’s argument that the negative impact of the mining boom is so widely known that it has its own name, that is “the Dutch Disease”. The ‘Dutch Disease’ refers to a phenomenon whereby as a result of one part of the economy is booming<sup>3</sup> as a result of a short term stimulus, other parts of the economy (known as lagging sectors) suffer long term declines due to increased competition for resources (the Resource Movement Effect) and reduced international competitiveness due to an appreciating exchange rate (the Spending Effect). While it may be convenient to make arguments that adjustments in the Australian economy are part of the so called “Dutch Disease”, it is not a universally held view, with David Gruen the Head of the Australian Treasury’s Macroeconomic Group pointing out:

“...this global changing of the Guard (from the economic re-emergence of China and India) seems more like a generational change in Australia’s comparative advantage than it does an example of the Dutch Disease, in which we might wish to return Australia to its pre-boom industrial structure once a short lived disturbance has passed” (Gruen, D. 2011 ‘The Resources Boom and Structural Change in the Australian Economy,’ address to the CEDA 2011 Economic & Political Overview, 24 Feb 2011)

14. Much of the discussion regarding the decline in the manufacturing industry has related to either employment or percentage GDP contribution. Notably however, the value of manufacturing exports has shown an upward trend over the long term (including the period after 2004) (as shown in Figure 4 of my first individual statement). Also, manufacturing’s industry value added (i.e. industry contribution to GDP) has remained stable despite sharp

<sup>3</sup> Typically, the comparison is between a booming resources sector and lagging manufacturing and agricultural sectors.

declines in textile, clothing & other manufacturing as a result of significant reduction in trade protection available to that sector (see Figure 5 of my first individual statement). Growth in export values and stabilised industry contribution in the face of declining employment would tend to suggest productivity improvement, rather than industry collapse. This tends to reinforce the proposition that Australia is moving through a long term readjustment rather than the so called 'Dutch Disease'.

15. The Grattan Institute report and Gary Banks (former Chairman, Productivity Commission) largely focuses on the exchange rate effect of a peaking Terms of Trade as the potential adverse impact of the mining boom, which in the context of the literature of the 'Dutch Disease' would be described as the 'Spending Effect', while Roderick Duncan appears more focussed on the 'Resource Movement Effect'.
16. The 'Spending Effect' focusses on the impact of an appreciating dollar. Australia's strong trade performance has most certainly been a contributing factor to the strength of our currency during the mining boom. However, as I explained in my first individual statement the value of the Australian dollar up until recently had been inflated by a suite of global monetary factors with the IMF estimating in November 2012 that the Australian dollar was 10% to 20% above levels that might be explained by Australia-specific factors<sup>4</sup>. The recent devaluation of the Australian currency has seen the Australian dollar fall from its November 2012 average of US\$1.041 to approximately US\$0.90.
17. In terms of the Resource Movement Effect, I would agree with Corder (2011), a paper cited frequently in the Grattan Institute report, that the resource movement effect (i.e. the movement of resources from a lagging sector to a booming sector) is not particularly significant in an Australian context insofar as the constraints on the movement of labour between sectors are somewhat reduced by Australia's skilled immigration policy, and secondly that the movement of capital between sectors is mitigated by high international capital mobility. Furthermore, the presence of considerable spare capacity in the Australian economy post the GFC (and particularly at present<sup>5</sup>) means that the potential for the Resource Movement Effect in relation to the Alpha Coal Project is highly unlikely.
18. Hence, I reiterate my previously made point that the strong growth in the Australian mining industry is not primarily responsible for the decline in the Australian manufacturing sector.
19. With regards to the potential crowding out effects of the Alpha Coal Mine, the somewhat secondary impacts of the mining boom on the manufacturing sector were a result of confluence of resource sector investment activity across a large number of projects which has since peaked and is subsiding. As I stated in the JER the potential for this one single project to cause crowding out is limited; however despite this the risk has been addressed in the EIS.
20. The issue of structural adjustment within the Australian economy (that is the long term reorganisation of the structure of the Australian economy in terms of the relative size and

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<sup>4</sup> The reported influence on the Australian dollar of factors other than the Terms of Trade would tend to suggest that the impact on the tradables sector of the exchange rate appreciation is not wholly a 'Dutch Disease' type phenomenon.

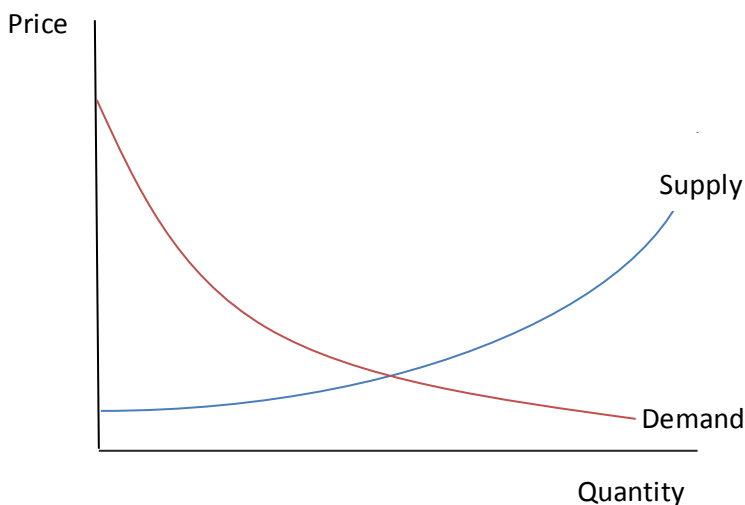
<sup>5</sup> As I stated in my first individual statement industry capacity utilisation economy-wide is currently estimated at less than 80%, lowest levels since the GFC, while mining's industry capacity utilisation is approximately 75%.

contribution of component industry sectors) is not one that would be dealt with on a project by project basis because it requires coordinated consideration at the macro-economic level.

**Elasticity in Supply Markets**

- 21. In paragraphs (g) and (h) on page 4 of the JER, Roderick Duncan makes comments regarding assumptions of perfect elasticity of supply and the likely absence (in his opinion) of indirect impacts of project purchases on the Queensland economy.
- 22. Elasticity refers to the responsiveness of changes in quantities demand or supplied to changes in prices (and vice versa). For example, say the price of petrol increased by 20% there would be a change in the amount of petrol consumed. Conversely, where the amount of petrol demand to increase by say 20% then the price of petrol would in all likelihood increase.
- 23. The issue of elasticities is a subtle one insofar as elasticities are not constant. Elasticities are a measure of the slope of the supply or demand curve from one point to another. Supply and demand curves are not linear, rather they are typically concave.

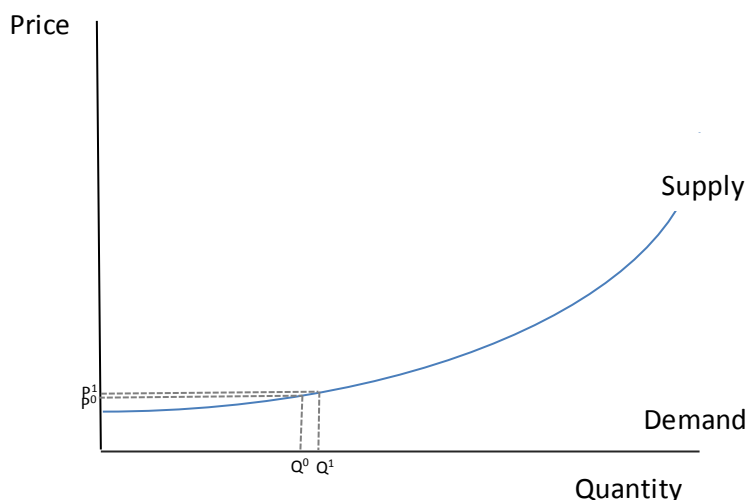
Figure 2: Example of supply and demand curves



- 24. Because of the concave nature of supply and demand curves there are typically two measures of elasticity of relevance to economists, firstly 'point elasticity' which relates to the changes in quantities supplied or demanded in response to marginal changes in prices (and vice versa), and secondly 'arc elasticity' which is the changes in quantities supplied or demanded in response to significant changes in prices (and vice versa).
- 25. The point raised by Roderick Duncan relates to supplier markets. Roderick Duncan's point appears to be that the increase in demand for materials created by the Alpha Coal Mine is significant, and therefore the relevant elasticity is 'arc elasticity'. Accordingly, Roderick Duncan implies that the increased demand for materials from suppliers would have a material impact on prices charged by suppliers, which would negatively affect demand from other projects. Hence there would be no net gain to production in Queensland.

26. To a lay person the Alpha Coal Mine appears to be a very large project, but in the broader context of the Queensland economy it represents a marginal change to the Queensland economy. For example, Queensland Gross State Product in 2011-12 was estimated at \$258 billion<sup>6</sup>, while the peak estimated value added effect of the supply chain stimulus of the Alpha Coal Mine in its first five years of operation is estimated in the EIS at approximately \$0.92 billion<sup>7</sup>. This represents approximately 0.35% of current Gross State Product.
27. In the context that industry capacity utilization is at comparatively low levels and the change across the broader economy is marginal, it would be more appropriate to consider elasticity in the context of a 'point elasticity'. In the context of the supply curve illustrated above, supply markets with underutilized capacity that experience a marginal change in demand operate at the flatter part of the supply curve. The supply curve at that point is highly elastic as illustrated in Figure 3 shown below (Note: moving from  $Q^0$  to  $Q^1$  results in a very small change in price from  $P^0$  to  $P^1$ ). Hence, a small movement along the supply curve would not be accompanied by a material change in price - that is, the change in materials supplied would not have a material impact on prices and hence other projects would not be affected.

Figure 3: Implications of a marginal change in quantity supplied on price



### **Remuneration of Mining Workers**

28. In the JER Roderick Duncan states, “The skilled labour required for mining operations is not a type of labour in abundance in Australia, or those workers would not be earning the average annual income of over \$100,000 that the ABS records workers in the sector as earning.”

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<sup>6</sup> Australian Bureau of Statistics (2013), Australian National Accounts-State Accounts, Catalogue No. 5220.0

<sup>7</sup> Based on addition of 2017 construction and operational total value added impacts (that is including both direct and indirect impacts).

29. Roderick Duncan's inference that mining labour is in short supply in Australia is not consistent with ABS evidence (Catalogue no. 6291.0) that mining employment has declined from a peak of approximately 277,000 mining workers in May 2012 to approximately 261,100 mining workers in Australia in May 2013.
30. The remuneration of mine workers is driven by a number of factors apart from their skill levels, including:
  - (a) The need to compensate workers for working in remote areas;
  - (b) A higher occupational health and safety risk than other lines of work; and
  - (c) A significant difference in average hours worked, when compared with workers in other industries.
31. Roderick Duncan's estimate of average mine worker income of \$100,000 per annum appears to come from the 2011 Census of Population & Housing, although I cannot be sure of this in the absence of any referencing.
32. Assuming that Roderick Duncan's estimate relates to the 2011 Census data, according to the ABS (Catalogue No. 6291.0.55.003) the average weekly hours worked by mining workers in Queensland during 2011 was approximately 44 hours per week as compared with:
  - (a) Queensland average hours worked of 34 hours per week;
  - (b) Queensland Manufacturing Industry average of 37 hours per week;
  - (c) Queensland construction industry average of 38 hours per week; and
  - (d) Utilities sector average of 37 hours per week.
33. The difference in hours worked alone accounts for 15% to 20% of the difference in remuneration.
34. Therefore, I consider Roderick Duncan's approach of simply inferring from a given average wage that labour of a particular type must be in short supply is inappropriate.

**Relevance of Scenario Analysis in the EIS**

35. Roderick Duncan is critical that the analysis does not consider the various risks associated with the project. He does not specifically identify the risks he is concerned about. However, his individual statement suggests falling coal prices as a significant risk to the project's viability, a risk which, if realized, could see the mine prematurely close.
36. The regulatory environment guiding the approval and development of mines throughout Queensland incorporates a number of risk management and mitigation measure to address the issue alluded to by Roderick Duncan. For example, the Alpha coal mine will be subject to a remediation bond (which I understand is known as a 'financial assurance' under the Environmental Protection Act 1994 (Qld)) to ensure that the mine site is appropriately remediated in the event of the financial failure of the mine. Additionally, the mine approval is specific as to the operating parameters of the mine, with any significant departures from the approval requiring a further approval. Therefore, the EIS responds to the approval to being sought, not some other version of it.



37. Finally, the mine would be developed in stages meaning that, were the mine to prematurely close, the mine would not be fully developed; hence the adverse impacts of the mine in say environmental terms would be generally commensurate with the level of development achieved.
38. Hence, the regulatory framework addresses risk management issues, limiting their relevance to the EIS.
39. If a 'multi-scenario' approach was run with respect to the economic impact assessment, for consistency, it would seem appropriate and necessary to adopt the same approach for the various other impact assessments that comprise the broader EIS – including, for example, groundwater, flora and fauna, etc. Given the lack of guidance (or sensible or obvious limit) as to the number or combination of 'scenarios' to assess, to me this would seem impracticable.
40. To the extent Roderick Duncan is suggesting that economic modelling would normally look at the profitability of the mine under various scenarios to determine the return the owner might expect, I consider this is a commercial risk for the owner of the mine to assess, and, in my experience, it is not common for an economic impact assessment under an EIS process to consider this. Rather, commonly economic impact assessments seek to identify the scope and scale of economic impacts on the economic environment and this is what has been done as part of the Alpha Coal Mine economic impact assessment.
41. It is important to note that the EIS responds to the requirements of a development approval process rather than determining whether a project is economically viable.
42. I note that Roderick Duncan has raised concerns about the ownership of the proponent and its implications for consideration of approving the mining lease. The application for a mining lease relates to the project, not the proponent. The ownership or control of a company with a mining lease can change (particularly if the company is publicly listed), furthermore approvals can be transferred. Concerns about foreign ownership of resource projects and the loss of project income through repatriation is largely misguided as pointed out by Gary Banks<sup>8</sup> (former Chairman of the Productivity Commission) who stated:

“Some have claimed that we are not benefiting from the mining boom because companies are foreign owned. But if this were the case, and income were going abroad, we wouldn't have a 'two speed' economy.” (page 2)

### **3. Expert's Statement**

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I confirm the following:

- (a) the factual matters stated in this report are, as far as I know, true;
- (b) I have made all enquiries that I consider appropriate;
- (c) the opinions stated in this report are genuinely held by me;

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<sup>8</sup> Gary Banks, Chairman, Productivity Commission “Address to the Melbourne Institute and the Australian Economic and Social Outlook Conference,” 30 June 2011.

- (d) the report contains reference to all matters I consider significant; and
- (e) I understand my duty to the court and have complied with the duty.



**Marcus Brown**

20 August 2013