Maximising Australia's Resources Boom…!!!

The economic costs of expenditure on mining expansion since 2004: Policies for cost minimisation

A report for the
Australian Steel Institute

AUSTRALIAN STEEL INSTITUTE

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Key messages

1. The benefit to Australia of the boom in resource investment has been overstated. The investment is very large but much goes directly into imports. It should be assessed for its contribution to Net National Product (income) rather than GDP (product). (Ch 4)
2. Activity associated with the boom has prompted fears of inflation. This is driving up interest rates and encouraging imports of labour to alleviate skill shortages for particular trades in particular locations.
3. The boom is driven by high commodity prices which are associated with a high exchange rate; directly (inflow of funds, future export earnings) and perhaps indirectly (response to high interest rate; perception of the Australian dollar as a proxy for the Chinese Yuan). (Ch 1.4)
4. Most of the actual construction is taking place in about 5 per cent of Australia's local government areas with strong spinoff in construction support (materials, design) in about a further 10 per cent of municipalities. Spinoffs elsewhere are positive but small. (Ch 7)
5. High exchange rates and high interest rates associated with the resources boom are seriously impacting the viability of businesses in non-mining trade-exposed industries (manufacturing, tourism, education, etc.). Businesses are operating at below capacity, skilled workers are underemployed and employment is falling. (Ch 4 & 7)
6. Despite 'conventional wisdom' that under-utilised resources (capital, labour, skills) in some parts of the country would be released for resource project construction this is not happening. (wrong skills, wrong capital, wrong places). (Ch 7.6)
7. The result is that there is considerable underutilised capacity (capital and labour) in the numerous regions that are only peripherally benefiting from the resources boom. (Table 7.3)
8. An opportunity therefore exists to better utilise these resources and maintain skills and capital that could be important after the resources boom. (As capacity constraints are absent in these regions there is no threat of inflation.)
9. One mechanism to do so is by negotiating an increase in the local content of resource investment, particularly local content which could be supplied by industries located in under-utilised regions (metals and machinery, steel fabrication) (Ch 8)
10. This increase can be made cost-neutral to the mining investors by tax relief. (Ch 8)
11. Though there is a revenue cost to the Commonwealth budget, the study finds this can be made good through the taxes generated by increased levels of net national product (budget neutral) – to say nothing of increased employment and incomes. (Ch 8)
12. The study recognises the skills needs for these resource investments but shortages are not being addressed entirely by existing workers re-locating from other regions at present because of factors that impair mobility (hence skilled migration programs). (Ch 7.6 & 7)
13. It should also be remembered that the stimulus of mining investment is temporary and may be expected to subside. Similarly the high exchange rate is most likely a bubble, particularly given the ongoing balance of payments deficit. (Ch 1)
14. When the mining construction phase ends, the jobs generated by this construction will need to be replaced. The expectation is that these will be generated in the non-mining trade-exposed industries made competitive once again by the fall in the exchange rate.

15. Australia will not necessarily be in that position. It will be much easier to generate these jobs if capacity in non-mining trade-exposed industries has not been reduced (capital, skills or product development) during the resource construction boom. (Ch 1.6)

16. A local-content requirement will make an important contribution to maintaining capacity and hence have major long-term benefits in addition to its short-term benefit of providing employment in the non-mining regions. (Ch 8)

17. The proposition of this report is not one of job creation but of fully utilising capacity (people and capital) in regions that are disadvantaged by circumstances created by the resources boom but currently only benefiting marginally from the boom.

Points of clarification

In general the analysis of this report is at the industry level. To illustrate how average industry level outcomes may change at the induced project level two types of projects are taken as examples. One is an offshore LNG project of "Gorgon scale" and the other is a large scale iron ore project. The data for these projects is benchmarked to publically available industry benchmarks, not to any actual data from any specific project other than what might be available from publicly available information such as scale and investment expenditures.

The general conclusions made in relation to offshore LNG may or may not differ significantly from the conclusions that might apply to the onshore (in terms of gas supply) LNG projects that are currently underway in Queensland. The possibility is that these projects may have a significantly different expenditure structure compared to revealed industry benchmarks at this point in time.

Methodology

Except in Chapter 7, this study makes no use of pre-estimated economic models, and even in Chapter 7 the model is a simple application of the data set developed for NIEIR's annual *State of the Regions* reports. All relationships are estimated from publicly available data. The emphasis is on standard macroeconomics and standard regional economics. There is no transparency problem.

Overview of report

This report can be viewed from either a glass half full or a glass half empty perspective. On the one hand it points to the opportunity that with strategic intervention from government, and complementary action from industry, it is possible to substantially reduce the impact of the 'two-speed economy' and use the current boom in resource investment to strengthen Australian industry. On the other, it points to the danger of inaction based on assumptions, held in some policy circles, that the 'resources boom', driven by historically high commodity prices, will sustain economic development and maximise living standards for Australians.

This report shows that to date at least the impact of the resources boom is over-rated. It argues that over the last 30 years on a per capita Net National Product basis, after allowing for crowding out of other sectors of the economy, imports of capital equipment and labour, the benefits of the resources boom are substantially neutralised. This is because during periods of resource expansion trade exposed non-mining industries face higher costs as a result of higher interest rates and are disadvantaged in international markets by higher exchange rates. The resources sector has high levels of foreign ownership and exposure to foreign lenders resulting in outflows of income generated. In the construction phase, a significant share of investment capital is spent on off-shore goods and fabrication and labour is either drawn away from other industries (reducing investment and driving up prices) or imported. Importantly, population growth accelerates during resource investment booms. Increasing the local content of resource investment would also increase the local content of operation expenditures since replacement/maintenance expenditures tend to be allocated to the source of original investment purchases. In 2008-09 total operational and investment expenditures by the resources section in the Australian economy is estimated at $111 billion.

If the Australian Metals and Machinery (MM) sector could increase its share of the total MM sector contribution to resources expenditures by 15 percentage points, then this would divert $2.6 billion of orders to local suppliers who, even on a very narrow definition of the Australian MM sector capable of supplying the mining sector have excess capacity capable of supplying products of at least $1.5 billion annually. The $2.6 billion increase would represent an increase in total Australian industry local content of 2.3 percentage points. The attached table estimates the benefit as per the structure of the economy in 2008-09. This has a higher impact on local production for the MM sector. The benefits would increase if, as seems likely, the domestic supply chain would strengthen and the increased local content was seen to be sustainable. In the years ahead, as demand shifts towards high import content LNG projects, the increase in local content will be required simply to maintain the absolute contribution of the local MM sector to resource expenditures at a stable level.

	15 percentage point increase in MM sector's share of mining expenditures	**Comment**
Direct employment ('000) – MM sector	10.0	If the increase was deemed to be stable the import content of local production would decline, potentially increasing benefits by up to 20 per cent.
Indirect employment ('000)	12.7	Would increase if the direct employment benefit increased from a decline in import content of local production.
Gross product at factor cost (2009 $ billion)	2.6	As above.
Tax revenue (2009 $ billion)	0.6	As above.
Welfare savings	0.2	As above.

Source: Derived from the results given in Section 8.2 of this study.

Employment growth is not the issue and indeed, given the excess capacity in the MM sector, the employment increase may well be a lot less than the 10,000 shown in the table. What is important is the gross product increase which represents in part increased profitability for the MM sector. This is what will stop plant closures and give long run benefits that a far greater than any short run benefits.

The report highlights the experience of Norway where a systematic program by government to maximise benefits from that country's oil and gas projects resulted in higher GDP per working age persons, higher labour force participation, skills development and a larger manufacturing sector than Australia. The report discusses some mechanisms that could be used to increase local content such as tax incentives through depreciation allowances or reductions in resources rent tax. The cost of these could be offset through reduced expenditure on social security and higher tax receipts from industries and regions that would otherwise flounder.

As a country dotted with the remnants of past resources booms, Australia should understand that extractive industries are projects that begin and end. When they end, the infrastructure (both industrial and community) is generally abandoned or removed. If as was the case in the 19th century income generated is reinvested locally it can build new business such as BHP and cities such as Melbourne. The wealth generated by BHP from mining largely built Australia's steel industry. But in a globalised economy profits can be reinvested anywhere in the world, wealth is accumulated by investors in New York, London or Beijing and income generated by imported labour repatriated to the country of origin. Along the way, high exchange rates during construction weaken trade exposed goods and services sectors leaving little to build a post-resources future for Australia.

The challenge of linking Australia's underutilised industrial capacity to the opportunities of the resource industry should not be underestimated. But Norway has shown what is possible. Australia will require something akin the industrial mobilisation initiated by BHP Managing Director Essington Lewis in the 1930s. That mobilisation not only contributed to securing Australia during WWII but laid the foundation for a post-war economy based on a mix of industries that brought Australia some of the highest living standards in the world. Obviously, the world has moved on and a different form of mobilisation will be required today that recognises a more globalised international economy. But to ignore the need to link underutilised capacity in many parts of the country to growing demand in other parts would be simply reckless. It will be much easier to generate jobs after the resources construction boom if capacity in non-mining trade exposed industries is maintained.

The *Dutch Disease* and the *Resources Curse*

The report uses the concept of the Dutch Disease to evaluate Australia's current predicament. The term was originally coined by *The Economist* in 1977 to describe what had happened to the Dutch economy and, in particular, it's manufacturing sector after the discovery of a large natural gas resource in the late 1950s. Models developed later described three sectors; the resource sector, the non-resource tradeable goods sector, and a non-tradeable sector. The discovery and exploitation of large-scale cost-competitive resources at a time of world-wide supply shortages, as reflected in high real commodity prices, led to large capital inflows and rapid growth in resources investment. This was accompanied by appreciation of the currency and reallocation of resources away from the other sectors, in particular the non-resource tradeable sector, towards the resources and construction sectors. The competitiveness of the non-resource tradeable sector declined.

As the resource base goes into decline what is required to offset this decline in activity and income is an expansion of the non-resource tradable sector (in the case of Australia, this decline is interpreted as when the concentrated investment period of a resource project declines). However this cannot be done easily because during the years of resource expansion declines in investment, R&D and skill formation in the non-resource tradeable sector reduce its competitiveness with foreign rivals. Cash flow and institutional support

mechanisms are no longer there to close the gap and as a result trend growth declines and per capita GDP and living standards fall below what would have been achieved in the absence of the episode of resource development. At the extreme, a Resource Curse outcome means that there is little or no overall growth as a result of an episode of resource investment.

Australia's Dutch problem

This study finds that the construction phase of a resource expansion has a significant impact on the economy and how it is managed will determine the degree of displacement of non-mining sectors. This study estimates that approximately half of the investment component of resource projects comprises imports and of the total imports some 60 per cent are metals and machinery products. High commodity prices associated with a boom generate high exchange rates which weaken the non-resource tradeable sector's competitiveness, discourage investment, capacity augmentation and eventually production. Demand for skilled construction labour pushes up costs and crowds out investment in these other sectors. High foreign ownership limits real income gains to residents. The resources sector is the most foreign owned in the Australian economy with at least 60 per cent of value added foreign owned. While it is recognised foreign capital is needed to develop these large projects this means an outflow of profits. For instance it has been estimated that local ownership of the North West Shelf is about 10 per cent; BHP 40 per cent; Rio Tinto 15 per cent and a joint venture such as the Eastern Range (Rio Tinto with Baosteel Group) 8.1 per cent local ownership. Importing people to meet skill demands during resource expansion has cost implications. Annual and once off costs of an additional 50,000 people is outlined in Table 3.4 in the range of $5 to $6billion. Negative sentiment toward the non-mining sector during these periods of resource focus is reflected in the decline in high-tech start-ups since the current expansion started in 2004.

National headline statistics mask the reality for many parts of Australia. At a regional level Australia is far from fully employed with some metals and machinery regions having high levels of underutilised labour. This study finds that around half the decline in capacity from normal levels can be directly linked to the negative consequences of rapid mining expansion. Steel industries are operating at historically low levels of capacity utilisation of around 50 per cent. If nothing is done to lift utilisation rates substantial capacity will be closed over the next five years. In many cases this will be in regions with already high effective unemployment rates. The number of regions adversely affected by the effects will be between 43 and 52 of the 67 NIEIR *State of the Regions* regions. Regions that are most seriously vulnerable are those with high proportions of knowledge-based industries in Victoria, NSW and SA (particularly the manufacturing belts). Tourism centres such as North Queensland and parts of WA are also disadvantaged by high exchange rates. A consequence will be to exacerbate housing shortages in urban areas as potential home buyers in these areas will not be able to earn enough to cover mortgage payments on new houses.

Under market conditions the dynamics of resource expansion is likely to produce a permanent contraction in manufacturing and other trade-exposed industries compared to what would otherwise have been the case. Each period of elevated resource expansion has a cost in terms of crowding out or displacement effects. Each produces increased import share and or stagnant relative export levels which are not reversed when the period of elevated mining expansion ends. This means that for each subsequent episode of elevated resource expansion the domestic metals and manufacturing sector has less capacity available to support the mining sector with local content. The danger is that unless something is done to remedy the current situation a substantial part of current capacity will be permanently closed over the next few years.

Based on past responses to expansion in resource activity, there will be little headline net per capita benefit from the current period. At the same time, the need to meet the infrastructure and service demands of the increased population induced by the 'boom' will create difficult political and economic constraints. This will be compounded by national productivity growth generally remaining below historical trend levels. The alternative is to change the way resource expansion is managed and to maximise the net benefits by, principally, increasing local content.

Disease prevention

A central argument of this report is that the resources boom, by crowding out non-resource activity, has created underutilised resources in other regions that can be exploited to increase the direct benefits from the boom. This will not only better utilise capital and labour resources, but improve productivity growth. (Growth in productivity is a function of the rate of growth in the economy).

This report uses Norway as a case study of a successful approach to managing resource expansion. In the early 1970s, as the problems with the Dutch expansion were becoming apparent, Norway prepared a strategy to maximise the benefits from its North Sea oil expansion. It took the view that market forces alone would not maximise benefits for Norwegians and focused on building strong local supply chains especially from the exploration, extraction and refinery industry back into the metals and machinery industries, logistics and high value added business services sectors. It took a share of ownership in extraction and set conditions for private companies based on local content targets and joint ventures that could assist in raising competency and competitiveness in new extraction and engineering related industries. Local content targets were not binding but government adopted a bidding process so local suppliers had notification of tenders well ahead of their issue and if a local supplier was competitive on price and quality it would be awarded the contract. Revenue raised by government (from dividends and royalties) was used to ensure investment, skill formation and technology capacity of local suppliers. Norwegian industry was positioned to grow independently of the oil and gas sector through R&D, knowledge transfer and, integration into global supply chains and joint ventures. Statoil was used for coordinating development of new fields to maximise benefit for local industry and ensure local industry could plan to remain competitive in a changing technological environment. Specific industry policies were complemented by macroeconomic approaches to limit wage break-out in resources and related sectors, increase general workforce skills base and target exchange rate stability. Norway established a Sovereign Wealth Fund to manage a longer-term dividend but also manage capital flows on a day to day base to stabilise the exchange rate. The Norwegians did not use migration to support resource expansion. Through these policies Norway maintained a strong manufacturing sector without evidence of the Dutch disease; it increased productivity relative to Australia and maintained a strong current account. The ratio of employment to working age population in Norway is five percentage points higher and effective unemployment lower than Australia.

This report argues that Australia can and needs to do something aggressive to minimise the impact of the Dutch disease on the Australian economy. The opportunity to do so arises because current underutilised capacity allows increases in production per hour worked (productivity); increases in average hours worked per employed person, and; increases in the number of employed. Analysis shows deterioration in metals and machinery hours worked in most of the regions dependent on this industry over the past decade. This provides strong evidence that displacement of metals activity by mining expansion has not resulted in significant labour being reallocated to mining support activities. This labour has largely gone into hidden unemployment or under-employment and been replaced by imported labour to support the mining sector. Lack of geographic mobility has resulted in higher under-utilisation of labour. This would be expected given the barriers to inter-regional migration (such as home ownership) and the encouragement of international migration to supply labour to the mining expansion. The report identifies 54,000 skilled people in the

metals and machinery sector who could be engaged in additional work to support mining expansion. Within regions exhibiting high not in employment levels, a pool of half a million FTE employees is available in areas of high metals or steel fabrication intensity.

A core finding of the report is that the Australian Government has the ability to enhance Australian industry participation and expand economic activity to achieve very large benefits through increased local content in the construction of new resource projects. This would, in the longer term, prevent plant closures. Such policies would not only utilise currently under-utilised resources, with obvious benefits for Australian employment and incomes, but could do so in a way that was budget neutral. Increased local content could be achieved through informal negotiation during project approval or mandated where projects were deemed to be marginal to the national interest. A tax incentive approach could offer increased tax concessions and/or Resource Rent Tax (RRT) discounts for increased local content where this involves increased costs compared to imported products. The report finds that policies targeting up to 20 per cent local content enhancement with a cost disability of between 10 and 20 per cent should be considered. However above a 15 per cent cost disability there should be reciprocal obligation to demonstrate long term viability of a plant post mining boom. The costs of enhanced local content would be reduced if the 'natural' local content was based on a deemed rather than actual exchange rate (such as PPP plus 10 per cent). This would increase 'natural' or competitive local content and reduce tax incentives required to increase local content.

Challenging conventional wisdom

1. To some, the emergence of a two speed economy or an economy as a result of the so-called Dutch disease as a result of the current mining boom is to be welcomed.

The Dutch disease describes a process of destruction of installed capacity and the foregoing of new capacity creation in internationally tradable non-mining sectors (agriculture, manufacturing, tourism, etc.) as a result of the drivers of rapid mining expansion. These drivers or consequences include, relatively:

(i) high commodity prices and exchange rates;

(ii) high interest rates; and

(iii) low business confidence in many non-resource industry sectors.

To many, including the Chairman of the Productivity Commission (*Australia's mining boom: what's the problem?*, Melbourne Institute Economic and Social Outlook Conference, Melbourne, 30 June 2011) the emergence of an economy subject to the Dutch disease is not a problem. Indeed, such a diseased economy is to be welcomed. It is a good outcome because it represents the dynamic process of an economy shifting resources to higher productivity activities from lower productivity uses.

The believers in this view fall into at least two camps. One camp would represent those with a vested interest in the mining boom proceeding and the other camp those with an intellectual commitment to the conclusions of so-called computerised general equilibrium (CGE) models of the economy. This world is one that the Central Policy Agencies of the Australian economy (such as the Commonwealth Treasury) adopt when it suits their policy objectives.

Over the past 30 plus years CGE model studies of the impact of mining expansion on the Australian economy have always shown positive benefits. This has created the environment in Australia where the long-run benefits from mining expansion are simply assumed and not questioned.

For simplicity this view is termed the 'conventional wisdom'.

2. The key assumptions of the conventional wisdom which welcomes the Dutch disease are straight forward.

The explicit assumptions made by past CGE model evaluation of mining expansions in Australia include:

(i) no increase in population;

(ii) use headline gross domestic product (GDP) as the measure of economic benefits;

(iii) assume not one extra person remains in unemployment in the economy, irrespective of whether the mining boom occurs or not;

(iv) productivity growth in the economy is independent of the economic environment; and

(v) market driven mechanisms, such as the exchange rate and wage rates, will ensure that the 'just right' amount non-resource tradable sector destruction will occur to allow the mining sector to absorb the displaced labour.

At the heart of this analysis is simple arithmetic. That is because gross domestic product per person employed is higher in mining than in the other non-mining tradable industries, then shifting labour out of the latter into the former will lift national productivity, that is, GDP per person employed.

At least in terms of 2008-09 real prices this proposition is not in dispute. In one element of the study, given the 2008-09 structure of the economy, the question is asked what happens if expansion in the mining sector, in line with current expectations, is offset on a dollar for dollar basis by pro rata contraction in Australia's other international exporting and import competing industries? The answer is that for every person employed from mining expansion, including all supply chain impacts on other industries and the household consumption spill-over effects (or in technical terms, Type II multipliers), the gain in GDP per person employed at factor cost is $208,000, while the displaced foregone GDP per person employed is $113,000.[1]

As the Chairman of the Productivity Commission would ask, "What's the problem?"

The answer from the study is "plenty".

3. A critique of the conventional wisdom – One: The use of the GDP indicator is not appropriate for evaluating the benefits of mining expansion.

The study argues that the use of the headline GDP measure is not appropriate for assessing the benefits of mining expansion. What is important, in terms of assessing the benefits of any change to the economic structure, is not the change in GDP produced but how much of this change accrues to local residents and governments in the form of additional income that can be used to increase living standards as measured by private and public consumption expenditure. That is, the GDP increase less transfers out of the country.

These transfers include:

(i) profits transferred to foreign equity holders;

(ii) interest payments to foreign lenders;

(iii) depreciation allowances transferred to foreigners which would include the payment of foreign debt to foreign lenders; and

(iv) payments to workers temporarily domiciled in Australia.

The appropriate indicator for the benefits accruing to local residents, as distinct from foreign residents, is what is called here the net national product at factor cost. For mining expansion/crowding out case noted above when the NNP indicator is used, the total net additionality in favour of mining expansion is reduced to 9 per cent over the equal dollar for dollar displacement effect of the non-mining tradable sector. This compares to the 36 per cent superiority for mining expansion when the GDP indicator is used.

Moreover, for every additional employment position created directly or indirectly by mining activity, there is a net 0.3 employment position lost as a result of contraction in the non-mining tradable sector. This is because mining production is less labour intensive then other sectors of the economy.

This outcome also reflects the fact that for the mining sector as a whole the net national product/GDP ratio is 0.53 compared to a national ratio is 0.84.

Further, as the study points out, these averages hide considerable variation in outcomes across the individual mining industries. For a Gorgon scale fully foreign owned offshore LNG projects, for the first 10 years of the project the ratio of net national product directly gained from the project to the gross domestic product gain is just under 20 per cent. It is only the advent of resource rental tax well into the life of the project that drives the ratio of net national product to gross domestic product to 35 per cent over the life of the project. In the first decade of a large scale fully foreign owned offshore LNG project two-thirds of the export receipts from the project will flow back overseas.

[1] These estimates are derived from Table 3.1 in the study below.

At the other polar extreme, in the case of iron ore which has relatively high domestic ownership and low capital intensity, means that the whole of life net national product/GDP ratio is around 68 per cent, which is above the mining industry average.

4. A critique of the conventional wisdom – Two: The construction phase is ignored.

A fundamental error is that the conventional wisdom/CGE model analysis is that it ignores the construction phase. The analysis, as the "simple arithmetic" illustration indicates above, is undertaken purely in terms of mining expansion/contraction elsewhere once the construction phase has ended.

However, it is the construction phase with high exchange rate, interest rates and skilled labour shortages is where the damage to the non-mining tradable sector is done in terms of capacity closed or capacity expansion not proceeded with. There is absolutely no mechanism to ensure that the capacity destroyed during the construction phase will be "just right" in terms of the capacity needed to be destroyed to accommodate the labour resources required by the mining sector during the production stage in a fully employed economy.

As the study shows, the construction stage does exert a powerful stimulus to the economy with on average over the past four to five years around 200,000 employment positions being created annually from the direct and indirect impact of mining construction investment expenditures.

Using quantitative rules of the destruction inflicted on the non-mining tradable sector during the construction phase from a variety of methods of estimating the displacement impact, the study provides evidence that in gross terms for every dollar of mining output expansion the associated construction phase crowds out at least 50 cents of non-mining production excluding any adverse impacts on agriculture with the range extending up to 100 cents in the dollar. At a 100 cents in the dollar the Resource Curse description would apply to the Australian experience.

At the lower end of crowding out estimates the comment from the adherents to the conventional wisdom would still be "so what?"

5. A critique of the conventional wisdom – Three: Population has not remained constant.

Once focus shifts to the construction phase, as the study makes clear, the focus shifts to the population growth and especially the increase in net immigration that has occurred during each successive mining boom construction phase to provide for the construction employment needs. The study estimates that since the late 1970s one million of additional net immigration has been taken in during periods of elevated mining construction. Four hundred thousand of the additional net immigration has been taken in during the 2006 to 2010 period. This is well in excess of the labour market needs for the historical peak construction year, so the inference is that periods of mining booms have been used to build Australia's population base well in excess of construction labour force requirements. To date the use of temporary 457 visas does not seem to have made a difference to this conclusion as Australia is again building up to a higher net immigration intake as the mining construction phase regains momentum over 2012.

This means that a finding of 50 cents in the dollar gross crowding out when converted to a per capita basis, produces a zero net gain in per capita net national income in terms of the "original population. That is, the population that would have been in Australia in the absence of periods of mining expansion have not gained any direct benefits from mining expansion.

Moreover, there is a risk that the original population may be required to fund part of the infrastructure costs and the associated service costs for the additional 400,000 population of the last few years. The study estimates that for each 50,000 increase in population the non-

housing infrastructure and annual service costs come to $12.2 billion after a decade (calculated from Table 3.4 below). How much of this will be funded out of the additional mining production will depend on the prevailing commodity prices and tax regimes over the next few years. If commodity prices turn down sharply, then a greater share of the costs will have to be borne by the original population.

6. Critique of the conventional wisdom – Four: For some high capital intensive foreign owned projects the net gain after crowding out is likely to be negligible.

Again the averages disguise a substantial variation at the project level. Simply using the crowding out impact on the metals and machinery sector, which the study estimates represents one third to one half of total non-agricultural crowding out, then the net impact on the economy of a fully foreign owned Gorgon scale offshore LNG project is likely to be relatively small. The net expenditure (which includes taxes and domestic depreciation allowances) impact of the Gorgon scale project is reduced from a cumulative $103 billion over the life of the project, to $22 billion. If the crowding out impact on other sectors is taken into account the conclusion would be that the benefit to the economy over the life of the project is at best negligible.

The conclusion should reflect the high capital intensity of the project and the low production benefits to the local economy means that the project does not have to inflict a relatively high degree of non-mining capacity destruction during the construction phase to cancel positive benefits on the economy from the production stage. This is a real concern given that LNG investment is going to drive the expected regaining of momentum in mining expansion over the next few years.

At the other end of the spectrum is a large iron ore project, where the relative benefits are large compared to the LNG case, even after metals and machinery crowding out. The risk here, however, is that iron ore prices may decline more than expected over the next few years which would significantly reduce the net benefits.

7. Critique of conventional wisdom – Five: Other countries have shown that aggressive intervention to increase local content from resource development can substantially increase national wealth.

Compared to Norway, the Australian Government's management of resource expansion has been a failure.

Over the past four decades, the outcomes for Norway compared to Australia are:

(i) the mining sector, which in 1970 was the same size as its Australian equivalent, has grown three to four times faster and is now four times the size in real US$PPP terms per working age population (US dollars at purchasing power parity exchange rates);

(ii) an economy which at its peak reached 30 per cent higher overall GDP per working age population than Australia (although this gap has narrowed over recent years because of oil production rundown and the GFC);

(iii) an economy with a larger manufacturing sector (currently just under 30 per cent) per working age population than Australia;

(iv) an economy with an employment to working age population ratio that is 5 percentage points higher than Australia's; and

(v) an economy where between 1980 and 2010 the cumulative current account surplus for Norway is 200 per cent of GDP, while for Australia the outcome is a cumulative current account deficit of 127 per cent of GDP. Norway now has a Sovereign Wealth Fund of US$600 billion (or US$2.4 trillion adjusted to Australian population levels). Australia has in excess of $600 billion in net international debt. This represents a difference of US$150,000 per person in net international assets.

All this was achieved with a population growth rate a third of Australia's (there was little reliance on migration) and has produced an exchange rate outcome which is currently over-valued by the same extent as Australia's, despite fundamentals which would suggest that a much higher exchange rate should prevail.

In order to achieve this Norway used:

1. aggressive monetary and fiscal policies to increase national savings in the expansion phase to limit demand-pull inflation;
2. aggressive industry policy to maximise pull-over effects to manufacturing from resource expansion. This was done by:
   (i) local content targets during resource expansion and operation;
   (ii) subsidies, investment support, training, etc. to ensure manufacturing could meet local content targets at minimum cost to the resource sector;
   (iii) use of local/foreign joint ventures to establish new industries in Norway initially linked to the mining supply chain but which now can stand alone given their global competitiveness;
3. aggressive taxation of the resource sector with funds used to support:
   (i) economy-wide education and training programs;
   (ii) knowledge clusters for research, development and innovation;
   (iii) regional adjustment and infrastructure expansion; and
4. creation of a Sovereign Wealth Fund to invest offshore and so minimise appreciation of the currency.

In terms of strategies to increase local content from mining investment, the MM sector is the prime candidate since 60 per cent of mining investment constitutes products of the MM sector.

8. The study shows how strategies to increase local content during the construction phase can produce very large net gains from resource development.

The study examined the consequences of increasing local content via the use of:

(i) depreciation loadings; and/or

(ii) resource rent tax discounts,

to neutralise the impact of higher costs for local content on the rate of return on the project. The analysis was carried out for a range of local content targets and cost differentials.

For low local content targets such as a 10 per cent target imposed where local suppliers have a 10 per cent cost disability the revenue gains to Government are positive. The extra taxation revenue from the enhanced local content more than offsets the revenue loss to compensate for the increased costs to the mining project. Even for a 20 per cent enhanced local content at a 20 per cent cost disability the Government would be revenue positive up to 15 years of production.

This analysis is highly conservative in that it assumes that there are no flow-on benefits, other than the enhanced local content, over a four year construction phase. However, what will actually happen, given the state of the Australian steel sector, is that the enhanced local content will enable capacity, which under current policies will be shut down over the next five years, to continue on, perhaps well into the 2020s and beyond since the plant will return to profitability once the mining expansion eases and exchange rates and interest rates return to lower levels. In this case the net impact on Government revenue is significantly positive, running into billions of dollars since the long-run GDP gain will be a multiple of from two to ten times the GDP gain from increased local content over the construction phase. The longer the period a plant would have stayed in production if it had not been closed during a mining boom the greater the GDP gain.

The analysis shows why the Norwegians were able to do what they did compared to Australia.

9. Critique of the conventional wisdom – Six: Australia is not a fully employed economy.

The study shows that the conventional wisdom view that Australia is a fully employed economy and nothing can be done is nonsense. Firstly, Norway achieved its results in an economy with a significantly higher employment to population ratio than Australia with no resort to immigration.

Secondly, although headline unemployment is low, this is largely the result of Governments switching the support to the unemployed to other forms of working age social security. On any measure of effective unemployment rates, ranging from hours of work available per capita of working age population, working age social security take-up rate, the working age not in employment ratio, etc., the actual unemployment rate is at least double the headline level.

At the regional level the effective unemployment rate can be three times or more the official or headline unemployment rate. Moreover, many of the regions with high effective unemployment rates are regions with high concentrations of MM sector activity and fabrication metal processing capacity.

Even more importantly, over the last few years of the current mining boom the divergence in effective unemployment rates across Australian regions has increased.

Australia is currently a long way from full employment. It is factually incorrect to assume otherwise.

The study argues that whatever impact policies to increase local content from the current mining boom have on the headline unemployment rate can easily be neutralised by Government by switching benefit receipts from non-unemployment benefits to unemployment benefits. In any event, the impact is likely to be small because the current capacity utilisation rate of the MM capacity is around 50 per cent which is about two-thirds of normal levels. Any increase in demand for MM products is likely to be met by increased productivity rather than increased employment.

10. Critique of the conventional wisdom – Seven: Market mechanisms don't work to ensure the "just right" account of capacity destruction.

It is clear from direct observation of what is currently happening in the economy and the historical record that market mechanisms do not ensure the "just right" account of capacity destruction during periods of mining expansion. Given the very large population response CGE type models would have shown that the exchange rate should have been much lower than what did in fact occur. This is because the current setting of the exchange rate has little to do with Australia's requirements for a long-run sustainable economy, but everything to do

with the Australian currency being used by financial investors as a proxy for the not fully convertible Chinese currency. Market mechanisms are not working as assumed.

As an extension of this point the study argues that a significant part of the blame for Australia's current slow-down in the rate of growth of labour productivity is due to the emergence of the two speed economy associated with the mining boom. The converse of this is that increased local content will lift capacity utilisation in industries and regions where it is currently low and therefore productivity growth which will enable non-inflationary expansion.

In this situation a responsible Australian Government has little choice, as the Norwegians decided 40 years ago, but to directly intervene to ensure that existing Australian residents salvage as much positive net benefit from the current mining boom as possible.

Background and summary

This study was commissioned by the Steel Institute to investigate:

(i) the benefit to the Australian metals and machinery (MM) sector of periods of elevated mining activity and, in particular, mining investment; and

(ii) if there is a case for policies to increase the direct benefit of mining activity to the MM sector that also would be in the national interest.

For policies to assist the MM sector achieve greater direct benefits from mining activity to be in the national interest a number of necessary conditions must be met. They are:

(i) Australia currently falls well short of maximising the benefits from mining expansion;

(ii) policies can be put in place to increase the benefits; and

(iii) the MM sector has a justified key role in policies to increase the Australian industry direct benefit from mining activity.

The study considers the validity of these three conditions.

The metals and machinery industries are defined as in the national official input-output tables and include the industries listed in Table S.1.

Table S.1 The metals and machinery industries

Iron and steel
Basic non-ferrous metal and products
Structural metal products
Sheet metal products
Fabricated metal products
Motor vehicles and parts, other transport equipment
Ships and boats
Railway equipment
Aircraft
Photographic and scientific equipment
Electronic equipment
Household appliances
Other electrical equipment
Agricultural, mining, etc. machinery
Other machinery and equipment

The MM sector offers the best prospects for increasing the direct benefits from mining expansion

The instrument for increasing the direct benefits from mining expansion considered in this study is the local content of mining activity. The extent that orders flow from mining operations and investment to local industry, rather than to foreign countries in the form of imports of goods and services, can be influenced in the course of negotiations over the terms of access to Australian mineral resources.

The MM sector is the strongest candidate for a substantial increase in local content because it accounts for a high proportion of mining imports. In 2009, of the total imports of $37 billion

of goods and services that directly supported current production and investment by the mining sector, $22 billion or 60 per cent were products of the MM sector.

Many of the other imports are products which have no local substitutes. For example, given the run down in domestic crude oil production the imported inputs of petroleum to the mining industry have no domestic substitute. These now account for 20 per cent of the import balance.

The steel sector (iron and steel and fabricated metals) is currently operating at historically low levels of capacity utilisation at around 50 per cent. If nothing is done to lift utilisation rates substantial capacity will be closed over the next five years. In many cases this closure of capacity will be in regions with already high effective unemployment rates.

It appears that around half of the decline of capacity from normal levels can be directly linked to the negative consequences of rapid mining expansion, namely sharply increased import penetration due to high exchange rates.

The question of whether or not Australia obtains substantial benefits from mining expansion is seldom asked

The issue is not trivial. The economic literature over the past three decades contains a significant segment focussing on the empirical observation that countries with a strong reliance on their natural resource base to generate income, particularly those which rely on energy and mineral resources, were likely to perform poorly in GDP and real income growth compared to comparable countries without national resources. J.O. Sachs and A.M. Warner "*National Resource Abundance and Economic Growth*", NBER Working Paper No. 5398, 1995.

The classic case in this regard is the OPEC countries where between 1965 and 1998 growth in gross national product per capita was negative compared to a growth rate of 2.2 per cent per annum for the rest of the developing world. This was despite multiple increases in the oil price during the period. More generally, the estimated relationship is that, for each 10 percentage point increase in national resource capital as a percentage of national wealth, trend growth in gross national product per capita falls by 1 per cent per annum.[2]

There is recent evidence[3] that the OPEC economies are beginning to obtain net benefits from their resource base. The reason for this is better management, using direct Government intervention to apply the funds generated by resource extraction to building the skill and infrastructure base of their economies.

It has been recognised that a major reason for poor economic performance from resource extraction is poor governance, when the resource surpluses are misapplied in poor performing investments or confiscated by corruption.

The Dutch disease and/or Resource curse

Countries with abundant natural resources are generally allocated to three categories. The first category contains those countries which have used national resources to successfully accelerate their growth rates. Norway is the outstanding country in this regard.

The next category of countries comprises those which have accelerated their overall growth rates at the cost of a relative or absolute contraction in the non-resource trade-exposed industries (predominately manufacturing). These countries have achieved a degree of net additionality in measured in GDP and real incomes but have lost income and employment

[2] T. Gylfason and G. Zoega, "*Inequality and Economic Growth: Do National Resources Matter*", in T.S. Eicher and S.J. Turnovsky, "*Inequality and Growth: Theory and Policy Implementation*", MIT Press, London, England, 2003.

[3] T. Cavalcanti et. al., "*Does oil abundance harm growth*", Applied Economic Papers, March 2011.

due to the impact of resource expansion on the exchange rate, wage costs, etc. Countries in this category are referred to as countries subject to the so-called Dutch disease.

The final category of country are those that do not seem to have achieved any significant net additionality in terms of GDP and real incomes and indeed perhaps a decline, either because of the severity of the Dutch disease and/or because the negative impact of resource expansion has extended from the non-mining trade-exposed industries to the non-tradeable service industries.

For developed countries like Australia, the factors which produce poor economic outcomes from elevated periods of mining expansion can include:

(i) high commodity prices are the essential catalysts for triggering an episode of elevated mining investment and subsequent production expansion. Unfortunately high commodity prices generate high exchange rates which discourage investment, capacity augmentation and eventually production outside the mining sector;

(ii) skilled labour shortages and cost pressures during the mining construction phase having the same effect as (i);

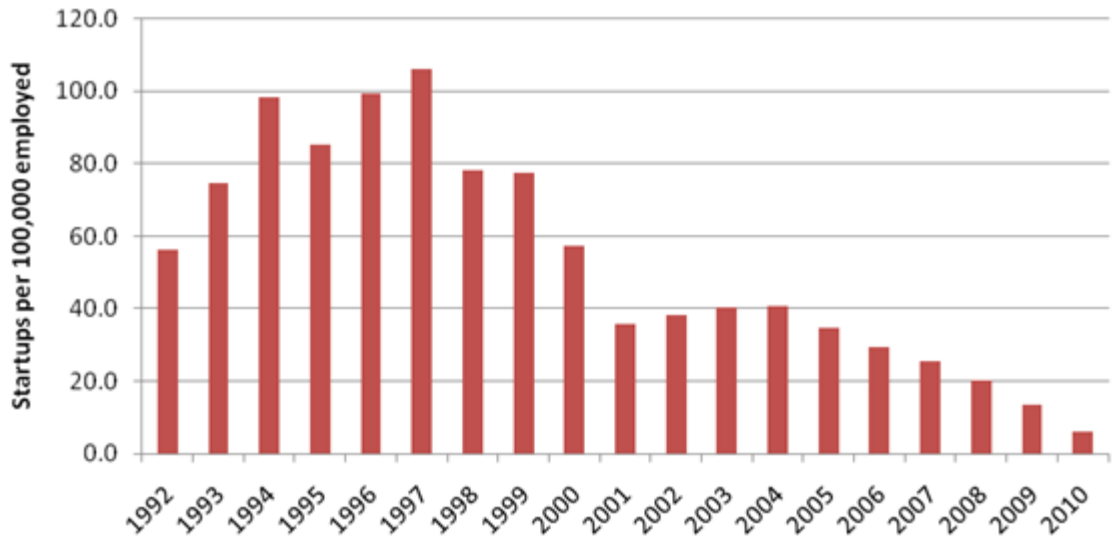
(iii) high foreign ownership of national resources which limit real income gains to residents and reduce taxation receipts;

(iv) the negative consequences from the import of additional population to provide resources for the construction phase; and

(v) generate negative sentiments, especially the view in international investment circles that Australia is not the place for non-resource activity.

The study found strong evidence for the operation for these drivers in Australia. The body of the report documents the negative consequences of the first four drivers, but the fifth should not be neglected. The decline in high-technology start-ups provides strong evidence of the prevailing negative assessment of Australia as a place for activities other than mining, especially since 2004 when the current resource expansion started – the decline from 1997 to 2001 reflects the ending of the high-tech boom.

Figure S.1: High tech start-ups



Source: Dunn and Bradstreet data base.

The timing of Australian episodes of mining expansion

Each episode of mining expansion can be divided into sub-periods of which the two most important are the construction and production phases.

Australia has had a number of episodes of mining expansion since 1788 period including the 1850s gold rush. Since the mid 1970s three episodes can be identified with the timing of the construction and production phases given in Table S.2.

Table S.2 Episodes and periods of Australian resource expansion	
Episode one	**1981 – 1991**
Construction phase	1981 – 1988
Production phase	1984 – 1992
Episode two	**1995 – 2001**
Construction phase	1995 – 1999
Production phase	1995 – 2001
Episode three	**2004 – ?**
Construction phase	2004 – ?
Production phase	2004 – ?

Mining expansion construction has a significant impact on the national economy

The study finds that the construction phase of a mining expansion has a significant impact on the economy. During the current construction phase, with net annual mining investment averaging at least $33 billion in 2009 prices, the inter-industry and household consumption multiplier flow-on in terms of employment demands (or technically Type II multipliers) account for approximately 200,000 full time equivalent employment positions. This is achieved despite the high import content of mining investment, which results in GDP rising by less than total investment even after allowance for the multiplier effects of the portion of investment that is spend locally. Purchases from the MM sector account for just 11 per cent of total investment.

Despite the low GDP multiplier, the employment upswing from mining investment since 1979 has been estimated to induce a population increase from net immigration of one million with the current episode's share estimated at 40 per cent of the one million, or 0.4 million.

Australia cannot accept zero additionality from mining expansion

An outcome of zero additionality in which the mining expansion displaces other forms of activity is not an acceptable outcome for Australia. This is because the displaced activity will be in regions that have been provided with adequate housing, infrastructure and services while the activity and employment created will be in regions where these resources will have to be created.

The study demonstrates that, for the current episode of mining expansion, a situation of zero net additionality for every annual increment in mining output over the next five years will, once construction subsides and the mining industry moves to the production phase, lead to:

(i) net destruction of 27,000 full time equivalent employment positions;

(ii) a permanent increase of 50,000 in population; and

(iii) a combination of annual recurring and once-off expenditures of between $5 to $6 billion in terms of additional infrastructure and services to support the additional population.

This accumulates with each year as mining production increases as a result of a further year's investment in mine capacity. Australia must obtain substantial positive additionality from mining if it is to satisfactorily increase the benefits to its citizens.

Has Australia escaped the Dutch disease and Resource curse?

The answer to the question is that Australia has not escaped the Dutch disease and a Resource curse outcome cannot be ruled out. There has been substantial crowding out on non-mining capacity and, on a per capita basis at least, the issue of the relevance of the Resource curse cannot be ruled out given that the final outcome will depend on what happens to commodity prices over the next few years.

Using quantitative rules of the destruction inflicted on the non-mining tradable sector during the construction phase from a variety of methods of estimating the displacement impact, the study provides evidence that in gross terms for every dollar of mining output expansion the associated construction phase crowds out at least 50 cents of non-mining activity, as measured by various indicators, excluding any adverse impacts on agriculture with the range extending up to 100 cents in the dollar. At a 100 cents in the dollar the Resource curse description would apply to the Australian experience.

In terms of non-primary gross product, or gross product less mining and agriculture, the evidence is for near full displacement of capacity expansion by mining expansion. The MM sector displacement was found to account for up to half of this capacity loss. (It should be borne in mind that the study excludes displacement effects in agriculture. The rural sector is in the same position as manufacturing and tourism in that it is losing competitiveness due to the high exchange rate, it was not possible to document this effect due to the cross-cutting effects of drought and flood.)

At best the evidence is that the increase in mining gross product has increased net national income (NNI), which is close to NNP but excludes domestic depreciation. This indicator is relevant rather than gross domestic product, since it adjusts for depreciation and for incomes accruing overseas and includes the impact of the so-called terms of trade or price effect of resource production. However the qualification is that the increase in NNI has been equal to the net national product directly generated by mining itself; no more though thankfully no less. An important contributor to this result is the high foreign ownership and capital intensity of mining, which means that NNI generated by the sector is not much more than half the gross product it generates.

This calculation suggests that all that the mining expansion has done is provide the same NNI per capita to the 'new' one million population that would otherwise have been provided to the 'original' population in the absence of any net mining investment since 1979. Unless the objective is to increase population *per se*, the question would be: Why did Australia bother?

The conclusion of no gain in NNI per capita would be approximately consistent with a 50 cents in the dollar gross crowding out effect.

Some projects generate greater benefits than others

Examination of individual projects shows that some projects generate greater benefits than others. Off-shore LNG projects have particularly high import content and the study finds that these projects, at least for the first 10 to 15 years of operation, are likely to make a significant net negative contribution to Australian economic welfare even before the costs of induced population increases are taken into account.

For iron ore the reverse applies. Unless prices fall to very low levels compared to the present (which is possible) nearly all of them are likely to be positive for the economy, even after population adjustment. The reasons are differences in capital intensity and foreign ownership, both of which are high for LNG projects. Domestic content is also low for LNG projects.

The analysis provides an insight of why, despite successive episodes of resource expansion over the last 40 years, Australia has, on average, run high current account deficits. By the time capital earnings are repatriated, the approximate net contribution of any large offshore LNG project to the current and capital accounts of the balance of payments is only a third of gross export revenue. With conservative assumptions derived from historical experience of crowding out the net contribution falls to 15 per cent and to near zero with the extent of crowding out revised for current circumstances, at least over the first decade of production. When eventually the resource rent tax cuts in it improves the situation.

Over the next few years commodity prices can be expected to decline as the world-wide supply expansion that is currently being undertaken comes into production in the context of sluggish world growth. High current account deficits will return with a vengeance. Then Australia will need every bit of the MM capacity it now possesses.

Compared to Norway, Australian Government's management of resource expansion has been a failure

Over the past four decades, the outcomes for Norway compared to Australia are:

(i) the mining sector, which in 1970 was the same size as its Australian equivalent, has grown three to four times faster and is now four times the size in real US$PPP terms per working age population (US dollars at purchasing power parity exchange rates);

(ii) an economy which at its peak reached 30 per cent higher overall GDP per working age population than Australia (although this gap has narrowed over recent years because of oil production rundown and the GFC);

(iii) an economy with a larger manufacturing sector (currently just under 30 per cent) per working age population than Australia;

(iv) an economy with an employment to working age population ratio that is 5 percentage points higher than Australia's; and

(v) an economy where between 1980 and 2010 the cumulative current account surplus for Norway is 200 per cent of GDP, while for Australia the outcome is a cumulative current account deficit of 127 per cent of GDP. Norway now has a Sovereign Wealth Fund of US$600 billion (or US$2.4 trillion adjusted to Australian population levels). Australia has in excess of $600 billion in net international debt. This represents a difference of US$150,000 per person in net international assets.

All this was achieved with a population growth rate a third of Australia's (there was little reliance on migration) and has produced an exchange rate outcome which is currently over-valued by the same extent as Australia's, despite fundamentals which would suggest that a much higher exchange rate should prevail.

In order to achieve this Norway used:

1. aggressive monetary and fiscal policies to increase national savings in the expansion phase to limit demand-pull inflation;

2. aggressive industry policy to maximise pull-over effects to manufacturing from resource expansion. This was done by:

    (i) local content targets during resource expansion and operation;

(ii) subsidies, investment support, training, etc. to ensure manufacturing could meet local content targets at minimum cost to the resource sector;

(iii) use of local/foreign joint ventures to establish new industries in Norway initially linked to the mining supply chain but which now can stand alone given their global competitiveness;

3. aggressive taxation of the resource sector with funds used to support:

   (i) economy-wide education and training programs;

   (ii) knowledge clusters for research, development and innovation;

   (iii) regional adjustment and infrastructure expansion; and

4. creation of a Sovereign Wealth Fund to invest offshore and so minimise appreciation of the currency.

The core issue: Labour resource constraints

An argument for policy support for Australian industry to obtain greater direct benefits from episodes of mining expansion should be dismissed out of hand if it fails come to grips with the resource constraints issue. Prima facie, additional orders to manufacturing industry during the construction phase will simply increase pressure on resources and so add to the core problem of excess demand, which drives up interest rates and the exchange rate and so defeats any strategy to divert orders to domestic suppliers by raising their costs relative to overseas suppliers.

This, however, is not a necessary result. It arises because of the way the economy has been structured to support mining. Mining expansion occurs in response to high international mineral prices. Flexible exchange rates tied to the commodity price cycle ensure that mining expansion occurs during periods of high exchange rates and so ensure that displacement occurs. However, Australia has not always had flexible exchange rates (and China does not to this day). If policies are having bad effects they can be changed. In this case there is a strong argument for more direct management of the currency, which would have to be coupled with alternative policies to control inflation.

The case for policy change is strengthened by overseas experience that quality governance, along the Norwegian model, can extract much higher benefits for the original population. The current policy assumption that nothing can be done other than let market forces sort it out is factual nonsense and the exact reverse of Norway's approach.

The final issue is: What if the capacity of Australian industry to meet additional orders from the mining expansion is limited by full employment of labour? A first answer to this question is that Norway achieved what it did over a sustained period of time with an effective unemployment rate that was considerably higher than Australia's, both in the past and currently. In 1998 Norway had an employment to working age population ratio of 78 per cent, which was 9 percentage points greater than Australia's. The 2009 ratio for Norway was still 78 per cent compared to 77 per cent for Australia. In 2009 several other OECD economies had employment to population ratios greater than these.

Using a variety of other indicators to measure labour utilisation rates, such as the not in employment full time equivalent to working age population rate, the study shows that the headline unemployment rate is now a poor indicator of:

(i) the trend in national labour utilisation rates;

(ii) the level of unutilised labour; and

(iii) regional differentials in unutilised labour.

Empirical evidence is presented which shows that the headline unemployment rate has been manipulated to show convergence in unemployment rates between regions. This was done by shifting working age social security beneficiaries from unemployment benefits to other forms of working-age social security in regions where effective unemployment rate is high, as measured, for example, by hours of work available per working age population. The headline unemployment rate was further massaged by adopting the reverse process in regions where unemployment rates are low.

At the regional level Australia is far from fully employed, with some MM-intensive regions having high levels of unutilised labour

Figure S.2 clearly shows how the headline official unemployment rate under-estimates the unemployment rate when the latter is based on working age social security payments.

The total unemployment rate is highly correlated with regional hours per working age population and Figure S.3 shows that many Australian regions that are dependent on MM sector hours per employment also have below Australian average levels of hours of work available for working age population. For regions in the bottom right quadrant of Figure S.3, if the working age to population ratio was brought up to the national average, an additional 83,000 employment positions would be created.

Over the last ten years the decline in MM sector hours of work per working age population (Figure S.4) has not led to the transfer of labour resources to resource industries and regions. Figure S.5 demonstrates that this resulted in significant declines in hours of work per working age population in MM sector dependent regions.

The State trends explain why, from Figure S.5, a number of steel fabrication intensive regions have experienced a negative change in hours available per working age population between 2000 and 2010. That is, effective unemployment rates have gone up.

Figure S.2: Total unemployment rate and headline unemployment rate 2010

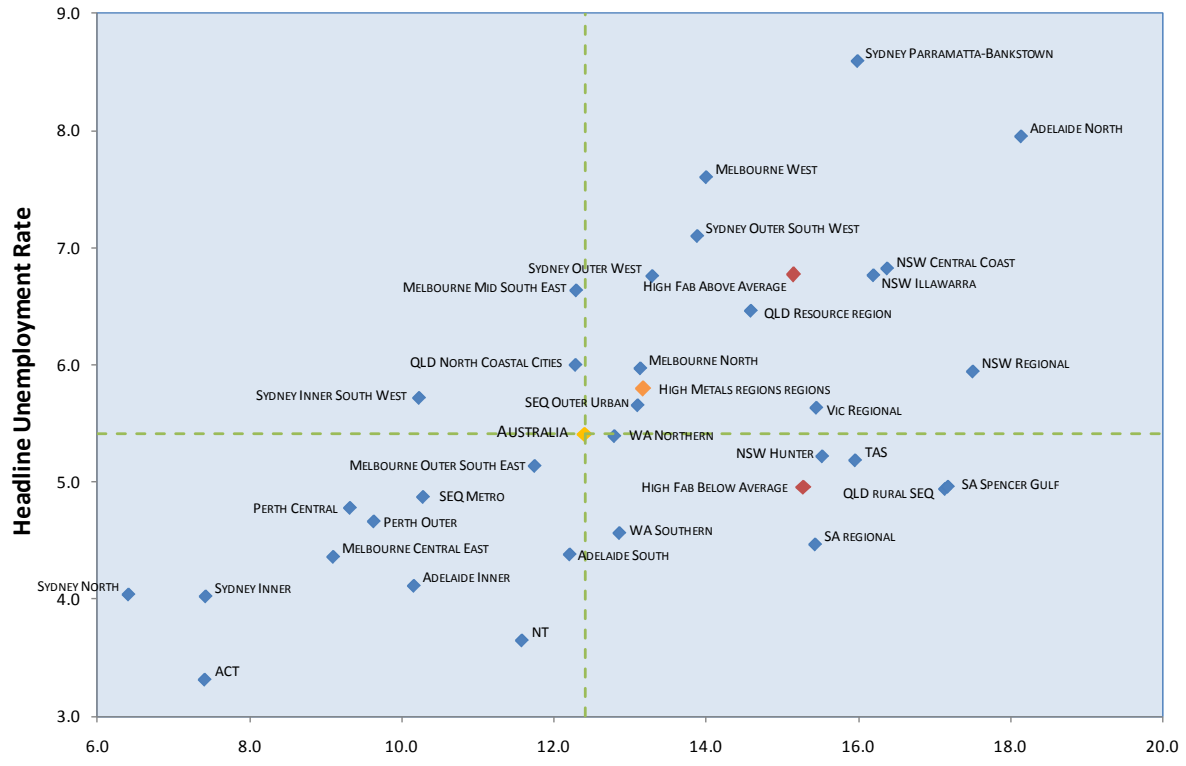


Figure S.3: Metals per cent of total hours and hours worked per working age population 2010

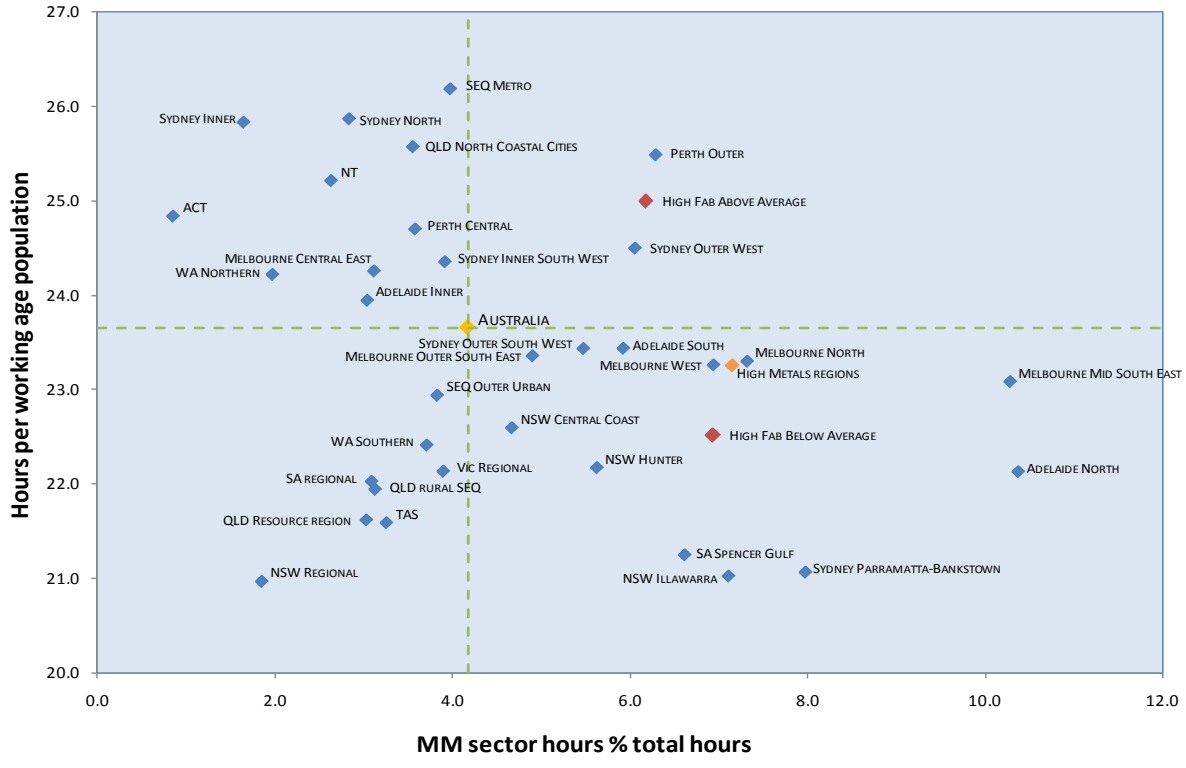


Figure S.4: MM sector hours worked and mining investment per working age population 2010

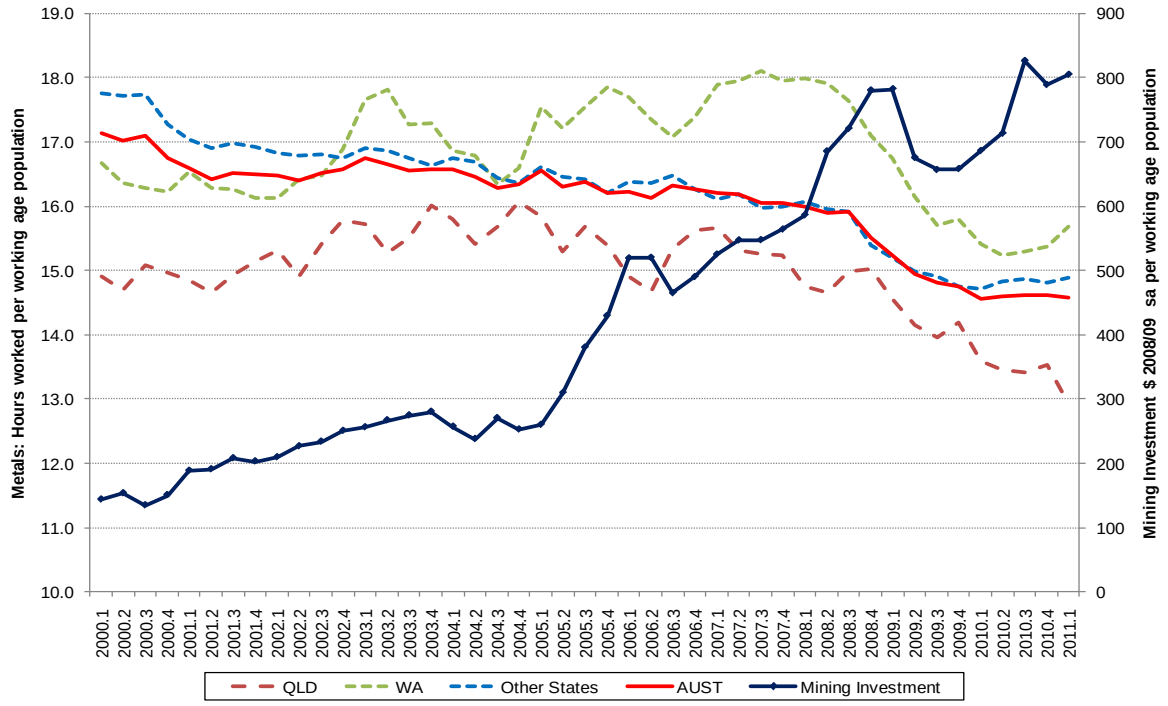


Figure S.5: Metals capacity per employed person and change in hours worked per working age 2000-2010 (%)

The majority of Australian regions will be adversely impacted by full crowding out

Using the results of this study, the ALGA/NIEIR "*State of the Regions Report – 2011-12*" (SOR report) estimates that, excluding the construction effect, after five years resident employment will be adversely affected in 52 of the 67 regions under the full crowding out case, while under the half crowding out case the number is still 43. If the construction effect is included the net negative outcome is delayed but the number of regions that will eventually experience a net negative outcome is not affected. In terms of resident employment, the majority of regions would have been better off if the mining boom since 2006 had not occurred, though it should be noted that this assessment excludes the benefits that may accrue from the expenditure of net additional taxation collected as a result of the expansion. These results are reproduced in this report at the 33 region level.

The mining expansion will aggravate existing problems of income inequality and housing shortages. In relation to housing shortages the core reason for Australia's current housing shortage is the failure of most capital city construction zones (or clusters of LGAs which have vacant land for residential development) to meet Australia's housing needs. As the SOR report makes clear, the underlying reason for this is the failure of the areas accessible from homes in the construction zones to supply the quantity of hours of work and value in terms of $/hour to allow potential home-buyers to earn enough to cover mortgage payments on new dwellings. The current mining boom, by reducing the hours of work and $/hour available in outer metropolitan areas (due to crowding out) will aggravate the current housing shortages.

As we have indicated, the construction phase of a mining expansion is positive, while the crowding-out effect is relatively slow – it takes time for businesses to become uncompetitive and fold. Crowding-out will not be fully reflected in the data till the construction phase has ended and the resulting close-downs have taken place. However, the indicators provide evidence that crowding out is under way. Since 2005 there has been a market change in trends with the current trend being one of increasing regional divergence in relative effective unemployment rates and in income and local production per capita.

The textbook policy response to control crowding out has failed

The textbook response to minimise crowding out and protect the non-resource sector is to apply contractionary fiscal policies and/or expand labour supply. The 400,000 population expansion should have been sufficient to do this by itself, but it failed. This is because a key intermediate instrument, namely the exchange rate, is driven by factors which are unrelated to Australian economic fundamentals.

One theory as to why the Australian exchange rate is currently so high is because it is a fully floating currency while the Chinese currency is controlled and market speculators are buying Australian dollars because they are frustrated in their attempts to buy yuan. If this is the case, the fundamentals of the Australian economy are being degraded simply because the currency is judged a good short-term proxy for a theoretical fully floating Chinese currency. If this situation continues Australia can expect not only a very severe case of the Dutch disease but also a case of the Resource curse.

Mitigating the overvalued exchange rate by macroeconomic policy responses will not be successful, though it will provide better outcomes than would otherwise would have been the case. The only solution which can be applied at this late stage to prevent significant crowding-out of the trade-exposed non-resource sector is to implement policies which increase the direct benefits for mining expansion to the non-resource sector. Failure to undertake aggressive intervention to maximise benefits will effectively outsource the strategic direction of the economy to financial speculators and their short-term attitudes.

Mining booms: The CGE model results

Current government attitudes towards increasing local content from resource expansion reflect past assessments of the mining expansion undertaken using the so-called CGE (or Computerised General Equilibrium) models beloved of the Productivity Commission and the Australian Treasury. As John Quiggin in "*Zombie Economics: How Dead Ideas Still Walk Among Us*", (Princeton University Press, 2010) concludes, the micro-foundations of CGE models are "of little use in understanding the macro-economy", p. 123. Though poor micro foundations are the ultimate weakness of CGE models, one does not have to understand them to see why CGE model assessments are irrelevant to understanding how mining expansions impact on the economy. This comes from simply stating the "macroeconomic" assumptions of the models. In the past the standard analysis has assumed:

(i) unchanged population in response to construction phase;

(ii) full employment where there is not one extra person available to be employed in the whole of Australia in both the base case with no resource expansion and the resource expansion case; and

(iii) sole focus on GDP with the NNP indicator ignored.

These assumptions guarantee results similar to the full crowding out case of this study, which is concluded to be the best possible since GDP increases and, within the narrow range of policy instruments countenanced, nothing else can be done to maximise benefits. The destruction of capacity in the non-resource sector has to be accepted on the basis that there is no alternative. With this quality of analysis underlying policy it is no wonder that Australia's performance relative to Norway has been dismal.

Measures to increase local content

Measures to increase the local content of investment in mine construction include:

(i) requiring that a US PPP, or weighted average equivalent, long run sustainable Australian exchange rate be used to evaluate the competitiveness of local supplies which, in $US terms, would be around 70 cents;

(ii) lower resource rent tax rates for higher local content;

(iii) accelerated depreciation rates for investment write-offs; and

(iv) deduction loadings for "excess" local costs of supply to compensate for the fact that the actual exchange rate is above the PPP rate.

The study shows that, even if significant tax deductions are allowed to compensate for higher local content, government revenue will rise because of higher local production and higher tax payments by local producers. This effect lasts well into the life of most projects.

The economic benefits from local content enhancement can be self-financing and can be very large

The study examined the consequences of increasing local content via the use of:

(i) depreciation loadings; and/or

(ii) resource rent tax discounts,

to neutralise the impact of higher costs for local content on the rate of return on the project. The analysis was carried out for a range of local content targets and cost differentials.

For low local content targets such as a 10 per cent target imposed where local suppliers have a 10 per cent cost disability the revenue gains to Government are positive. The extra taxation revenue from the enhanced local content more than offsets the revenue loss to compensate for the increased costs to the mining project. Even for a 20 per cent enhanced local content at a 20 per cent cost disability the Government would be revenue positive up to 15 years of production.

This analysis is highly conservative in that it assumes that there are no flow-on benefits, other than the enhanced local content, over a four year construction phase. However, what will actually happen, given the state of the Australian steel sector, is that the enhanced local content will enable capacity, which under current policies will be shut down over the next five years, to continue on, perhaps well into the 2020s and beyond since the plant will return to profitability once the mining expansion eases and exchange rates and interest rates return to lower levels. In this case the net impact on Government revenue is significantly positive, running into billions of dollars since the long-run GDP gain will be a multiple of from two to ten times the GDP gain from increased local content over the construction phase. The longer the period a plant would have stayed in production if it had not been closed during a mining boom the greater the GDP gain.

The headline unemployment rate

Although the headline unemployment rate is a poor indicator of Australia's economic fundamentals, it does influence expectations which can have negative consequences. That is, it is desirable that in the current environment of low measured unemployment rates that any direct stimulus does not involve any further reduction in measured unemployment rates due to the possibility that actual interest rates may be increased and inflationary expectations increased. This outcome can result because some believe that the headline unemployment rate is a measure of the actual unemployment rate.

The study points out that many of the benefits of increased local content will accrue in regions with high effective unemployment rates. In addition, the low levels of capacity utilisation in these regions in general and the steel sector in particular couple with a low employment response to minimise the impact on the headline unemployment rate. Instead, the gain in gross regional product gain will be expressed mainly as increased profitability and $/hour income.

On top of this, the Government can make sure that the headline unemployment rate does not fall by reversing the policy of the GFC period. During this period, when employment was lost in a region with high unemployment, social security claimants were, more often than not, placed on non-unemployment working age social security. A reversal of this policy is required and if aggressive enough Australia will be able to enjoy significant gains in local content with no reduction in the headline unemployment rate.

This may not be a problem. If the world-wide financial turmoil of the first half of August 2011 is translated into slower world and Australian growth then, as many expect, rising headline unemployment rates may result. In this case increasing local content policies will become both a short-term instrument for increasing employment as well as a long-term tool to strengthen the industrial base of the economy.

1. Mining expansion: Facts and analytical frameworks

The background issues covered in this chapter include:

(i) the scale of the current and short term projected mining expansion;

(ii) the drivers of mining expansion and the contrast with the growth drivers of other sectors; and

(iii) a broad framework for analysing the impact of mining expansion.

The core focus of this study is to investigate the displacement of non-mining economic activity by mining expansion and the benefits of minimising this displacement.

1.1 Terminology clarification: Mining and resource expansion

The analysis of this study benefits from 25 years of economic literature focussed on the consequences of a sudden episode of resource expansion/exploitation. The episode may arise from the unexpected discovery of a natural resource or from the rapid exploitation of known resources when an unexpected price rise makes resource extraction highly profitable. Either way total resource investment rises quickly (that is, over a year or two) to high levels compared to the long term historic average. When the investment projects are completed this is followed by a sharp increase in the rate of growth of resource output.

Technically agricultural production is a resource-based activity. However, once adjusted for the instability in weather related drivers, the expansion in agricultural investment and production is relatively slow and stable. Sudden and large increases in resource activity are restricted to mineral and energy natural resources (coal, oil, gas) where new discoveries and/or large price changes affecting the economics of past discoveries can trigger a sharp increase in investment claims on national economic resources. Hence, in terms of both the literature and this report, mining expansion is used interchangeably with resource development.

1.2 The periods of an episode of resource expansion

Figure 1.1 describes the four periods of an episode of elevated resource development. Period one, or the period before elevated activity commences, is one where the levels of investment and output growth are below their long term historic averages. However, in this period new discoveries of mineral resources are made and/or there is a sharp increase in mineral and energy commodity prices which sharply increase the prospective return on investment. This is followed by the construction or investment stage where the rate of resource investment as a percentage of GDP increases to well above the long term average.

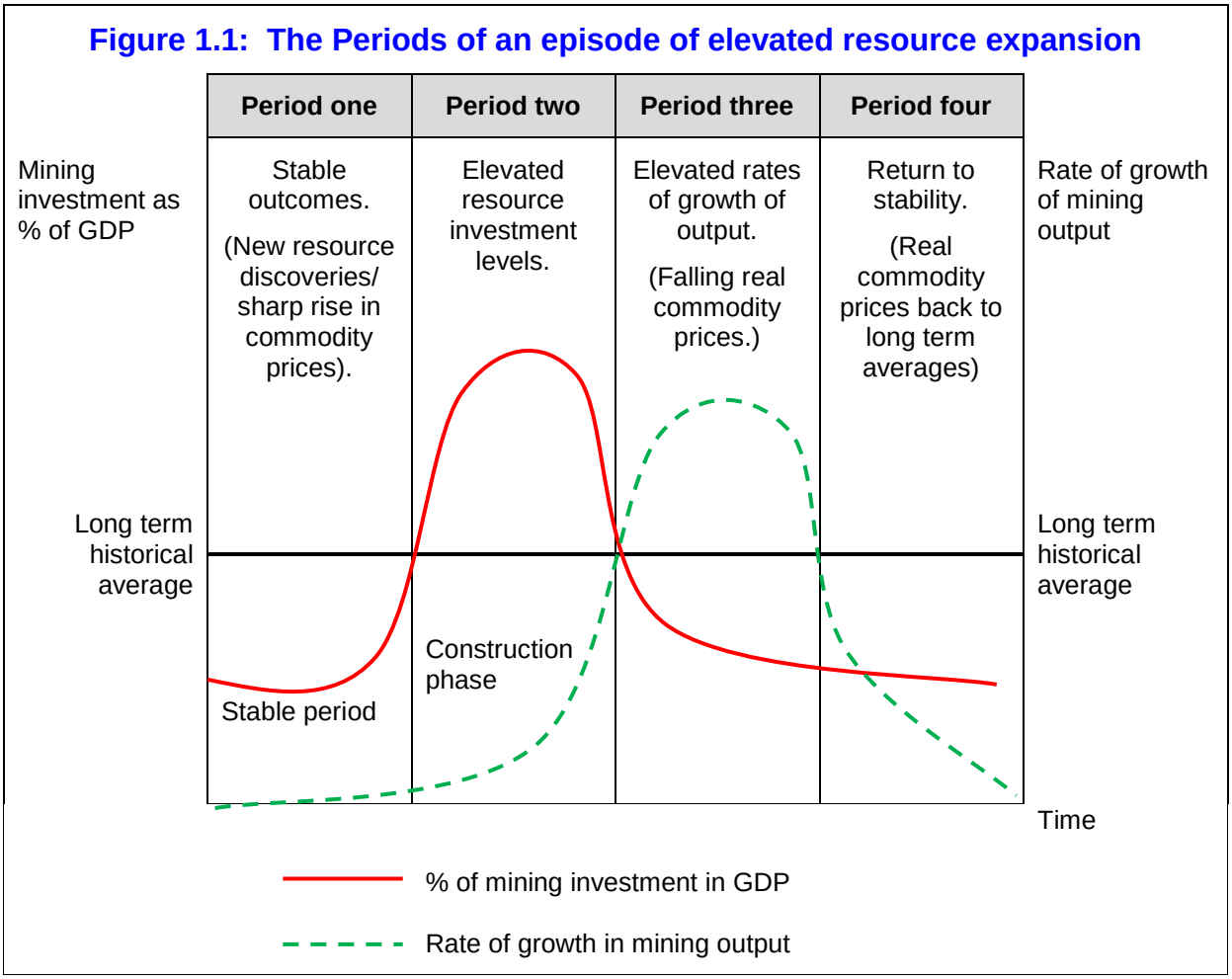
The completion of the investment projects ushers in a period which is characterised by high rates of growth in mining production compared to the long term average growth rate or (at least) the growth rates of the stable periods. During this period, as production expands, real commodity prices fall resulting in falling resource investment. For countries unlike Australia, which do not have extensive stocks of rich undeveloped mineral resources, investment will fall even if commodity prices remain high because of a shortage of unexploited deposits which can be extracted economically.

In Period four, the episode of resource expansion ends with investment and output growth rates returning to below historic benchmarks.

The term “mining boom” most commonly refers to period two when both investment and real commodity prices are above historical averages.

The main periods of interest of this study are periods three and (particularly) four which follow an episode of elevated resource expansion. This is because the focus of this study is on the net, not the gross, impact of a completed episode of resource expansion. What determines the net overall outcome, as will be seen below, is what happens to other sectors in the economy during periods two and three, and in particular period two.

Figure 1.1: The Periods of an episode of elevated resource expansion

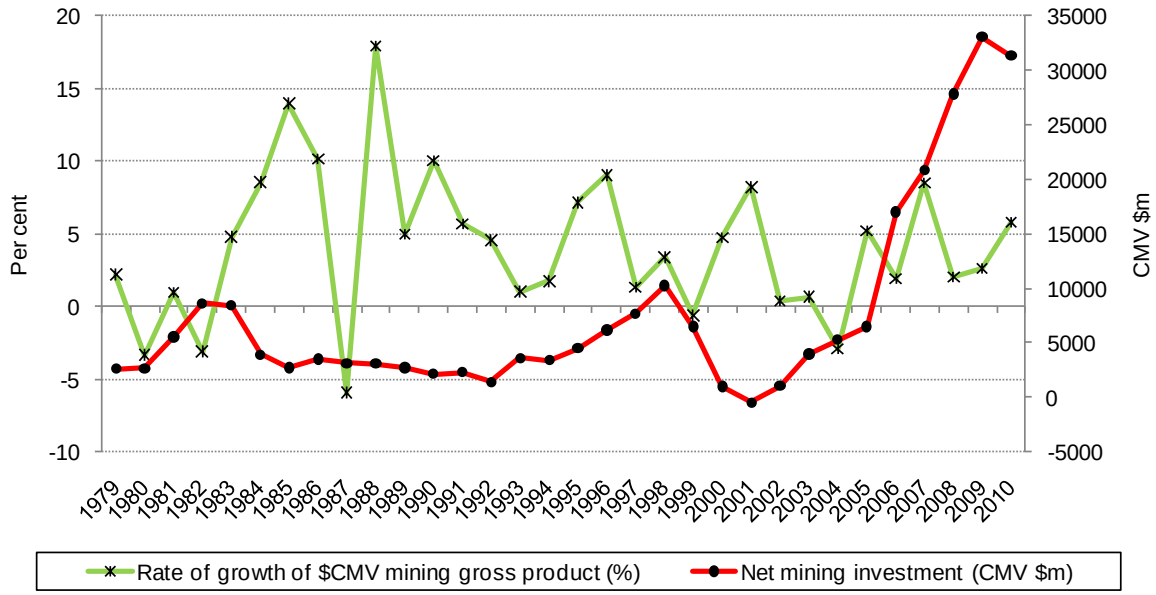


1.3 The Australian experience: Characteristics of episodes of elevated mining expansion

Following on from Figure 1.1, the characteristics of the episodes of mining expansion will be described by the outcomes for investment and mining output growth. Figure 1.2 shows the level of net mining investment since 1978. Net mining investment represents the change in the real capital stock in place as estimated by the Australian Bureau of Statistics (ABS) cat. No. 5204. The Figure extends from the late 1970s to 2009-10. During this period there were three episodes of elevated mining expansion. The first episode covered the 1980s while the second ran from 1995 to 1997. The third episode commenced on 2004 and is currently ongoing.

Seven years elapsed between the ending of the construction phase for episode one and the commencement of the production phase for episode two. Another seven years separated the ending of the construction phase for episode two and the commencement of the construction phase for episode three.

Figure 1.2 Annual net mining investment and mining gross product growth rate



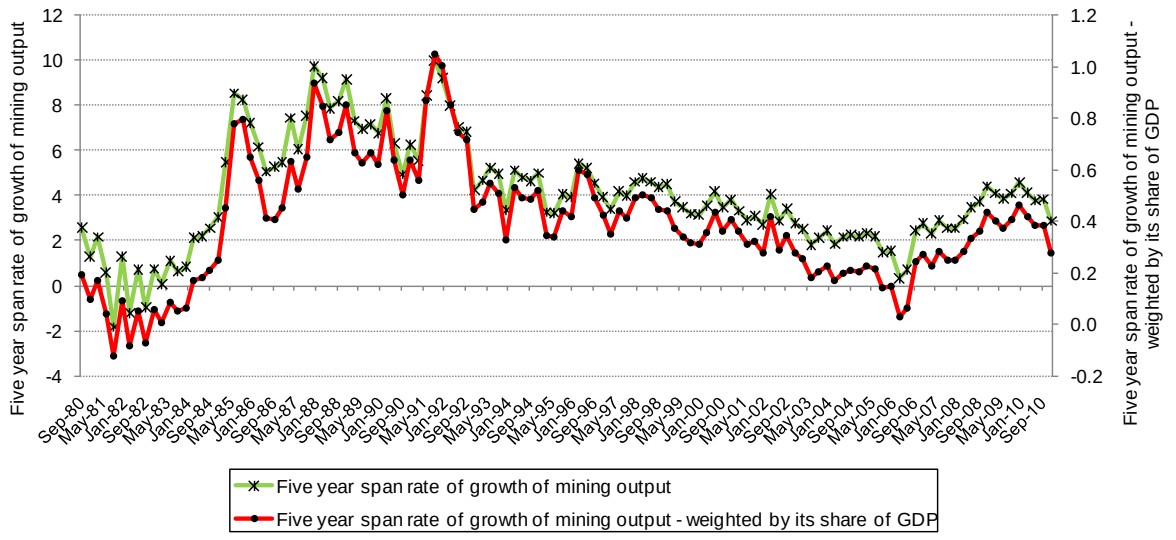
The current construction episode is likely to continue at least until 2015. Projects under construction, committed and highly likely to proceed will keep the net mining investment average over the next five years in the vicinity of $33 to $38 billion. In its March 2011 bulletin "Australian Commodities" ABARES predicted that the volume of mining production will grow by 6.2 per cent per annum between 2010 and 2015. This growth rate is common for the energy minerals (coal, LNG, oil) and for iron ore though not necessarily for all other minerals.

The production growth profile is consistent with the immediate past and immediate future level of mining investment. Between 1979 and 2010 an average CVM$1 million of net mining investment produced CVM $0.34 million of mining gross product. Therefore, an average of CVM$30 billion of investment (or the average from 2007 to 2012) would be expected to produce around CVM$10 billion of mining gross product. This represents 7 per cent of estimated 2011-12 mining gross product. (CVM = chain volume measure, essentially a means by which the ABS converts values to constant-price terms, in this case prices centred on 2008.)

The projected growth rate over the next five years is not as large as the average annual growth rate from 1984 to 1990, which was 8.5 per cent per annum. This is also reflected in the profile given in Figure 1.3, which shows the annual average growth rate over the previous 20 quarters (that is, five years). Between the June quarter 1985 and September quarter 1992 the average annual growth rate exceeded 6 per cent per annum.

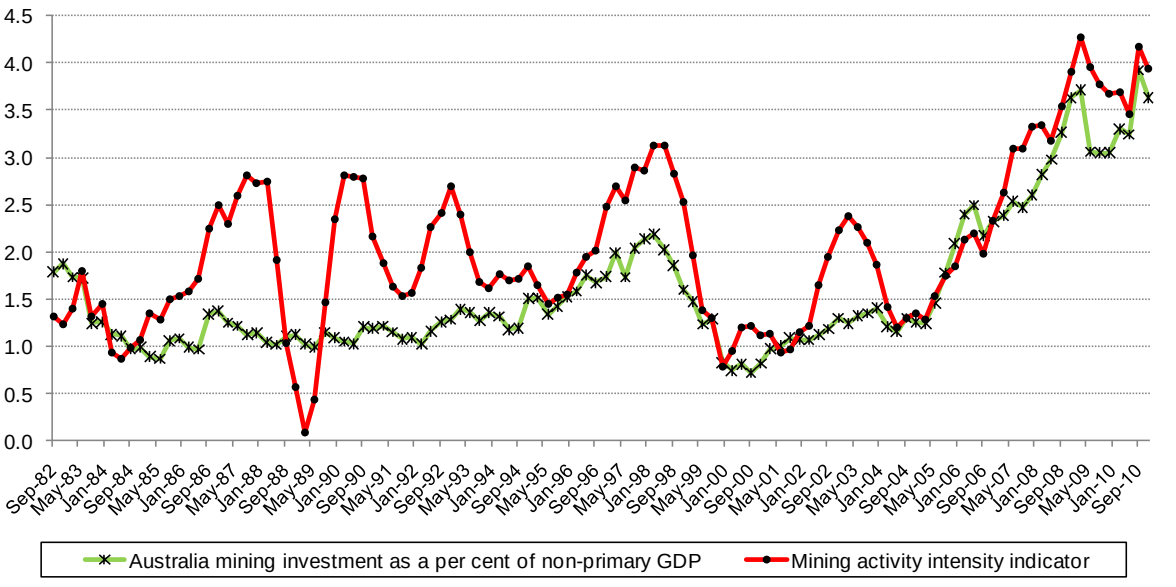
Figure 1.3 also profiles the series for the mining gross product growth rate weighted by the share of mining gross product in GDP or the direct contribution of mining to national GDP growth. Over the production period of the first episode, the average annual contribution to GDP growth was 0.7 percentage points. The contribution over the next five years will average 0.6 percentage points, which will be close to the 1980 decade production period outcome. Although average annual growth rates will be lower over the next few years than in the 1980 decade production period the mining sector now has a larger share of GDP than it had in the mid 1980s.

Figure 1.3 Australian mining sector growth rate and contribution to National GDP growth



The quarterly series for national gross mining investment as a share of non-primary (that is, excluding agricultural and mining gross product) is shown in Figure 1.4.

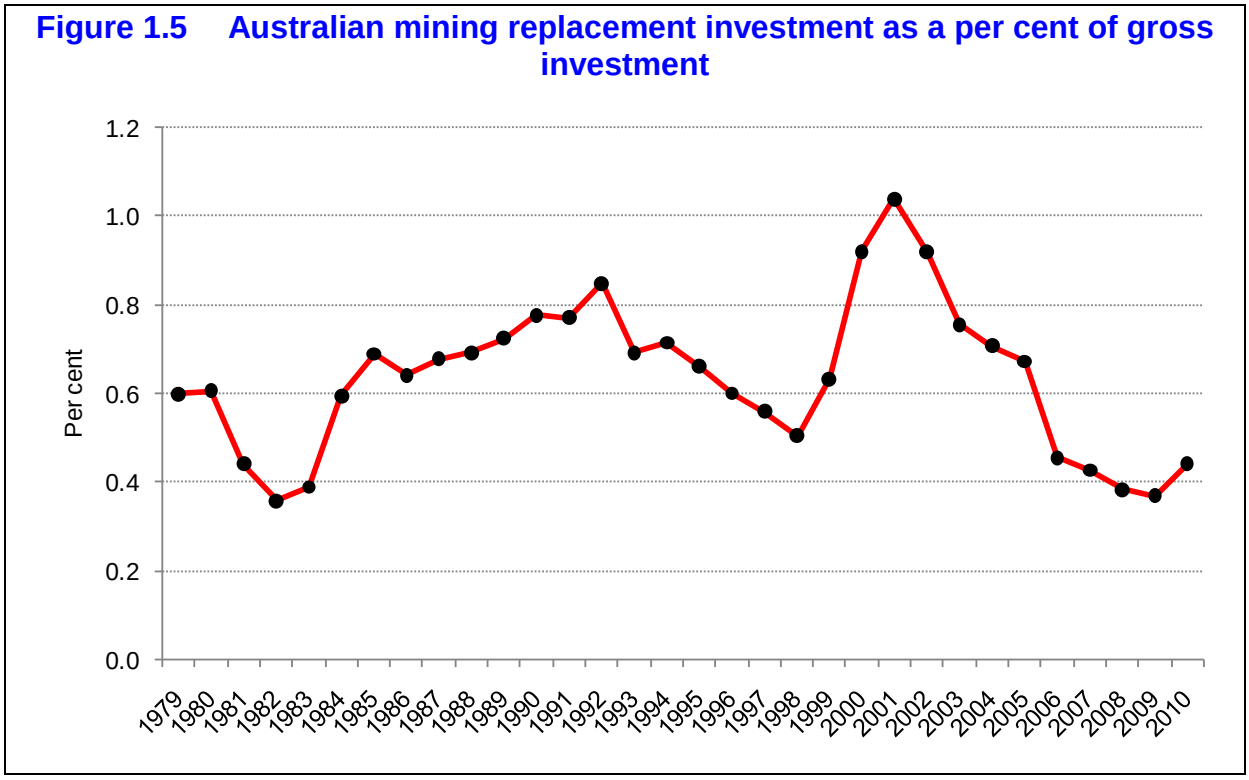
Figure 1.4 Australia: Mining investment as per cent of non-primary product and mining activity intensity indicator



In the early 1980s the share was around 2 per cent. This fell to 1 per cent by the end of the decade, before recovering to the 2 per cent benchmark by 1997 and then falling to 0.8 per cent of GDP by the end of the 1990s. By the middle of the last decade the 2 per cent benchmark had been regained. Currently the level of mining investment is running at a little under 4 per cent of GDP and is expected to remain within the 4 to 5 per cent range over the next five years.

From Figure 1.5, the share of replacement investment in gross mining investment averaged two thirds of the total gross mining investment over the period 1979 to 2010. Over recent years, however, the share of replacement investment in total gross investment has averaged around 40 per cent. It should be noted that the quarterly series for mining investment excludes items which are included in the annual "Australian National Accounts" (cat. no. 5204) series. The quarterly series is approximately 80 per cent of the annual series. Much of the analysis of this report uses the quarterly series.

Figure 1.5 Australian mining replacement investment as a per cent of gross investment



An indicator of the intensity of mining activity (IMA) can be derived by adding the four quarter span growth rate of mining gross product to the mining investment share in non-primary GDP. (The four-quarter span growth rate is a moving average, which for the June quarter approximates the growth rate from one financial year to the next.) This is shown in Figure 1.4. It shows that the intensity indicator currently, and into the immediate future, will take values that are unprecedented compared to outcomes over the past three decades. Partly this reflects the fact that mining capital stock increased three-fold since the late 1980s to reach CVM$304 billion by 2010, with a proportionate increase in replacement investment. Deleting the replacement investment leaves the conclusion that to date the current episode of resource expansion is adding approximately 2.0 to 2.5 percentage points to the IMA. In terms of the enhanced investment share, and in terms of the analysis below, the annual average net investment benchmark of $33 billion will be used, which represents 2.8 per cent of current non-primary gross product at factor cost or 2.2 percent in terms of the quarterly series.

1.4 The drivers of episodes of mining expansion

The drivers of expansion for resource-based industries are different from drivers in other industries and very different from those in manufacturing industries other than the small proportion of manufacturing industries which receive 'natural protection'. (Some of the naturally protected manufacturing industries, such as gold smelting, are closely tied to mine-sites because they greatly reduce the bulk of the product to be transported; others, such as baking, are closely tied to consumption sites because of the costs of transporting fresh products. It is noted that some types of 'mining' – chiefly blue-metal quarrying – receive natural protection.) From here on the designations 'mining' and 'manufacturing industry' refer to industries which do not receive natural protection.

As Figure 1.6 indicates, the drivers for a mining expansion are standard market signals. An increase in demand forces up commodity prices which in turn not only signals the need for expansion but provides the cash flow to finance expansion. Investment increases are sustained until the supply response drives the price level back to the cost of the next new mine, LNG plant etc.

An episode of mining expansion can occur in response to discoveries without the inducement of an increase in real commodity prices. Hence, the catalyst is the availability of economically extractable resources at prevailing commodity prices.

In addition to manufacturing, agriculture (with the partial exceptions of fresh milk and fresh vegetables), tourism and increasingly education and health services are counted among the trade-exposed industries. The agricultural industries were akin to mining in that they produced standard commodities with world-market prices but they are increasingly akin to manufacturing in that they are increasingly developing specialised and individually-marketed products for niche markets. Tourism, education and health produce services rather than goods, but like manufacturing serve differentiated markets which must be cultivated assiduously. This study concentrates on manufacturing but its results can be extended to other trade-exposed industries whose product-development requirements (see Figure 1.6) resemble manufacturing rather than the strict commodity responses characteristic of mining.

Figure 1.7 compares the IMA indicators with Australian real non-rural commodity prices in $US, where the price relativity indicator is the Australian CPI. In terms of the timing of the mining expansion episodes in Table S.2, the first and third episodes correspond to the dynamics depicted in Figure 1.6. In the middle of the construction phase for the first episode, the real commodity price indicator was around unity and had fallen to 0.7 when the production phase of the first episode ended.

At the end of the second episode the real price indicator had fallen to 0.75. However, in the early stages of the construction phase of the third episode the real price indicator had reached values of 1.1 to 1.2. By the end of 2010 the real price indicator value was 1.7.

The exception to the rule was the generally low commodity prices that prevailed over the construction phase for the second (relatively subdued) episode.

However, the current episode is following the general script. The high current values for the IMA indicator compared to the first and second episodes reflect the relatively high real commodity prices prevailing currently compared to comparable past episodes.

Figure 1.8 shows the relationship between real commodity prices in $US and market exchange rate between the Australian dollar and the $US, divided by the purchasing power parity $US exchange rate. In this series, a ratio above unity indicates that the Australian dollar is over-valued compared to the exchange rate required for cost parity between Australia and the United States. We expect that the Australian exchange rate will tend to be over-valued at times of high real commodity prices. As expected, the current high real commodity prices are producing an over-valued exchange rate. At the end of 2010 the over-valuation was 50 per cent and the extent of the over-valuation increased into the second quarter of 2011.

An important point also shown in Figure 1.8 is that the appreciating currency leaves the mining sector with substantial real price gains in Australian dollar terms. Even when real commodity prices are deflated by the exchange rate over/under valuation index, real commodity prices are currently higher than those which prevailed during the construction phase of the first episode of mining expansion.

Figure 1.6: Mining expansion versus manufacturing expansion

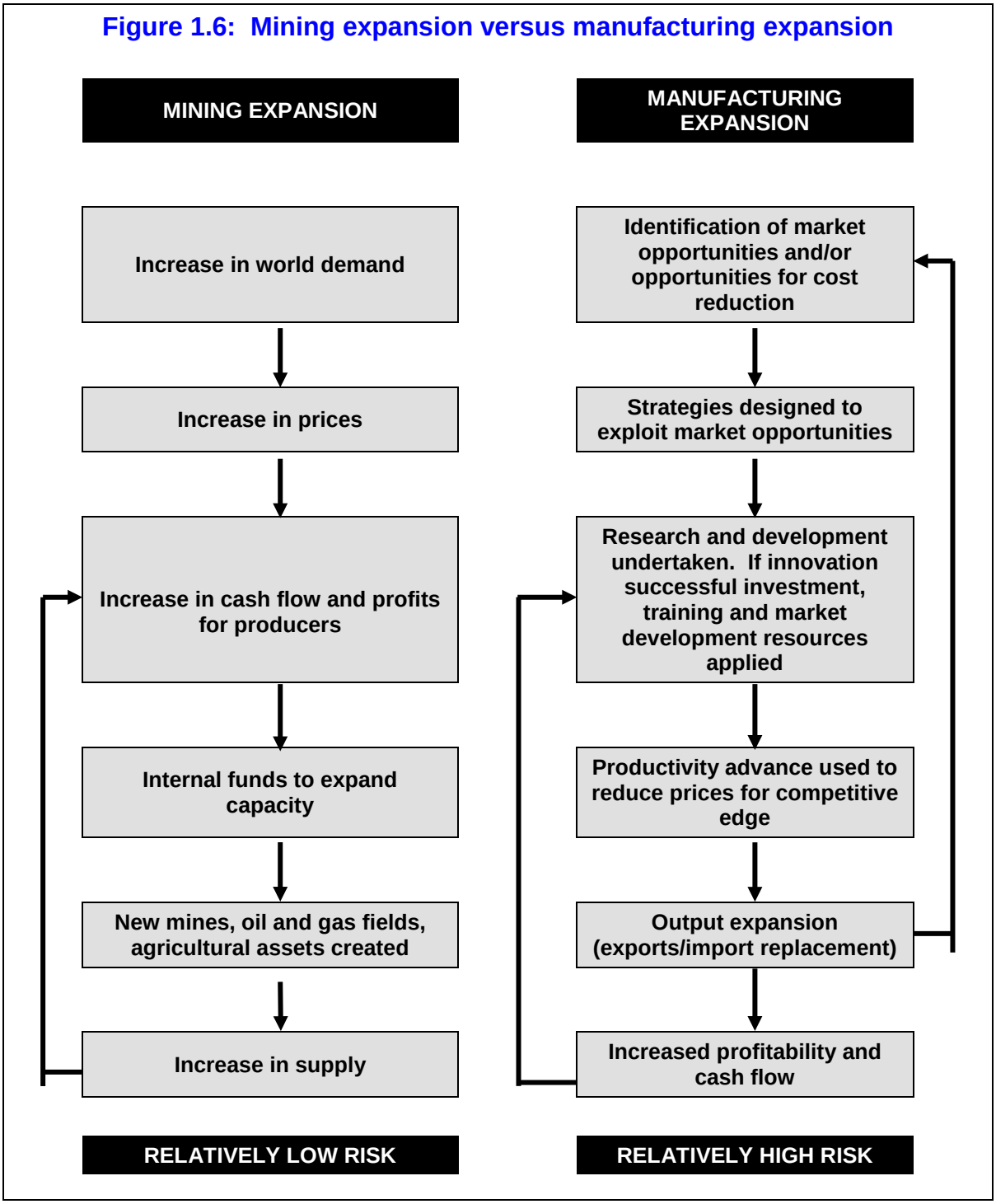


Figure 1.7 Australia: Mining activity intensity indicator versus real non-rural commodity prices

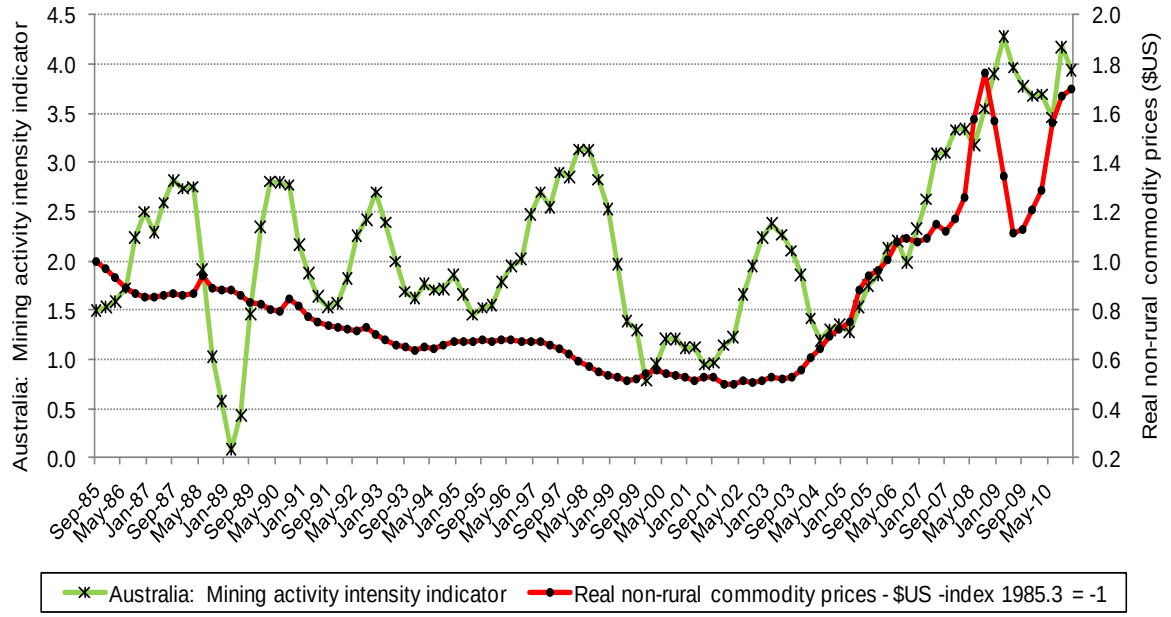
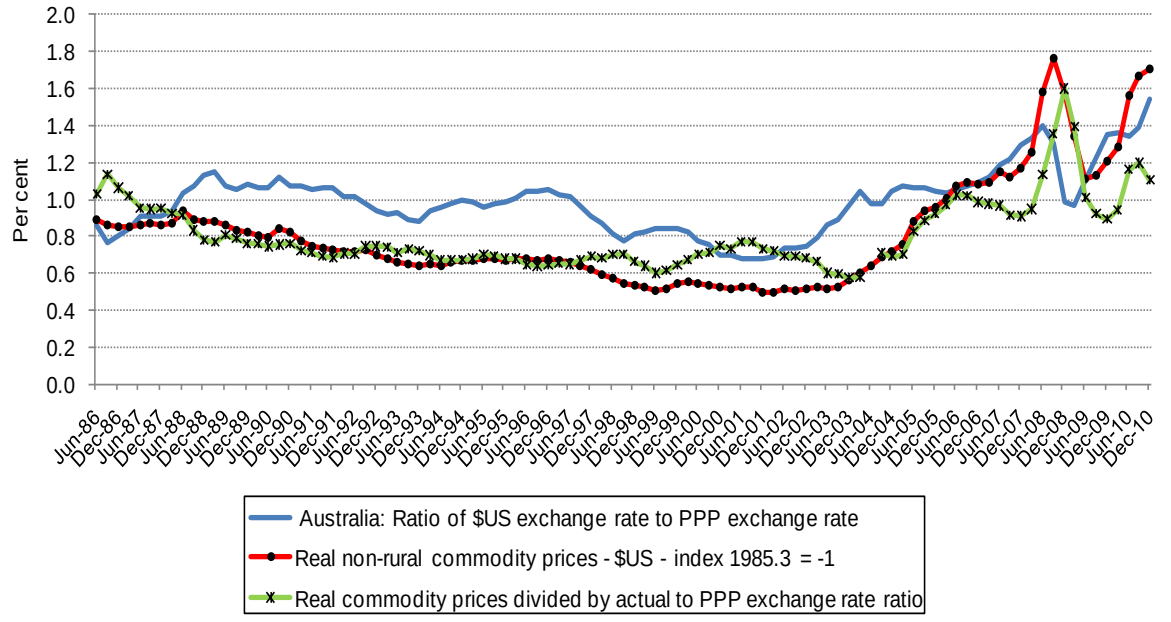


Figure 1.8 Australia: Ratio of $US exchange rate to PPP exchange rate and real commodity prices



1.5 The drivers of manufacturing expansion

Figure 1.6 also shows the drivers of expansion for manufacturing. Relative costs are important in the sense that manufacturing will contract if there is too great a gap between domestic and foreign costs of production. However, even if relative costs are comparable and Australian products have a price edge (as when the actual $A/$US exchange rate is below its PPP level) manufacturing expansion still depends on producers' ability to gain a competitive edge by product differentiation in terms of the design, functionality, durability, etc. of their products. This requires years of lead time in:

(i) research and development efforts;

(ii) marketing efforts; and

(iii) financing innovation and new capacity involving the latest technology, etc.

The efforts of a firm in terms of adopting best practice production technology, innovation via research and development expenditures and market development expenditures are all part of either achieving competitive edge product differentiation or identifying opportunities for greater exploitation of existing advantages.

For this type of manufacturing, the individual producer creates or maintains a market while for mining the producer responds to the market. This is why differentiated product manufacturing is riskier than most other industries. An important aspect of this higher level of risk is that differentiated product manufacturers have to create their own finance for expansion whereas in mining this finance is delivered by the market.

At the macroeconomic level the different drivers of mining versus manufacturing expansion can lead to a conflict between manufacturing expansion and equivalent mining expansion that is unrelated to issues of national resource availability. This is because the higher terms of trade effect associated with mining expansion crowds out manufacturing activity through exchange rate impacts. The converse negative impact on mining from manufacturing expansion is much weaker because manufacturing expansion does not influence the terms of trade.

The most important dynamic is one of cumulative causation. Success in sustained manufacturing expansion depends on an uninterrupted sequence of steps that are resourced adequately and are consistent with market requirements.

Periods of highly over-valued exchange rates associated with elevated mining activity intensity are very destructive for manufacturing. This is because high relative costs, in conjunction with already high risks, lead producers to curtail or end new development initiatives. R and D is scaled back and capacity expansion and replacement decisions are postponed, which leads to producers falling further behind their competitors in other economies. When the period of elevated mining expansion ends and the exchange rate falls back to cost parity levels, domestic competitors are too far behind to restart R and D programs or even in some cases to undertake the replacement investment required to ensure long term business sustainability. The same adjustment process occurs, though less severely in terms of the long run negative outcomes, for other trade-exposed industries such as differentiated agriculture, high value business services industries, tourist industries and the health and education industries.

Under market conditions, therefore, the dynamics of mining expansion is likely to produce a permanent contraction in manufacturing and other trade-exposed industries compared to what would otherwise have been the case. Each period of elevated resource expansion has a cost in terms of these crowding-out or displacement effects. Each episode of elevated mining expansion produces increased import shares and/or stagnant relative export levels which are not reversed when the period of elevated mining expansion ends.

An additional factor is the pressure on labour resources. The lower the unemployment rate and especially the higher the utilisation of skilled construction labour, the more likely labour will be attracted away from non-resource trade-exposed sectors to mining and related construction. This is particularly likely to be the case in the investment phase. This disrupts the capacity expansion process for non-resource industries, which will not be fully restored when the high mining investment phase ends and labour utilisation rates fall.

Prima facie evidence for this crowding out or displacement dynamic would be a high negative correlation between the manufacturing share of GDP and the IMA indicator. However, given the dynamics outlined above, the expected negative correlation is not between the manufacturing share in GDP and the IMA, but between the manufacturing share in GDP and the cumulative IMA, or perhaps the cumulative IMA less replacement investment. This is because the greater the intensity of an episode of mining expansion, the greater the permanent reduction in manufacturing capacity and capability. Thus, the time series outcome for the manufacturing share in GDP should be highly correlated with the cumulative impact of each episode of mining expansion if the above relative industry dynamics have validity.

The data is presented in Figure 1.9. The strong correlation is self evident. The correlation coefficient is -0.99. This also implies that the net gains from mining expansion could be small or negative.

An alternative interpretation of Figure 1.9 is that the tariff phase-down slimmed manufacturing to competitive levels and released resources for mining. To counter this interpretation, we examine the impact of mining expansion on the metals and machinery (MM) manufacturing industry over the past quarter century. The MM sector was not much affected by the tariff phase-down and, more importantly, would be expected to directly benefit from episodes of elevated mining expansion in the form of increased orders during the construction phase of mining expansion.

Figures 1.10 to 1.13 present a range of MM sector indicators. The use of domestic in the indicator descriptions notes that exports have been excluded. The evidence from the figures is supportive of the consequences for the manufacturing growth dynamics of an episode of elevated mining expansion. Each episode of elevated investment and over-valued exchange rate increases the import share in domestic demand that is not recovered during periods of low commodity prices/exchange rates and low IMA values. This means that for each subsequent episode of elevated mining expansion, the domestic MM sector has less capacity available to support the mining expansion with local content. Clearly the damage done to non-resource trade-exposed sectors of the economy in terms of this crowding out or displacement from episodes of mining expansion is cumulative.

Two terms are used in the literature to describe this process: ‘Dutch disease’ and ‘Resource curse’.

Figure 1.9 Manufacturing share in GDP versus cumulative mining activity

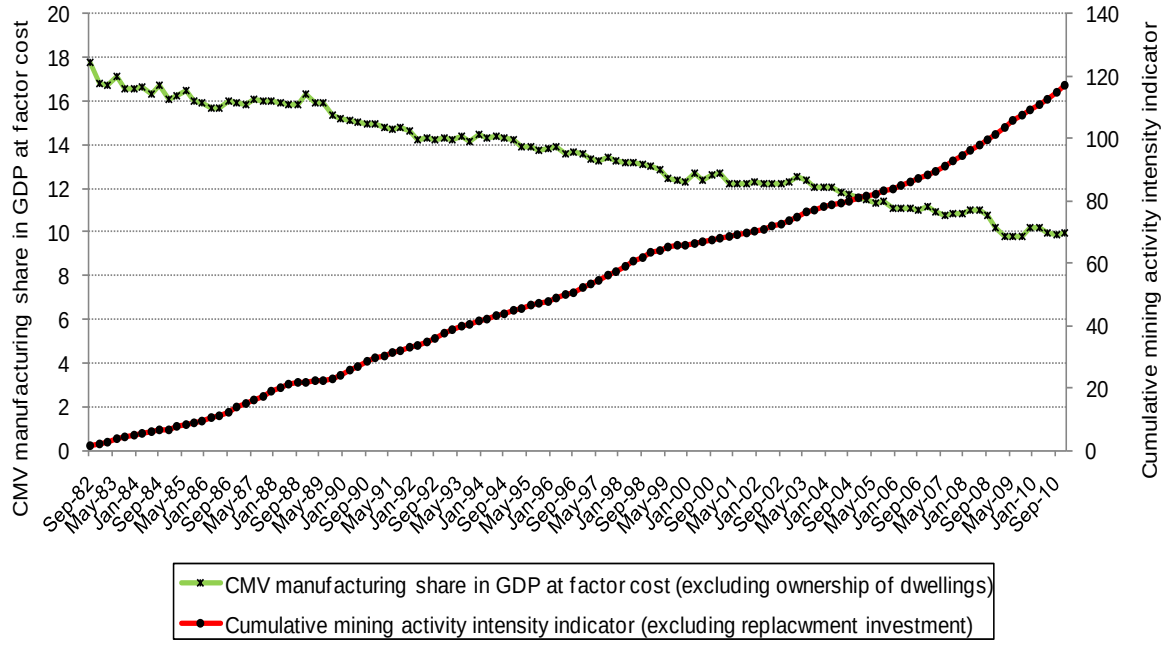


Figure 1.10 Australian metals and machinery sector – selected indicators

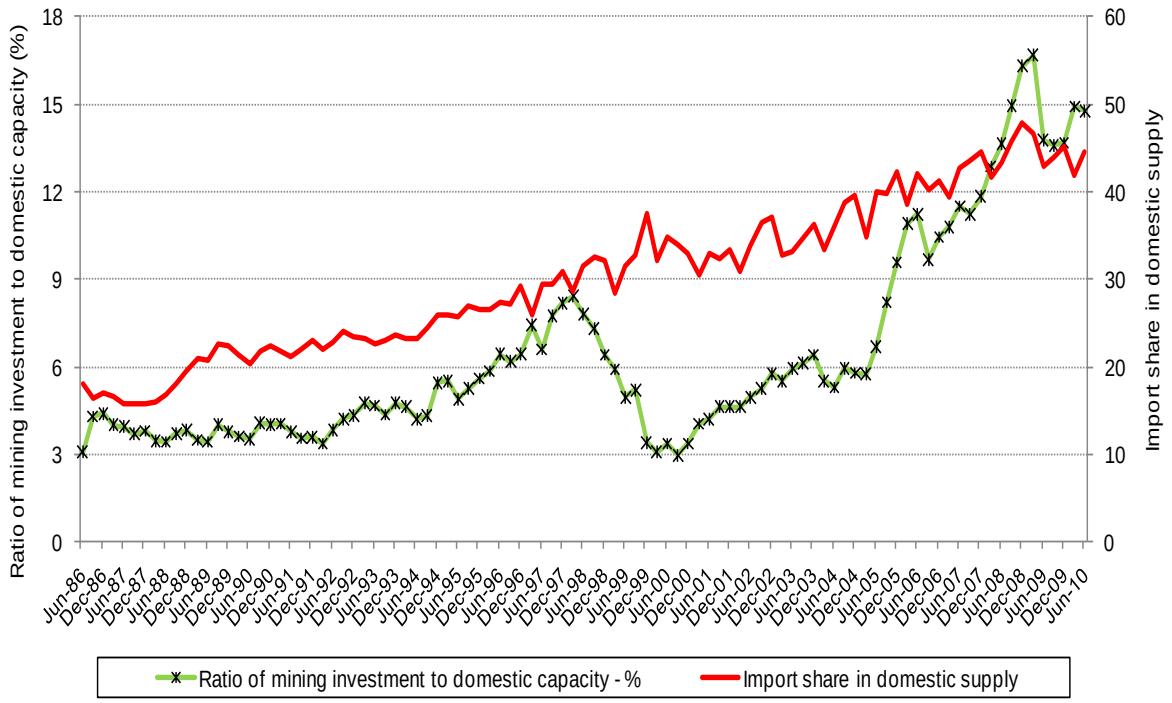


Figure 1.11 Australian metals and machinery sector – selected indicators (continued)

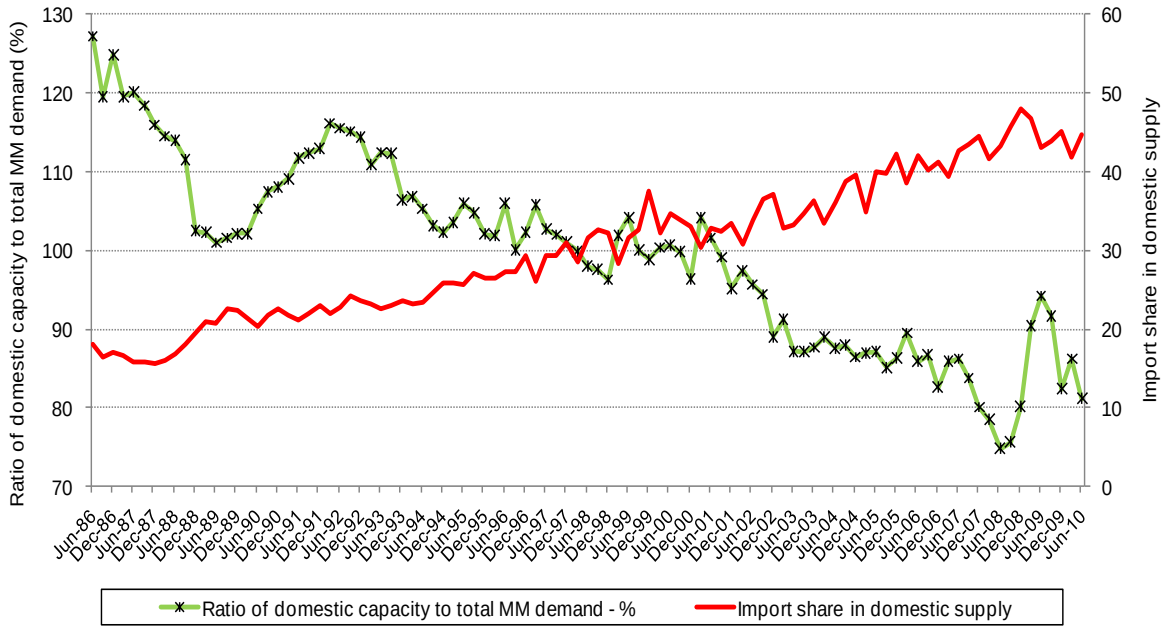


Figure 1.12 Australian metals and machinery sector – selected indicators (continued)

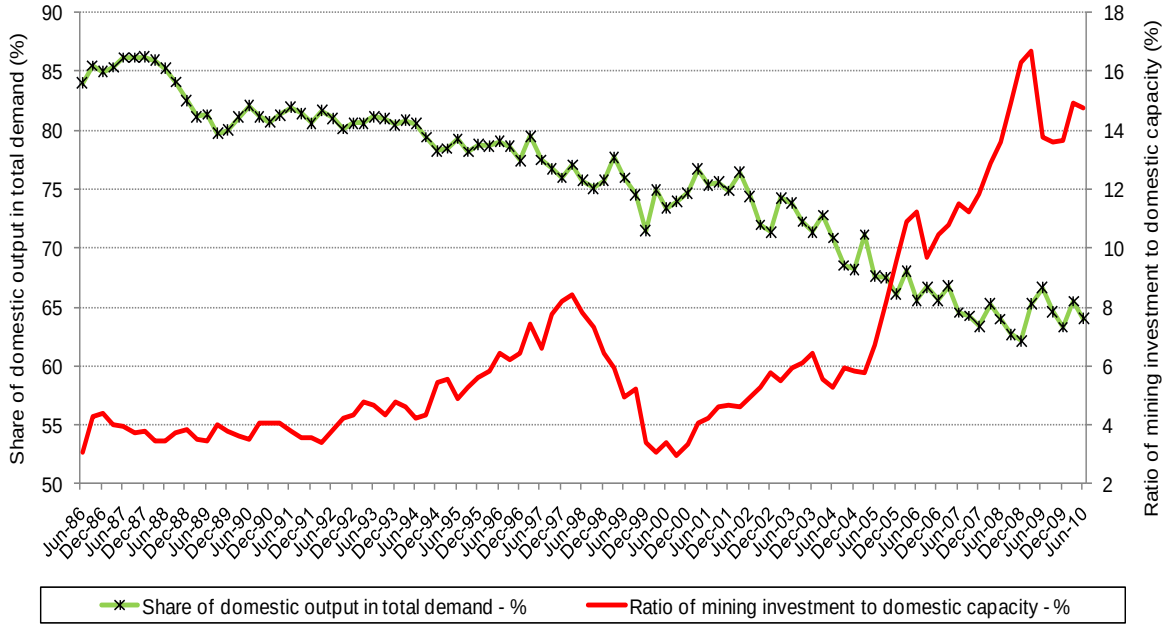
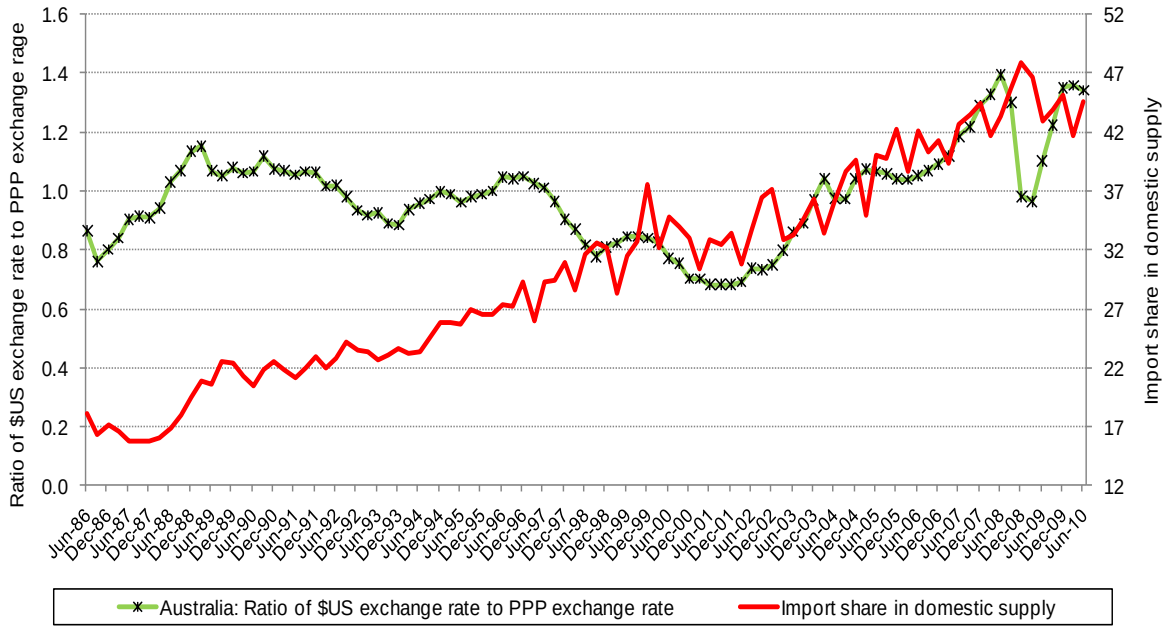


Figure 1.13 Australian metals and machinery sector – selected indicators (continued)



1.6 The steel sector

The quality of Australian manufacturing data has declined over recent years. For example, after the June quarter 2009 quarterly sales data by 3-digit ANZSIC level is no longer available. The data from the MM sector, given above, is based on the Australian National Accounts aggregate data.

The "steel sector" data, or iron and steel plus fabricated metals, is based on the now discontinued data updated to 2010.4 as best as possible. The capacity series estimates shown in the table are based on the traditional trend through peak method plus an 18 per cent loading to bring the series in line with the survey estimates of capacity utilisation.

Figures 1.14 to 1.16 give the capacity estimates and the capacity utilisation rates. Across the steel industry, capacity utilisation rates have fallen considerably since 2008. Both steel industries currently have an utilisation rate of around 50 per cent compared to a normal level of around 75 to 80 per cent.

The profile for the import penetration for the steel industries is shown in Figure 1.17 and for the machinery sector in Figure 1.18. If 2003-04 is taken as the benchmark, the trend increase in import penetration into the steel industry subtracted approximately 6 percentage points from capacity utilisation rates. An approximately 4 to 6 per cent of capacity utilisation loss in the steel sector has come from the increase in import share in the machinery sector. The steel sector lost orders from the machinery sector as import penetration increased in the latter sector.

The increase in import penetration would explain approximately half the loss in capacity utilisation rates over the past three years. A large part of the rest would probably be explained by the decline in steel intensive construction, such as offices and apartment buildings.

The core point from the steel sector changes is that the current capacity utilisation rates are low by historical standards with substantial risk that, unless something is done to remedy this situation, a substantial part of current capacity will be permanently closed over the next few years, inflicting very large damage on the economy. The damage will become painful once

mining investment and exchange rates start to fall and the unemployment rate and current account deficit start to rise and domestic capacity is no longer available to substitute for imports which can no longer be afforded.

Figure 1.14: Iron and steel capacity and capacity utilisation

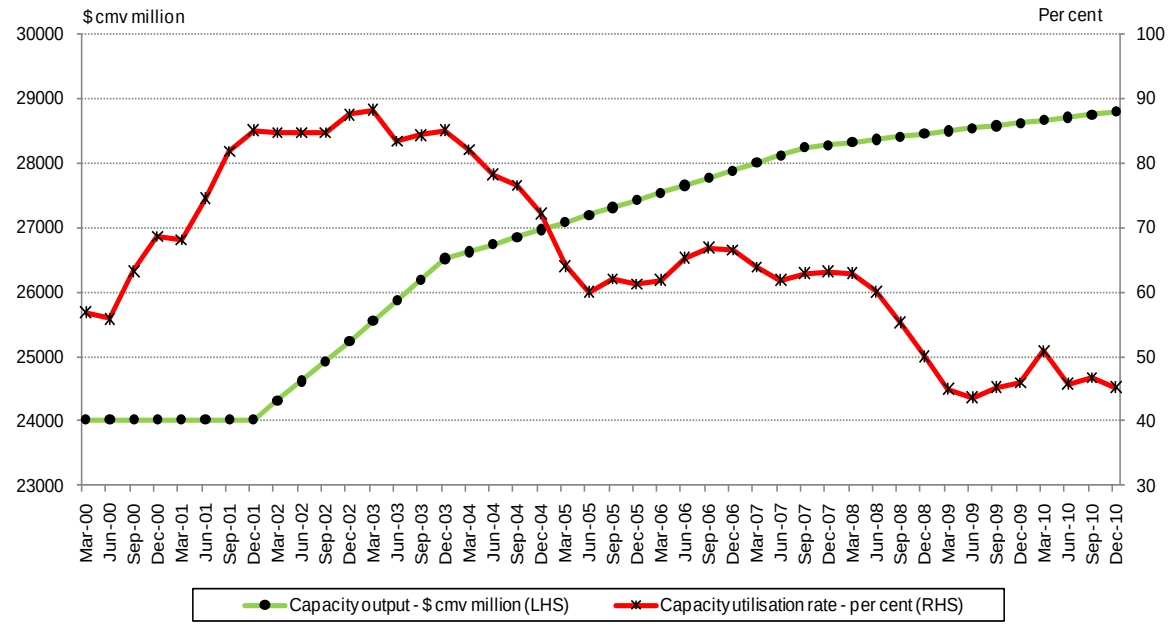


Figure 1.15: Fabricated metals capacity and capacity utilisation

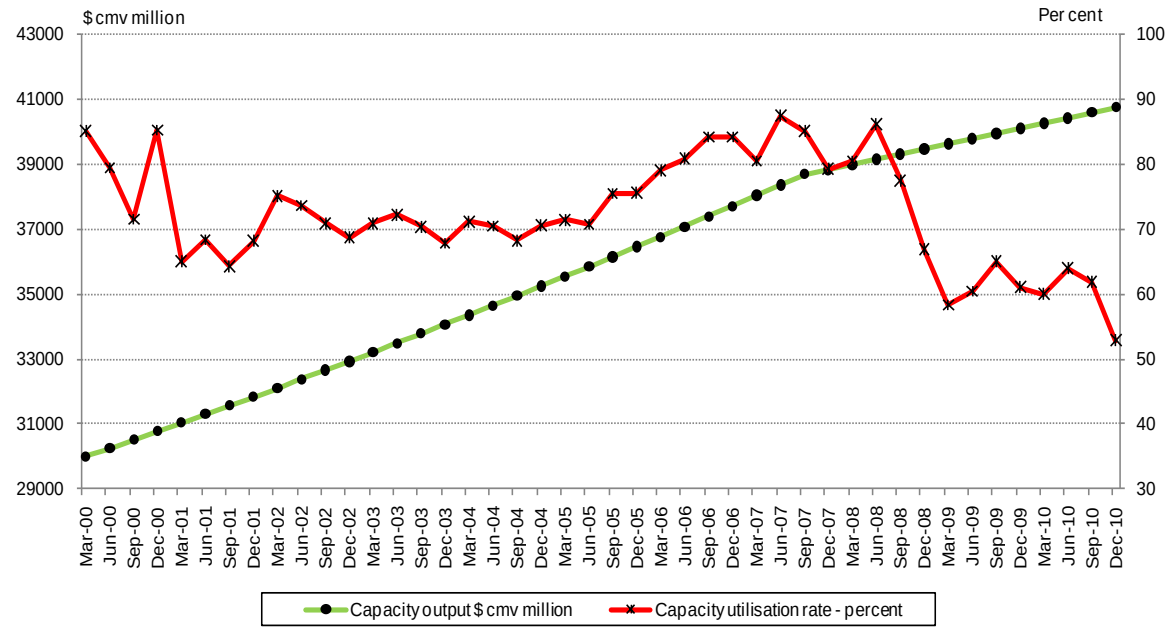


Figure 1.16: Steel sector capacity and capacity utilisation

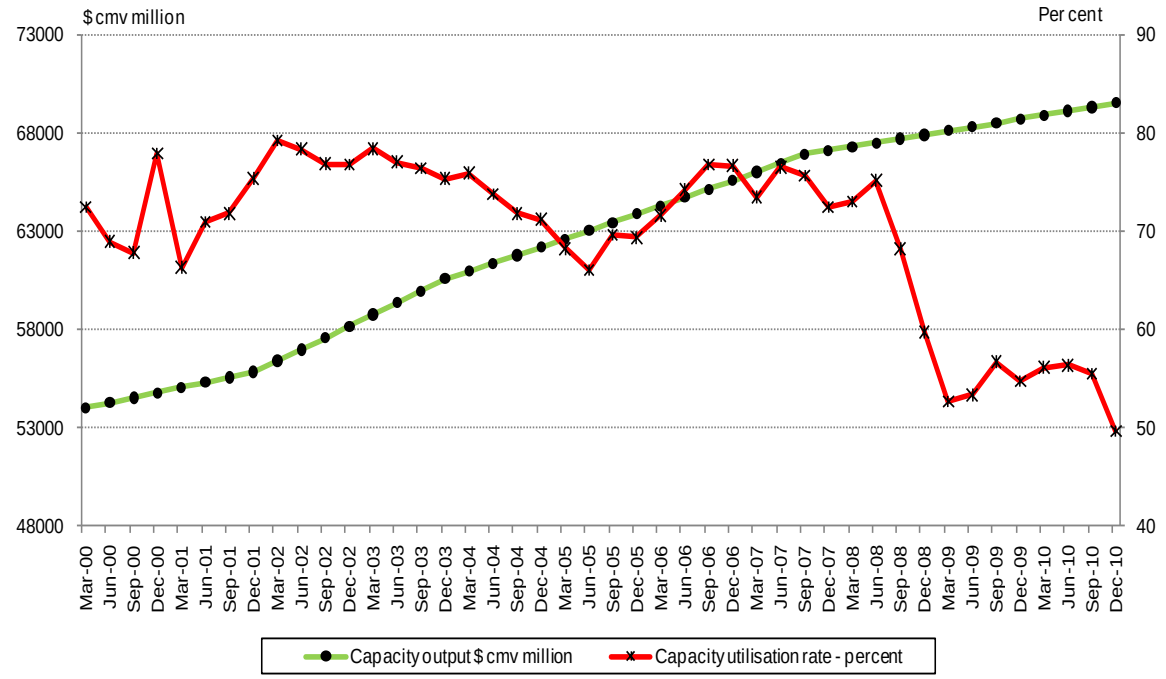


Figure 1.17: Steel sector import share in domestic demand

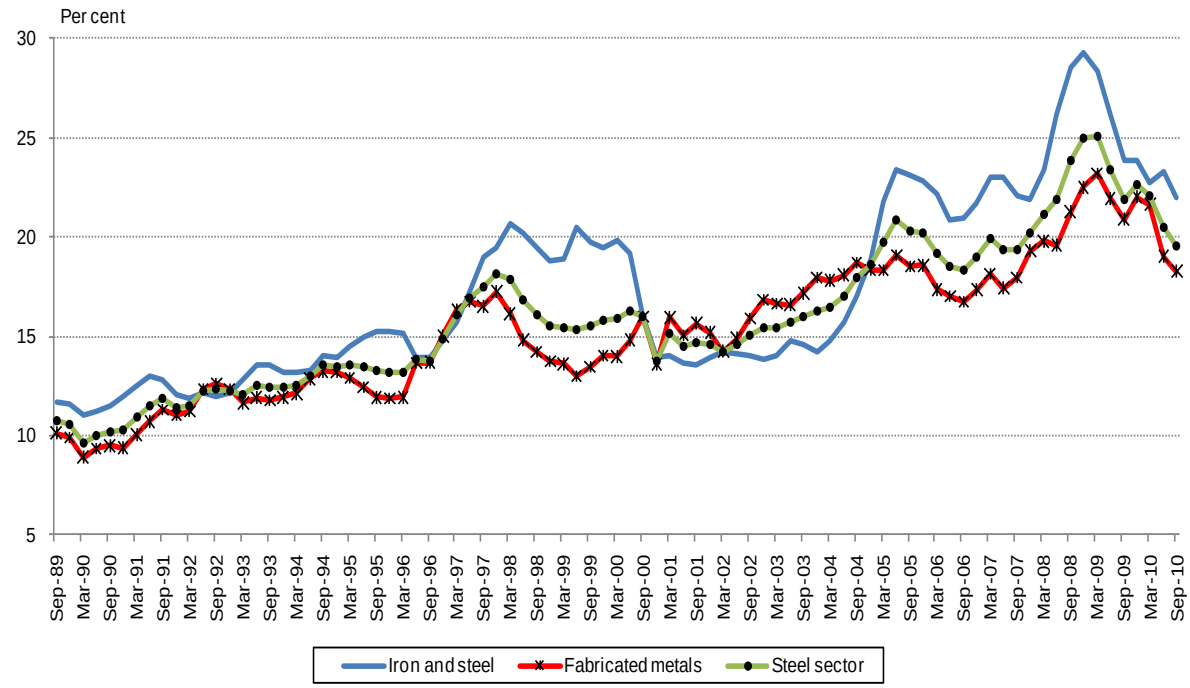
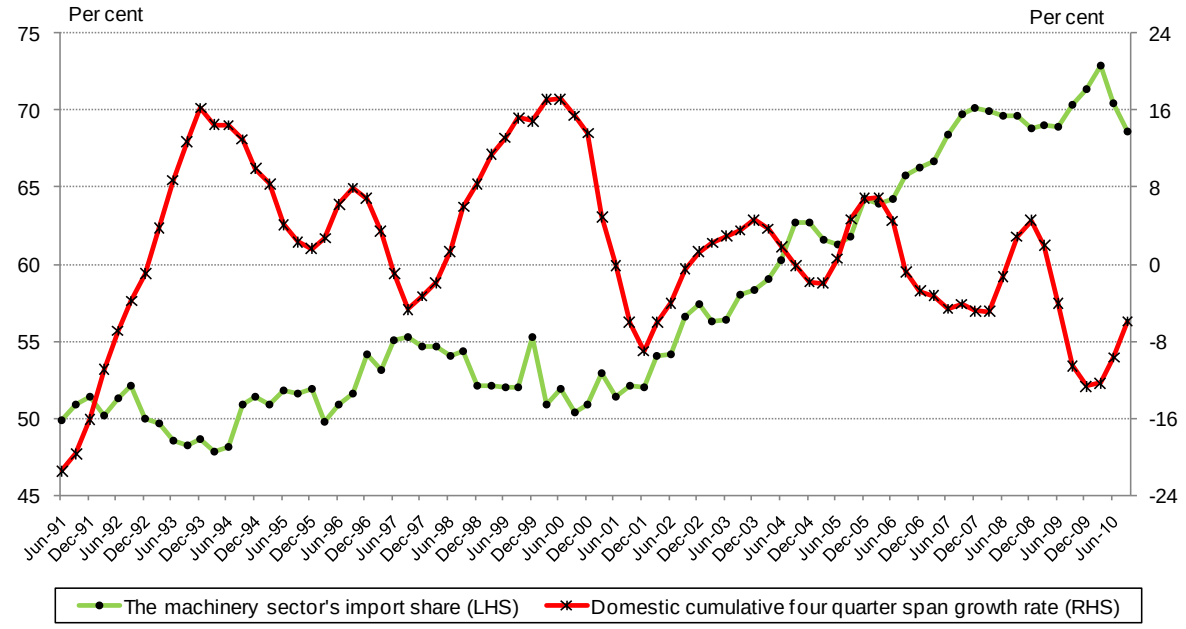


Figure 1.18: The machinery sector – domestic sales and import share



1.7 The Dutch disease and the Resource curse

What is meant by the 'Dutch disease'? The term was originally coined by *The Economist* in 1977 to describe what had happened to the Dutch economy and, in particular, its manufacturing sector after the discovery of a large natural gas resource in the late 1950s.

In the early 1980s economists developed formal models to describe the operational impacts of the Dutch disease, typically a three sector model, namely:

(i) a resource sector, generally mining;

(ii) a non-resource tradable sector (agricultural/manufacturing/tourism); and

(iii) a non-tradable services sector.

The discovery and exploitation of large-scale cost-competitive mineral resources at a time of world-wide supply shortages, as reflected in high real commodity prices, will lead, especially in a small open economy, to:

(i) large scale capital inflows and rapid growth in mining investment; and

(ii) appreciation of the currency and reallocation of resources away from the non-resource sectors and, in particular, the non-resource tradable sector towards the mining and construction sectors.

The competitiveness and capacity of the non-resource tradable sector declines.

To some economists this is not a problem. Countries should specialise in industries where they have a comparative/competitive advantage. The crowding out of non-resource tradable industries is part and parcel of economies maximising their living standards by greater specialisation of what they can (now) do best.

The designation of Dutch disease, however, describes a case where in the longer run productivity and employment would have been higher in the absence of an intense episode of resource development. Clearly this will be the case if eventually the resource runs out, as was the case of natural gas in the Netherlands. To its credit, the Netherlands government realised this before it was too late and took action to gain general benefits from its burst of offshore gas production.

When the mineral resource base goes into decline what is required to offset this is an expansion of the non-resource tradable sector. However, this cannot be easily done because during the years of resource expansion declines in investment, research and development and skill formation in the non-resource tradable sector widen the competitive gap between the sector and its (previous) foreign peers. The cash flow and institutional support measures are no longer there to facilitate closing the gap. As a result, trend growth will decline and per capita GDP levels and living standards (consumption per capita) will fall below the levels that would have been achieved in the absence of the episode of resource development and production.

For countries with large reserves of unexploited resources that cannot be exhausted in the foreseeable future the concept of the Dutch disease has been extended to cover the net outcome once the investment/expansion phase has ended and the production phase commenced, bringing with it a supply response. In this case the crowding-out effect is caused by the high exchange rate and high utilisation of skilled labour during the construction phase of the episode of elevated resource expansion, with the Dutch disease occurring if manufacturing output contracts from what would otherwise have been the case. The need to reinterpret the Dutch disease along these lines for the Australian case is clear. The original Dutch disease event referred to a once-off resource expansion event with the product supply (gas) from the investment coming to an end. In the Australian case the natural resource base of the economy has allowed sustained long term expansion. In the case of Australia, cost is associated with the episodes of concentrated investment and associated supply growth.

In this context, and adopting the three sector model framework, Table 1.1 lists the options that could follow an episode of high resource investment. The table refers to the production impacts of the resource supply after the period of elevated investment and the associated high commodity prices, exchange rates and skilled labour supply pressure has ended. Unless there is a skilled labour supply constraint overall growth exhibiting positive net additionality is virtually guaranteed during the construction phase. The doubt is whether positive net additionality carries over into the production phase.

Table 1.1	Resource sector expansion: Industry sector outcome options – resource sector production phase
Positive growth additionality	Overall GDP growth accelerates in response to supply expansion. The additional growth in GDP is proportional to the resource expansion stimulus.
Negligible or negative growth additionality	Overall GDP growth is little affected in response to accelerated resource supply expansion. Overall GDP growth may even fall. For some developing countries, where GDP was stagnant before resource expansion, GDP growth remains stagnant with resource expansion.
Nil or minor manufacturing sector crowding-out	Manufacturing/non-resource tradable sector stimulated resource expansion. The manufacturing/non-resource tradable sector's share of GDP only falls marginally with resource expansion.
Substantial manufacturing sector crowding-out	At the very least, at the margin the manufacturing sector contracts to offset resource sector expansion. Overall the manufacturing/non-resource tradable sector's share in GDP falls in line with resource sector expansion.
Nil or minor non-tradable sector crowding-out	Non-tradable service sectors stimulated by resource sector expansion. The share of the non-tradable service sector in GDP is relatively unaffected by resource sector expansion.
Substantial non-tradable sector crowding-out	At the very least, at the margin the non-tradable sector contracts to offset resource sector expansion. Overall the non-tradable sector's share in GDP falls in line with increases in the resource sector's share.

Table 1.2 sets the criteria that apply to resource expansion outcomes. A Resource curse outcome applies when there is little or no net additionality in terms of overall growth. The label Dutch disease applies irrespective of whether or not there is overall growth in additionality if activity in the manufacturing sector (or more broadly the non-resource tradable sector) declines from levels that would otherwise have been achieved in the absence of the episode of elevated mining expansion and the decline is proportional to the expansion in resource production.

Table 1.2	Impact of resource sector expansion: Dutch disease versus Resource curse	
	Resource curse	
	NO	**YES**
Dutch disease **NO**	Positive growth additionality, little manufacturing growth crowding-out.	Negligible or negative growth additionality. Little manufacturing crowding-out. Non-tradable sector substantial crowding out.
Dutch disease **YES**	Positive growth additionality. Little non-tradable sector crowding-out. Substantial manufacturing sector crowding-out.	Negligible or negative growth additionality. Substantial manufacturing sector crowding out.

Although the definitions in the table refer to the post-investment phase, the outcomes for the non-resource sectors in the economy will largely depend on what happens during the investment/construction phase of the resource expansion. This is because, as outlined above, episodes of elevated resource investment can all too easily result in the non-resource trade-exposed sector being crowded-out expressed in terms of long term declines in capacity installed compared to what otherwise would have been the case. These impacts have long lags and it may be well into the production phase of an episode of elevated resource investment before the negative production consequences flowing from the investment phase are realised.

It can be seen from Table 1.2 that there is one case where both the Dutch disease and Resource curse apply. The case of Resource curse without the Dutch disease mainly applies to developing economies without a substantial manufacturing sector. In the case of an economy like Australia's, with a significant manufacturing sector, if the Resource curse applies it will most likely be associated with the occurrence of a severe case of the Dutch disease.

2. Mining expansion: The construction phase and population growth

Although this study is focussed on the post-construction phase of episodes of mining expansion, the central hypothesis of the study is that the management (or non-management) of the construction phase determines the degree of displacement of non-mining sectors during the production phase. In addition, this chapter includes discussion of the key economic indicators and macroeconomic analytical framework used for this study.

2.1 Indicators of national economic welfare

National economic benefits or welfare is measured by a variety of indicators. The most often used indicators are employment, preferably full time equivalent employment, and gross domestic product (GDP). The two are used together because there will be times when employment will increase but productivity measured by GDP per person employed will fall. An ambiguous increase in national economic welfare will only occur if GDP and employment both increase and productivity does not fall.

The use of the GDP measure, especially in the case of mining expansion, is open to criticism in that the mining sector is the most foreign-owned sector of the Australian economy with approximately 60 per cent of value added foreign owned. The GDP measure does not distinguish between foreign or domestic resident owned product.

As regards foreign ownership, what is important is the distribution of gross product. If 90 per cent of the gross product is distributed to domestic employees and in tax payments, then foreign ownership is of little relevance. However, in mining a large percentage of value added is distributed to foreigners in the form of interest payments, depreciation cash flow, dividends or retained earnings in the enterprise. These do not add to domestic incomes. An indicator which excludes foreign payments for interest, dividends and retained earnings is gross national product (GNP as distinct from GDP).

The other distinguishing feature of mining is its high level of capital intensity. Relatively large increments in investment are required to increase output. In turn this means that there will need to be large deductions from gross domestic product in the form of replacement depreciation expenses if the output is to be sustained. A measure which deducts depreciation, or at least depreciation undertaken on behalf of domestic residents and foreign distribution out of value added, is net national product (NNP) which is akin to the concept of national net disposable income in the Australian National Accounts. This is the measure which will determine the flow-on benefits for household consumption expenditures, government finances and the welfare of domestic residents. In order not to bias the results against mining, depreciation allowances that accrue to domestic entities are included in the NNP definition as these funds can be used elsewhere in the domestic economy.

Finally, it is argued that the prime measure of welfare is consumption expenditure. Hence, the relevant welfare indicator is the flow-on implications for household consumption expenditure plus net additional taxation receipts which will determine further potential flow-on benefits for household consumption expenditure (tax rate reductions) or public consumption expenditure increases.

The outcome for all indicators is given in this study.

2.2 The analytical framework

The most practical and transparent analytical framework to measure the implications of displacement from mining expansion is derived from a set of input-output tables that reflect the structure of the economy at the time of displacement. For this study this is provided by a set of tables updated from the 2005-06 table to 2008-09 and with value added distribution reflecting the impact of foreign ownership. The estimated tables for 2008-09 for:

(i) indirect allocation of imports; and

(ii) import flow by industry,

are given in Appendix A. The algebra underlying the calculations given in this and latter chapters are given in Appendix B.

By updating to 2008-09 the structure of the economy will reflect the commodity price relativities which are likely to prevail, at least until 2014. Earlier input-output tables do not reflect current price relativities.

2.3 Australian resource expansion: The construction impact

Using the input-output tables in the appendix, the Type II multipliers, that is, the total of intermediary plus private consumption flow-on are given in Table 2.1. The results are based on the $33 billion average annual net additional mining investment benchmark established in Chapter 1 as an average level of annual expenditure for the 2009 to 2015 period in terms of net investment.

Table 2.1(b) indicates that total imports are $17 billion, which limits the increase in headline GDP to $23.3 billion. If indirect taxes are added this gives a traditional multiplier of 0.74. If a Type III multiplier analysis had been employed, that is, with induced non-mining investment flow-on, the multiplier would have been closer to unity.

A key variable of interest is the employment impact. The answer from Table 2.1(a) is just under 200,000. The other key variable is the flow-on orders to manufacturing. From Table 2.1(b), the total increase in gross output of the MM sector in all industries in the table (from iron and steel to other machinery and equipment) comes to just under $4 billion or a local content for the industry relative to total expenditure of 12 per cent.

Table 2.1(a) Australian resource expansion: Construction impact of average annual net mining investment 2009-2015 – National economic aggregates		
	Unit	**Full net additionality**
National aggregates		
GDP at factor cost	$2009m	23302.6
Mining gross product at factor cost	$2009m	534.4
Non mining gross product at factor cost	$2009m	22768.2
Gross local product at factor cost	$2009m	19557.7
Net local product at factor cost	$2009m	17776.4
Total employment – full time equivalent	ths.	195.7
Household consumption expenditure at basic values	$2009m	7255.3
Per capita household consumption expenditure	index – per cent change	1.6
Household income formation		
Net national product at factor cost	$2009m	20273.9
Wages and salaries	$2009m	12118.2
Mixed income	$2009m	2513.7
Interest received dividends	$2009m	1472.0
Disposable income	$2009m	10161.5
Government revenue		
Household direct taxes	$2009m	2721.6
Enterprise direct taxes	$2009m	1153.7
Indirect taxes	$2009m	1202.7
Total		**5078.0**

Table 2.1(b) Australian resource expansion: Construction impact of average annual net mining investment 2009-2015 – Industry output and imports ($2009m)			
	Gross output	**Imports**	**Total supply**
Sheep	36.2	0.0	36.2
Grains	49.7	0.2	49.9
Beef cattle	90.0	0.0	90.0
Dairy cattle	49.1	0.0	49.1
Pigs	12.5	0.0	12.5
Poultry	26.9	0.0	26.9
Other agriculture	196.3	29.3	225.7
Services to agriculture, hunting and trapping	48.4	0.3	48.6
Forestry and logging	47.6	2.0	49.6
Commercial fishing	26.7	2.4	29.1
Coal	74.6	0.3	74.9
Oil and gas	292.2	208.0	500.2
Iron ores	36.9	3.6	40.4
Non-ferrous metal ores	288.6	109.9	398.5
Other mining	193.7	14.3	208.0
Services to mining	55.4	5.7	61.1
Meat and meat products	211.0	10.3	221.3
Dairy products	160.7	17.4	178.1
Fruit and vegetable products	48.2	27.0	75.2
Oils and fats	20.7	13.6	34.3
Flour mill products and cereal foods	83.2	10.4	93.6
Bakery products	64.5	9.7	74.2
Confectionery	51.6	14.6	66.2
Other food products	129.3	51.5	180.8
Soft drinks, cordials and syrups	62.4	4.5	67.0
Beer and malt	53.5	7.7	61.2
Wine, spirits and tobacco products	61.1	37.9	99.0
Textile fibres, yarns and woven fabrics	10.2	32.2	42.4
Textile products	27.1	93.5	120.6
Knitting mill products	13.2	17.1	30.3
Clothing	27.7	74.8	102.6
Footwear	6.7	23.8	30.5
Leather and leather products	7.3	18.1	25.4
Sawmill products	102.8	22.4	125.2
Other wood products	189.5	31.0	220.5
Pulp, paper and paperboard	29.8	46.1	75.9
Paper containers and products	88.4	27.8	116.2
Printing and services to printing	252.0	19.1	271.2
Publishing, recorded media, etc.	198.0	214.6	412.7
Petroleum and coal products	376.3	975.7	1352.0
Basic chemicals	295.1	317.9	613.0
Paints	39.3	26.3	65.6
Medicinal and pharmaceutical products, pesticides	63.8	93.3	157.1

Table 2.1(b)	Australian resource expansion: Construction impact of average annual net mining investment 2009-2015 – Industry output and imports ($2009m) – continued		
	Gross output	**Imports**	**Total supply**
Soap and detergents	23.2	10.8	34.0
Cosmetics and toiletry preparations	5.8	23.2	29.1
Other chemical products	72.2	43.7	115.9
Rubber products	18.0	84.6	102.6
Plastic products	285.2	198.3	483.5
Glass and glass products	74.6	20.9	95.5
Ceramic products	25.6	24.0	49.6
Cement, lime and concrete slurry	614.3	12.7	626.9
Plaster and other concrete products	216.3	15.1	231.5
Other non-metallic mineral products	60.0	42.4	102.4
Iron and steel	801.7	385.3	1187.0
Basic non-ferrous metal and products	650.3	145.3	795.6
Structural metal products	806.0	62.3	868.3
Sheet metal products	132.7	55.6	188.3
Fabricated metal products	326.0	311.7	637.7
Motor vehicles and parts, other transport equipment	253.5	2388.6	2642.1
Ships and boats	38.0	56.9	94.9
Railway equipment	19.2	150.2	169.4
Aircraft	41.0	332.6	373.7
Photographic and scientific equipment	55.8	905.1	960.9
Electronic equipment	95.4	1027.0	1122.5
Household appliances	112.2	357.3	469.5
Other electrical equipment	323.8	675.8	999.5
Agricultural, mining, etc. machinery	61.7	3611.1	3672.8
Other machinery and equipment	132.4	2090.7	2223.1
Prefabricated buildings	33.3	2.2	35.5
Furniture	100.4	402.1	502.6
Other manufacturing	139.2	80.4	219.6
Electricity supply	645.4	0.3	645.7
Gas supply	96.8	1.3	98.1
Water supply, sewerage and drainage services	272.2	0.4	272.6
Residential building	513.6	0.2	513.7
Other construction	21589.1	0.5	21589.6
Construction trade services	4125.0	0.7	4125.7
Wholesale trade	1961.9	44.3	2006.1
Wholesale mechanical repairs	67.0	0.0	67.0
Other wholesale repairs	197.3	0.4	197.7
Retail trade	1492.3	12.9	1505.1
Retail mechanical repairs	440.9	0.1	441.0
Other retail repairs	23.8	0.0	23.8
Accommodation, cafes and restaurants	747.0	72.5	819.5
Road transport	810.2	19.7	829.9

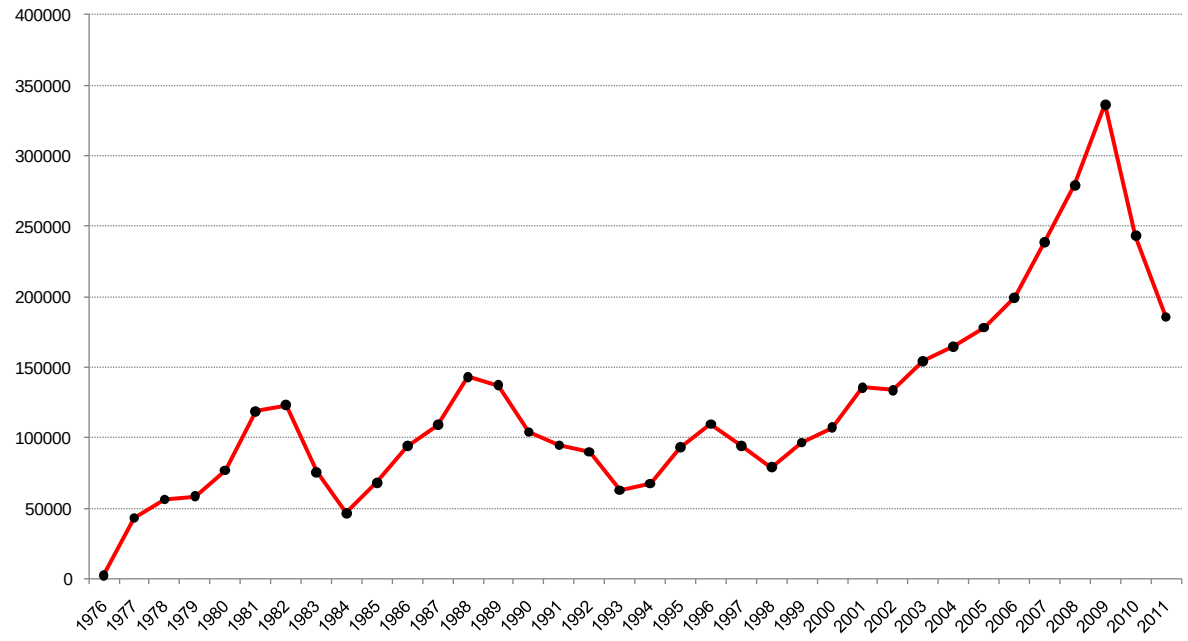
Table 2.1(b)	Australian resource expansion: Construction impact of average annual net mining investment 2009-2015 – Industry output and imports ($2009m) – continued		
	Gross output	**Imports**	**Total supply**
Rail, pipeline and other transport	138.0	11.7	149.6
Water transport	41.4	7.5	48.9
Air and space transport	249.6	96.5	346.1
Services to transport, storage	1242.7	2.9	1245.5
Communication services	1123.4	19.1	1142.5
Finance	2982.9	41.5	3024.4
Ownership of dwellings	0.0	0.0	0.0
Other property services	2999.2	27.0	3026.2
Scientific research, technical and computer services	1984.9	275.8	2260.6
Legal, accounting, marketing and business management services	2195.1	81.9	2277.0
Other business services	1369.1	29.6	1398.7
Government administration	209.2	0.1	209.3
Defence	2.5	0.1	2.6
Education	426.2	19.4	445.6
Health services	381.3	9.8	391.2
Community services	46.7	0.0	46.7
Motion picture, radio and television services	306.2	30.1	336.3
Libraries, museums and the arts	67.1	3.4	70.5
Sport, gambling and recreational services	346.9	9.5	356.3
Personal services	165.2	2.9	168.2
Other services	252.3	0.0	252.3
Total	**59228.5**	**16952.7**	**76181.2**

2.4 Migration and manufacturing expansion

Given the strong employment impact of the construction phase, the expectation would be for net Australian migration to be correlated with mining investment. From Figure 2.1, typically Australia has responded to each episode of elevated mining expansion with increases in net immigration. As Figure 2.1 indicates, for the years 1980 to 1989 the average level of net immigration averaged 105,000 compared to 60,000 for the four years before 1980. At the end of the 1990s there was another spike in net immigration, partly as a lagged response to the second construction phase.

Before the third mining construction episode the average was 150,000. However, over the 2006 to 2010 period the average was 260,000, or a total cumulative increase in population of 550,000 compared to pre-third episode trends.

Figure 2.1: Australia net fiscal year net permanent and long-term arrivals – number



The link between net immigration and mining investment, between 1978 and 2010, is given by:

$$ni = \underset{(1.3)}{0.008} + \underset{(3.6)}{0.115\,mi} + \underset{(5.3)}{0.0002\,time}$$

$R^2 = 0.55$

Where:

ni = Net long term and permanent arrivals to population.

mi = Net mining investment as a per cent of GDP, both variants $CMV millions.

Figure 2.1 shows the predictions from the equation with *mi* set at zero against the actual outcome, along with the difference between the variables measured in thousands. This gives the result of an additional 400,000 population between 2006 and 2010. This is lower than the 500,000 estimate given above from the Figure because of the influence of the trend term in the estimated equation.

If the average worker to immigrant population rate is between 0.3 and 0.4 (allowing for children and the basically male demands of the construction industry) immigration would have yielded around 150,000 workers towards the labour requirements of the construction phase. Therefore between 60 and 80 per cent of the employment required by the current episode of mining expansion construction phase has been supplied by imported labour.

This dynamic is completely ignored in assessing the impact of elevated mining expansion. However, it is critical to the assessment of economic benefits. The figure shows that a net 950,000 persons (rounded up to one million to allow for very modest net natural increase after migrant arrival) were added to Australia because of the employment opportunities created by the three episodes of mining expansion since the late 1970s.

2.5 The local content of mining activity

Using the input-output table estimates in Appendix A, an indicative local content arising from mining activity for 2009 can be obtained. The direct demand from mining is defined as operational demands for goods and services plus investment requirements including replacement investment. The operational demands are simply the intermediate industry demand column sums from the estimated input-output tables for all mining industries. This comes to a total demand for the mining sector of $85.7 billion, of which $75.8 billion is supplied by local industry. The bulk of the imports come from the MM sector. Total MM demand for operations is $11 billion, of which $4.4 billion is supplied locally.

More important, from the investment data which is included in the totals in Table 2.2, it can be calculated that the investment component has much higher import content. The import content is approximately half, with imports of $26 billion. This includes replacement investment. Of the total imports, 60 per cent come in the form of products from the MM sector overseas.

These averages will change from year to year as the industry/project mix changes. As the share of LNG projects in total mining investment increases over the next two years the MM sector's share can also be expected to increase.

Table 2.2 Direct operational and investment demand from mining sector – 2009 ($2009m)					
	Total demand	Local supply	Imports	Local content	Local content as % of local production
Sheep	15.1	15.1	0.0	100.0	0.3
Grains	0.0	0.0	0.0	0.0	0.0
Beef cattle	92.7	92.7	0.0	100.0	0.9
Dairy cattle	18.9	18.9	0.0	100.0	0.4
Pigs	0.0	0.0	0.0	0.0	0.0
Poultry	0.0	0.0	0.0	0.0	0.0
Other agriculture	39.1	14.5	24.5	37.2	0.1
Services to agriculture, hunting and trapping	0.0	0.0	0.0	0.0	0.0
Forestry and logging	136.8	129.4	7.5	94.5	5.7
Commercial fishing	0.4	0.0	0.4	6.5	0.0
Coal	278.0	277.0	1.0	99.6	0.5
Oil and gas	852.2	847.7	4.5	99.5	2.2
Iron ores	836.1	807.9	28.1	96.6	2.3
Non-ferrous metal ores	1220.0	1216.9	3.1	99.7	3.2
Other mining	851.5	787.0	64.5	92.4	18.5
Services to mining	14239.3	14127.5	111.8	99.2	91.1
Meat and meat products	15.6	13.3	2.3	85.2	0.1
Dairy products	32.1	25.5	6.6	79.4	0.2
Fruit and vegetable products	14.2	12.7	1.5	89.7	0.3
Oils and fats	5.9	5.1	0.7	87.6	0.3
Flour mill products and cereal foods	12.0	11.4	0.7	94.6	0.2
Bakery products	53.7	43.6	10.1	81.2	0.9
Confectionery	10.0	9.0	1.0	90.3	0.2
Other food products	48.4	41.2	7.3	85.0	0.3
Soft drinks, cordials and syrups	5.5	4.8	0.7	88.0	0.1
Beer and malt	23.4	20.6	2.8	88.2	0.5
Wine, spirits and tobacco products (a)	35.7	29.1	6.6	81.6	0.4
Textile fibres, yarns and woven fabrics	53.5	16.0	37.5	29.9	1.9
Textile products	71.5	41.0	30.5	57.4	2.3
Knitting mill products	11.4	9.5	1.9	83.1	1.0
Clothing	65.7	40.4	25.3	61.5	1.8
Footwear	25.2	7.1	18.1	28.1	1.6
Leather and leather products	12.5	7.6	4.8	61.3	0.6
Sawmill products	78.8	40.0	38.8	50.7	0.9
Other wood products	287.4	213.5	74.0	74.3	3.2
Pulp, paper and paperboard	183.0	39.1	143.8	21.4	2.1
Paper containers and products	93.9	57.2	36.8	60.9	1.4
Printing and services to printing	243.2	197.6	45.6	81.3	1.8
Publishing, recorded media, etc.	118.4	106.5	12.0	89.9	0.9
Petroleum and coal products	3793.1	1914.1	1879.0	50.5	7.2
Basic chemicals	1321.4	490.1	831.4	37.1	4.1
Paints	88.0	44.6	43.5	50.6	4.0

Table 2.2 Direct operational and investment demand from mining sector – 2009 ($2009m) – continued	Total demand	Local supply	Imports	Local content	Local content as % of local production
Medicinal and pharmaceutical products, pesticides	149.4	53.2	96.2	35.6	0.8
Soap and detergents	28.5	20.4	8.1	71.6	1.3
Cosmetics and toiletry preparations	3.5	3.2	0.3	90.6	0.5
Other chemical products	876.0	697.9	178.1	79.7	25.0
Rubber products	336.4	101.9	234.5	30.3	9.2
Plastic products	459.0	347.0	112.0	75.6	3.9
Glass and glass products	104.1	89.1	14.9	85.7	3.1
Ceramic products	35.7	17.2	18.5	48.1	1.9
Cement, lime and concrete slurry	643.1	634.0	9.1	98.6	7.9
Plaster and other concrete products	260.5	242.8	17.7	93.2	6.0
Other non-metallic mineral products	157.2	106.9	50.2	68.0	8.9
Iron and steel	2517.2	1340.7	1176.5	53.3	6.3
Basic non-ferrous metal and products	698.3	375.4	322.9	53.8	0.6
Structural metal products	1941.9	1254.4	687.5	64.6	9.0
Sheet metal products	348.6	250.0	98.6	71.7	5.3
Fabricated metal products	1646.6	830.9	815.7	50.5	9.6
Motor vehicles and parts, other transport equipment	615.3	470.9	144.4	76.5	2.3
Ships and boats	92.9	85.9	6.9	92.5	2.0
Railway equipment	76.4	50.5	25.9	66.1	2.4
Aircraft	588.8	288.1	300.7	48.9	6.9
Photographic and scientific equipment	264.9	119.8	145.1	45.2	2.2
Electronic equipment	624.8	123.8	501.0	19.8	2.6
Household appliances	292.0	106.3	185.7	36.4	2.0
Other electrical equipment	971.8	310.8	661.1	32.0	4.5
Agricultural, mining, etc. machinery	3038.3	2357.4	680.9	77.6	34.1
Other machinery and equipment	3262.1	758.7	2503.4	23.3	9.7
Prefabricated buildings	446.0	428.9	17.1	96.2	41.1
Furniture	209.0	167.9	41.0	80.4	2.9
Other manufacturing	289.2	233.8	55.4	80.8	4.2
Electricity supply	1663.8	1620.5	43.4	97.4	4.2
Gas supply	82.7	82.2	0.5	99.4	1.6
Water supply, sewerage and drainage services	634.5	619.3	15.2	97.6	3.8
Residential building	983.3	817.4	165.9	83.1	1.3
Other construction	2250.7	2013.0	237.6	89.4	1.8
Construction trade services	11843.6	10718.1	1125.5	90.5	9.3
Wholesale trade	7097.0	6741.3	355.8	95.0	5.8
Wholesale mechanical repairs	914.6	896.4	18.2	98.0	37.0
Other wholesale repairs	1242.4	1225.2	17.1	98.6	13.8
Retail trade	766.0	712.1	54.0	93.0	0.7
Retail mechanical repairs	898.0	855.8	42.2	95.3	4.2

Table 2.2 Direct operational and investment demand from mining sector – 2009 ($2009m) – continued					
	Total demand	**Local supply**	**Imports**	**Local content**	**Local content as % of local production**
Other retail repairs	5.4	3.5	1.9	65.0	0.2
Accommodation, cafes and restaurants	535.7	486.2	49.5	90.8	1.0
Road transport	1602.4	1473.9	128.5	92.0	3.3
Rail, pipeline and other transport	2944.2	2934.6	9.6	99.7	22.6
Water transport	507.4	462.3	45.1	91.1	12.8
Air and space transport	576.0	405.1	170.9	70.3	2.1
Services to transport, storage	2988.8	2717.9	270.9	90.9	5.2
Communication services	1421.9	1196.3	225.7	84.1	2.2
Finance	5009.2	4185.7	823.5	83.6	3.0
Ownership of dwellings	0.0	0.0	0.0	0.0	0.0
Other property services	6398.2	5226.1	1172.0	81.7	5.3
Scientific research, technical and computer services	6311.7	5110.8	1200.9	81.0	8.3
Legal, accounting, marketing and business management services	4343.7	3188.3	1155.5	73.4	4.3
Other business services	2141.2	1607.6	533.5	75.1	3.3
Government administration	600.6	560.3	40.2	93.3	1.0
Defence	5.3	5.2	0.1	98.8	0.0
Education	253.7	239.3	14.4	94.3	0.4
Health services	4.6	3.8	0.8	82.2	0.0
Community services	0.0	0.0	0.0	0.0	0.0
Motion picture, radio and television services	135.6	133.2	2.4	98.2	0.8
Libraries, museums and the arts	56.5	55.2	1.3	97.7	0.7
Sport, gambling and recreational services	430.9	395.4	35.5	91.8	1.9
Personal services	21.3	15.8	5.5	74.1	0.1
Other services	173.6	136.1	37.5	78.4	0.5
Total	**111106**	**90487**	**20619**	**81.4**	**3.9**
Metals and machinery	**16980**	**8724**	**8256**	**51.4**	**4.8**

3. Mining expansion: Full additionality and full displacement

This chapter investigates the impact of the annual average increase in mining gross output expected over the next five years on the basis of:

(i) full additionality; and

(ii) full displacement,

as well as the consequences of the resource requirements to support the induced population increase.

3.1 Mining expansion: Full additionality

Full additionality occurs when impact of the production phase on the economy is close to the Type II multiplier estimates from the latest input-output table. This calculation shows what would happen if there is no capacity is lost in the non-mining industries during the construction phase.

Given ABARES's benchmark for forecast mining production over the next five years, Table 3.1 shows the annual impact of each increment in production. From Table 3.2 ABARE's projection implies an annual average increase of $12.6 billion in gross mining output, or $63 billion between 2010 and 2015.

From Table 3.1, the increase in gross domestic product is $12 billion, of which $6.8 billion is mining gross product. Thus, the total mining gross product multiplier would be 1.76 under full additionality. Much of this is overseas-owned, and gross local product increases by $7 billion. What is important, however, is the increase in real net national product, or what the ABS now calls real net national disposable income. This increases by $8 billion, or 1.18 times the increase in mining gross product. The increase in real net national disposable income is two thirds of the GDP increase because depreciation and foreign transfers from the mining industry (which include repayment of foreign loans, interest, dividends and retained earnings) mining NNP is 53 per cent of mining gross product. Government revenues increase by $2.8 billion.

Total employment increases by 57,200. This means that over the next five years a total of 286,500 employment positions will be created by the projected mining output expansion.

Table 3.1	Average annual resource expansion 2010-2015: Impact on national economic indicators			
	Unit	**Full net additionality**	**Gross full displacement**	**Net full displacement**
National aggregate				
GDP at factor cost	$2009m	11952.5	-8830.0	3122.5
Mining gross product at factor cost	$2009m	6799.6	-589.5	6210.1
Non-mining gross product at factor cost	$2009m	5152.9	-8240.5	-3087.6
Gross local product at factor cost	$2009m	7002.9	-6767.5	235.4
Net local product at factor cost	$2009m	5986.3	-5859.5	126.8
Total employment – full time equivalent	ths.	57.2	-78.1	-20.9
Household consumption expenditure at basic values	$2009m	2479.5	-2853.4	-373.9
Per capita household consumption expenditure	Index – % change	0.5	-0.6	-0.1
Capital stock	$2009m	32428.3	-19923.3	12505.0
Factor productivity – net national product	Index – % change	-0.1	0.1	0.0
Household income formation				
Net national product at factor cost	$2009m	8001.5	-7272.4	729.1
wages and salaries	$2009m	4146.3	-4860.0	-713.7
Mixed income	$2009m	593.6	-884.5	-290.8
Interest received dividends	$2009m	763.6	-588.8	174.7
Disposable income	$2009m	3472.7	-3996.3	-523.6
Government revenue				
Household direct taxes	$2009m	930.1	-1070.3	-140.2
Enterprise direct taxes	$2009m	1440.3	-474.5	965.7
Indirect taxes	$2009m	494.1	-508.1	-14.0
Total	**$2009m**	**2864.5**	**-2053.0**	**811.5**

Table 3.2	Average annual resource expansion 2010-2015: Impact on industry gross output ($2009m)		
	Full net additionality	**Gross full displacement**	**Net full displacement**
Sheep	11.9	-98.4	-86.6
Grains	17.3	-272.4	-255.1
Beef cattle	30.6	-145.4	-114.8
Dairy cattle	16.7	-62.2	-45.5
Pigs	4.3	-14.1	-9.8
Poultry	9.2	-27.1	-17.9
Other agriculture	60.1	-205.1	-145.1
Services to agriculture, hunting and trapping	15.3	-89.2	-73.9
Forestry and logging	18.2	-27.0	-8.8
Commercial fishing	9.1	-28.0	-18.9
Coal	3923.9	-37.6	3886.3
Oil and gas	2531.3	-205.0	2326.2
Iron ores	2386.1	-15.6	2370.5
Non-ferrous metal ores	2806.0	-688.4	2117.7
Other mining	20.6	-61.4	-40.8
Services to mining	988.5	-89.7	898.9
Meat and meat products	71.5	-327.8	-256.3
Dairy products	54.7	-198.4	-143.8
Fruit and vegetable products	16.7	-98.2	-81.5
Oils and fats	7.0	-38.5	-31.5
Flour mill products and cereal foods	28.6	-102.0	-73.4
Bakery products	24.4	-56.9	-32.5
Confectionery	17.3	-63.0	-45.7
Other food products	43.3	-271.8	-228.5
Soft drinks, cordials and syrups	21.2	-44.6	-23.3
Beer and malt	20.1	-53.8	-33.7
Wine, spirits and tobacco products	22.5	-173.8	-151.3
Textile fibres, yarns and woven fabrics	2.9	-31.6	-28.7
Textile products	6.5	-51.2	-44.7
Knitting mill products	4.4	-35.7	-31.3
Clothing	10.7	-158.6	-147.9
Footwear	2.2	-47.2	-45.1
Leather and leather products	2.1	-43.2	-41.0
Sawmill products	19.5	-55.7	-36.2
Other wood products	39.2	-40.0	-0.8
Pulp, paper and paperboard	7.8	-31.8	-23.9
Paper containers and products	17.9	-61.0	-43.1
Printing and services to printing	66.3	-97.7	-31.4
Publishing, recorded media, etc.	60.9	-141.9	-81.0
Petroleum and coal products	211.8	-403.9	-192.0
Basic chemicals	75.2	-196.4	-121.2
Paints	6.7	-13.5	-6.8

Table 3.2 Average annual resource expansion 2010-2015: Impact on industry gross output ($2009m) – continued			
	Full net additionality	**Gross full displacement**	**Net full displacement**
Medicinal and pharmaceutical products, pesticides	20.0	-337.5	-317.5
Soap and detergents	8.2	-32.5	-24.3
Cosmetics and toiletry preparations	2.0	-57.9	-55.9
Other chemical products	55.9	-34.4	21.5
Rubber products	9.9	-58.9	-49.0
Plastic products	42.9	-125.3	-82.5
Glass and glass products	17.8	-47.2	-29.4
Ceramic products	4.6	-13.3	-8.8
Cement, lime and concrete slurry	41.5	-22.1	19.4
Plaster and other concrete products	21.3	-11.9	9.4
Other non-metallic mineral products	8.2	-9.0	-0.8
Iron and steel	167.0	-360.3	-193.3
Basic non-ferrous metal and products	140.0	-1678.0	-1538.0
Structural metal products	126.1	-81.9	44.2
Sheet metal products	28.8	-52.0	-23.2
Fabricated metal products	75.9	-106.0	-30.2
Motor vehicles and parts, other transport equipment	90.2	-803.3	-713.2
Ships and boats	9.7	-28.9	-19.2
Railway equipment	27.8	-42.6	-14.8
Aircraft	33.2	-87.5	-54.3
Photographic and scientific equipment	18.6	-209.2	-190.6
Electronic equipment	19.3	-476.7	-457.4
Household appliances	24.8	-133.4	-108.6
Other electrical equipment	38.9	-127.2	-88.3
Agricultural, mining, etc. machinery	68.6	-271.3	-202.8
Other machinery and equipment	60.9	-270.0	-209.1
Prefabricated buildings	28.9	-5.1	23.8
Furniture	24.6	-104.5	-79.8
Other manufacturing	30.1	-146.1	-116.0
Electricity supply	273.5	-294.9	-21.4
Gas supply	26.0	-38.0	-12.0
Water supply, sewerage and drainage services	114.9	-112.6	2.3
Residential building	79.4	-41.5	37.9
Other construction	173.0	-68.4	104.6
Construction trade services	1066.6	-330.7	735.9
Wholesale trade	770.3	-1304.9	-534.6
Wholesale mechanical repairs	66.3	-20.1	46.3
Other wholesale repairs	129.5	-76.6	52.9
Retail trade	502.3	-766.6	-264.3
Retail mechanical repairs	161.3	-171.4	-10.1
Other retail repairs	7.0	-9.2	-2.2

Table 3.2 Average annual resource expansion 2010-2015: Impact on industry gross output ($2009m) – continued			
	Full net additionality	**Gross full displacement**	**Net full displacement**
Accommodation, cafes and restaurants	276.0	-588.5	-312.5
Road transport	233.9	-592.2	-358.3
Rail, pipeline and other transport	234.0	-220.4	13.5
Water transport	42.6	-60.8	-18.2
Air and space transport	102.9	-333.7	-230.8
Services to transport, storage	370.4	-490.4	-120.0
Communication services	334.4	-411.8	-77.4
Finance	1047.3	-940.8	106.5
Ownership of dwellings	0.0	-29.5	-29.5
Other property services	860.2	-736.2	124.0
Scientific research, technical and computer services	506.9	-499.9	7.1
Legal, accounting, marketing and business management services	583.7	-642.6	-58.9
Other business services	348.0	-435.4	-87.4
Government administration	69.3	-55.6	13.7
Defence	0.8	-3.7	-2.9
Education	153.8	-352.1	-198.3
Health services	129.6	-193.3	-63.7
Community services	15.9	-18.5	-2.6
Motion picture, radio and television services	97.9	-135.0	-37.2
Libraries, museums and the arts	24.3	-34.8	-10.5
Sport, gambling and recreational services	118.4	-147.4	-29.0
Personal services	53.0	-71.4	-18.4
Other services	62.3	-69.4	-7.1
Total	**23991.7**	**-20937.7**	**3054.0**

Table 3.3 Average annual resource expansion 2010-2015: Impact on industry imports ($2009m)			
	Full net additionality	**Gross full displacement**	**Net full displacement**
Sheep	0.0	0.0	0.0
Grains	0.1	0.2	0.2
Beef cattle	0.0	0.0	0.0
Dairy cattle	0.0	0.0	0.0
Pigs	0.0	0.0	0.0
Poultry	0.0	0.0	0.0
Other agriculture	5.6	25.3	30.9
Services to agriculture, hunting and trapping	0.1	0.4	0.5
Forestry and logging	1.0	0.9	2.0
Commercial fishing	0.7	3.2	3.9
Coal	0.1	0.4	0.5
Oil and gas	102.7	248.6	351.3
Iron ores	2.7	2.3	5.0
Non-ferrous metal ores	23.9	51.0	74.8
Other mining	4.5	7.6	12.1
Services to mining	7.8	3.6	11.4
Meat and meat products	3.5	15.1	18.6
Dairy products	6.1	26.5	32.6
Fruit and vegetable products	9.1	41.9	50.9
Oils and fats	4.6	17.8	22.4
Flour mill products and cereal foods	3.5	15.3	18.9
Bakery products	3.9	15.6	19.5
Confectionery	5.0	22.6	27.6
Other food products	16.5	75.3	91.8
Soft drinks, cordials and syrups	1.5	7.7	9.2
Beer and malt	2.9	11.9	14.8
Wine, spirits and tobacco products (a)	13.4	59.8	73.3
Textile fibres, yarns and woven fabrics	8.6	13.5	22.1
Textile products	10.6	50.4	61.0
Knitting mill products	5.5	23.2	28.6
Clothing	25.5	113.1	138.6
Footwear	9.2	34.7	43.9
Leather and leather products	4.7	14.1	18.8
Sawmill products	5.7	19.5	25.2
Other wood products	6.3	21.3	27.6
Pulp, paper and paperboard	19.7	45.5	65.2
Paper containers and products	5.4	24.4	29.8
Printing and services to printing	4.4	19.5	24.0
Publishing, recorded media, etc.	12.4	73.1	85.6
Petroleum and coal products	176.5	327.5	504.0
Basic chemicals	96.9	187.2	284.1
Paints	2.7	10.2	12.9

Table 3.3 Average annual resource expansion 2010-2015: Impact on industry imports ($2009m) – continued	Full net additionality	Gross full displacement	Net full displacement
Medicinal and pharmaceutical products, pesticides	34.3	255.8	290.1
Soap and detergents	3.8	15.2	19.0
Cosmetics and toiletry preparations	7.9	38.8	46.8
Other chemical products	17.6	27.7	45.4
Rubber products	26.6	70.9	97.5
Plastic products	19.5	82.6	102.1
Glass and glass products	4.8	13.1	17.9
Ceramic products	4.4	21.7	26.1
Cement, lime and concrete slurry	1.9	6.4	8.3
Plaster and other concrete products	1.0	6.0	7.0
Other non-metallic mineral products	3.0	16.6	19.6
Iron and steel	91.0	141.7	232.7
Basic non-ferrous metal and products	41.8	67.5	109.3
Structural metal products	12.0	23.9	35.9
Sheet metal products	4.7	18.8	23.5
Fabricated metal products	56.3	140.1	196.4
Motor vehicles and parts, other transport equipment	75.8	611.6	687.4
Ships and boats	1.0	21.6	22.6
Railway equipment	10.8	21.5	32.3
Aircraft	25.5	50.4	75.9
Photographic and scientific equipment	27.6	235.1	262.7
Electronic equipment	91.5	522.4	613.9
Household appliances	21.4	120.6	142.0
Other electrical equipment	46.7	155.0	201.6
Agricultural, mining, etc. machinery	50.9	242.3	293.2
Other machinery and equipment	209.8	335.2	545.0
Prefabricated buildings	0.3	0.4	0.7
Furniture	10.8	83.6	94.3
Other manufacturing	20.2	90.1	110.3
Electricity supply	0.1	0.3	0.4
Gas supply	0.0	0.1	0.1
Water supply, sewerage and drainage services	0.2	0.5	0.7
Residential building	0.1	0.2	0.2
Other construction	1.0	0.7	1.7
Construction trade services	0.2	0.7	0.9
Wholesale trade	4.8	12.5	17.3
Wholesale mechanical repairs	0.0	0.0	0.0
Other wholesale repairs	0.2	0.4	0.6
Retail trade	4.0	20.3	24.3
Retail mechanical repairs	0.0	0.1	0.1
Other retail repairs	0.0	0.0	0.0

Table 3.3 Average annual resource expansion 2010-2015: Impact on industry imports ($2009m) – continued			
	Full net additionality	**Gross full displacement**	**Net full displacement**
Accommodation, cafes and restaurants	26.7	110.9	137.6
Road transport	6.9	33.1	40.0
Rail, pipeline and other transport	4.0	19.5	23.5
Water transport	8.0	9.8	17.8
Air and space transport	35.7	117.8	153.6
Services to transport, storage	1.2	3.2	4.4
Communication services	5.5	21.0	26.5
Finance	15.2	32.2	47.3
Ownership of dwellings	0.0	13.0	13.0
Other property services	8.2	18.8	26.9
Scientific research, technical and computer services	24.5	76.1	100.6
Legal, accounting, marketing and business management services	37.6	68.3	105.8
Other business services	10.5	26.2	36.8
Government administration	0.0	0.0	0.0
Defence	0.0	0.0	0.0
Education	7.0	31.4	38.4
Health services	3.3	16.6	19.8
Community services	0.0	0.0	0.0
Motion picture, radio and television services	7.9	24.1	31.9
Libraries, museums and the arts	1.2	8.7	9.9
Sport, gambling and recreational services	3.2	14.6	17.8
Personal services	0.8	4.2	5.0
Other services	0.0	0.0	0.0
Total	**1754.1**	**5752.2**	**7506.3**

3.2 Mining expansion: Gross full displacement

Gross full displacement is defined as the Type II multiplier that results when the increase in mining exports is neutralised completely by the increase in imports and reduction in non-mining exports. The adjustment is achieved by the same percentage adjustment to all import penetration ratios and non-mining exports. In this case GDP falls by $8.8 billion and net national product by $7.2 billion. Employment falls by 78,100, reflecting relative high labour intensity of the sectors displaced. This is further reflected in the near $5 billion fall in wages and salaries.

Net full displacement is given by the first column minus the second column in the tables. The numbers indicate that, except for employment, policy makers should be indifferent to mining expansion even if it results in full net displacement since, on this basis, the one key benefit would be an increase in national productivity. Government revenue is positive with net full displacement.

3.3 Regional adjustments: The issue of government revenue

The results in the tables are based on the average ratios compiled from the Appendix A input-output tables.

The main problem here, as will be seen in Chapter 5, is the tax revenue for new mining projects may take five to ten years to peak because of the high write-offs in the early stage of production for preliminary expenses, depreciation, exploration expenditure, etc. Secondly, for highly capita-intensive projects, resource rent tax may not be levied for eight to ten years from the commencement of production. The taxation results in the table assume immediate payment of resource rent tax based on the industry averages. For the full additionality case, the increase in direct tax revenue from the mining sector equals $1 billion. In the early years at least the estimate of nearly $3 billion Government revenue from mining can be reduced significantly.

3.4 Mining expansion: Costs of additional population

The second adjustment that must be made is that the gross and full displacement analysis indicates that 78,000 jobs are lost from industries which are, in the main, located in established regions with adequate infrastructure and community services.

The mining expansion case, on the other hand, involves the necessity to increase national population in regions where, in the main, the infrastructure and resource requirements have not been provided. These costs need to be taken into account.

It has been estimated in the previous chapter that an additional 400,000 people have been induced to migrate into Australia to resource the construction that will allow mining production to increase as analysed in the tables. How much of the 400,000 population increase should be attributed to a given year's increase will depend on how long the current construction episode will last. If it ended tomorrow, then all the 400,000 people would be allocated to a period of a little over four years, giving a total of 90,000 for the annual increment. However, the expansion is likely to continue to 2015 at least, and later for LNG if not for metallic minerals. Therefore, a notional 10 year construction phase will be assumed.

Given the rigours of life in many of the regions where mining investment is taking place, the workers imported to support the mining expansion will by attrition shift to industries and regions that are unrelated to the mining construction and production supply chain. If inflationary pressures are to be avoided, part of this attrition will have to be replaced by additional migration over the next few years. Allowing for this, it will be assumed that for each of the next five years the mining expansion will induce a population increase of 50,000 permanent net additional people.

Table 3.4	Mining expansion resource requirements for 50,000 increase in population ($2009b)	
		Remarks
Population increase ('000)	50	
Housing	3.3	Total
Other infrastructure(a)	1.2	Total
Current Government expenditure	0.5	Annual
Working age social security support	0.3	Annual to support 27,000 displaced workers
Potential working age social security support	0.3	Annual potential when the construction phase ends and unemployment increases
Total	**5.6**	

Note: (a) That part of communication, electricity, gas, rail, road, education and health infrastructure attributed to households.

The annual and once-off expenditures that will be required over the next decade to support each 50,000 increment are given, by component, in Table 3.4 and come to a total of between $5.0 billion and $6.0 billion to give a range rather than a point estimate. Given these resource claims from mining expansion either directly on government or in terms of resource claims on society as a whole (as is the case with housing), in order for Government and society to be indifferent between resource expansion and leaving the minerals in the ground, the net Government revenue from resource expansion would have to be at least $1.5 billion to $2.0 billion greater on an annual basis than what is likely to be generated. This would require an outcome of either:

(i) higher mining taxes, both in the short and long term; and/or

(ii) low levels of displacement of domestic non-mining production.

4. Australian resource expansion: Estimates for the degree of net additionality

The graphical analysis of Chapter 1 is fairly conclusive in that at the very least for Australia episodes of elevated mining expansion have resulted in the Dutch disease with the displacement of non-resource tradable sector production by mining production. The question is the severity of the disease and whether or not it has been severe enough to bring on the Resource curse.

To explore this issue three different approaches will be taken. The first will examine the statistical relationship between real net national disposable income and mining product; the second will examine the relationship between State capacity and mining investment and the third will examine the evidence of crowding out in the MM manufacturing sector.

There will never be one approach that will provide an answer to the question posed above. All that can be done is assemble the available evidence and make an informed judgement.

4.1 The link between mining and net national income

One simple way to test for the link between mining gross product and net national product/net national income) is to run a regression of real net national income (less mining and construction gross product) per capita against time and real mining gross product. To remove the terms of trade effect, nominal mining gross product is deflated by the Australian National Accounts' gross national income implicit deflator rather than by mining prices. The mining variable is expressed in per capita terms.

The results of the regression using annual data over the 1979-2010 period are:

$$\begin{array}{lcccc} ln(NDIA) & = & 9.942 & + & 0.020\ time \\ & & (48.6) & & (17.4) \end{array} \quad \begin{array}{c} - \\ \\ \\ \end{array} \quad \begin{array}{c} 0.001\ ln(MGP) \\ \\ (0.0) \end{array}$$

$R^2 = 0.97$

Where:

NDIA = Real net disposable income less construction and mining gross product, $CMV million per capita.

MGP = Nominal mining gross product per capita deflated by gross national income deflator, $CMV million.

The zero coefficient for the mining gross product variable indicates that in both real and price terms mining has had no impact on non-mining and construction national net disposable income. At this level of abstraction, mining seems to add to income overall, though without any positive multiplier effects into other industries.

The results suggest a degree of additionality. In the full additionality model run in the previous chapter the ratio of the increase in net national product to the increase in mining gross product was 1.18. However, the equation just estimated indicates that full additionality does not apply and the mining production phase has contributed no more than mining's direct contribution to net national product. The contribution from the full additionality sensitivity analysis is 0.53 per $ of gross product, or an increase of $3.6 billion a year between 2010 and 2015. Therefore, taking the ratio of $3.6 billion to the $8.0 billion increase in net national product from Table 3.1 suggests an average net additionality factor of 45 per cent, suggesting that while Australia has not avoided the Dutch disease it has avoided the Resource curse. This case is referred to elsewhere in this study as the 50 per cent gross crowding out case or the 50 cents in the dollar crowding out case.

However, the conclusion does not adjust for the increase in population to support mining expansion. This is done in Table 4.1.

Table 4.1	Population adjustment of mining contribution to net national disposable income			
	Unit	**Year**		**Remarks**
Per capita net national disposable income (NNDI)	2009 $'000	2010	45.6	From ABS Cat. No. 5204
Total net national disposable income attributed to population increase to support mining since 1979	2009 $m	2010	45,000	Row (1) twice one million population
Total increase in mining gross product since 1979	2009 $m	2010	82,664	From ABS Cat No. 5204
Total annual contribution of mining gross product increase since 1979 to NNDI	2009 $m	2010	43,812	Row (3) by 0.53

The conclusion from Table 4.1 is that the annual mining contribution to net national income is a little less than the per capita net national income attributed to the one million population increase to support the mining construction phase since 1979. In other words, on a per capita basis there has been no net additionality in terms of the original population, defined as the population that would have existed if net mining investment since 1979 had been zero. Thus, the conclusion will be that on a per capita basis Australia has been subject to the Resource curse, if not in terms of headline outcomes. This suggests that the main impact of the mining expansion since 1979 has been to expand population without loss of per capita net national income but no doubt at a cost of housing shortages and decline in infrastructure quality.

4.2 Resource expansion: The impact on non-primary GDP capacity

The analytical framework developed in Chapter 1 suggested that the major driver of displacement is foregone non-mining capacity that results from the pressures of the construction phase. Time series estimates of non-agricultural capacity utilisation are required to do this. They are available at the State level from NAB surveys on a quarterly basis and can be readily adjusted to exclude mining.

To test for the crowding out of non-mining activity during the construction phase the following model was estimated for the five main Australian States.

$$
\begin{aligned}
capg_i \quad = \quad & \underset{(4.1)}{0.0055\ NSW} + \underset{(4.0)}{0.0055\ VIC} \\
& + \underset{(4.66)}{0.0098\ QLD} + \underset{(2.9)}{0.0048\ SA} + \underset{(3.9)}{0.0080\ WA} \\
& + \underset{(5.4)}{0.049} \cdot \sum_{j=1}^{8} w_j \cdot capgap_{i,\,t-j} \\
& - \underset{(1.5)}{0.119} \cdot \sum_{j=1}^{3} v_j \cdot MINV_{t-j} / cap_{i,\,t-j} - \underset{(1.8)}{0.178} \cdot MINV_3 / cap_3 \\
capg_i \quad = \quad & cap_{i,t} / cap_{i,\,t-1} - 1 \\
capgap_i \quad = \quad & [dcap_{i,\,t+8} - cap_{i,\,t-1}] / cap_{i,\,t-1} \\
dcap_{i,\,t+8} \quad = \quad & dcap_{i,\,t-1} \cdot out_{i,\,t-1} / out_{i,\,t-1}
\end{aligned}
$$

w_1	=	0.1	v_1	=	0.2
w_2	=	0.1	v_2	=	0.4
w_3	=	0.15	v_3	=	0.4
w_4	=	0.15			
w_5	=	0.20			
w_6	=	0.15			
w7	=	0.1			
w8	=	0.05			

$$j = \begin{cases} 1: \text{NSW} \\ 2: \text{VIC} \\ 3: \text{QLD} \\ 4: \text{SA} \\ 5: \text{WA} \end{cases}$$

Where:

cap_i = Non-primary capacity State i in \$2009m, quarter t.

out_i = Non-primary gross product State i in \$2009m, quarter t.

$dcap_{i,\,t+8}$ = Desired non-primary capacity State i eight quarters ahead in \$2009m, quarter t.

$MINV$ = National mining investment, quarter t.

$MINV_i$ = Mining investment for State i.

'Non-primary' refers to total GDP at factor cost less the gross product of the agricultural and mining sectors. Estimation 1989.4 to 2010.

In general, across all five States, the displacement effect from mining is associated with total mining investment at the national level. Only one State, Queensland, was found to suffer additional displacement from its own mining investment.

The critical coefficient is, therefore, the -0.12 coefficient. From our benchmark settings for the current expansion episode, the net average increase in quarterly net mining investment was set at 2.2 per cent of non-primary GDP. This implies a quarterly growth displacement of capacity growth of 0.0026 per cent, or 1 per cent on an annual basis. In 2010 non-primary capacity for the five States was \$1,321 billion. A 1 per cent a year loss by displacement of capacity represents a loss of capacity of \$13.2 billion, which at a nominal capacity utilisation rate of 80 per cent, represents a loss of potential production of \$10.6 billion in terms of gross product. This would increase to \$12.6 billion if the Queensland crowding out impact was included.

The increase in gross mining product that on average can be expected from the \$33 billion of annual net mining investment has been estimated as \$11.2 billion at best – the ABARES projections imply a significantly smaller amount as can be seen from Table3.1. Hence this analysis suggests that for all practical purposes the situation prevailing over the last two decades has been one of net full displacement, at least for the short to medium terms covered by the construction phase.

It should be noted that the presence of the mining investment variable in the equation (as for other equations which use this variable) can be interpreted as a proxy for the high interest rates, exchange rate, inflationary expectations, etc. which directly crowd out non-mining capacity. There is a double connection, in that these crowd-out mechanisms are the result of mining investment and are also themselves driven by the factors driving mining investment.

4.3 Resource expansion: The impact on the metals and machinery sector

An important part of the displacement that is estimated to have occurred under the previous section would occur in the metals and machinery sector. If a similar model is estimated for the MM sector and is found to produce a proportional crowding out effect, this would tend to validate the findings of the previous section.

The estimated model for the MM sector is:

$$
\begin{aligned}
MMIS = {} & -10.411 + 0.681 \,.\, PEAKMMIS \\
& (2.18) \quad (12.23) \\
& + 15.78 * DCAP + 25.07 \,.\, MINVI \\
& (3.30) \quad (1.88) \\
& + -0.678 \,.\, PPPEX - 0.257 \,.\, PPPEX_{t-1} \\
& (0.56) \quad (0.37) \\
& + 0.066 \,.\, PPPEX_{t-2} + 0.325 \,.\, PPPEX_{t-3} \\
& (0.17) \\
& + 0.508 \,.\, PPPEX_{t-4} + 0.614 \,.\, PPPEX_{t-5} \\
& (1.18) \quad (1.11) \\
& + 0.643 \,.\, PPPEX_{t-6} + 0.596 \,.\, PPPEX_{t-7} \\
& (1.06) \quad (1.03) \\
& + 0.474 \,.\, PPPEX_{t-8} + 0.275 \,.\, PPPEX_{t-9} \\
& (1.00) \quad (1.00)
\end{aligned}
$$

$R^2 = 0.964$
D.W = 1.64

Where:

MMIS	=	Metals and machinery national import share in domestic supply.
PEAKMMIS	=	Previous peak metals and machinery national import share in domestic supply.
DCAP	=	Ratio of metals and machinery demand excluding mining investment to domestic industry capacity.
MINVI	=	Rate of mining investment to domestic industry capacity.
PPPEX	=	Ratio of actual Australian exchange rate to $US to the PPP exchange rate (a rate greater than unity in price over-valued the currency).

The MM domestic capacity expansion equation is given by:

$$
\begin{aligned}
DCAPG = {} & 0.0039 + 0.0011 \,.\, CCAP + 0.0019 \,.\, CCAP_{t-1} \\
& (6.54) \quad (0.86) \quad (2.17) \\
& + 0.0025 \,.\, CCAP_{t-2} \\
& (4.14) \\
& + 0.0029 \,.\, CCAP_{t-3} + 0.0031 \,.\, CCAP_{t-4} \\
& (5.76) \quad (5.82) \\
& + 0.0031 \,.\, CCAP_{t-5} + 0.0029 \,.\, CCAP_{t-6} \\
& (5.26) \quad (4.75) \\
& + 0.0025 \,.\, CCAP_{t-7} + 0.0018 \,.\, CCAP_{t-8} \\
& (4.37) \quad (4.08) \\
& + 0.0010 \,.\, CCAP_{t-9} + 0.084 \,.\, MINVI \\
& (3.88) \quad (7.91) \\
& + 0.040 \,.\, MINVI_{t-1} + 0.0064 \,.\, MINVI_{t-2} \\
& (7.75) \quad (4.16) \\
& - 0.018 \,.\, MINVI_{t-3} - 0.033 \,.\, MINVI_{t-4} \\
& (6.72) \quad (7.51) \\
& - 0.039 \,.\, MINVI_{t-5} - 0.035 \,.\, MINVI_{t-6} - 0.022 \,.\, MINVI_{t-7} \\
& (7.68) \quad (7.74) \quad (7.78)
\end{aligned}
$$

Where:

DCAPG = Quarterly growth in domestic capacity installed, $2009m.

CCAP = Difference between desired capacity eight quarters ahead and current installed capacity, $2009m.

Because of the interaction between import share and capacity it is not possible to interpret outcomes directly from equation coefficients. However, simulations from the analysis in the next chapter suggest that for a $33 billion annual mining investment, the decline in MM gross output will be around $12 billion if the previous peak import share is exceeded or about $8 billion if this is not the case. Given the gross product to gross output ratio, this suggests a loss of output in terms of gross product of between $3 and $4.2 billion directly and perhaps double this after inter-industry flow-ons. This, in turn, would represent a plausible one third to one half of the reduction in aggregate displaced capacity estimated in the previous section.

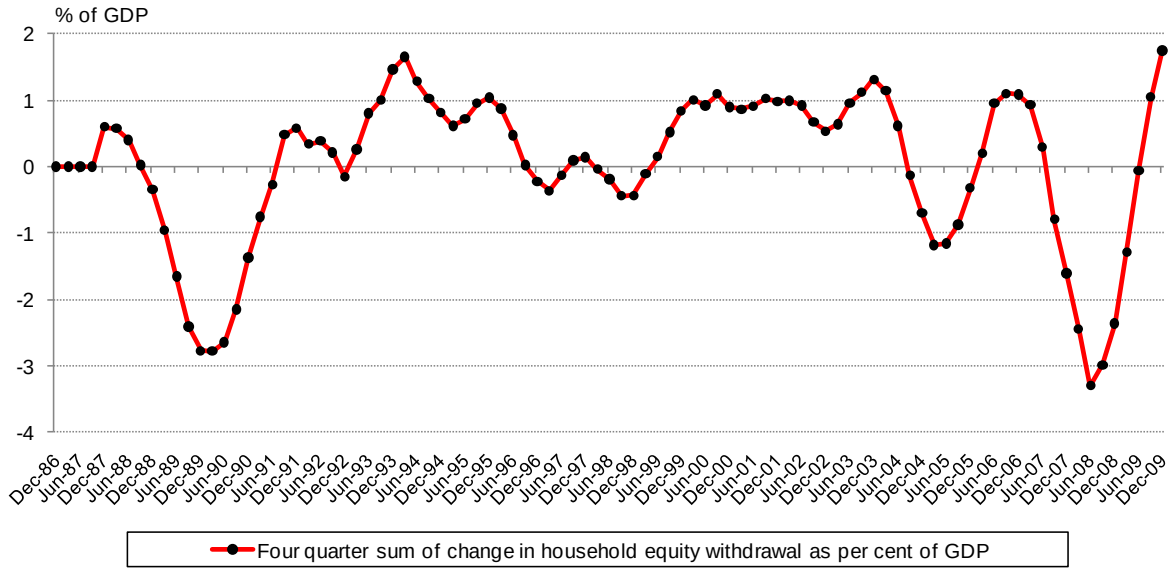
4.4 Household debt and net additionality

We now have an apparent contradiction. It would appear that there has been headline net additionality, if not on an adjusted per capita basis. The results from the last two sections suggest a situation close to zero net additionality. The two can be reconciled by the recognition of the role of household debt in driving Australian economic growth since the early 1990s.

The accumulation of household debt stimulated growth through equity withdrawal by the household sector, including an increase in debt above the levels required to finance housing and other household investment. The net additional stimulus to growth is measured by the change in household equity withdrawal as a percentage of GDP. This series is given in Figure 4.1. Between 1992 and the middle of 2008 the average annual stimulus from the change in equity withdrawal was 0.5 percentage points, so that the growth in household debt contributed at least half a percentage point to annual growth. This was a powerful mechanism for producing headline positive net additionality which coincided with the construction phase of resource expansion – and was related to that phase by overseas willingness to lend to the Australian banks. The inference is that without the growth of household debt, mining expansion over the past two decades may well have produced headline zero net additionality. Under these circumstances it is likely that population growth would have been less. However, significant negative per capita additionality may well still have occurred.

The problem is that with the ratio of household debt to net disposable income now at 200 per cent there is only limited further stimulus to economic growth available from this source. It follows that it is likely that the economic stimulus from the current episode of elevated mining expansion over the next few years is will fall well short of expectations based on the last decade.

Figure 4.1: Direct debt stimulus to economic growth



4.5 Macroeconomic policy and crowding out

The textbook response did not work. At the macroeconomic level the objective is to protect the domestic non-resource sector then the appropriate response to ensure internal/external balance would be to introduce contractionary fiscal policies to prevent the exchange rate appreciating and allowing sufficient labour resources to enable both mining construction and the maintenance of the non-resource sector activity at pre-mining boom levels.

The less painful alternative, at least in the short-term, is to increase the supply of labour in migration so that both domestic supply and demand can be expanded and upward pressure on the current account balance neutralised. This is what Australia did. It imported 400,000 additional population which would have been more than enough to prevent crowding out of the non-resource sector and should have been more than enough to prevent upward appreciation of the currency. However, the estimated equations suggest that crowding out was not prevented.

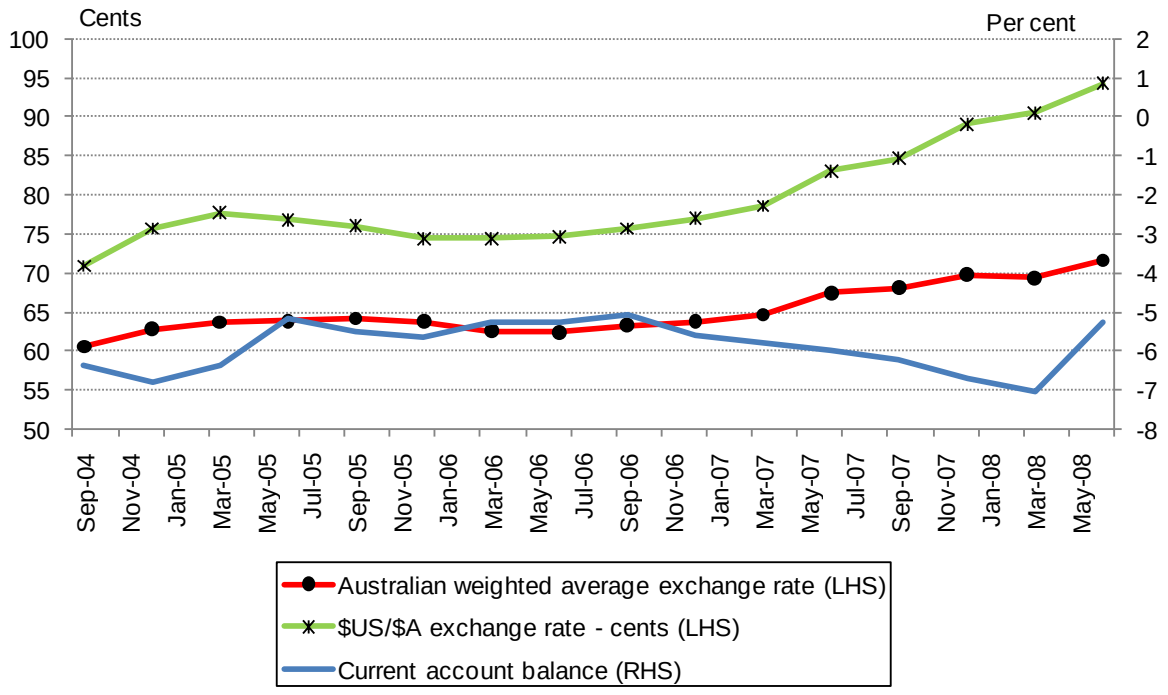
Indeed, the current account deficit in Figure 4.2 indicates significant deterioration and the exchange rate appreciated significantly between September 2004 and June 2008. The economic textbook suggested that this should not have happened. That is, the exchange rate should not have appreciated with an increase in the current account deficit and the exchange rate should not have increased because of the additional population.

What then drives the exchange rate? The latest theory of financial sector analysis is that the high Australian exchange rate is being driven by the Australian currency being a “proxy” for the Chinese currency. The Chinese currency is not fully convertible and is a non-market driven controlled currency. The Australian currency is market driven. Therefore, international investors are reluctant to invest directly in Chinese financial assets to capture the benefits of China’s economic growth. Hence, they do the safest next best strategy by investing in $A denominated assets which, because of the dependency of the Australian economy on the Chinese economy, the exchange rate should “shadow” what would have been a free market outcome for the Chinese economy.

The inference is clear. Australia has no ability to control crowding out by macroeconomic policy instruments. The only solution is direct intervention to increase the direct benefits to the Australian economy from elevated periods of mining expansion.

This is not to suggest that increasing the migration rate has not lessened the degree of crowding out from what would otherwise have been the case. What is clear is that textbook policies are necessary, but not sufficient factors, in significantly reducing the degree of crowding out to ensure success, that is, to establish sufficient conditions to minimise crowding out direct action is required.

Figure 4.2: The current account balance and the exchange rate



4.6 The mining expansion and the national productivity slowdown

The central argument of this study is that the mining boom, by crowding out non-resource activity, has created unutilised resources which can be exploited to increase the direct benefits from the current mining expansion. This argument applies not only to capital and labour resources, but also to the impact higher direct benefits from mining expansion will have on the rate of productivity growth.

This stems from the view that the rate of growth of productivity growth in the economy is a function of the rate of growth of economic activity. For this to be a correct view, the evidence must suggest that the current productivity slowdown is related to the slowdown in the rate of growth in the economy. As is indicated below in this section, this is the case.

There certainly has been a slowdown in the rate of growth in productivity. From the December quarter National Accounts, the rate of growth of productivity measured in terms of GDP per hour worked has fallen from between 0.5 to 0.8 per cent, depending on whether the September or December quarters 2010 is selected compared to the corresponding quarter a year earlier.

Figures 4.3 and 4.4 leave out the poor recent quarters and run to the June quarter 2010. Even so, productivity growth was still trending down. What is important here is not so much what the recent rate of growth of productivity has been, but from the historical record what contribution any slowdown in productivity was due to the changes in economic activity.

Figures 4.3 and 4.4 indicate such a relationship. In Figure 4.3, in general the higher the rate of growth of GDP the higher the rate of growth of productivity. This finding is expressed in Figure 4.4 by a larger gap between the rate of growth of total hours worked and GDP. This gap is larger the higher the rate of growth of GDP.

The historical record indicates that the relationship between the rate of growth in hours worked and economic activity is given by:

$$
\begin{aligned}
thoursg \quad = \quad & -0.253 + 0.0030 \,.\, cute \\
& (3.4) \qquad (3.2) \\
+ \quad & 0.209 \,.\, gdpg + 0.180 \,.\, gdpg_{-1} \\
& (2.2) \qquad\qquad (4.5) \\
+ \quad & 0.144 \,.\, gdpg_{-2} + 0.102 \,.\, gdpg_{-3} \\
& (3.5) \qquad\qquad (2.0) \\
+ \quad & 0.054 \,.\, gapg_{-4} \\
& (1.4)
\end{aligned}
$$

$R^2 = 0.47$
Sample period 1989.1 to 2010.2

Where:

thoursg	=	Four quarter span rate of growth in total hours worked.
gdpg	=	Four quarter span rate of growth of $CVM gross domestic product.
cute	=	Non-farm capacity utilisation rate.

Figure 4.3: Four quarter span total national GDP per hour (PRODG) versus GDP growth (GDPG)

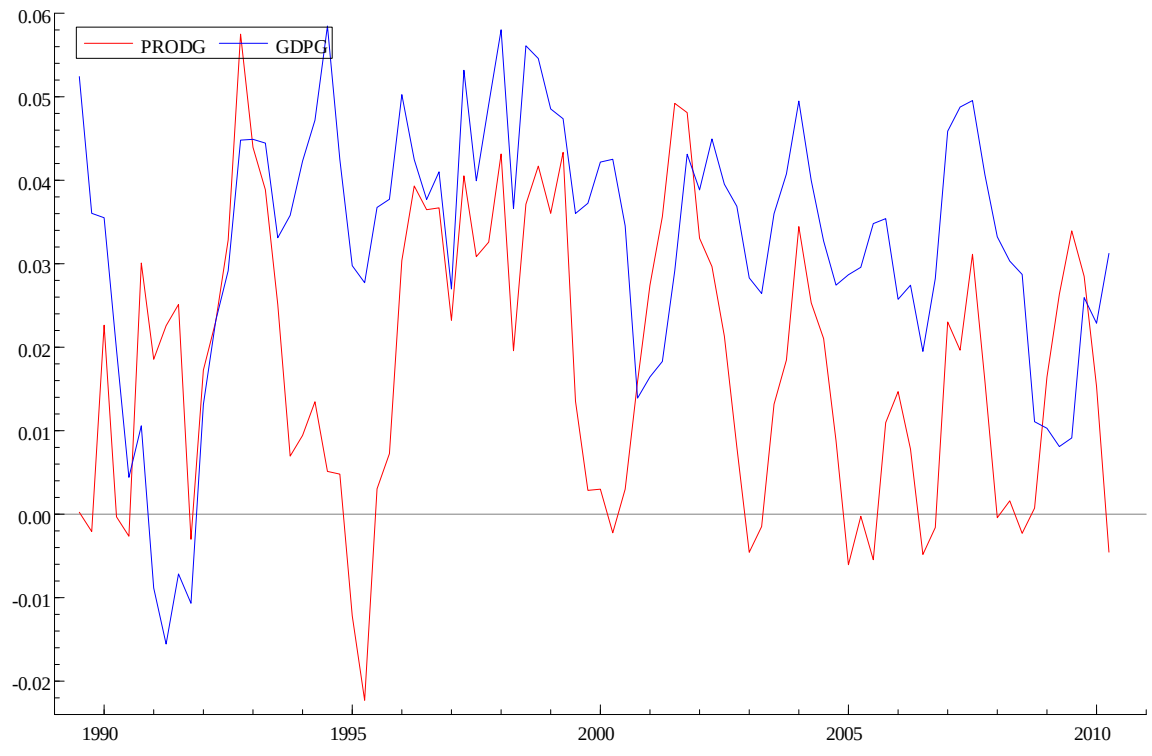
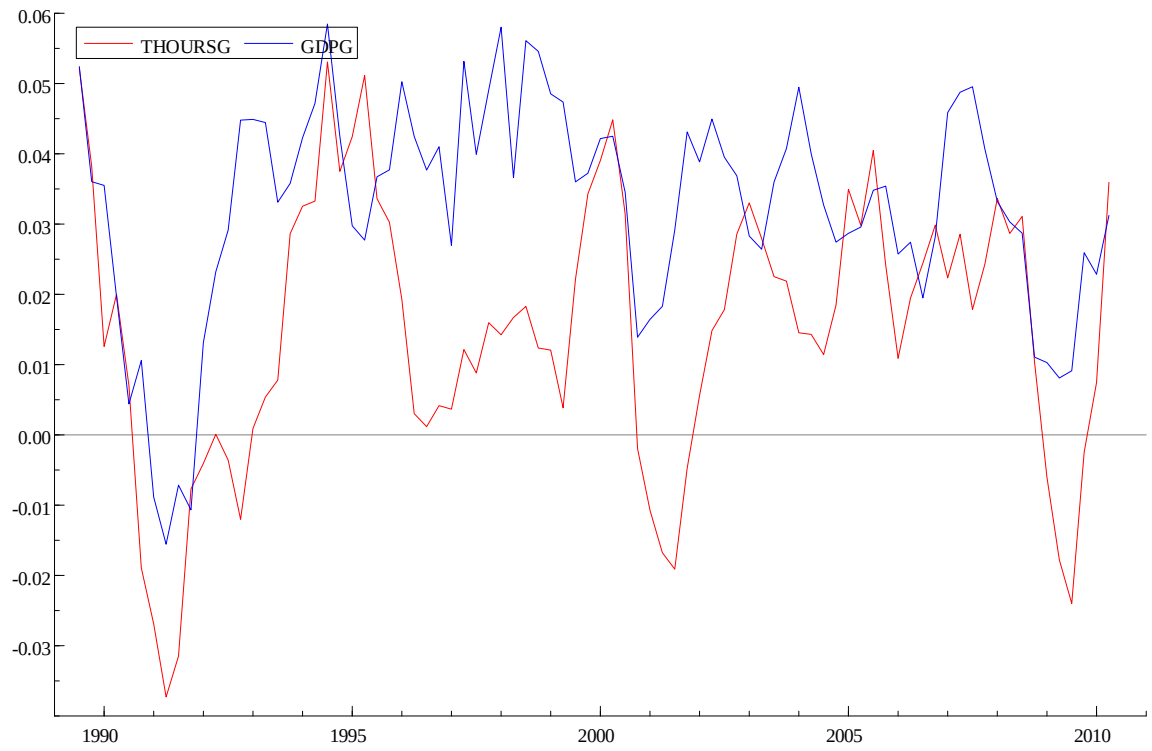


Figure 4.4: Four quarter span national hours worked growth (THOURSG) versus GDP growth (GDPG)



The two key coefficients are the sum of *gdpg* coefficients and the *cute* coefficient. The *cute* coefficient indicates that the lower the capacity utilisation rate in the economy the lower the (labour) productivity growth, no doubt in part due to the under-utilisation of overhead hours. The sum of the *gdpg* coefficients is 0.68, indicating that a 1 per cent growth rate of *gdpg* is associated with an additional labour productivity growth rate of 0.32 per cent.

In order to demonstrate this impact of economic activity on GDP growth, the 2007 calendar year will be compared with the 2010 calendar year. The 2007 calendar year was the last year of sustained high productivity growth over all four quarters. The average GDP growth for 2007 over the four quarters was 4.6 per cent, compared to 2.7 for 2010. The difference in growth was 1.9 per cent, suggesting that the growth difference would explain a productivity growth decline of 0.6 per cent per annum.

However, productivity growth has declined, also because of lower capacity utilisation rates, between 2007 and 2010. The average non-farm capacity utilisation rate over 2007 was 83.8, compared to 81.6 for 2010. The lower capacity utilisation rate explains another 0.6 per cent decline in productivity. The average labour productivity growth rate in terms of hours worked in 2007 was 1.9 per cent, compared to 0.3 for 2010. Therefore, the slowdown in economic activity between 2007 and 2010 explains 1.2/1.6, or three quarters of the decline in productivity.

The crowding out effects of mining expansion would have contributed to the decline in national productivity over the last year. However, to date the largest contribution to falling productivity would have come from the unwinding of the fiscal stimulus (P.J. Brain, *Australia and the global financial crisis: A highly efficient policy response at the cost of locking in structural imbalances*, NER No. 65, December 2010).

In the years ahead, however, the cumulative effects of the Dutch disease if they are allowed to continue can be expected to reduce national productivity growth rates from levels that would have been expected given longer term historical trends.

The important point as far as this study is concerned, is that since the crowding out effects of mining expansion have had a larger negative impact on national productivity growth compared to what is currently the case. It follows that the impact of measures to increase the direct benefits from mining expansion will have a positive impact on national productivity, and therefore, in part, have an anti-inflationary component as it will enable existing employed resources to be used more effectively.

4.7 Conclusion

Given the changed circumstances that are likely to prevail over the next few years, extrapolation of past responses to mining expansion into the future suggests that there may well be little headline net per capita additional benefit. This will come at a time when the resource claims to meet the infrastructure and service demands of the increased population induced by the current episode of mining expansion will be presented in full, creating very difficult political and economic constraints. This will be compounded by the national productivity growth remaining below historical trend levels other than for the odd years, such as for 2011-12.

The alternative is to change the way resource expansion is managed to maximise the net additionality from mining expansion as indicated by the analysis in Chapter 8 below. In Chapter 5 we complement the analysis so far with some microeconomic analysis.

5. Mining expansion net additionality: The project perspective

The analysis of the previous chapter can be complemented by an analysis from the project perspective. The two projects evaluated are:

(i) a Gorgon-scale offshore LNG project; and

(ii) an iron ore project.

5.1 Project evaluation: Gorgon scale LNG project

We are not here talking of the actual Gorgon project. We instead put forward a hypothetical project which is Gorgon in the scale of its investment and output but otherwise typical of offshore LNG projects.

The Gorgon-scale LNG project is assumed to be 100 per cent foreign owned. The project profile is given in Table 5.1. The project starts construction in 2011 and comes on-line in 2015. Total investment is $43 billion. Real revenue is indexed to real oil prices.

Total direct gross product from the project will be $6.6 billion in 2009 prices in the early years, increasing to $10.8 billion in 2035 as a result of the rise in real oil prices. However, since the project is assumed to be 100 per cent foreign owned and financed 100 per cent by foreign borrowings on a 50/50 debt/equity ratio, the only net product retained in Australia will be wages, salaries and taxes. Until the project starts paying resource rent tax, which is estimated not to occur until 2027, net national product from the production phase of the project will only be approximately a fifth of gross product. After resource rent taxes are paid the ratio of net product to gross product increases to 58 per cent. A total of $4 billion of accumulated exploration expenditure is allowed for in the resource rent tax liability calculation.

Direct local expenditure stimulus from the project is the sum of operating costs excluding imported inputs plus (during the construction phase) local inputs to construction.

The response of the MM sector to the additional mining investment for the LNG project is also given in the table. It is based on the MM equations given in the previous chapter.

The MM sector initially benefits from the project through orders flowing from the project to the sector. However, the impact of the LNG project on the exchange rate, skills availability and the outlook expectation of enterprises in the MM sector results in the diversion of orders overseas and a fall off in both output and capacity expansion. Until 2025 there is full crowding out. After 2025 with further oil price rises and in particular the payment of resource rental taxes the LNG project makes a positive contribution.

The crowding out effect reduces the total undiscounted cumulative gross benefit of the production phase from the project substantially. If falls from $103 billion to $22 billion in 2035 (in 2009 prices).

If, on the other hand, the domestic MM sector received an additional 18 per cent local content from the investment phase, especially in the later years of construction, the crowding out effect would be limited to approximately 50 per cent. The undiscounted cumulative gross benefit from the project would then increase to $68 billion to 2035 – a three-fold increase.

It should be noted, however, that the MM crowding out effect is only part, albeit an important part, of the displacement process. The low return of offshore LNG to the nation, especially in the early years, relative to the resource costs of the additional population (which have not been factored in) puts a question mark against the LNG development. An urgent detailed investigation of the gross and net benefits for LNG production and how they can be maximised should be a high priority given the projected investment profile over the next

decade. The differences between the benefits of offshore LNG projects and onshore LNG projects based on on-shore coal seam methane, as in Queensland, should also be investigated.

5.2 The foreign account impact: Large scale offshore LNG

One of the mysteries of the last 25 years has been, except for short periods, Australia's propensity to run high current account deficits as a per cent of GDP. The results in Table 5.1 give an insight of at least one of the reasons why current account deficits have continued. Total LNG revenue less direct local expenditures represents the outflow of funds overseas. Thus, for the first decade of the project's operation, at best about two-thirds of the gross export revenue will flow out to overseas. With strong crowding out the net impact on the foreign account would fall to negligible levels or even negative.

It is only when the resource rent tax cuts in does the domestic income retention rate increase to around 40 per cent.

It should be noted that the impact on the current account balance will be less than the total financial account impact. This is because depreciation, which in the early years of the project will be used to repay foreign debt, is not reflected in the current account deficit but in the foreign capital account.

In short, Australia's sustained propensity to run high current account deficits in the past is due to the structure, ownership and tax treatment of the mining sector. No doubt when commodity prices return to more normal levels, circa 2013-2015, high current account deficits will return with a vengeance. The Table 5.1 example provides an insight of why this will be the case.

The issue of CO_2 permit prices has not been explored here. Depending on the extent to which Australia fails to meet its Kyoto commitments there are likely to be significant CO_2 costs that in one way (the project is responsible) or another (the Government purchases the permits) could be a further negative for the foreign account.

5.3 Resource development: Iron ore project

Once again we analyse a hypothetical iron ore project of typical size, cost and profitability.

The iron ore project is assumed to create capacity of 50 million tonnes a year at a total investment of $6 billion. The project is assumed to have 50 per cent domestic ownership. The lower capital requirement per unit of output means that the iron ore project will be paying resource rental tax from 2018. The lower investment requirement also means that there is less crowding out of the MM sector. Nevertheless, as can be seen from Table 5.2, the displacement effect does reduce the undiscounted cumulative benefits from $70.4 billion to $57.5 billion. These benefits are relatively large compared to the LNG case. Indeed, the benefits are five to seven times the LNG case if the benefits are adjusted for the relative capital expenditure.

Again it should be remembered that the results in Table 5.2 include neither the non-MM sector displacement by additional imports nor the additional population resource costs. In terms of population costs, given the analysis of the previous chapter, about $1 billion of annual and once-off costs could be attributed to the project, which would be readily financed out of the first four years of tax revenue. There will also be State Government direct taxes and royalties.

5.4 The iron ore project: Output price sensitivity

The relatively good outcome from the iron ore project has to be qualified by the existence of very large price risks. The Chinese are determined to drive the iron ore price down from current levels. The 12th Five Year Plan has a target of 40 per cent of Chinese imports by 2015 coming from foreign Chinese-owned iron ore mines.

The example in Table 5.2 assumed the price falls back to $85 in 2009 prices. If it falls back to $60 a tonne, or closer to the long term average, the returns from the project would fall significantly, especially in terms of Federal Government revenue. The contribution to net national product falls by half.

The product still delivers returns greater than the loss of MM industry production through crowding out. However, if the displacement from all other sectors is taken into account the costs and benefits would be more balanced, especially if the rate of MM displacement was a third to a half of the total displacement costs.

5.5 Conclusion

The examples of this section clearly demonstrate that projects can differ considerably in terms of their economic benefit. In developing policy to maximise the benefits from mining expansion it is important to understand the reasons driving the benefits on a project by project basis.

Table 5.1(a) Direct impact of Gorgon scale LNG project on economy and metals and machinery (MM) sector

	Unit	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
LNG project														
Direct investment	$2009m	6235	13330	14190	9245	0	0	0	0	0	0	0	0	0
LNG production	million tonnes	0	0	0	0	15	15	15	15	15	15	15	15	15
LNG revenue	$2009m	0	0	0	0	8549	8721	8897	9076	9259	9445	9636	9830	10028
Real oil price	2009 a bbl				135	137	139	142	145	148	151	154	157	160
Operating costs (excluding wages)	$2009m	0	0	0	0	1970	1970	1970	1970	1970	1970	1970	1970	1970
Wage and salary costs	$2009m	0	0	0	0	180	180	180	180	180	180	180	180	180
Federal Government direct taxes inc. PRRT	$2009m	0	0	0	0	0	736	884	991	1083	1169	1254	1338	1423
Gross domestic product	$2009m	0	0	0	0	6579	6751	6927	7106	7289	7475	7666	7860	8058
Net national product	$2009m	0	0	0	0	180	916	1064	1171	1263	1349	1434	1518	1603
Direct local expenditures	$2009m	0	0	0	0	2150	2886	3034	3141	3233	3319	3404	3488	3573
Direct local expenditure after crowding out of MM sector		790	1852	643	-1201	-1185	-1156	-756	-540	-613	-648	-635	-556	-471
Direct local expenditure after 50% crowding out of MM sector		790	1852	1743	1522	483	865	1139	1301	1310	1335	1384	1466	1551
Metals and machinery industry														
Output	$2009m – % deviation from case where LNG project did not proceed	0.4	1.0	0.3	-0.6	-1.7	-2.1	-1.9	-1.9	-1.9	-2.0	-2.0	-2.0	-2.0
Output	$2009m – Deviation from case where LNG project did not proceed	826	1936	673	-1255	-3486	-4225	-3961	-3848	-4020	-4147	-4222	-4227	-4227
Domestic capacity	$2009m – % deviation from case where LNG project did not proceed	0.5	2.1	2.7	1.9	-0.3	-1.6	-1.8	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Demand (local production plus imports)	$2009m – % deviation from case where LNG project did not proceed	1.9	4.1	4.3	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Import share of local supply	% – Percentage point deviation from case where LNG project did not proceed	0.6	1.1	1.6	1.7	1.3	1.5	1.4	1.3	1.4	1.4	1.4	1.4	1.5
Operating costs (excluding wages)	$2009m	627.7	1471.7	511.4	-954.3	-2650.2	-3212.6	-3011.4	-2925.5	-3056.8	-3153.0	-3209.8	-3214.2	-3214.2
Net national product	$2009m	162.1	380.1	132.1	-246.5	-684.5	-829.7	-777.7	-755.5	-789.4	-814.3	-829.0	-830.1	-830.1
Direct local expenditures	$2009m	789.8	1851.7	643.4	-1200.8	-3334.7	-4042.3	-3789.1	-3681.0	-3846.2	-3967.3	-4038.8	-4044.3	-4044.3

Table 5.1(b) Direct impact of Gorgon scale LNG project on economy and metals and machinery (MM) sector (continued)

	Unit	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2011-2035	
LNG project															
Direct investment	$2009m	0	0	0	0	0	0	0	0	0	0	0	0	43000	Total
LNG production	million tonnes	15	15	15	15	15	15	15	15	15	15	15	15	315	Total
LNG revenue	$2009m	10230	10436	10646	10861	11080	11303	11531	11763	12000	12242	12489	12740	220761	Total
Real oil price	2009 a bbl	164	167	170	174	177	181	184	188	192	196	200	204	166.6	Average
Operating costs (excluding wages)	$2009m	1970	1970	1970	1970	1970	1970	1970	1970	1970	1970	1970	1970	41370	Total
Wage and salary costs	$2009m	180	180	180	180	180	180	180	180	180	180	180	180	3780	Total
Federal Government direct taxes inc. PRRT	$2009m	1509	1597	2285	4214	4366	4521	4678	4839	5001	5167	5336	6142	58533	Total
Gross domestic product	$2009m	8260	8466	8676	8891	9110	9333	9561	9793	10030	10272	10519	10770	179391	Total
Net national product	$2009m	1689	1777	2465	4394	4546	4701	4858	5019	5181	5347	5516	6322	62313	Total
Direct local expenditures	$2009m	3659	3747	4435	6364	6516	6671	6828	6989	7151	7317	7486	8292	103683	Total
Direct local expenditure after crowding out of MM sector		-385	-298	391	2319	2472	2627	2784	2944	3107	3273	3441	4248	22447	Total
Direct local expenditure after 50% crowding out of MM sector		1637	1724	2413	4342	4494	4649	4806	4966	5129	5295	5463	6270	67930	
Metals and machinery industry															
Output	$2009m – % deviation from case where LNG project did not proceed	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-1.6	Average
Output	$2009m – Deviation from case where LNG project did not proceed	-4227	-4227	-4227	-4227	-4227	-4227	-4227	-4227	-4227	-4227	-4227	-4227	-84915	Total
Domestic capacity	$2009m – % deviation from case where LNG project did not proceed	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-1.3	Average
Demand (local production plus imports)	$2009m – % deviation from case where LNG project did not proceed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	Average
Import share of local supply	% – Percentage point deviation from case where LNG project did not proceed	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.5	Average
Operating costs (excluding wages)	$2009m	-3214.2	-3214.2	-3214.2	-3214.2	-3214.2	-3214.2	-3214.2	-3214.2	-3214.2	-3214.2	-3214.2	-3214.2	-64562	Total
Net national product	$2009m	-830.1	-830.1	-830.1	-830.1	-830.1	-830.1	-830.1	-830.1	-830.1	-830.1	-830.1	-830.1	-16674	Average
Direct local expenditures	$2009m	-4044.3	-4044.3	-4044.3	-4044.3	-4044.3	-4044.3	-4044.3	-4044.3	-4044.3	-4044.3	-4044.3	-4044.3	-81236	Total

Table 5.2(a) Direct impact of a large iron ore project on economy and metals and machinery (MM) sector

	Unit	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Iron ore project														
Direct investment	$2009m	870	1860	1980	1290	0	0	0	0	0	0	0	0	0
iron ore production	million tonnes	0	0	0	0	50	50	50	50	50	50	50	50	50
Total revenue	$2009m	0	0	0	0	4250	4250	4250	4250	4250	4250	4250	4250	4250
Real iron ore price	$ a tonne				85	85	85	85	85	85	85	85	85	85
Operating costs (excluding wages)	$2009m	0	0	0	0	1401	1401	1401	1401	1401	1401	1401	1401	1401
Wage and salary costs	$2009m	0	0	0	0	213	213	213	213	213	213	213	213	213
Federal Government direct taxes inc. PRRT	$2009m	0	0	0	0	633	560	608	1045	1195	1201	1206	1210	1214
Gross domestic product	$2009m	0	0	0	0	2849	2849	2849	2849	2849	2849	2849	2849	2849
Net national product	$2009m	0	0	0	0	1697	1661	1685	1904	1978	1982	1984	1986	1988
Direct local expenditures	$2009m	0	0	0	0	3099	3062	3087	3305	3380	3383	3385	3387	3389
Direct local expenditure after crowding out of MM sector		217	72	-99	-224	2419	2454	2505	2733	2787	2778	2771	2772	2774
Metals and machinery industry														
Output	$2009m – % deviation from case where LNG project did not proceed	0.1	0.0	-0.1	-0.1	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
Output	$2009m – Deviation from case where LNG project did not proceed	227	75	-103	-234	-711	-635	-608	-598	-620	-633	-642	-643	-643
Domestic capacity	$2009m – % deviation from case where LNG project did not proceed	0.1	0.3	0.4	0.3	-0.1	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
Demand (local production plus imports)	$2009m – % deviation from case where LNG project did not proceed	0.3	0.6	0.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Import share of local supply	% – Percentage point deviation from case where LNG project did not proceed	0.0	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Operating costs (excluding wages)	$2009m	172.2	57.3	-78.7	-178.0	-540.4	-483.2	-462.4	-454.3	-471.3	-481.2	-488.4	-489.1	-489.1
Net national product	$2009m	44.5	14.8	-20.3	-46.0	-139.6	-124.8	-119.4	-117.3	-121.7	-124.3	-126.1	-126.3	-126.3
Direct local expenditures	$2009m	216.7	72.1	-99.0	-224.0	-680.0	-608.0	-581.8	-571.7	-593.1	-605.5	-614.6	-615.4	-615.4

Table 5.2(b) Direct impact of a large iron ore project on economy and metals and machinery (MM) sector (continued)

	Unit	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2011-2035	
Iron ore project															
Direct investment	$2009m	0	0	0	0	0	0	0	0	0	0	0	0	6000	Total
iron ore production	million tonnes	50	50	50	50	50	50	50	50	50	50	50	50	1050	Total
Total revenue	$2009m	4250	4250	4250	4250	4250	4250	4250	4250	4250	4250	4250	4250	89250	Total
Real iron ore price	$ a tonne	85	85	85	85	85	85	85	85	85	85	85	85	85.0	Average
Operating costs (excluding wages)	$2009m	1401	1401	1401	1401	1401	1401	1401	1401	1401	1401	1401	1401	29431	Total
Wage and salary costs	$2009m	213	213	213	213	213	213	213	213	213	213	213	213	4480	Total
Federal Government direct taxes inc. PRRT	$2009m	1217	1221	1224	1228	1231	1235	1238	1241	1245	1248	1252	1344	23795	Total
Gross domestic product	$2009m	2849	2849	2849	2849	2849	2849	2849	2849	2849	2849	2849	2849	59819	Total
Net national product	$2009m	1990	1991	1993	1995	1996	1998	2000	2002	2003	2005	2007	2203	41047	Total
Direct local expenditures	$2009m	3391	3393	3394	3396	3398	3400	3401	3403	3405	3407	3408	3604	70478	Total
Direct local expenditure after crowding out of MM sector		2776	2777	2779	2781	2783	2784	2786	2788	2789	2791	2793	2989	57574	Total
Metals and machinery industry															
Output	$2009m – % deviation from case where LNG project did not proceed	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	Average
Output	$2009m – Deviation from case where LNG project did not proceed	-643	-643	-643	-643	-643	-643	-643	-643	-643	-643	-643	-643	-13489	Total
Domestic capacity	$2009m – % deviation from case where LNG project did not proceed	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	Average
Demand (local production plus imports)	$2009m – % deviation from case where LNG project did not proceed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	Average
Import share of local supply	% – Percentage point deviation from case where LNG project did not proceed	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	Average
Operating costs (excluding wages)	$2009m	-489.1	-489.1	-489.1	-489.1	-489.1	-489.1	-489.1	-489.1	-489.1	-489.1	-489.1	-489.1	-10256	Total
Net national product	$2009m	-126.3	-126.3	-126.3	-126.3	-126.3	-126.3	-126.3	-126.3	-126.3	-126.3	-126.3	-126.3	-2649	Average
Direct local expenditures	$2009m	-615.4	-615.4	-615.4	-615.4	-615.4	-615.4	-615.4	-615.4	-615.4	-615.4	-615.4	-615.4	-12904	Total

Table 5.3(a) Direct impact of a large scale iron ore project on economy revised for low prices

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Direct investment ($2009m)	870	1860	1980	1290	0	0	0	0	0	0	0	0	0
Iron ore production (million tonnes)	0	0	0	0	50	50	50	50	50	50	50	50	50
Total revenue ($2009m)	0	0	0	0	3000	3000	3000	3000	3000	3000	3000	3000	3000
Real iron ore price ($/tonne)	0	0	0	0	60	60	60	60	60	60	60	60	60
Operating costs (excluding wages) ($2009m)	0	0	0	0	1399	1399	1399	1399	1399	1399	1399	1399	1399
Wage and salary costs ($2009m)	0	0	0	0	213	213	213	213	213	213	213	213	213
Federal Government direct taxes inc. PRRT ($2009m)	0	0	0	0	130	262	265	269	272	276	279	501	578
Gross domestic product ($2009m)	0	0	0	0	1601	1601	1601	1601	1601	1601	1601	1601	1601
Net national product ($2009m)	0	0	0	0	822	888	890	892	893	895	897	1008	1046
Direct local expenditures ($2009m)	0	0	0	0	2221	2287	2289	2290	2292	2294	2296	2407	2445
Direct local expenditure after crowding out of MM sector	217	72	-99	-224	1541	1679	1707	1719	1699	1688	1681	1791	1829

Table 5.3(b) Direct impact of a large scale iron ore project on economy revised for low prices (continued)

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2011-2035	
Direct investment ($2009m)	0	0	0	0	0	0	0	0	0	0	0	0	6000	Total
Iron ore production (million tonnes)	50	50	50	50	50	50	50	50	50	50	50	50	1050	Total
Total revenue ($2009m)	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	63000	Total
Real iron ore price ($/tonne)	60	60	60	60	60	60	60	60	60	60	60	60	57.3	Average
Operating costs (excluding wages) ($2009m)	1399	1399	1399	1399	1399	1399	1399	1399	1399	1399	1399	1399	29373	Total
Wage and salary costs ($2009m)	213	213	213	213	213	213	213	213	213	213	213	213	4479	Total
Federal Government direct taxes inc. PRRT ($2009m)	581	585	588	592	595	598	602	605	609	612	616	618	10033	Total
Gross domestic product ($2009m)	1601	1601	1601	1601	1601	1601	1601	1601	1601	1601	1601	1601	33627	Total
Net national product ($2009m)	1048	1050	1051	1053	1055	1056	1058	1060	1062	1063	1065	1066	20919	Total
Direct local expenditures ($2009m)	2447	2448	2450	2452	2453	2455	2457	2459	2460	2462	2464	2465	50292	Total
Direct local expenditure after crowding out of MM sector	1831	1833	1835	1836	1838	1840	1842	1843	1845	1847	1848	1850	37388	Total

6. The Dutch disease and the Resource curse can be avoided: The case of Norway

It is well recognised in the literature that the example of Norway represents a clear cut example in which the Dutch disease and Resource curse have been avoided despite substantial resource developments. As will be seen below, the outcomes from the Norwegian management of their resource expansion since the early 1970s stand in sharp contrast to Australia, to such an extent that the Australian outcome can only be interpreted as a failure of governance.

6.1 The Norwegian strategy

The Norwegian strategy to maximise the benefits from resource expansion over the past 40 years has been thoroughly documented in Jonathon W. Moses "*Open States in the Global Economy: The Political Economy of Small-State Macroeconomic Management*", MacMillan Press, London 2000.

In response to the discovery of North Sea oil, the Government undertook to produce a report which would set out the strategic response. The report became available in 1973. The report outlined how the government would be involved as an active manager of the resource development process and would move industrial policy to centre stage. The blueprint was largely followed. The report took the view that the State must directly influence the industrial development outcomes from resource expansion to maximise the benefits and to design and implement the strategies to solve adjustment problems. Maximum benefits would not be achieved by allowing adjustment by unregulated market prices (Moses, page 143). In contrast the Australian response has been largely to allow the market to determine the adjustment and the strategic response to elevated periods of resource development.

The Government wanted to avoid the Dutch disease and Resource curse that had infected other economies and local capacity building and procurement policy and complementary knowledge enhancing policies were key tools for doing this. It focussed on building strong local supply chains, especially from the exploration, extraction and refinery industry back into the metals and machinery industries, logistics and high value added business services sectors.

The first step in gaining control over the resource industry was to establish a high level of direct Government ownership in oil extraction. To this day the Norwegian Government has a high level of direct (company shares) and indirect (licences) ownership in the oil extraction sector. In return for major private sector companies receiving extraction approval licence conditions included:

(i) local content targets; and

(ii) joint ventures with local State-owned and private companies to assist in raising Norwegian competency and competitiveness in new industries and especially in the oil extraction and related engineering industries.

The Norwegian local content targets were not binding. But the government ensured that for all practical purposes they were binding by adopting a transparent audit bidding process. Firstly, if a local supplier was competitive on price and quality it was required that the local supplier was awarded the contract. The Government ensured that local suppliers had notification of coming tenders well ahead of their issue, giving time to plan and coordinate with Government for successful outcomes. Next they ensured from the early stages that the State maximised its revenues from oil extraction, not only from dividends from State-owned companies and royalties from private companies but also by levying company tax on "excess profits" of over 80 per cent.

Part of the resources raised were then recycled as direct support to industry. Between 1973 and 1982 direct State support to industry increased almost five fold to reach 2 per cent of GDP (Moses, page 144). This support was used to ensure investment, skill formation and technological capacity building and outright subsidies to ensure that local suppliers would be competitive in the tendering process.

Complementary to the growth of local content was policies to position Norwegian industry to be able to grow independently of the oil and gas sector. This was carried out under the general policy of industry cooperation. The key factors of the industry cooperation policy were:

(i) active use of joint venture/partnership R and D programs for productivity enhancement;

(ii) knowledge and experience transfer from foreign companies to local industry;

(iii) integration of local industry into world-wide oil and gas/engineering/value added business services supply chains; and

(iv) encourage joint ventures at all levels.

The end result was a set of world-quality local supply chains. As a result, between 1980 and 2000, Norwegian real manufactured exports doubled, as did service exports.

Finally, when a new oil field comes up for development, the State-owned oil company Statoil is the prime policy instrument for coordinating the development of the field, with the objective of maximising the benefit to local industry. Secure in this knowledge local industry can plan well ahead to remain competitive in a rapidly changing technological environment.

6.2 Other Norwegian policies

The Norwegian policy framework was comprehensive and extended well beyond the local content issue. This was because it was recognised that for the local content strategies to work it was necessary for macroeconomic balance to be achieved.

A policy of high levels of immigration was avoided by using credit, interest rates and fiscal policies to limit demand-pull inflation. Cost-push inflationary pressures were managed by:

(i) use of centralised wage determination to limit wage breakout in the mining and related sectors; and

(ii) allocation of significant resources to increase the general workforce skills base.

There was also a target of general exchange rate stability, especially with the German Mark and subsequently the Euro. This was achieved where possible by interest rate policy and then subsequently by setting up a Sovereign Wealth Fund with the long run objective to invest surplus funds in domestic and foreign assets so as to provide resources which could be applied to maintain living standards when the oil runs out. On a day-to-day basis flows from the fund are used to influence capital inflows and outflows so as to stabilise the exchange rate.

Finally, to maximise direct influence over the economy the Government adopted a policy regime of financial suppression. That is, direct control over credit growth rather than, as in the Australian case, direct control over interest rates.

6.3 The comparable Australian expansion

In the 1960s and 1970s episodes of elevated mining expansion Australian Governments (Commonwealth and State) did focus on implementing initiatives to increase the benefits for local industry. However, the initiatives were generally specific project-based and no overall policy framework was developed.

An attempt in the mid-1980s to develop a more comprehensive policy to resource development in Australia around the "Scandinavian Model" did not get very far. As a result, Australian policy has remained project-specific with any major interventions associated with individual projects having little flow-on impact on other projects. There are few or no targets, instruments, resource coordination efforts, etc. for ensuring a consistent domestic flow-on of benefits from episodes of mining expansion, other than relatively weak general industry programs.

It is fair to conclude that compared to the Norwegian model assistance to Australian industry to maximise the benefits from resource development is almost non-existent. From time to time Government interventions to produce flow-on benefits to local industry around specific projects do produce results. However, other than short term benefits to the firms directly involved, this is not a secure base for industry to plan, invest or undertake R and D to remain competitive during the current mining expansion episode and, more importantly, be more competitive or even be in existence for the next episode. In practical terms, compared to the Norwegian case, the Australian policy of non-intervention, letting markets, and in particular financial markets, be the more important determinant of outcomes.

6.4 Norway versus Australia: The manufacturing sector outcome

The costs of Government non-intervention to at least minimise displacement of non-mining economic activities can be calculated by comparing the Australian aggregate economic outcomes over the last quarter century with the Norwegian experience. The data below is derived from the OECD "National Accounts" and STAN database.

From Figure 6.2, adjusted for working age population real mining per capita in 2000 PPP $US was close to the Australian level. However, until 2005 its rate of growth was 3 to 4 times the Australian rate of mining expansion. Since 2005, for Norway, the depletion of the North Sea oil reserves has triggered an oil production rundown which is evident in the data.

The focus here is what happened in Norway between the 1970s and the mid 2000s when Norway experienced a sustained expansion in resource development.

It has to be also noted that Norway did not use migration to support the resource expansion in an attempt to shelter other sectors of the economy from the mining expansion. Between 1970 and 2010 the increase in the Norwegian population was 25 per cent, while Australia's population increased by 75 per cent over the same period.

Figure 6.3 shows that on a trend basis real manufacturing gross product per capita of working age population in Norway increased, relative to Australia, between the early 1980s and currently. At the commencement of the 1980s it was 20 per cent higher, while in recent years it has been approximately 26 per cent higher.

Australia did close the gap with Norway in manufacturing over the 1990s. However, this was because of the application of aggressive industry development policies. These policies were significantly weakened at the end of the 1990s as a result of a change in Government. As a result, since then, Australia has fallen steadily behind. Initially this would have been from the withdrawal of industry development policy support. However, since 2005 the evidence is that an important reason has been the elements of the Dutch disease.

For Norway, on the other hand, in the context of the strength of the mining expansion and the absence of resources from migration, there is no evidence of the Dutch disease in relation to the manufacturing sector. As a result, over the last quarter century the per capita growth rate of Norwegian manufacturing has been the same as Australia's. If Norway had followed the Australian approach to the manufacturing sector, it would be conservative to conclude that the size of the Norwegian manufacturing sector would be significantly lower.

The ability of Norway to manage the impact of the Dutch disease has allowed Norway to increase productivity relative to Australia. In the 1970s Norway had a similar GDP per working age population in 2000 PPP $US compared to Australia. By 2000 Norway's productivity level over Australia had increased to just under 30 per cent, as indicated by Figure 6.5. Over the last four years the crude oil rundown and the relative severity of the GFC in Europe has reduced the differential.

6.5 The high level of Norwegian net external wealth

The main benefit of Norway maintaining a relatively strong manufacturing sector is that it has created an economy with a high level of net external wealth. This is because by maintaining a strong manufacturing sector it has also maintained a strong current account surplus on the balance of payments. Australia, by contrast, by allowing the manufacturing sector to relatively contract compared to Norway in the face of elevated periods of resource expansion, has allowed Australia to return to high current account deficits once commodity prices have fallen back to more normal levels.

Between 1980 and 2010 the cumulative current account balance for Norway, as a percentage of GDP, was 200 per cent, while for Australia it was minus 127 per cent, a difference of 327 per cent (for the time pattern see Figure 6.4). This explains why the value of Norway's Sovereign Wealth Fund is US$600 billion (or US$2.4 trillion on an adjusted Australian population basis), while Australia's net international debt is in excess of US$600 billion. The worrying failure is that 30 per cent of the Australian banking sector's liabilities are foreign obligations, placing Australia at risk of an Iceland/Ireland type meltdown if there is a sudden loss of confidence in the currency. Norway is immune from such risks as a result of the difference between Norway and Australia in international financial assets being nearly US$150,000 per person, or US$600,000 for a family of four.

Figure 6.5 indicates that the Norwegian success was achieved with a relatively small over-valuation of its currency given its strong resource growth and strong current account surplus. Being able to use the Wealth Fund to influence capital flows means that currently the Norwegian currency is over-valued to the same extent as Australia's. The fact that Australia has a similar over-valued currency compared to Norway makes little sense given the competitive strength of the Norwegian economy.

6.6 Norway's strong employment performance

Finally, the ratio of employment to working age population for Norway is currently 5 percentage points higher, implying that the effective unemployment rate is 5 percentage points lower (Figure 6.6). For this reason the Norwegian headline unemployment rate is 3.5 per cent, though this is a considerable under-estimation of the true underlying rate as Norway has one of the highest working age disability pension rates in the world.

6.7 Norway: The role of financial suppression

From Figure 6.4, it can be noted that Norway has a smaller gross product for the tertiary sector per working age population. This is partly due to the higher land mass per capita for Australia relative to Norway, requiring a costly, in terms of resources, distribution system.

However, as can be seen from Figure 6.6, it is also due to Norway having a similar financial sector per capita of working age population. This is due to policy choices. The choice is between monetary policy targeting of credit growth interest rates. Australia, in the 1980s, chose interest rate targeting which meant that the finance sector was allowed to fund its own level with the direct consequence that the greater the size of the finance sector the greater the level of the finance sector's output, mainly debt. The Norwegians chose a policy of financial suppression, that is, targeted credit growth since they regarded interest rate

targeting as an “inadequate tool for affecting aggregate demand because of the uncertain effects that those changes would have on investment and savings”, Moses, p. 220.

The inference is that beyond a certain size the finance sector becomes a negative for overall economic outcomes, which is reflected in the difference between the per capita net external wealth of the two economies.

6.8 Conclusion

With the success of Norway at managing resource expansion, it would be thought that the Norwegian template would be at the forefront as a guide to managing resource booms in Australia. The Norwegian model is rarely, if ever, mentioned in the past and only now with reference to the suggestion that it would be beneficial to the economy to have a Norwegian style Sovereign Wealth Fund. To do this you have to have a sustained, well performing manufacturing sector to build up sustained surpluses on the current account.

Figure 6.1: Norway versus Australia: Agriculture gross product per capita working age population (2000 $US PPP)

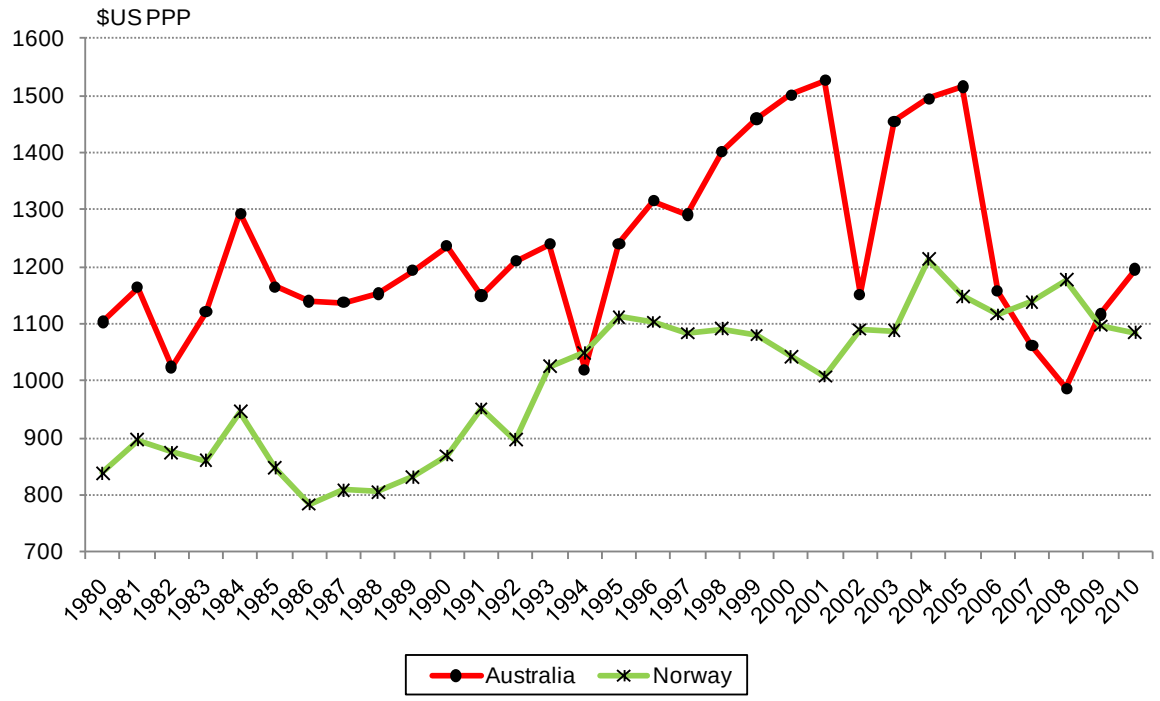


Figure 6.2: Norway versus Australia: Mining gross product per capita working age population (2000 $US PPP)

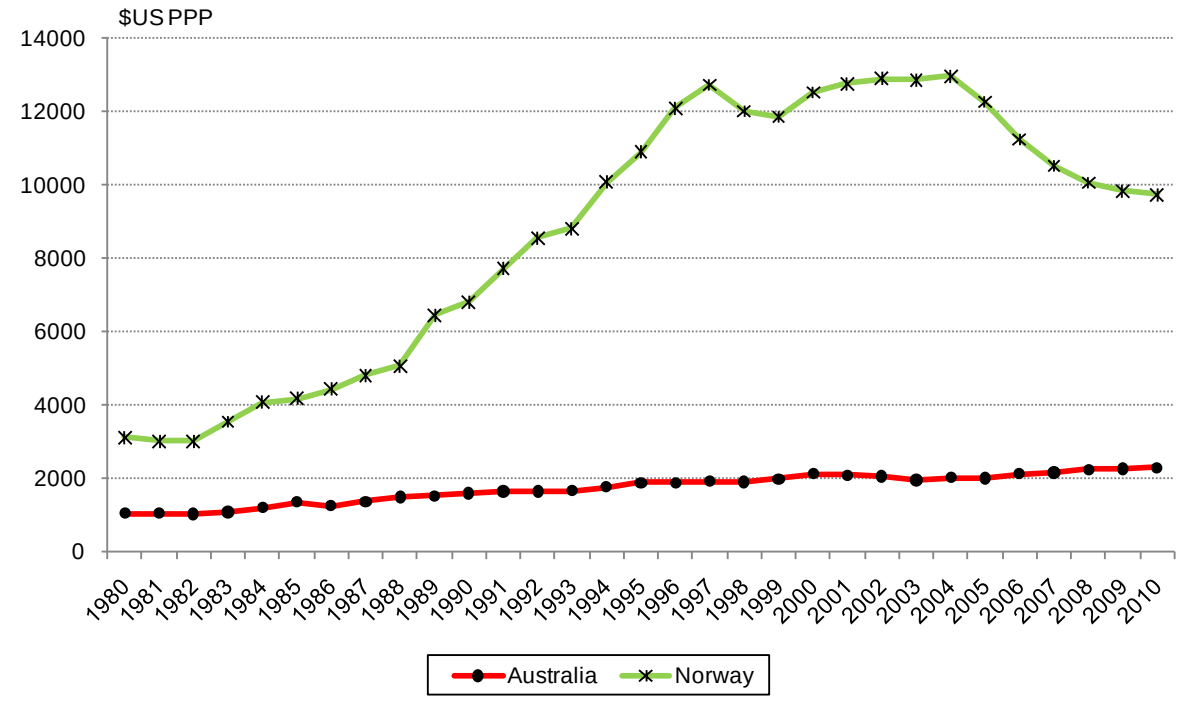


Figure 6.3: Norway versus Australia: Manufacturing gross product per capita working age population (2000 $US PPP)

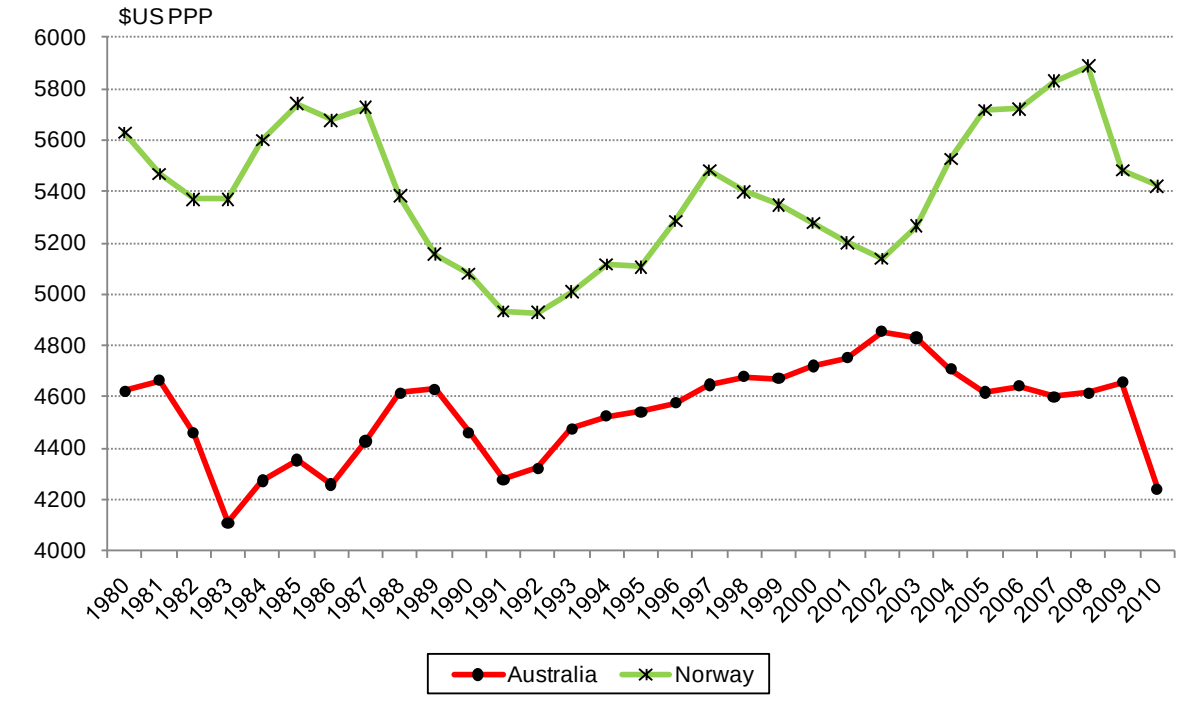


Figure 6.4: Norway versus Australia: Tertiary sector gross product per capita working age population (2000 $US PPP)

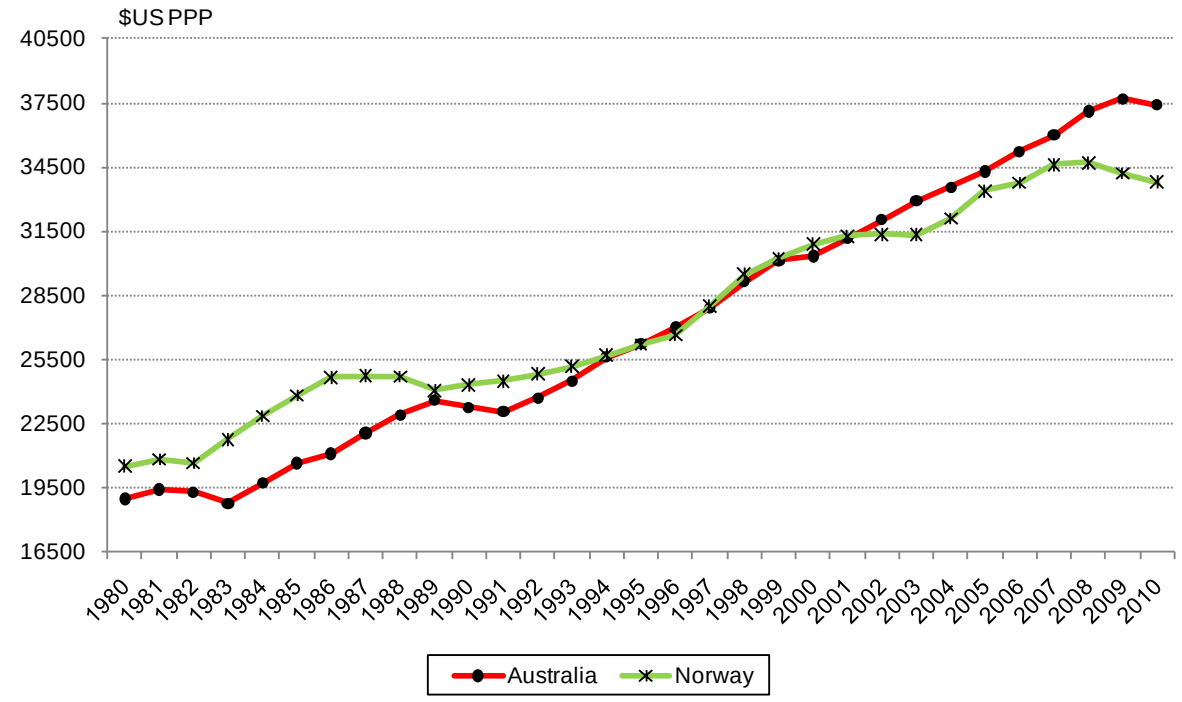


Figure 6.5: Norway versus Australia: Total gross product per capita working age population (2000 $US PPP)

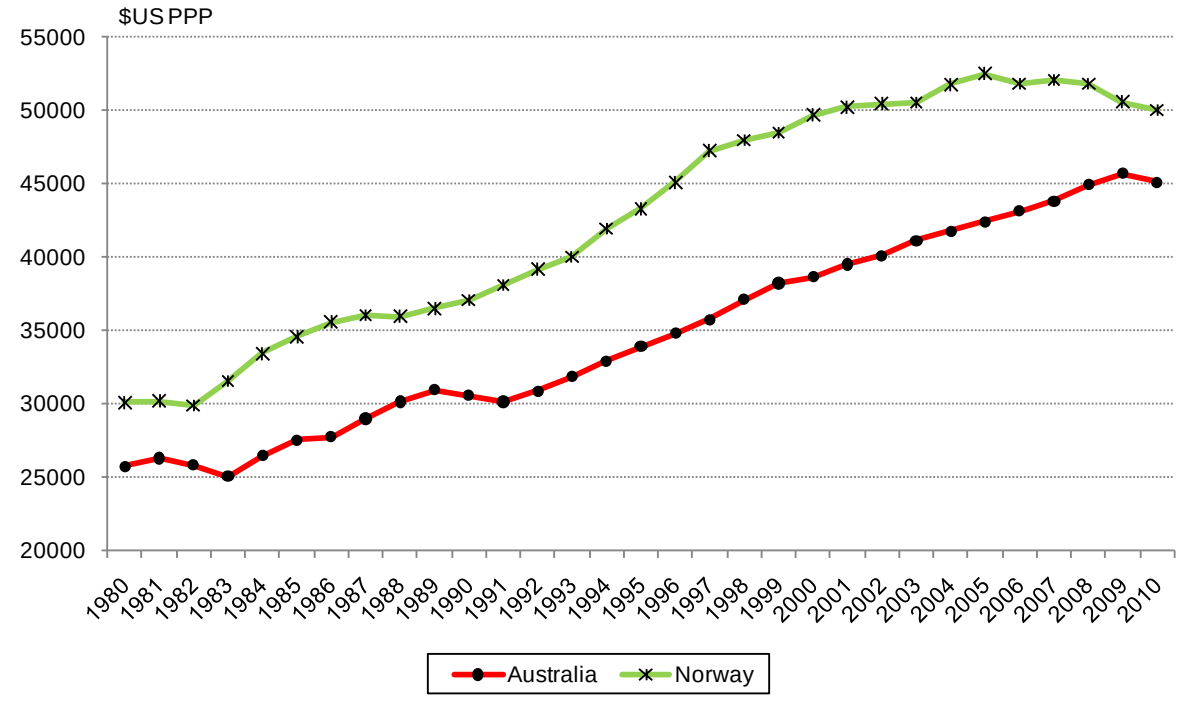


Figure 6.6: Norway versus Australia: Finance and insurance product per capita working age population (2000 $US PPP)

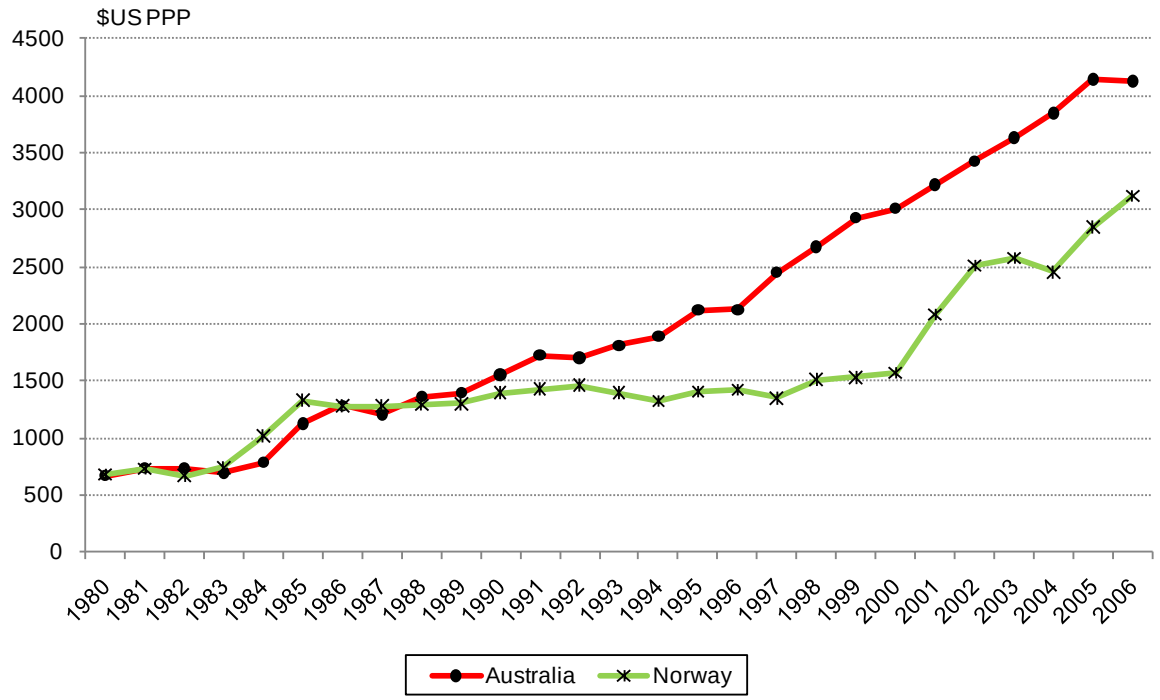


Figure 6.7: Norway versus Australia: Ratio of employed to working age population

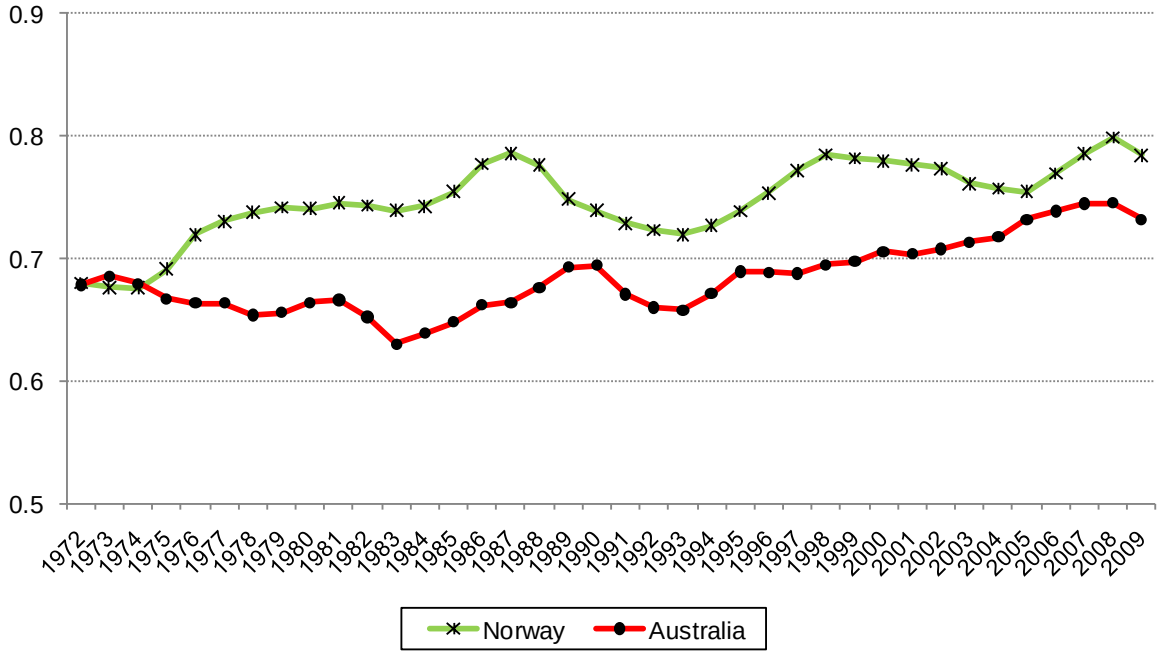


Figure 6.8: Norway versus Australia: Current account balance as a per cent of GDP (%)

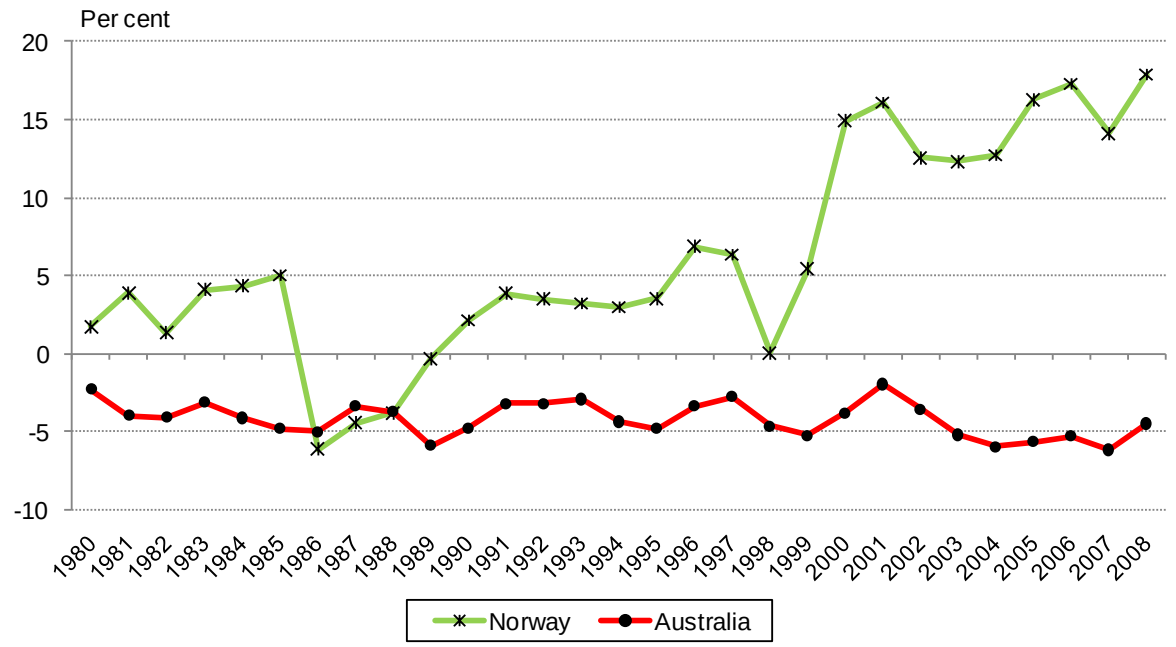
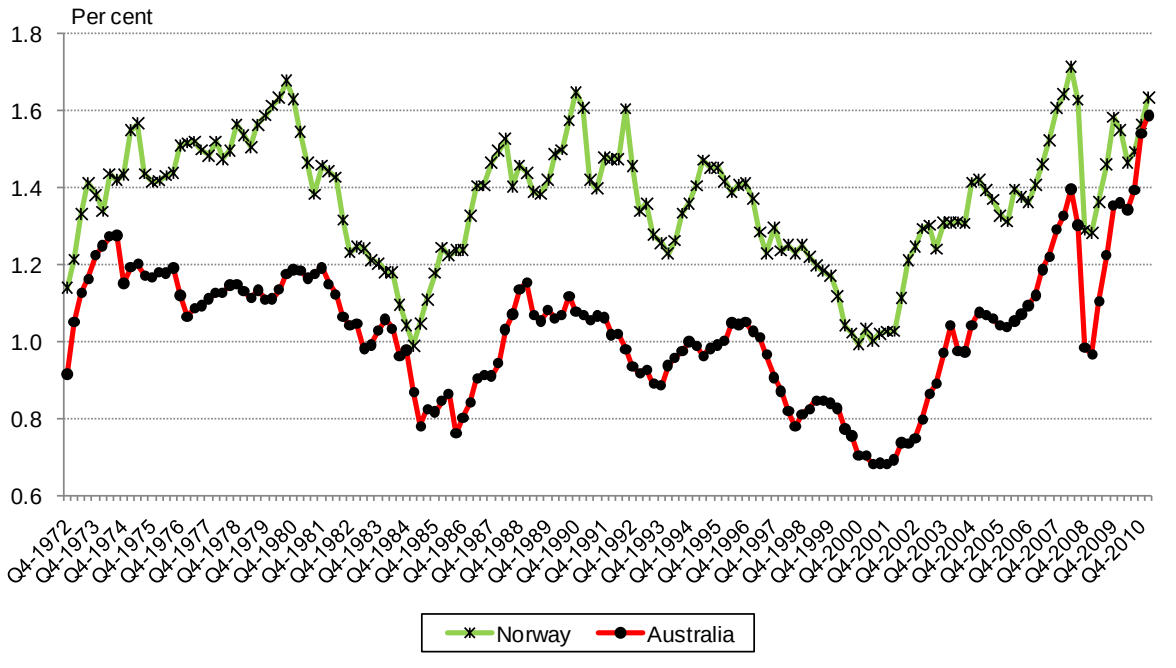


Figure 6.9: Norway versus Australia: Ratio of $US exchange rate to PPP exchange rate (%)



7. The MM sector mining boom and regional economic performance

The implication of this study is that Australia can and needs to do something aggressive to minimise the impact of the Dutch disease on the Australian economy. The opportunity to minimise the impact of the Dutch disease arises because Australia is a long way from full employment. Therefore, the extra economic capacity required to increase the direct benefits from the mining expansion can be accommodated by a combination of:

(i) increases in production per hour worked (labour productivity);

(ii) increases in average hours worked per employed person; and

(iii) increases in the number of employed.

In terms of (iii), the argument is that any increase in the number employed can be met by the required skilled labour with minimum impact on the measured or headline unemployment rate and hence without any perceived danger of wage inflation. In order to understand why this is the case, it is necessary to examine the structural features of Australian regions and differences between regions in terms of their unutilised labour resources. This is the main task of this chapter.

Further, at the regional level, if there has been a strong crowding out from the mining boom over the past five years, it would be expected that there has been an increase in divergence between Australian regions in terms of labour utilisation rates and incomes, and that this divergence will be related to the regional incidence of mining and of crowded-out industries. This issue is also examined in this chapter.

7.1 Convergence or divergence between Australian regions

The measurement of convergence or divergence depends on the indicator selected and the appropriateness of the selected indicator. Measures of regional performance which can also be employed as measures of regional convergence/divergence are:

(i) hours worked per working age resident;

(ii) persons not in employment (full time equivalent) as a proportion of working age residents;

(iii) the working-age social security take-up rate;

(iv) the NIEIR unemployment rate;

(v) the headline unemployment rate;

(vi) gross local product per capita; and

(vii) real household disposable income per capita.

Indicators (i) and (ii) reduce down to essentially the same indicator as (ii) is simply (i) divided by the average full time hours worked during a period.

The following discussion is taken from the ALGA/NIEIR "*State of the Regions*" report for 2011-12. The discussion is in terms of the order from the broadest definition of unemployment to the narrowest. The narrowest is the official unemployment rate, or what is called here the headline unemployment rate. Time series measuring the degree of convergence (absolute differences reducing over time) or divergence (absolute differences) are given in Table 7.1.

Hours of work available per working age population

One approach is to give up on the idea of 'unemployment', with its connotations of unsatisfactory income and job search, and consider simply the availability of work in relation to the population of workforce age, here defined as 15-64. This is not a completely satisfactory definition in that some hours of paid work are performed by persons aged 65 and over and a few by children aged 14 and under. Further, it can only be interpreted in relation to a norm concerning desired hours of work. This will be less than full-time hours for all persons of workforce age due to people desiring non-work hours for purposes including child care, study and leisure and also to the unavailability of people who are too sick or disabled to work.

By this measure, the trend over the course of the mining construction boom has on the whole been favourable. Between 2005 and 2011, 80 per cent of the 67 SOR regions experienced increases in hours of work per working age population. However, since 2004, that is, before the commencement of the current elevated mining expansion, there has been an increase in divergence between regions. This is not only reflected in the average absolute difference indicator, but also the difference between the highest and lowest regions in terms of hours available per working age population.

As would be expected, the ratio of persons not in full time equivalent employment to working age population shows a similar trend to the average hours available indicator.

Social security take-up by persons of workforce age

The Australian social security system provides modest cash incomes to households whose adult members are deemed unable to support themselves adequately. Accordingly, social security take-up by persons of workforce age provides an indirect indicator of the availability of paid work. Social security take-up by persons of workforce age is unlikely to fall to zero because of the needs of sick and disabled people and their carers but it can fall quite low – down to 4 per cent in Sydney Outer North and Sydney Northern Beaches. However, these low rates are partly due to high housing costs in these regions, which mean that social security recipients cannot afford to live there unless, exceptionally, they own their own houses.

Some of the reductions in social security take-up from 2005 to 2011 can be linked to the mining boom. Take-up fell in the Perth metropolitan area (by around 25 per cent), in WA Pilbara Kimberley (similarly) and in Qld Mackay by nearly 40 per cent. There were also substantial decreases in take-up (around 20 per cent) in Qld Fitzroy Central West and NSW Newcastle. The major decreases which occurred in NT Darwin and NT Lingiari can also be partly related to the boom.

Among regions adversely affected by the boom, there was a significant increase in social security uptake in Qld Far North Torres. Other regions with major increases in uptake were SA North and SA East, followed by Vic Hume, Vic Grampians and Vic Loddon Mallee, all regions with non-mining trade-exposed agricultural and manufacturing industries coupled with drought effects. However, social security uptake declined in Melbourne itself, related to the way in which the mining boom reduced wage rates rather than reducing employment. Similarly the NSW inland regions failed to translate their moderate decreases in hours worked into increases in social security take-up.

After these changes, social security uptake by persons of workforce age is low in the regions of high socio-economic status in Sydney and Melbourne and in the ACT. It is high in NT Lingiari, SA Far North and West and NSW Orana (with their poor employment opportunities for Aboriginal people) and in the lifestyle regions of the NSW coast, in Qld Wide Bay Burnett and now also in Qld Far North Torres (which is affected not only by the tourism downturn but by lack of employment opportunities for the residents of remote areas). Uptake is also high in Tasmania and Adelaide North, regions which have not completely recovered from the economic reforms of the 1980s.

Again, since 2004, from Table 7.1, there has been a divergence in social security take-up rate between regions despite the overall downward trend.

NIEIR unemployment

We turn now to a narrower definition of unemployment, familiar from past *State of the Regions* reports. This is NIEIR unemployment, which is calculated by adjusting the headline unemployment rate for excess take-up of disability pension. It has long been observed that increases in the headline unemployment rate tend to be followed by transfer of many of the long-term unemployed to disability pension. From the point of view of the individual pensioner this recognises the hopelessness of looking for work when there isn't any coupled with the debilitating effects of being unable to find work, while from the point of view of governments it massages the headline unemployment rate downwards.

Trends in the NIEIR unemployment rate are similar to trends in the workforce-age social security uptake rate with the striking exceptions of NT Lingiari, WA Pilbara Kimberley and Qld Far North Torres, in which the NIEIR unemployment rate increased much more rapidly than social security take-up. In all three regions the Commonwealth seems to have been transferring the Aboriginal population onto disability pension.

The resulting pattern of NIEIR unemployment rates is familiar. The rate is high in two groups of regions: the remote regions headed by NT Lingiari and the lifestyle regions headed by NSW South Coast and including the NSW Mid North Coast. Only one of the regions hard-hit by the 1980s reforms remains on the high unemployment list, Tasmania North West.

As always, the NIEIR unemployment rate is low among residents of the high-status and inner suburbs of Sydney and Melbourne and in the ACT. It has also fallen to the exceptionally low level of 3 per cent in NT Darwin.

This indicator also indicates divergence between regions.

Headline unemployment

The headline unemployment rate is a rather narrowly-based measure, better suited to the assessment of unemployment in the days when men expected to work for 40 hours and women left the workforce at marriage than in these days of greater sexual equality and a wide variety of working hours. At the regional level, two changes stand out over the period 2005 to 2011.

- The rate in NT Lingiari has halved – good news, perhaps, but more likely a stroke of the pen redefining how the residents of remote Aboriginal communities are supported. The rate also fell noticeably in Darwin.
- The rate in Qld Far North Torres has doubled, confirming the bad news of decline in tourism we have already noted from the more general indicators.

Mining cannot be guaranteed to reduce the headline unemployment rate – if it could, the rate would not have risen in WA Pilbara Kimberley which, like Far North Queensland, is exposed to the tourist industry as well as to mining.

Away from the tropics, the headline rate fell in Perth and in other WA regions apart from Pilbara Kimberley, in most of Melbourne and in the other Victorian regions except Hume, in coastal NSW but not in Sydney, not in NSW Riverina and not in NSW Murray Far West. The rate fell in Tasmania South and North and in non-metropolitan Queensland apart from Far North Torres. The headline rate rose in most of SEQ, balanced by a considerable reduction in West Moreton – the new home-buyers of that region doubtless include few who are unemployed. The headline rate also rose across Sydney, particularly Parramatta Bankstown.

There is little in these patterns that relates strongly to the mining boom, which can be related to the narrowness of the headline unemployment rate as a measure.

The resulting pattern is at least partly familiar. The worst region for headline unemployment is now Qld Far North Torres, a relative newcomer to this particular malady, but the other regions with high headline unemployment are familiar: NSW South Coast, NSW Mid North Coast, SEQ Sunshine Coast and Qld Wide Bay Burnett among lifestyle regions, Sydney Parramatta Bankstown, Sydney Old West, Tasmania North West and Vic Grampians among regions not fully recovered from the reforms of the 1980s, and one new recruit: SEQ Logan Redland, also a region which has also suffered from the decline of manufacturing.

The headline unemployment rate is the only indicator that has exhibited convergence between regions. This outcome is used by commentators to argue that Australia can do nothing to limit the crowding out effects of the mining expansion.

However, it is clear from Table 7.1 that not only is the headline unemployment rate implausibly low compared to the other measures, its convergence trend in the context of the diverging movement of other measures considered above is extremely implausible. The local gross regional product indicator and the real household disposable income per capita indicator also show an increasing percentage in absolute divergence since 2004.

Apart from headline unemployment, the indicator outcomes are consistent. Before the commencement of the current resource expansion, that is, the period up to 2004, there was marked convergence between the indicators. Since then there has been divergence.

Table 7.1 Divergence indicator summary

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Equality indicator														
Gross local regional product per capita ($CVM per capita) – %	17.1	18.0	19.7	19.5	17.3	17.7	18.9	19.2	19.2	20.5	21.4	21.1	21.0	20.9
Real household disposable income ($CVM per capita) – %	13.2	14.0	14.4	14.1	13.5	13.4	13.6	13.6	13.3	14.4	14.6	14.0	14.5	15.4
Headline unemployment rate (%)	2.1	1.9	1.8	1.6	1.6	1.4	1.3	1.2	1.3	1.3	1.1	1.1	1.1	1.1
NIEIR unemployment rate (%)	2.3	2.4	2.4	2.4	2.2	2.1	2.1	2.1	2.2	2.3	2.4	2.3	2.3	2.4
Social Security take-up rate (%)	2.7	2.8	2.9	3.0	3.2	3.3	3.2	3.2	3.1	3.2	3.2	3.2	3.2	3.6
Not in employment full time equivalent rate (%)	4.5	5.1	5.1	4.7	4.3	4.2	4.2	4.4	4.4	4.8	5.0	5.1	4.8	5.1
Hours per week per working age population (no.)	1.7	1.9	1.9	1.8	1.6	1.6	1.6	1.7	1.7	1.8	1.9	1.9	1.8	1.9
Difference from maximum to minimum														
Gross local regional product per capita ($CVM per capita) – %	29300	32563	37899	39052	34667	34644	39300	46134	46839	51334	54027	52648	52906	52470
Real household disposable income ($CVM per capita) – %	20793	22080	24796	25123	22363	23591	26611	29894	30126	34053	34312	34677	37185	38284
Headline unemployment rate (%)	12.0	11.3	12.0	9.3	9.5	9.3	8.6	7.2	7.0	6.7	5.5	5.7	8.0	9.0
NIEIR unemployment rate (%)	14.1	14.7	15.4	16.0	15.4	14.4	13.6	12.3	13.3	11.0	12.7	12.5	13.7	14.5
Social Security take-up rate (%)	17.8	18.3	18.7	18.9	21.8	22.1	22.5	22.3	17.4	16.9	16.8	16.8	16.2	18.4
Not in employment full time equivalent rate (%)	27.4	29.3	32.2	37.6	29.9	32.1	42.4	43.6	43.3	43.8	48.7	47.6	48.5	51.5
Hours per week per working age population (no.)	10.4	11.1	12.3	14.3	11.4	12.2	16.1	16.6	16.4	16.6	18.5	18.1	18.4	19.6
National indicator value														
Gross local regional product per capita ($CVM per capita) – %	30638	31385	32610	32695	33171	33937	35565	37138	38701	40301	41498	40953	40994	40719
Real household disposable income ($CVM per capita) – %	27241	27562	28576	29230	29680	29736	30828	31742	32672	34671	35045	36988	36813	37789
Headline unemployment rate (%)	8.4	7.6	7.1	6.7	6.7	6.3	5.9	5.5	5.1	4.8	4.4	4.6	5.4	5.2
NIEIR unemployment rate (%)	9.7	9.6	9.5	9.2	9.2	8.5	8.2	7.7	7.3	6.9	6.5	6.7	7.6	7.5
Social Security take-up rate (%)	13.5	13.5	13.5	13.1	13.3	13.1	12.7	12.3	11.8	11.2	10.7	11.3	10.8	11.4
Not in employment full time equivalent rate (%)	31.8	31.2	30.7	30.3	30.4	29.7	29.4	28.4	27.5	26.8	26.5	27.1	26.7	25.7
Hours per week per working age population (no.)	23.3	23.3	23.7	23.4	23.1	23.3	23.5	23.7	23.8	24.0	24.2	23.9	23.7	24.1

Notes: **Equality indicator** is derived as the average of the sum of absolute difference of each region from national average.
The **Difference from maximum to minimum** is an indicator or the spread of the regional values for each indicator value.
Source: ALGA/NIEIR "*State of the Regions Report – 2011-12*".

7.2 The drivers of the headline unemployment rate

A simple equation explaining the change in the headline unemployment rate across the 67 regions of the *State of the Regions* report is given by:

$$hur_i - hur_{i,\,t-5} = \underset{(6.6)}{-0.185} + \underset{(4.4)}{0.233}\,(NIE_{i,\,t} - NIE_{i,\,t-5}) - \underset{(2.7)}{0.056}\,(NIE_{i,\,t-5} - NIEA_{t-5})$$

$$R^2 = 0.20$$

The equation is estimated from pooled time series cross section data for the benchmark years 2000, 2005 and 2010, where:

hur_i = headline unemployment rate for region i.

NIE_i = not in full time equivalent employment per working age population for region i.

$NIEA$ = national average not in full time equivalent employment per working age population.

The equation indicates that for every change in the not-in-employment ratio, 0.23 percentage points are reflected in the change in the headline unemployment rate. However, this should be adjusted for whether the regional not-in-employment ratio is above or below average. If above average, for every percentage point above average the headline unemployment rate is reduced by 0.11 percentage points per year. As a result, after five years, even if the not in employment ratio has remained constant, the headline unemployment rate will decline by 0.5 of a percentage point for a region which started out with a not-in-employment ratio 10 percentage points above the national average.

The data analysis given above is consistent with a "social market" model of unemployment determination. That is, in regions with high unemployment there will be a tendency to place benefit claimants on other forms of working age social security other than unemployment benefits. The main reason would be that as there are few jobs available, relative to the applicants, then there is little point in allocating resources by both the claimant and supporting agencies in employment search. It saves the claimant from psychological damage from repeated rejection and, depending on the form of social security, can give the claimant more dollars per week.

On the other hand, if employment is relatively plentiful the reverse will occur. If employment opportunities become more plentiful there will be a strong tendency to keep claimants on unemployment benefits and monitor and assist their search for employment.

This is a humane process. The problem arises when it is forgotten that these dynamics underlie changes in the headline unemployment rate. The use of the headline unemployment rate as an indicator of over-heating in the labour market, so that reductions in the rate are treated as reasons for increasing interest rates, is creating a vicious cycle which threatens to unnecessarily aggravate the negative impact of the current mining boom. As this report makes clear, the evidence of measures other than the headline unemployment rate agrees that many regions which will be negatively impacted by the mining boom have high rates of unutilised labour. In these regions the tendency will be to place those who lose their employment because of the resource crowding out effect on non-unemployment working age social security (because there are simply no jobs), where they will join with others who have already been classified as outside the labour force. In these regions the headline unemployment rate can easily decline as the not-in-employment working-age ratio increases. The fall in the headline unemployment rate is then used to justify further increases in interest

rates, cuts in government expenditure and increases in migration, which will exacerbate the negative impacts of the mining expansion.

7.3 What is Australia's true unemployment rate?

One could do as the Australian Financial Review did in their 18-19 June weekend edition and count up the people who:

(i) were outside the workforce who wanted employment; and

(ii) were in the workforce and wanted more hours of work,

and come to an estimate of 2.7 million for the number unemployed and underemployed, which is four times the official unemployment estimate.

Another method would be to define a not-in-employment reference ratio as the average of the best practice regions. This would be 27 per cent, compared to the current overall average of 36.5 per cent. The difference between the 27 per cent benchmark and the actual non-in-employment ratio can be calculated for each region, multiplied by the regional working age population and added across the 67 regions. This estimate also comes to 1.4 million. This is the benchmark estimate adopted here.

Clearly there is a large amount of unutilised labour available. The next question is, however, how employment ready is it? An additional question for this study is: Would the employment gains from enhanced local content in mining investment mainly occur in regions with high not-in-employment ratios or low not-in-employment ratios? This question is answered in Chapter 9 below. However, before this can be assessed, it is necessary to explain the characteristics of regions where MM capacity is located.

7.4 Australian regions: Labour utilisation and income by MM and metal fabrication intensity

This section is based on a series of figures which show the level of labour availability and the change in labour availability (using the various labour utilisation indicators) across 33 regions. The 67 SOR regions are reduced to 33 so graphical analyses can be undertaken (more regions would render the graphs unreadable). The consolidated regions are given in Table 7.2.

Each figure has a number of diamond-shaped dots. Each dot represents a region. There are 33 regions covering all of Australia, as defined in Table 7.1. The data in each figure is from the NIEIR/ALGA "*State of the Regions*" report database which is at the LGA level. Appendix C contains the allocation of each of the 567 LGAs in Australia to one of the 33 regions.

However, there are more than 33 dots in each figure. There is one dot for all of Australia and there are three dots for metal and machinery and high steel fabrication regions which will be defined below.

Most of the figures follow a standard format. The 'x' axis has one of two different indicators. One indicator is total hours worked in the metals and machinery industries as a percentage of total hours worked. The other indicator is the Steel Institute's series of metal fabrication capacity by region divided by total employment in a region to give steel fabrication tonnes per total employed.

The 'y' axis records an economic indicator. In Figure 7.1 it is hours per working aged population for 2010, while in Figure 7.1 the 'x' axis is steel fabrication capacity tonnes per total employment of a region.

The four quadrants in each graph are defined by the Australian average for each indicator and indicate whether each region is above or below the national average. In terms of the focus of this study, the important quadrant is the lower right quadrant – the quadrant for regions with above national average fabrication capacity but low total hours of work available in relation to the working age population. (This latter measures the under-utilisation of the workforce more accurately than unemployment rates). In this quadrant will be found regions where the demand for steel fabrication could be stimulated with minimum inflationary impact from pressure on labour resources because they are regions with relatively high levels of unutilised labour.

Regions in the right top quadrant are regions with above average utilisation rates for labour and high steel fabrication intensity or reliance on steel fabrication for employment.

Regions in the left top quadrant have relatively high utilisation rates of labour and relatively low dependence on the steel fabrication industry for employment. Regions in the left bottom quadrant have relatively low dependence on steel fabrication capacity for employment and relatively low utilisation of labour resources.

Figure 7.2 is the same as Figure 7.1 except the 'x' axis records dependence on the MM sector for employment, measured by hours worked. The MM sector is considerably larger than the fabrication segment since it takes into account the machinery and transport sectors.

As would be expected, there is a degree of overlap. Overlap occurs when a region is allocated to the same quadrant in both groups. Thus, Adelaide North is in the right bottom quadrant in both figures having a relatively high dependence on both steel fabrication and the broader MM sector, as is NSW Hunter. Melbourne West, however, is a region with relatively low dependence on steel fabrication but relatively high dependency on MM sector hours.

There are three more dots in each figure. One is the result for the average of all regions highly dependent on steel fabrication or the MM sector. For both Figures 7.1 and 7.2 the average for the high dependent steel fabrication or MM regions is in the right bottom quadrant. As a whole, they have lower labour utilisation rates in terms of hours than the national average. The other two dots are the averages for the right-top and right-bottom quadrants. Thus, from Figure 7.2, the regions which fall in the right-bottom quadrant have an average 25 hours per week available for each member of the working population which compares with the national average of 26.2 hours per week.

Figure 7.3 shows the percentage change in hours worked per working age population between 2000 and 2010 for high steel fabrication dependent regions, while Figure 7.4 shows the same for MM sector dependent regions.

Most of the other graphs have the same four figure set structure, only differing in terms of the indicator.

7.5 State outcomes: The decline in MM sector hours of work

Before proceeding it is useful to note state trends in MM hours worked since these will be reflected in the regional trends.

It has already been established that there has been substantial displacement of MM activity by mining expansion. Figures 7.40(a) to 7.40(c) shows this for MM hours worked per working age population at the national and state level. The hours in these graphs are total quarterly hours available from the MM sector divided by the working age population which is taken to be the population aged 21 to 64. The graphs differ in terms of time period. The commencement quarters are 1991.3, 2000.1 and 2005.1.

Since the mid 1990s, total MM hours worked per working aged population nationally has fallen with periods of accelerated decline coinciding with periods of elevated mining investment. Over the first half of the last decade the resource intensive States of Western Australia and Queensland did increase their MM sector hours worked per working age population in line with the pick-up in mining investment. However, in accordance with the estimated national model given above, as the period of elevated mining investment continued (that is, as the exchange rate stayed high for longer, etc.), MM hours worked per working age population began to fall from 2007.

7.6 The decline in MM hours worked and regional labour utilisation

If the decline in MM hours worked per working age population was a "full employment" outcome of the pressure of mining labour demand on the national economy, the expectation would be that there would be few or no steel fabrication or MM sector regions which experienced a significant increase in unutilised labour rates over the last decade. Figures 7.3 and 7.4 indicate that this is not the case. From Figure 7.3 a number of high steel fabrication dependent regions over the last decade have seen between a -4 and -15 per cent fall in the number of hours of work available per working age population. The outcome is similar for MM dependent regions.

We conclude that the decline in MM hours available at the national level has released labour which has not been significantly relocated into additional hours of work for construction and mining, because these are occurring in different regions. Lack of geographic mobility has therefore resulted in higher un-utilisation of labour - higher unemployment and higher underemployment. This is what would be expected given the barriers to inter-regional migration (such as home ownership) and the encouragement of international migration to supply labour to the mining expansion.

7.7 The decline in MM hours worked and unemployment

There are many different definitions of unemployment. There is the official "headline" unemployment rate from the ABS Labour Force Survey. However it has become common practice throughout the developed countries to minimise the headline unemployment rate by resort to forms of working age social security other than unemployment benefit.

The graphs of this chapter use four definitions, namely:

(i) headline;

(ii) NIEIR unemployment rate;

(iii) NIEIR structural unemployment rate; and

(iv) NIEIR total unemployment rate.

The total unemployment rate is closer to the social security take-up rate considered above than the other definitions of unemployment.

The NIEIR rates are adjusted by various combinations of working age social security beneficiaries as defined in Appendix D.

The most credible unemployment rate is that rate which has the closest correspondence to the percentage of the working age population not in employment. Figure 7.38 shows the poor correlation between the headline ('official') unemployment rate and the percentage of the working-age population not in employment, while Figure 7.39 shows the much stronger relationship for the NIEIR total unemployment rate. Figure 7.35 shows that the NIEIR total unemployment rate can range up to twice the headline unemployment rate.

This said, all unemployment rate measures (Figures 7.15-7.20) show deterioration in the unemployment rate in most MM dependent regions over the past decade, in keeping with the change in total hours available per working age population at the national and state level. This provides strong evidence that over the last decade displacement of MM activity by mining expansion has not resulted in significant labour being reallocated to mining support activities. The labour has largely gone into hidden unemployment or under-employment and replaced by imported labour to support the mining sector.

7.8 Other indicator outcomes

Figures 7.5 to 7.8 show that part of the response to declining MM sector hours worked is low and falling hours worked per employed person in some steel fabrication and MM dependent regions. Figures 7.21 to 7.24 show that the response in some steel fabrication and MM dependent regions to declining MM hours of work is that real dollars of income per hours of work are low and declining.

7.9 The capacity of metal intensive regions to provide labour resources

Table 7.3 shows the potential labour supply available by region. The first and second columns in the table are based on the 27 per cent not in employment rate benchmark. One half of a million of the potential labour supply are in high MM intensity or fabrication intensity regions.

The last two columns are estimates of MM skills available by region. The estimate of skills available is equal to the difference between peak full-time equivalent MM employment and since the year 2000 and 2010-11 actual employment estimates. This gives a total estimate of skills available of 54,000.

Table 7.2 Regions in figures

NSW Central Coast	QLD Resource region
NSW Hunter	QLD rural SEQ
NSW Illawarra	SEQ Metro
NSW Regional	SEQ Outer Urban
Sydney Inner	Adelaide South
Sydney North	Adelaide Inner
Sydney Outer South West	Adelaide North
Sydney Inner South West	SA regional
Sydney Outer West	SA Spencer Gulf
Sydney Parramatta-Bankstown	Perth Central
Melbourne Central East	Perth Outer
Melbourne Mid South East	WA Northern
Melbourne North	WA Southern
Melbourne Outer South East	TAS
Melbourne West	NT
Vic Regional	ACT
QLD North Coastal Cities	

Table 7.3 Potential employment availability by region

			Potential full time equivalent Labour resources		Potential MM skilled full time equivalent employment available	
	MM intensity rating	Steel fabrication intensity rating	Number	Per cent of working age population	Number	Per cent of peak employ-ment
NSW Central Coast	High	High	23186	11.61	390.8	8.3
NSW Hunter	High	High	53052	12.42	2648.2	16.6
NSW Illawarra	High	Low	46031	16.34	3694.9	26.8
NSW Regional	Low	Low	168665	16.83	3557.5	30.4
Sydney Inner	Low	Low	21595	3.14	1755.2	11.8
Sydney North	Low	Low	17237	3.47	1341.7	18.4
Sydney Outer South West	High	High	30816	10.11	1816.4	20.6
Sydney Inner South West	Low	Low	27506	11.37	1907.3	18.3
Sydney Outer West	High	Low	28697	6.54	1420.8	11.0
Sydney Parramatta-Bankstown	High	High	85134	16.66	3469.8	12.2
Melbourne Central East	Low	Low	87388	7.08	2989.4	11.8
Melbourne Mid South East	High	High	38504	10.10	2080.2	8.7
Melbourne North	High	Low	40700	10.07	1229.8	11.5
Melbourne Outer South East	High	High	41445	10.10	341.8	5.5
Melbourne West	High	Low	45374	10.26	2098.8	20.5
Vic Regional	Low	Low	125472	13.14	1062.8	6.2
QLD North Coastal Cities	Low	Low	36819	6.03	2310.6	15.3
QLD Resource region	Low	High	10468	18.39	413.5	24.6
QLD rural SEQ	Low	Low	53435	16.58	744.1	14.9
SEQ Metro	Low	Low	62796	4.75	5412.6	15.0
SEQ Outer Urban	Low	Low	108019	14.19	1939.1	14.2
Adelaide South	High	Low	22817	9.06	637.3	15.8
Adelaide Inner	Low	Low	20710	7.72	1383.9	20.2
Adelaide North	High	High	46594	13.11	2266.3	14.7
SA regional	Low	High	21954	14.02	276.3	10.8
SA Spencer Gulf	High	High	11177	15.75	938.7	23.9
Perth Central	Low	High	19834	4.69	1245.5	7.8
Perth Outer	High	High	22789	2.98	1903.0	9.9
WA Northern	Low	High	9800	6.68	268.7	8.5
WA Southern	Low	High	31724	11.80	1216.3	17.6
TAS	Low	Low	50955	15.32	1052.9	16.1
NT	Low	High	6409	3.85	56.0	1.8
ACT	Low	Low	21005	8.15	93.7	5.7
Total			**1438109**		**53964**	
Low MM intensity			901793		29027	
Low steel fabrication intensity			872198		31265	
High MM intensity			536316		24937	
High steel fabrication intensity			542725		22308	

Figure 7.1: Metals capacity per employed person and hours worked per working age population 2010

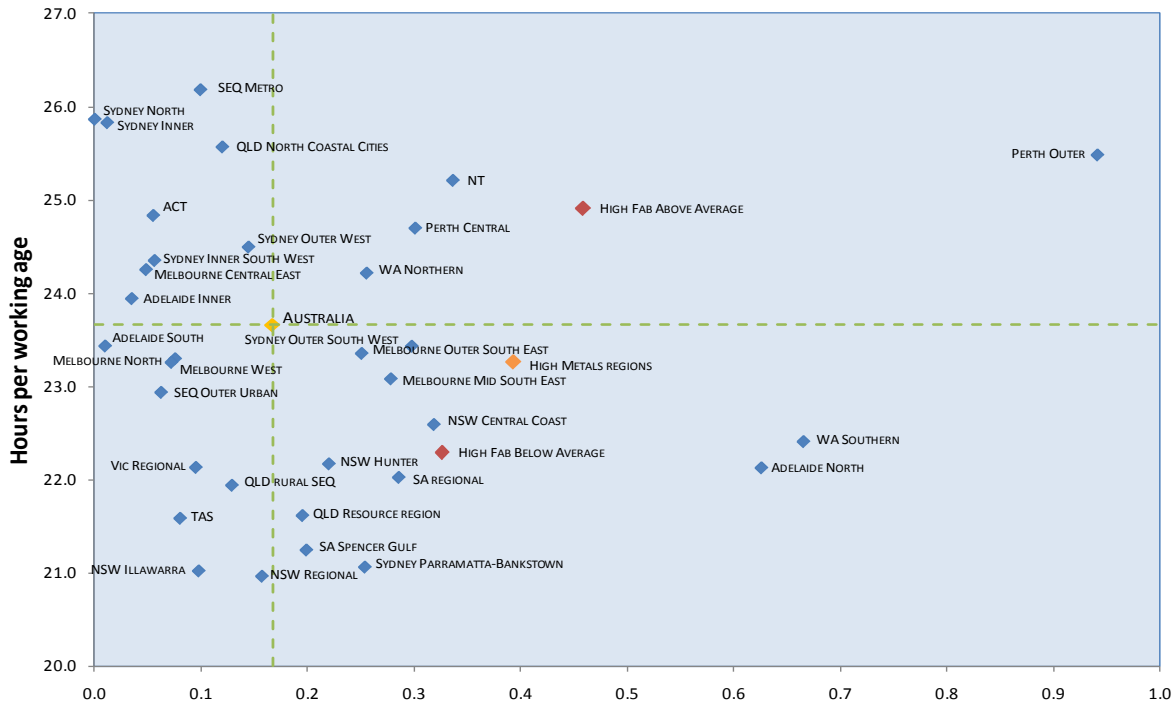


Figure 7.2: Metals per cent of total hours and hours worked per working age population 2010

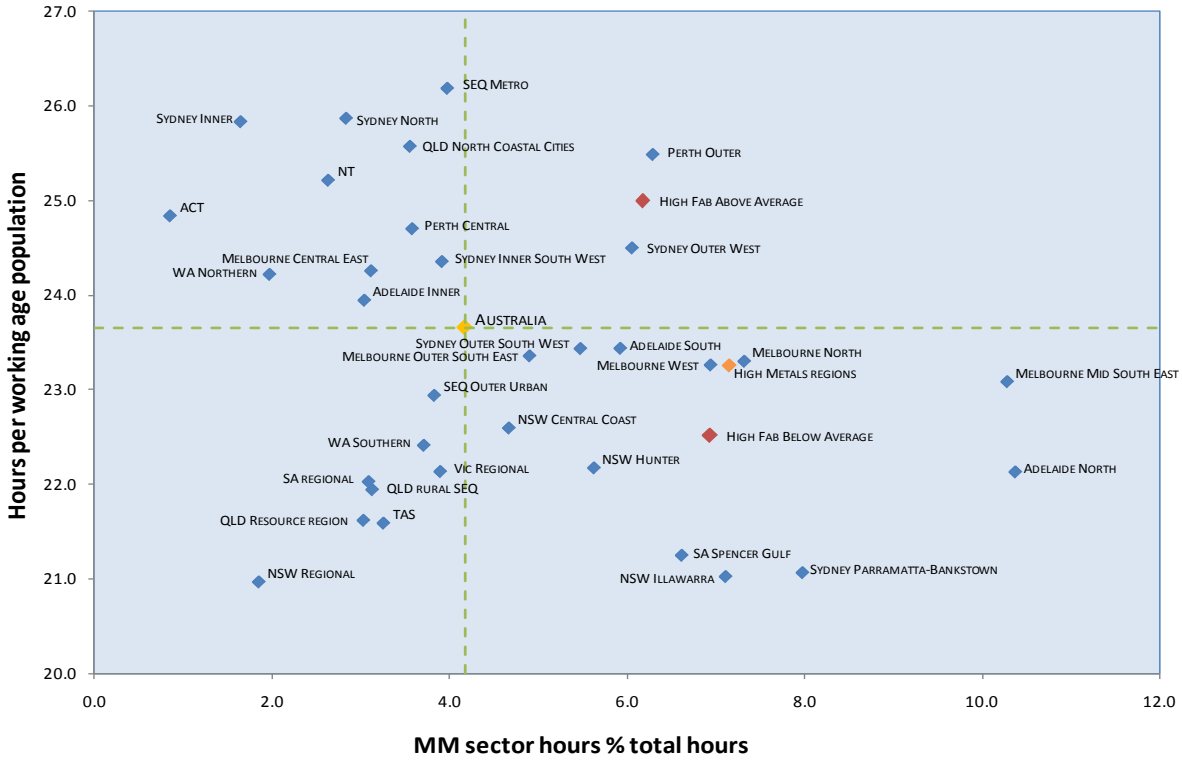


Figure 7.3: Metals capacity per employed person and change in hours worked per working age 2000-2010 (%)

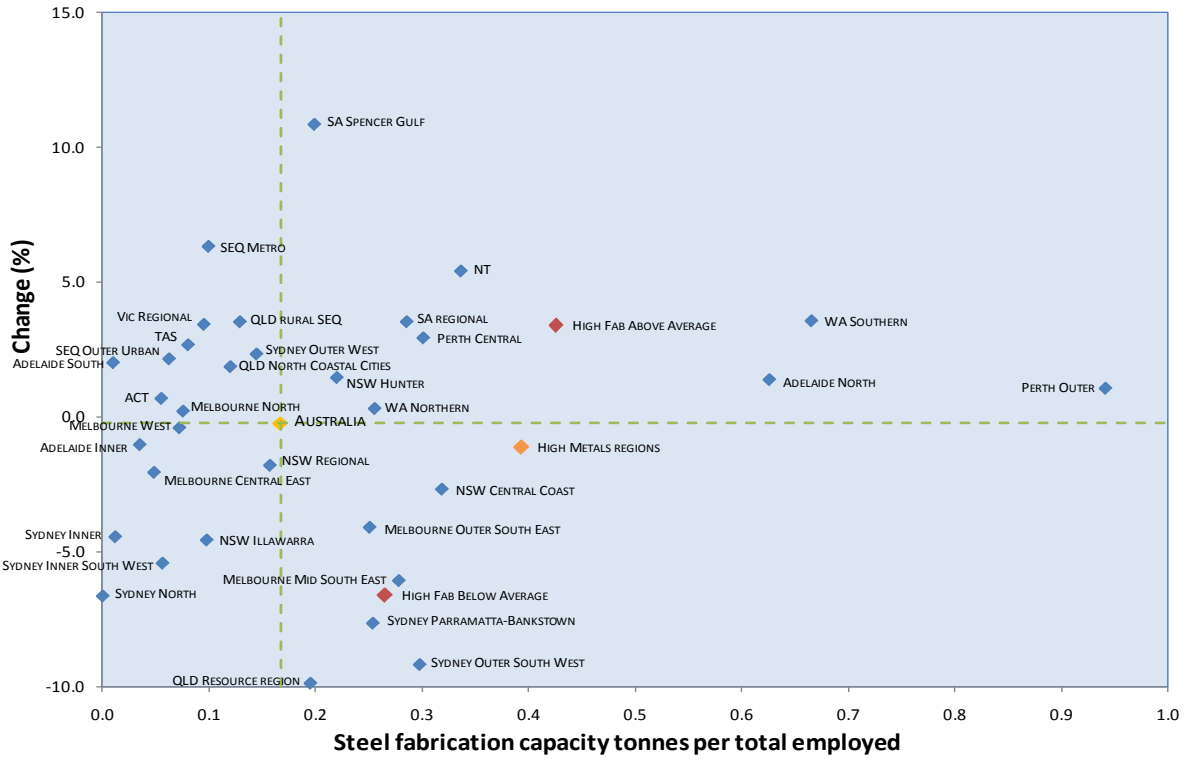


Figure 7.4: Metals per cent of total hours and change in hours worked per working age 2000-2010 (%)

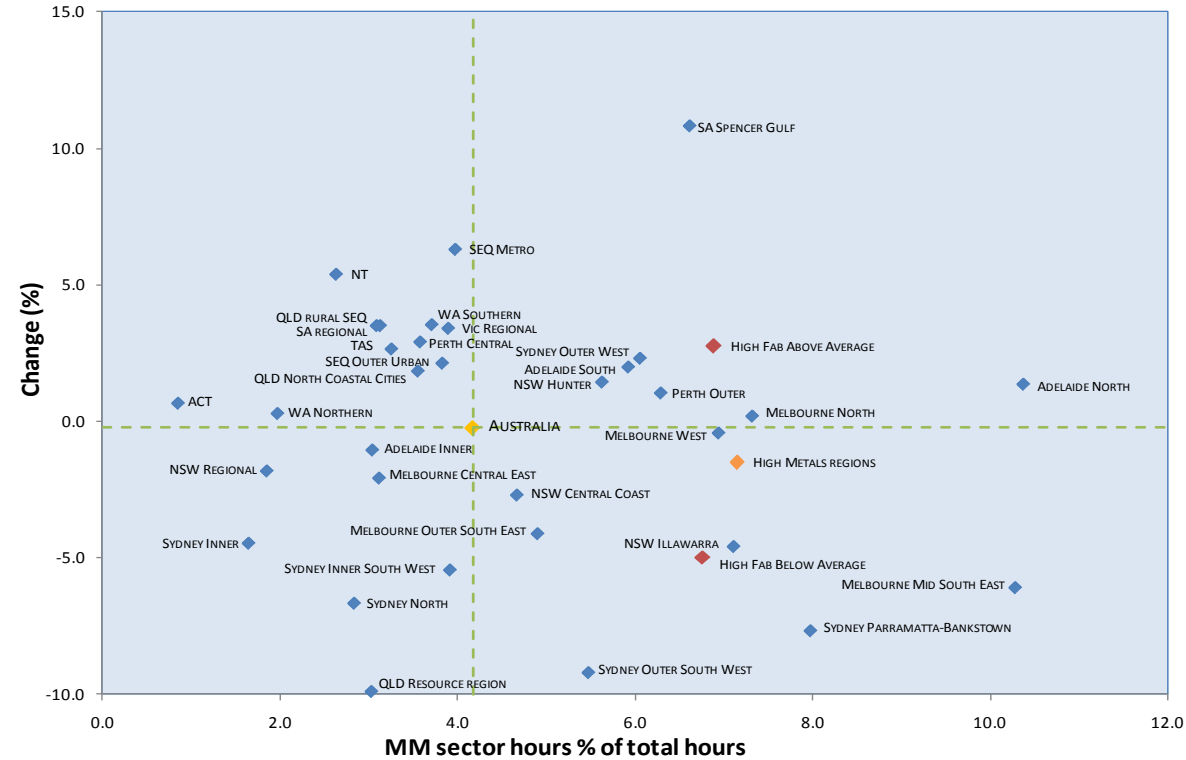


Figure 7.5: Metals capacity per employed person and hours worked per employed 2010

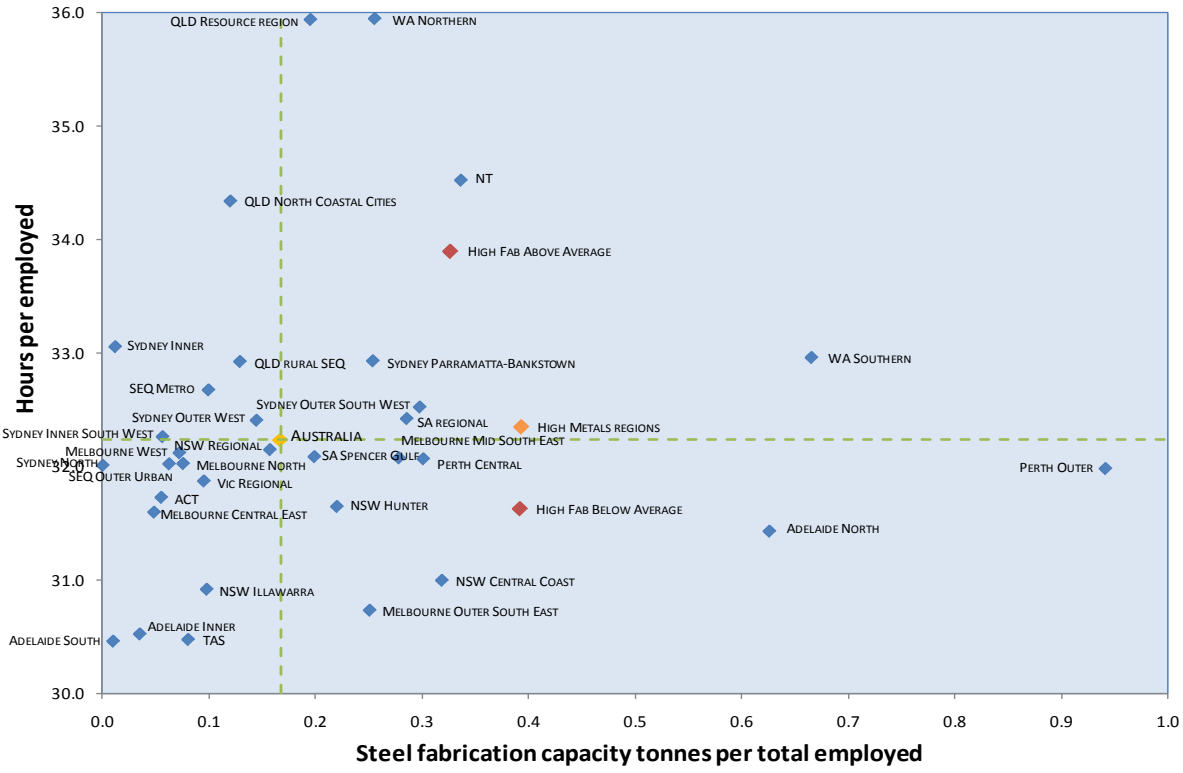


Figure 7.6: Metals per cent of total hours and hours worked per employed 2010

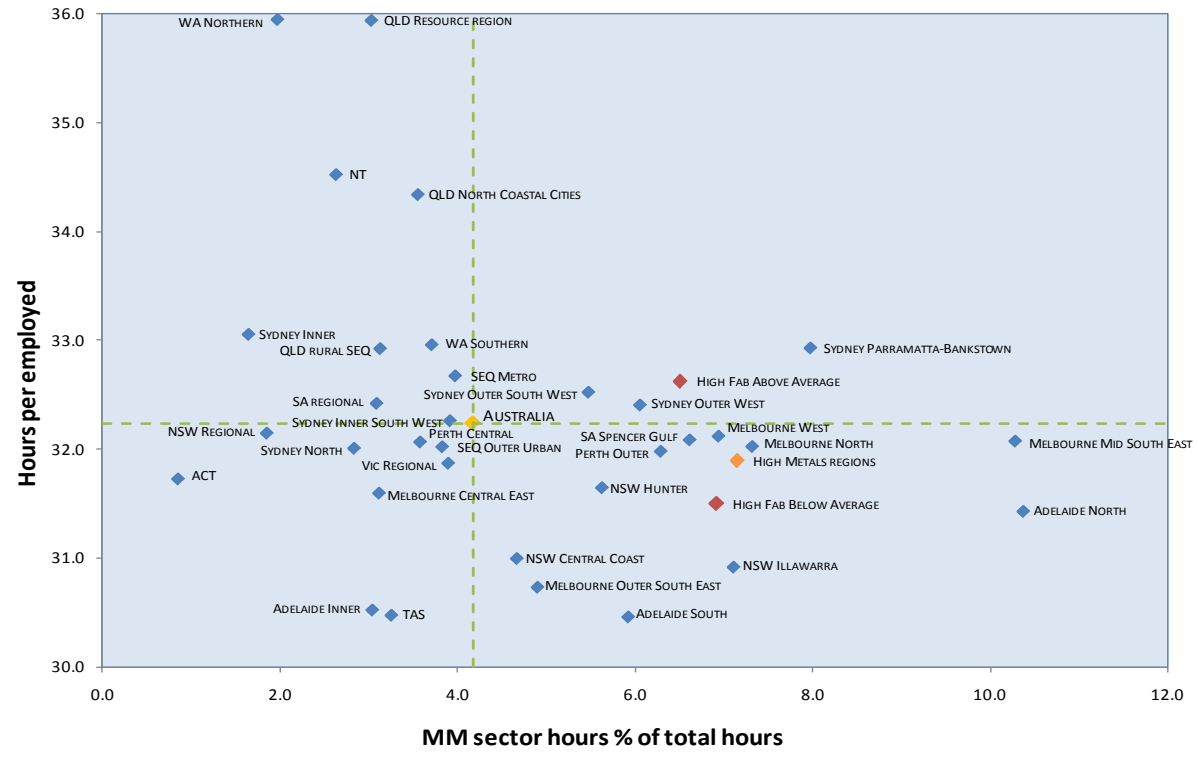


Figure 7.7: Metals capacity per employed person and change in hours worked per employed 2000-2010 (%)

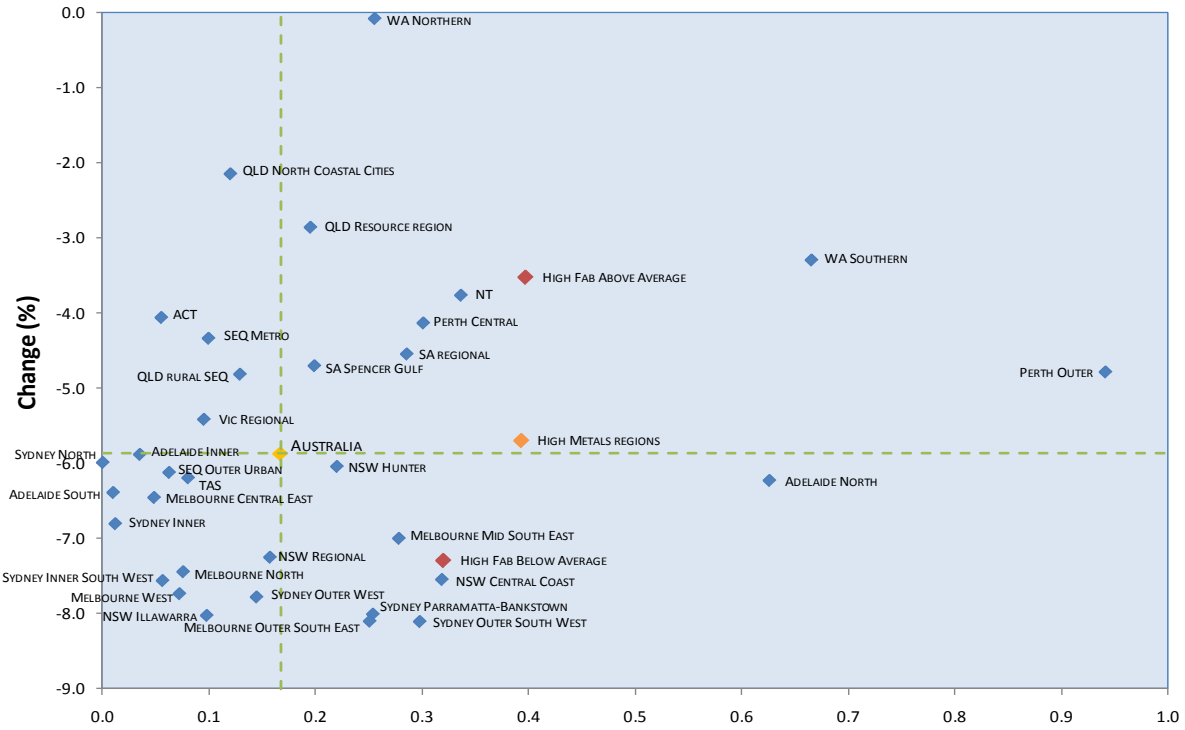


Figure 7.8: Metals per cent of total hours and change in hours worked per employed 2000-2010 (%)

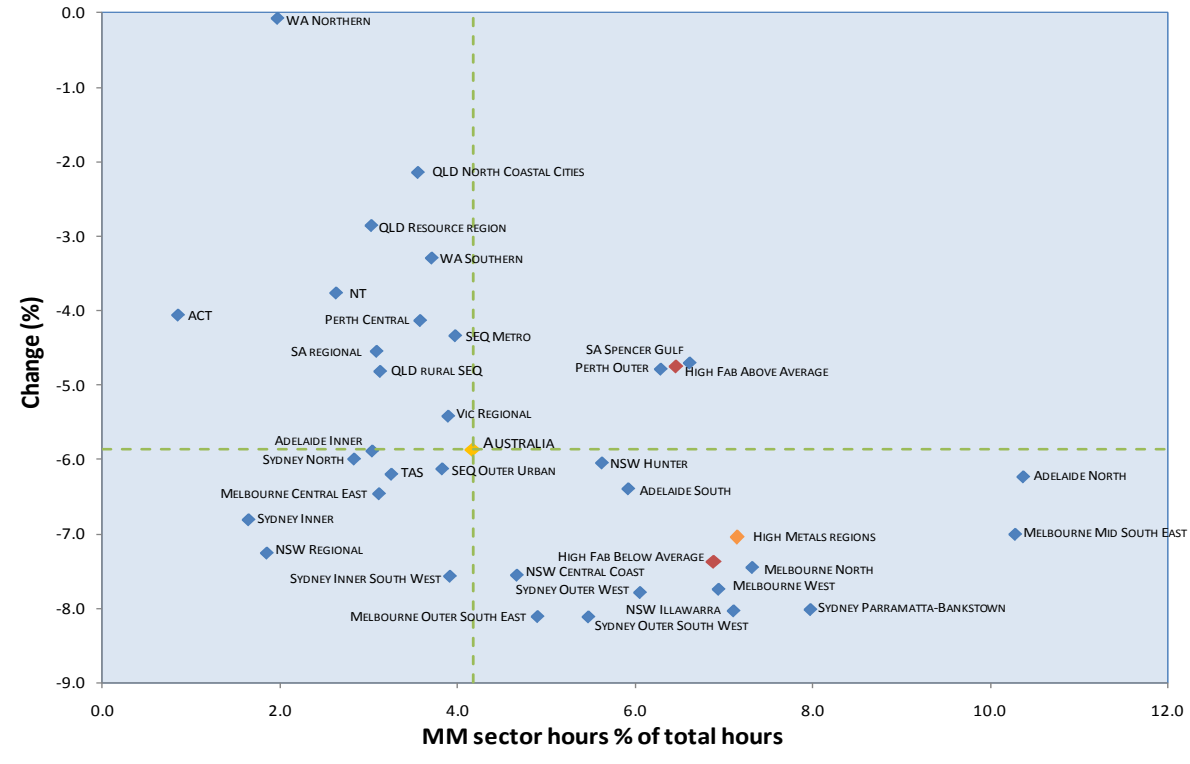


Figure 7.9: Metals capacity per employed person and structural unemployment rate 2010 (%)

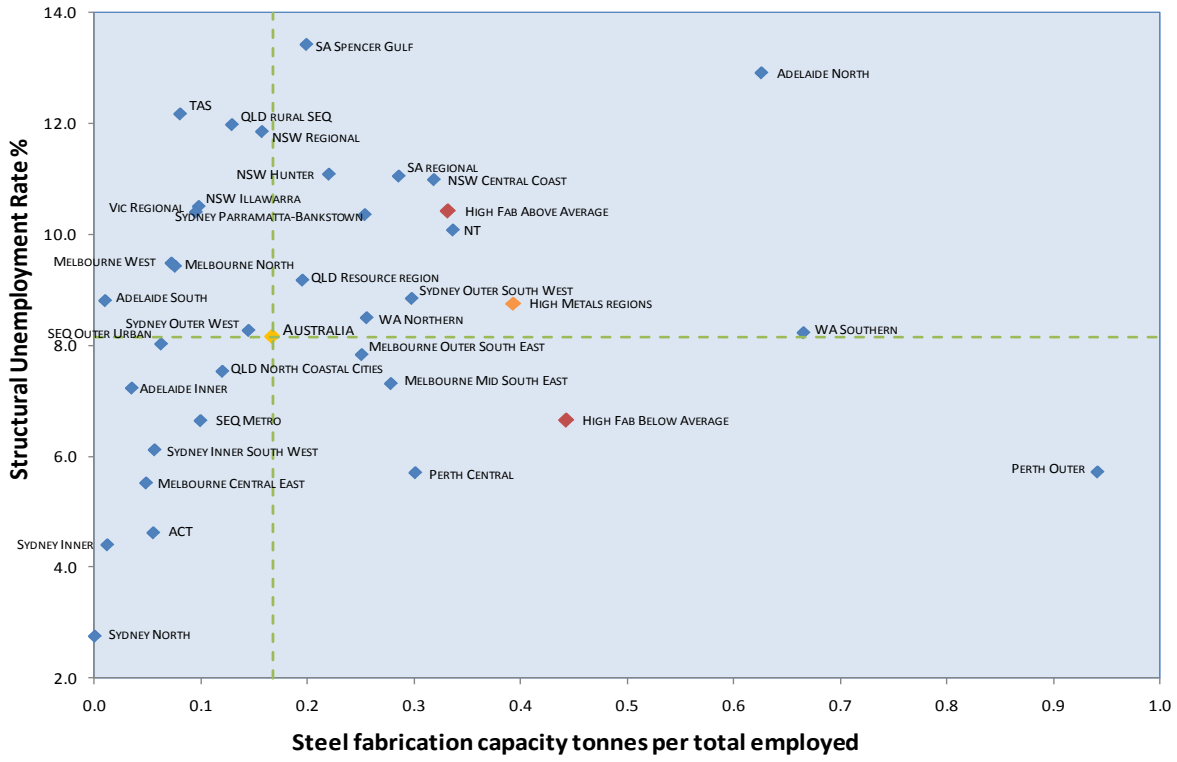


Figure 7.10: Metals per cent of total hours and structural unemployment rate 2010 (%)

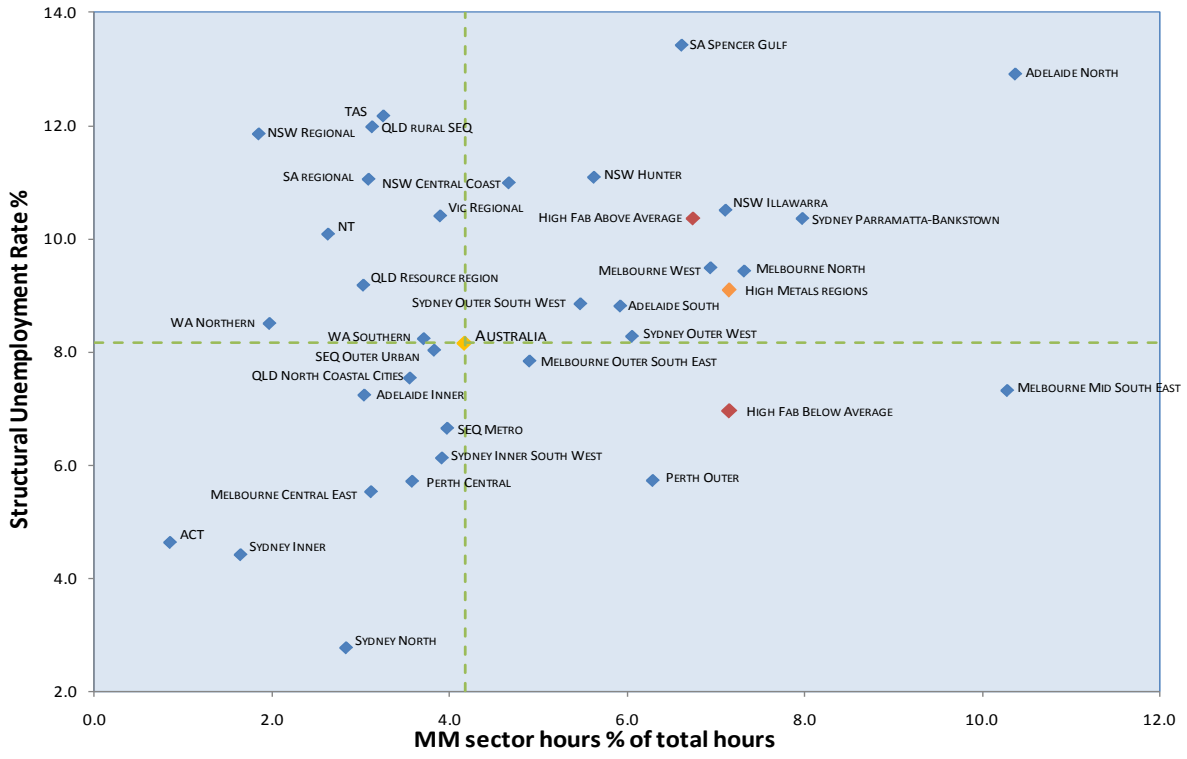


Figure 7.11: Metals capacity per employed person and percentage point change in structural unemployment rate 2000-2010 (%)

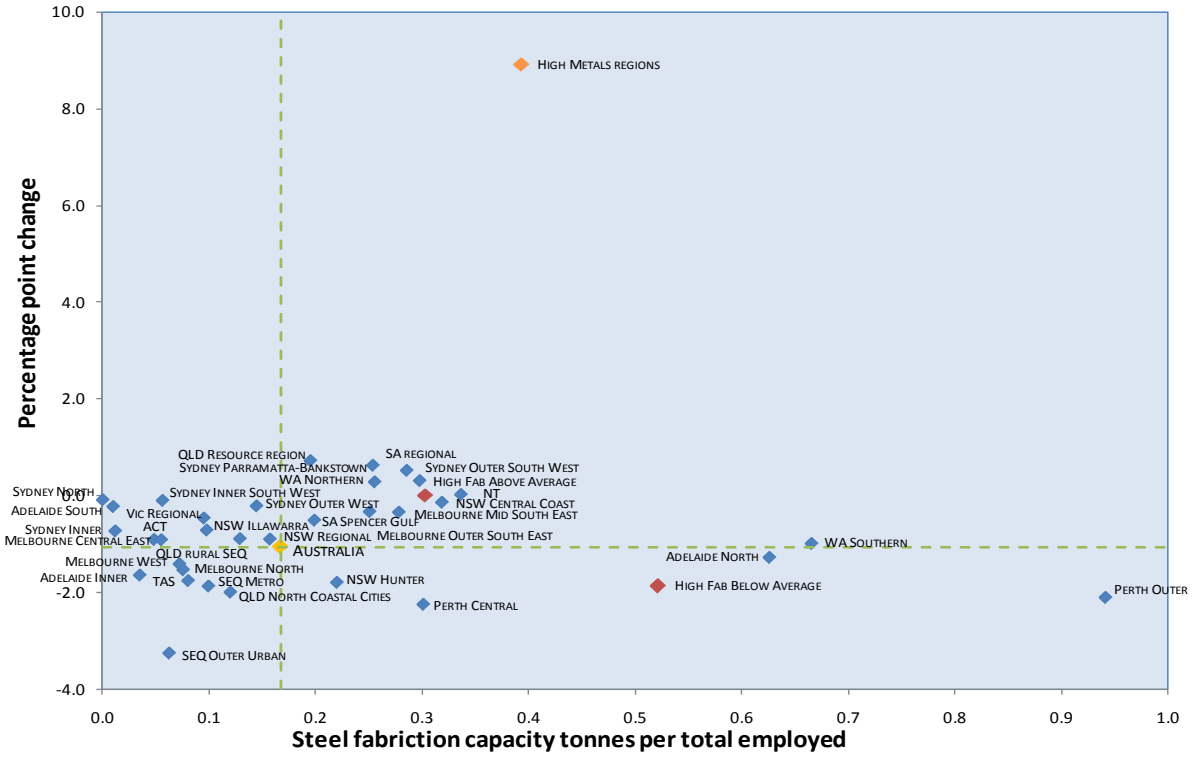


Figure 7.12: Metals per cent of total hours and percentage point change in structural unemployment rate 2000-2010 (%)

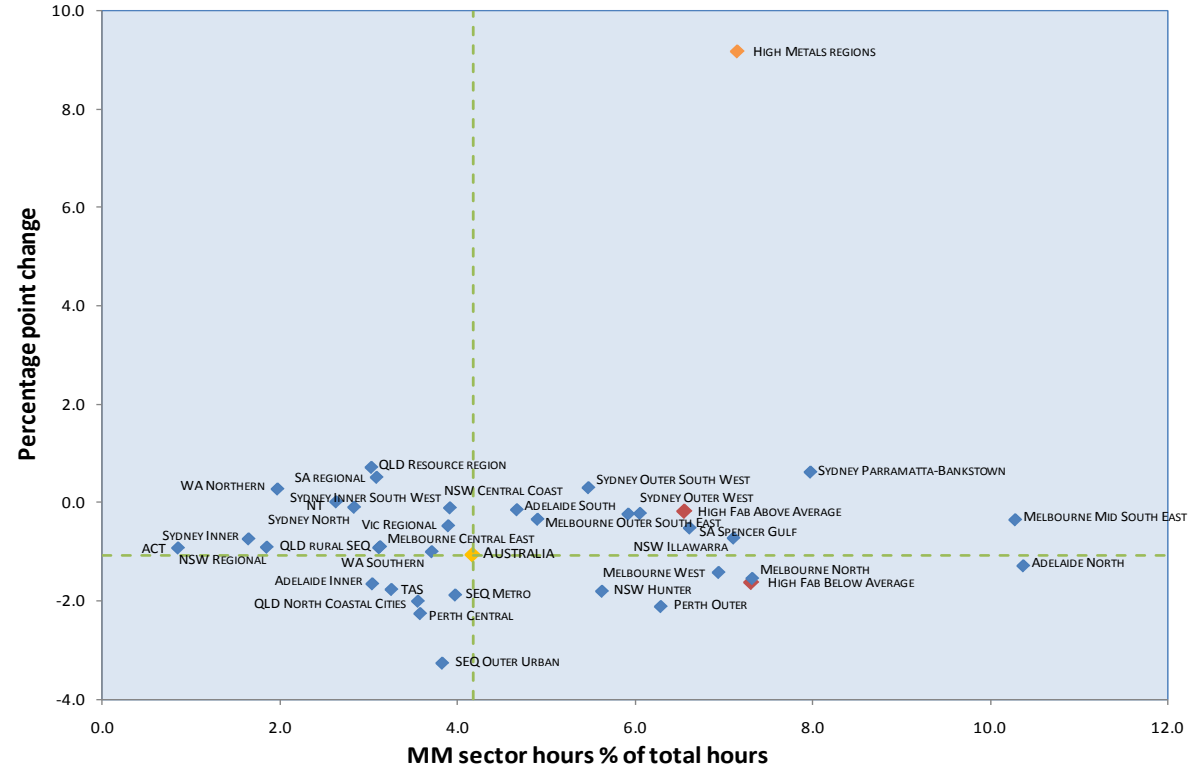


Figure 7.13: Metals capacity per employed person and headline unemployment rate 2010 (%)

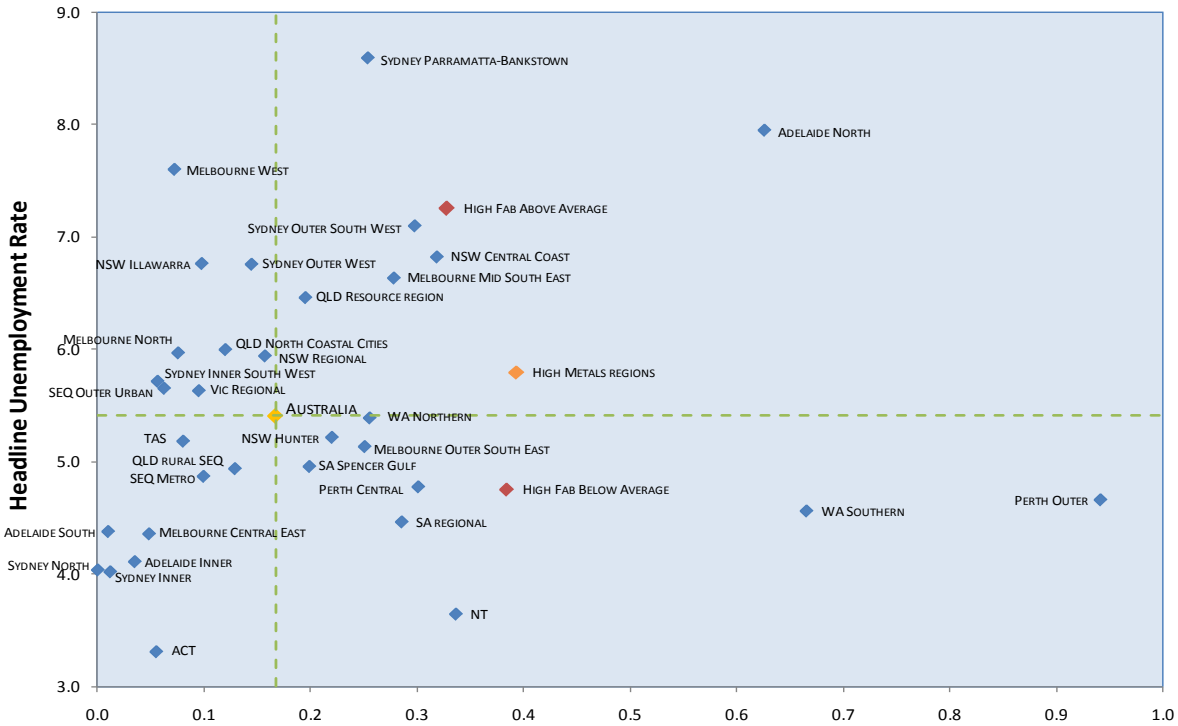


Figure 7.14: Metals per cent of total hours and headline unemployment rate 2010 (%)

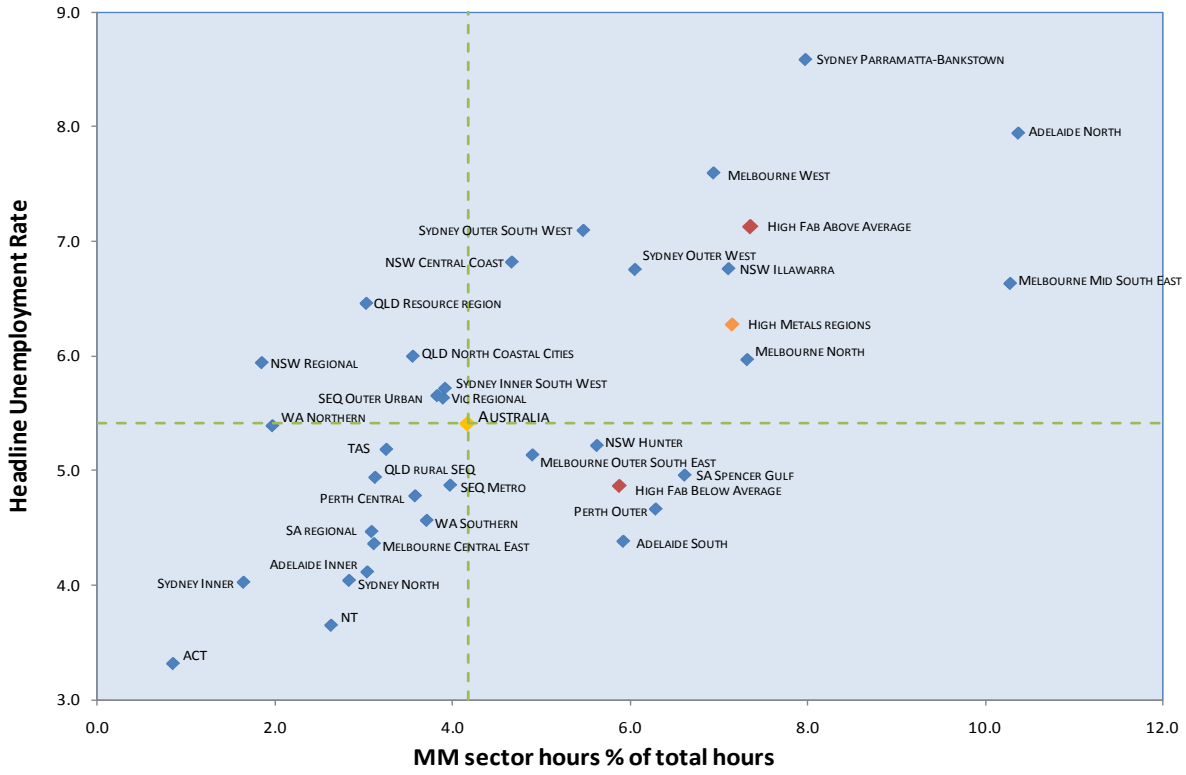


Figure 7.15: Metals capacity per employed person and percentage point change in headline unemployment rate 2000-2010 (%)

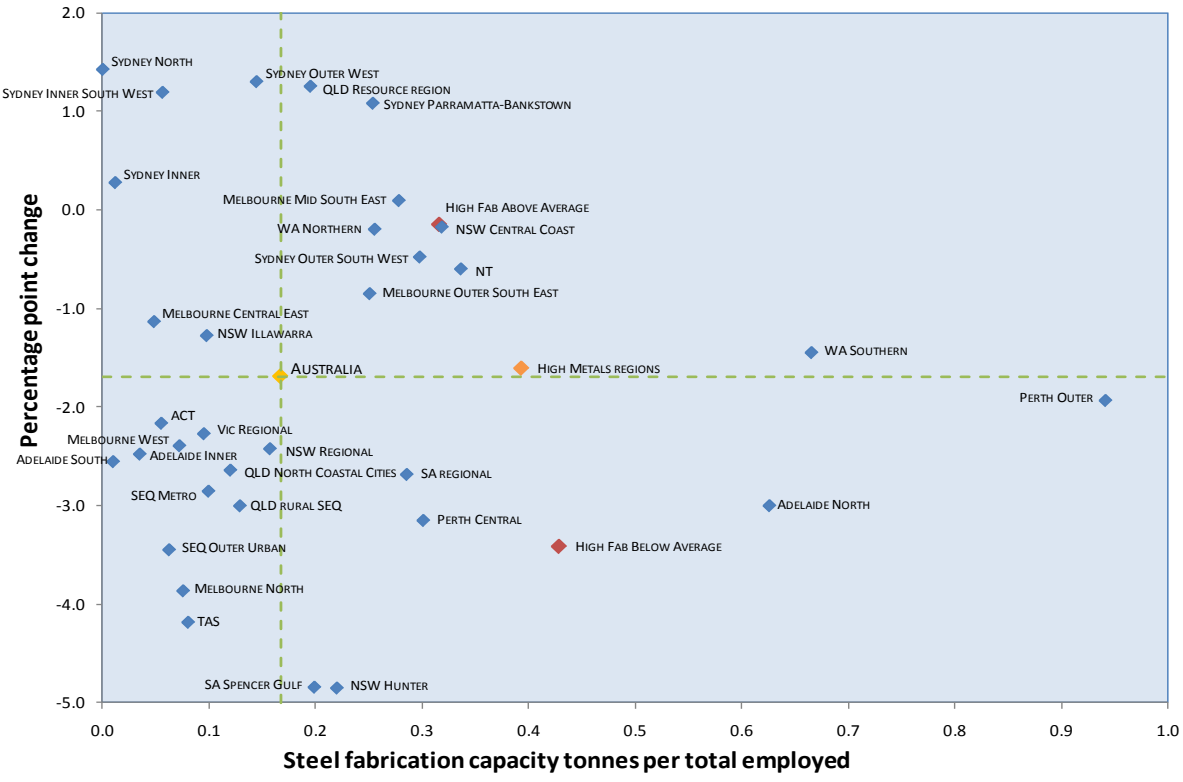


Figure 7.16: Metals per cent of total hours and percentage point change in headline unemployment rate 2000-2010 (%)

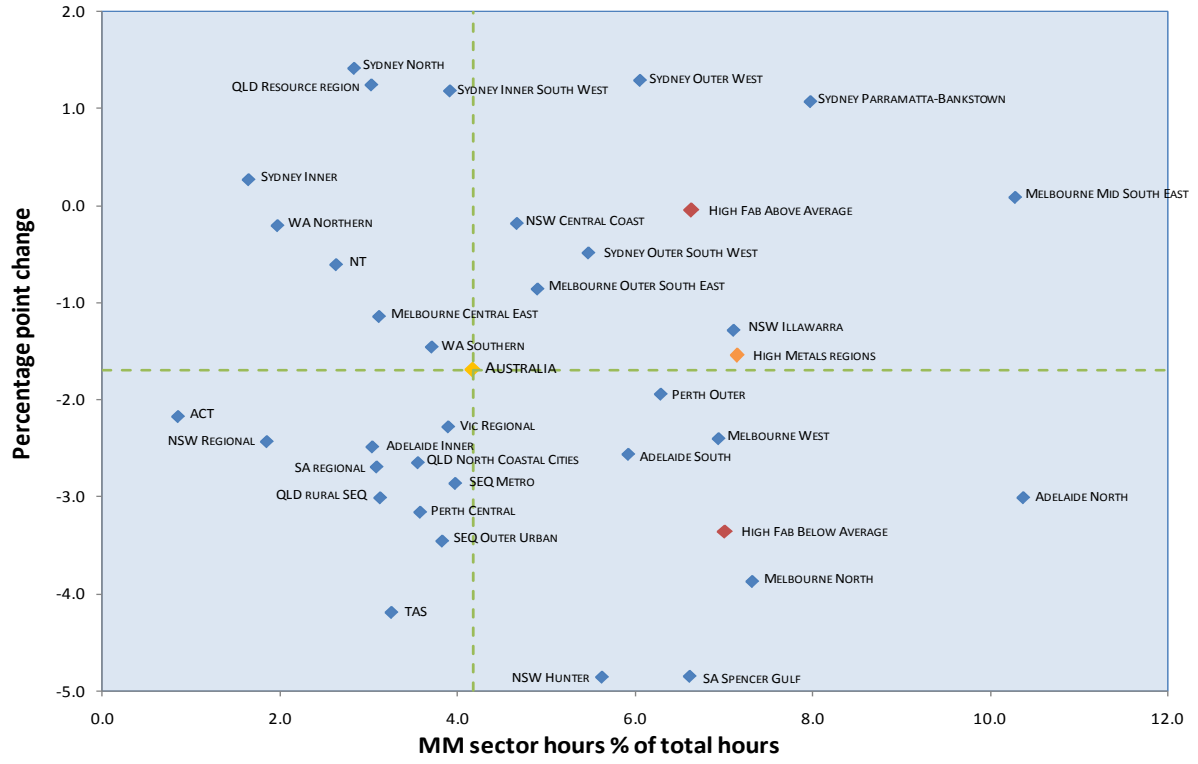


Figure 7.17: Metals capacity per employed person and NIEIR unemployment rate 2010 (%)

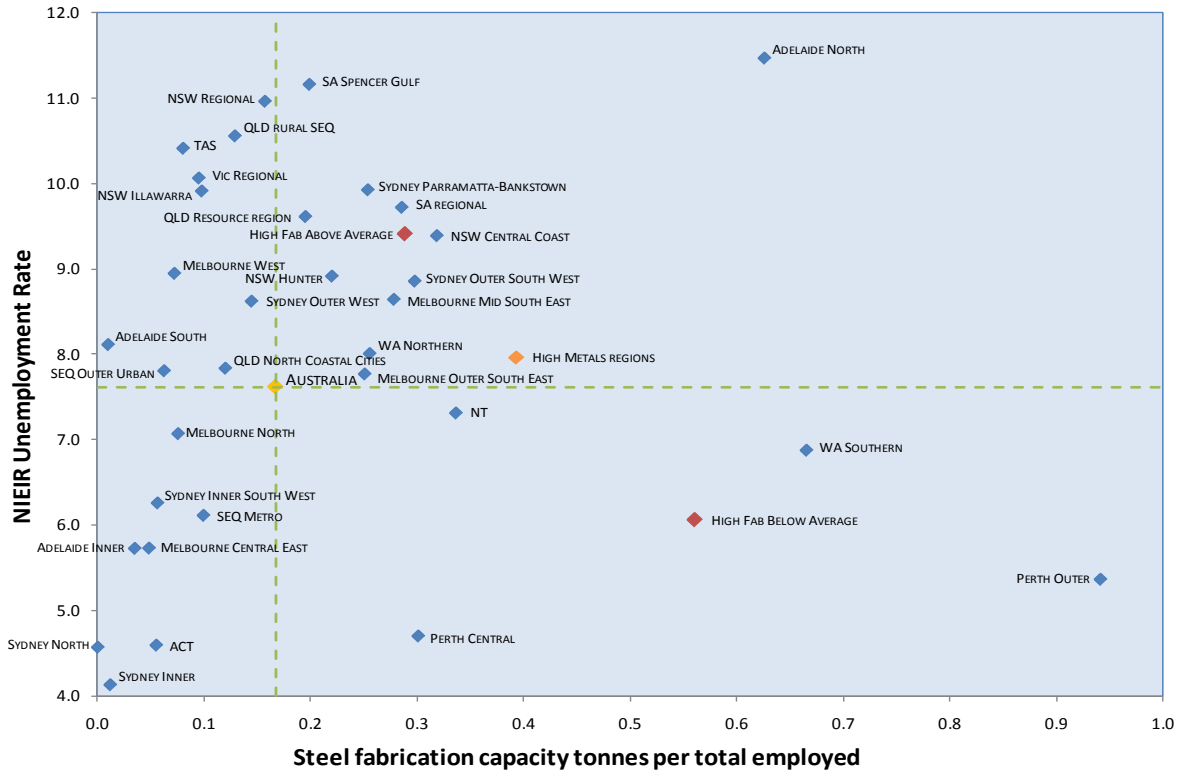


Figure 7.18: Metals per cent of total hours and NIEIR unemployment rate 2010 (%)

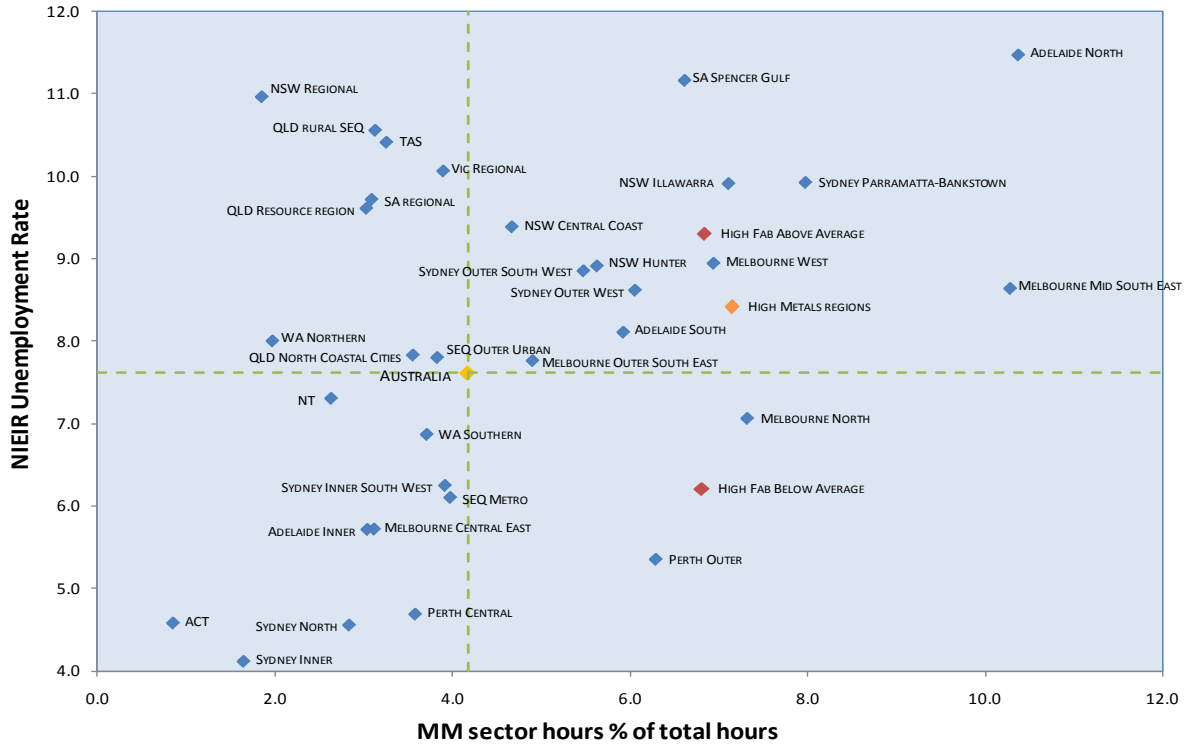


Figure 7.19: Metals capacity per employed person and percentage point change in NIEIR unemployment rate 2000-2010 (%)

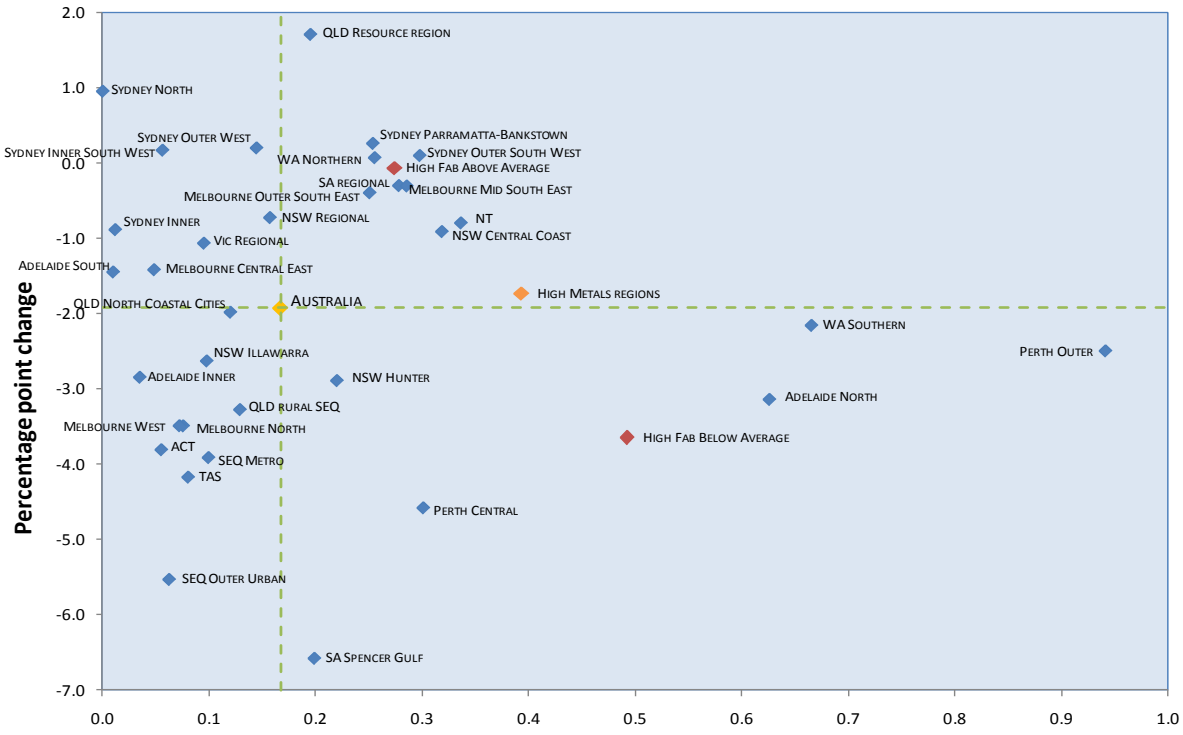


Figure 7.20: Metals per cent of total hours and percentage point change in NIEIR unemployment rate 2000-2010 (%)

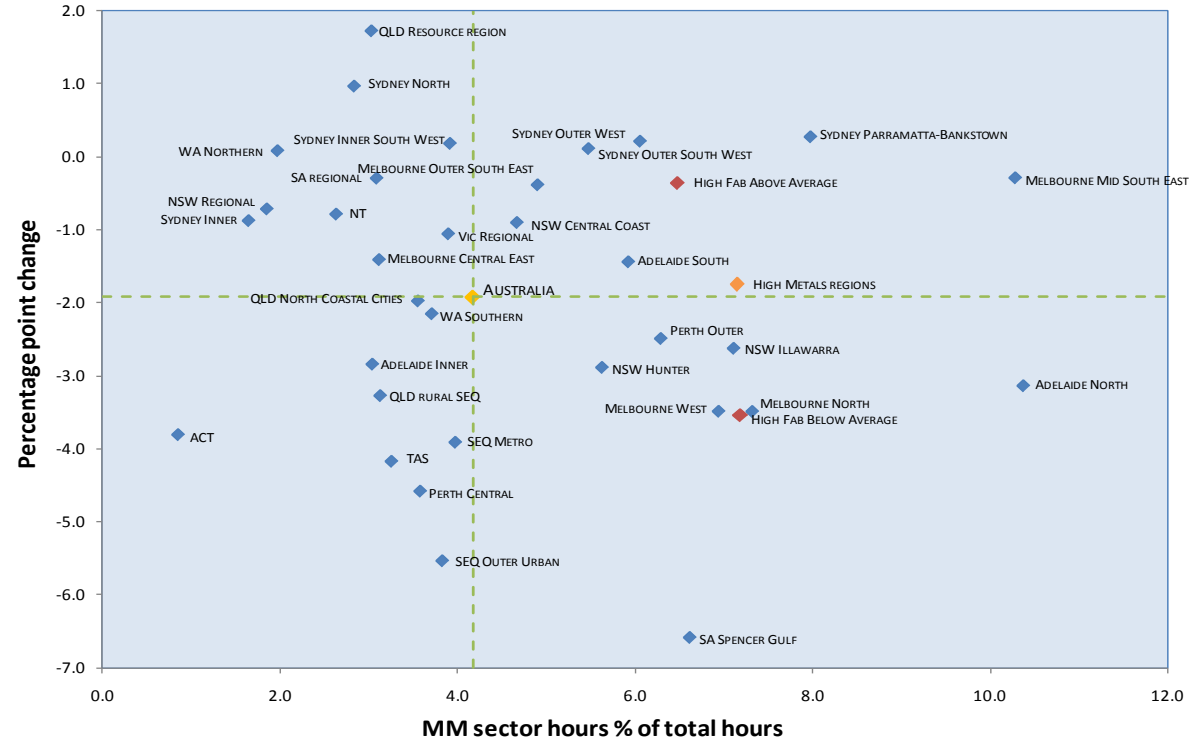


Figure 7.21: Metals capacity per employed person and income per hour 2010

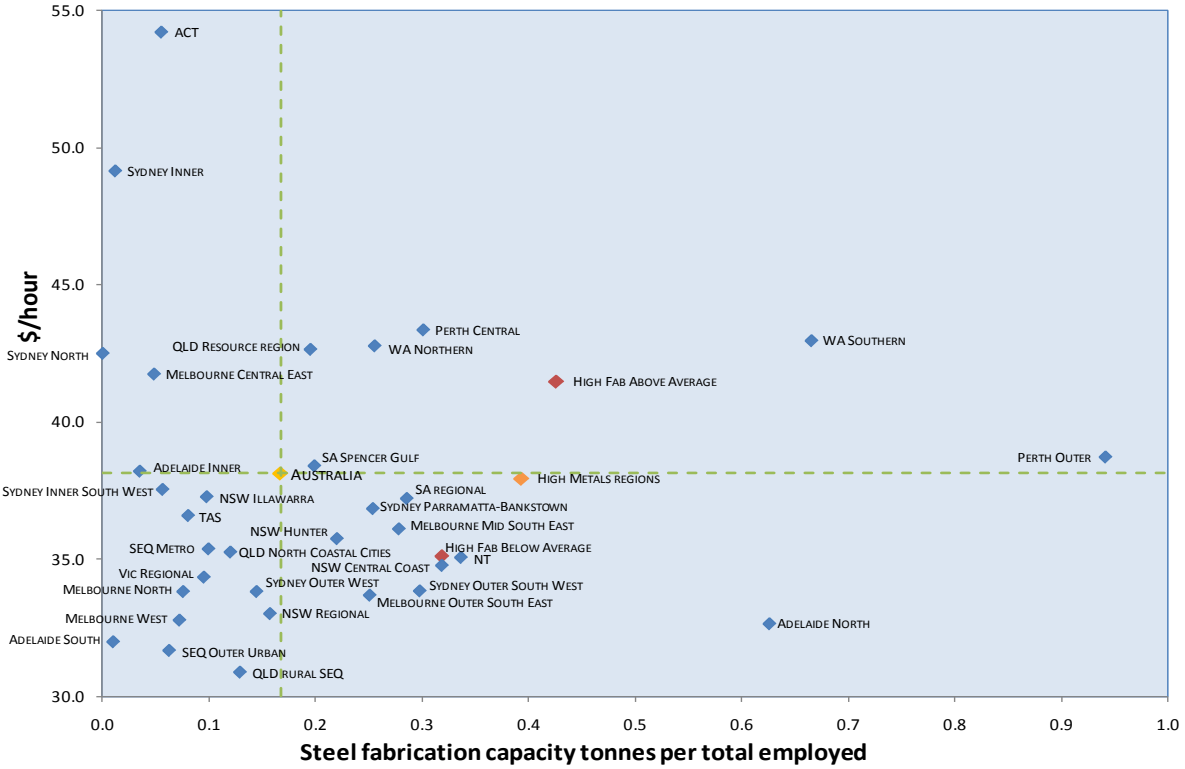


Figure 7.22: Metals per cent of total hours and income per hour 2010

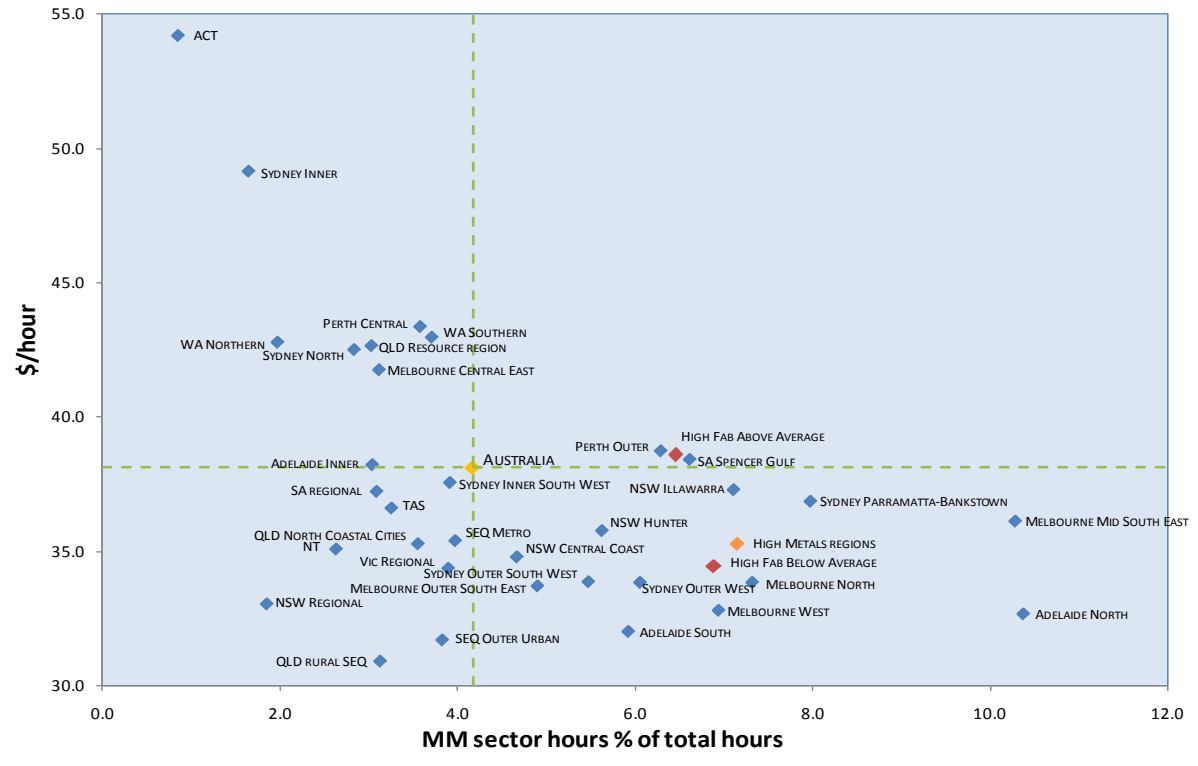


Figure 7.23: Metals capacity per employed person and average annual change in income per hour 2000-2010 (%)

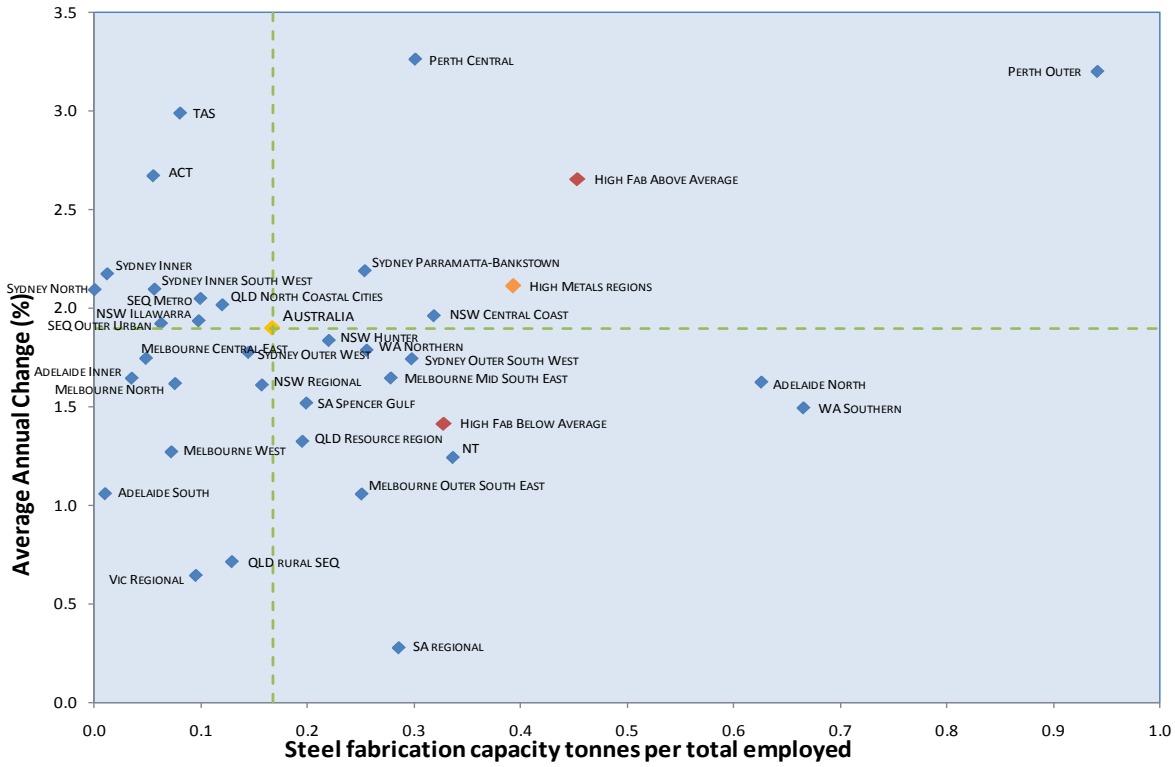


Figure 7.24: Metals per cent of total hours and average annual change in income per hour 2000-2010 (%)

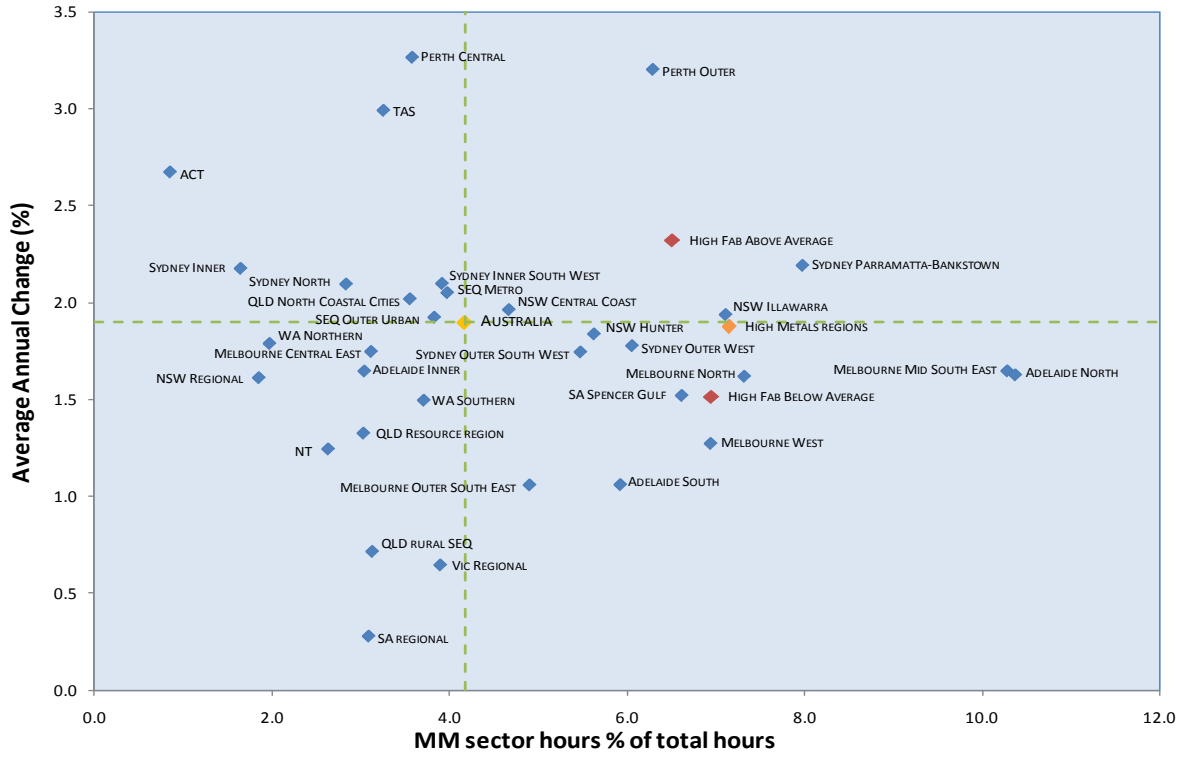


Figure 7.25: Metals capacity per employed person and weekly income per working age population 2010

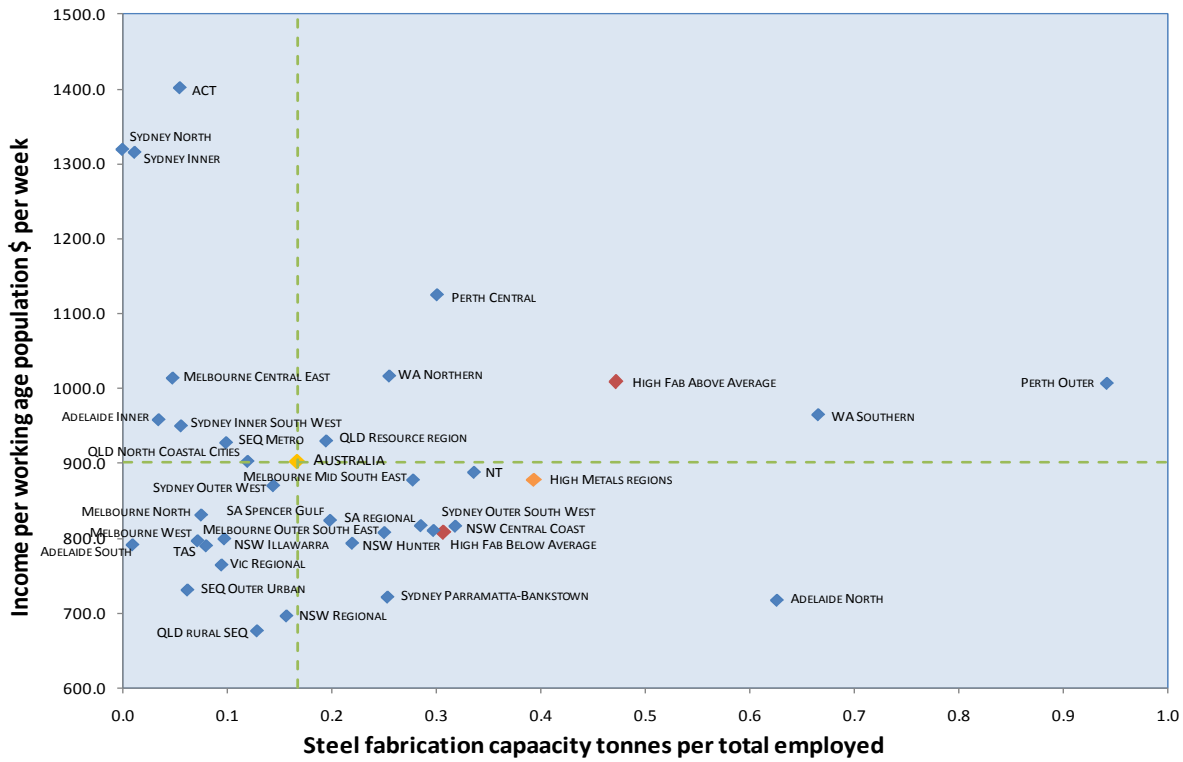


Figure 7.26: Metals per cent of total hours and weekly income per working age population 2010

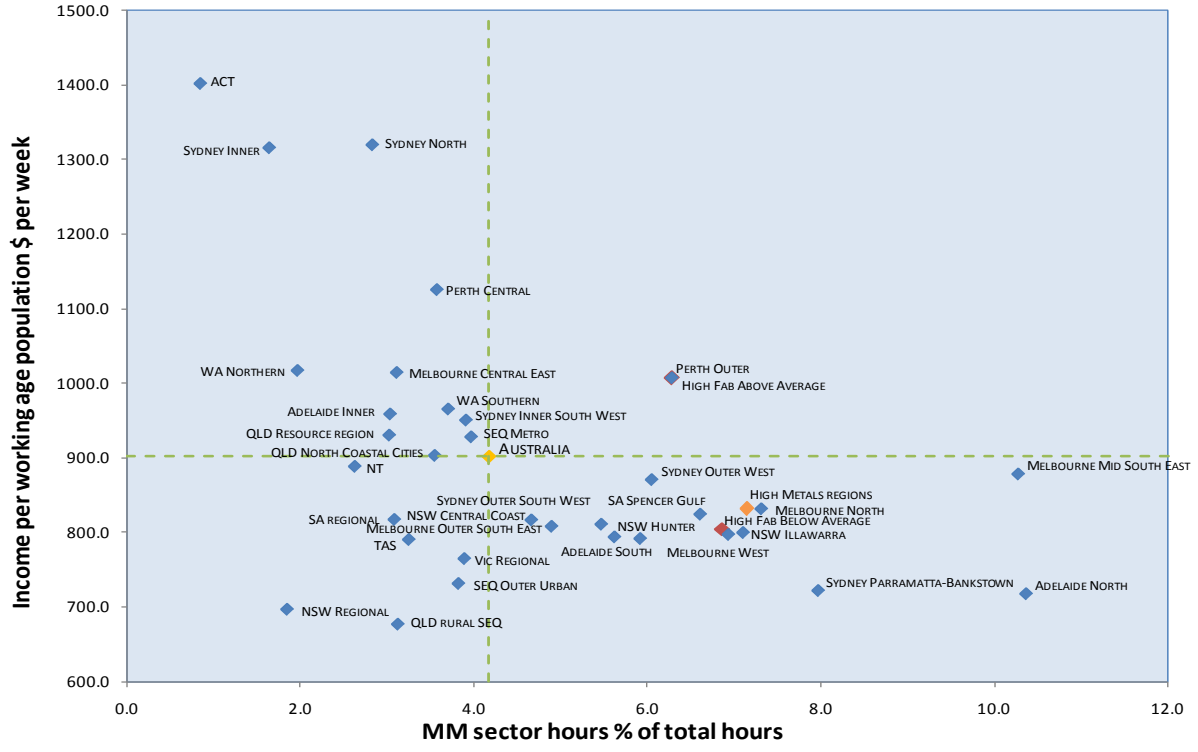


Figure 7.27: Metals capacity per employed person and total unemployment rate 2010

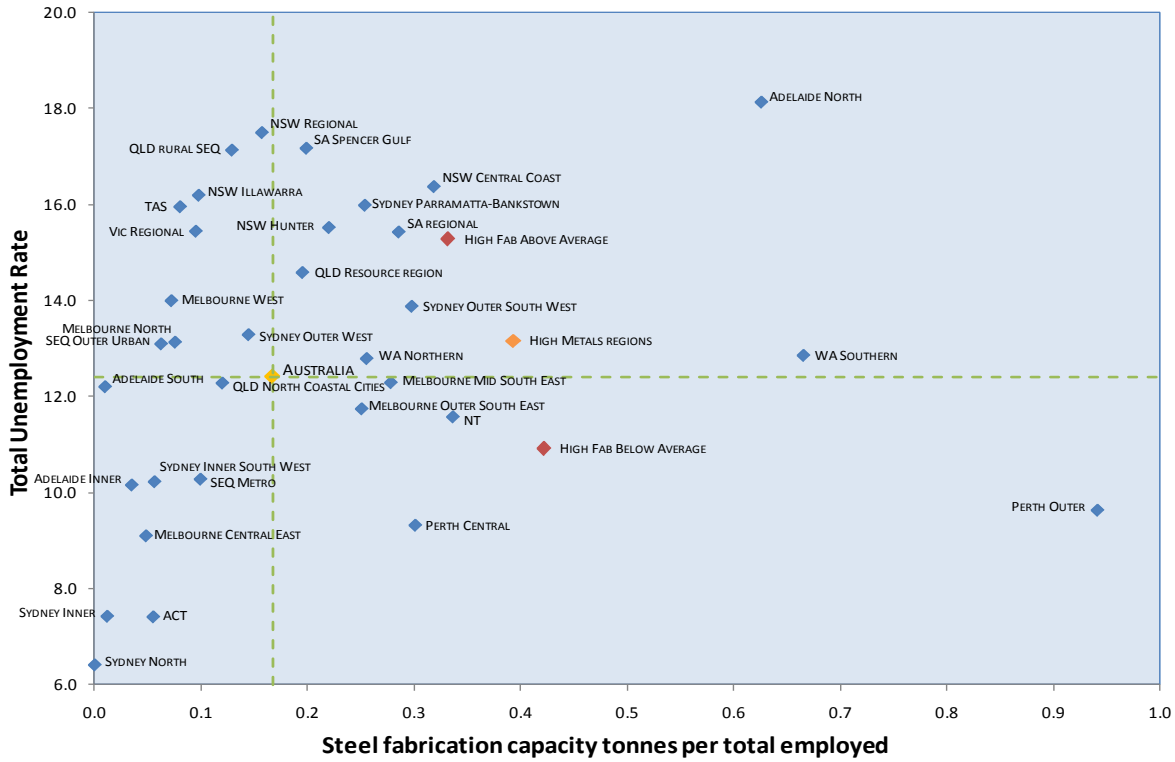


Figure 7.28: Metals per cent of total hours and total unemployment rate 2010

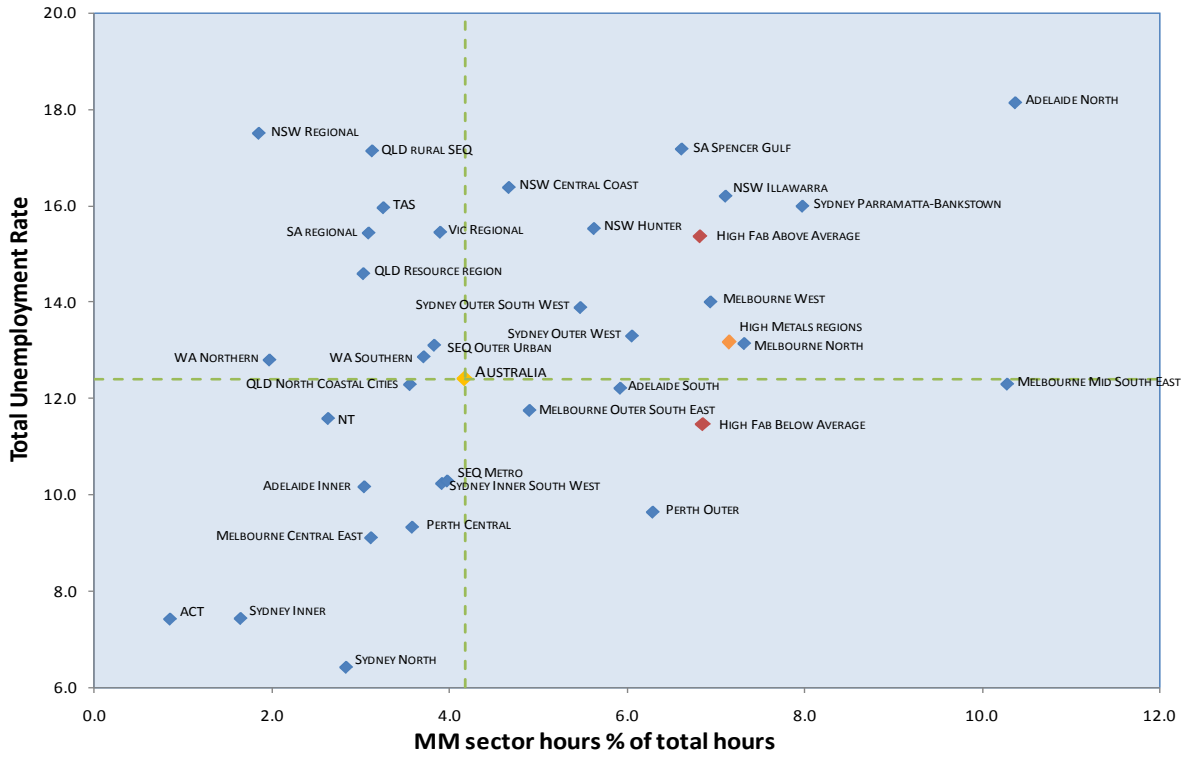


Figure 7.29: Metals capacity per employed person and percentage point change in total unemployment rate 2000-2010

Figure 7.30: Metals per cent of total hours and percentage point change in total unemployment rate 2000-2010

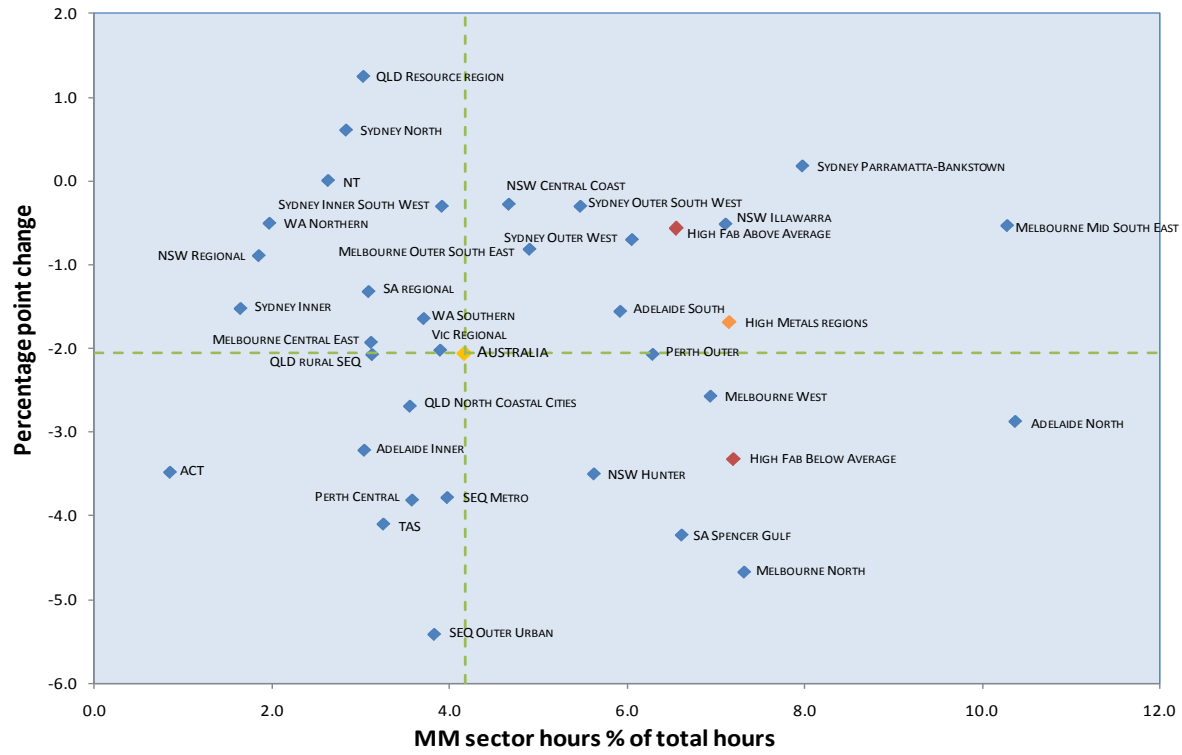


Figure 7.31: Metals capacity per employed person and per cent of population aged 15 to 64 not in employment 2010

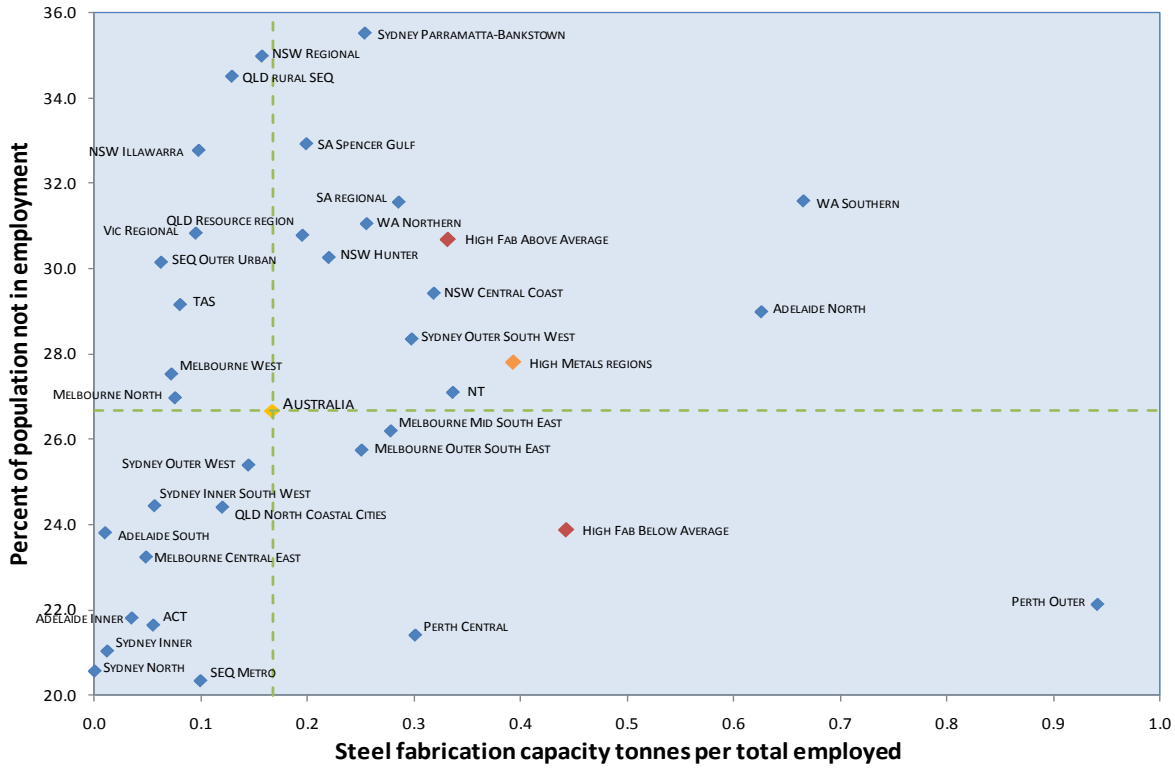


Figure 7.32: Metals per cent of total hours and per cent of population aged 15 to 64 not in employment 2010

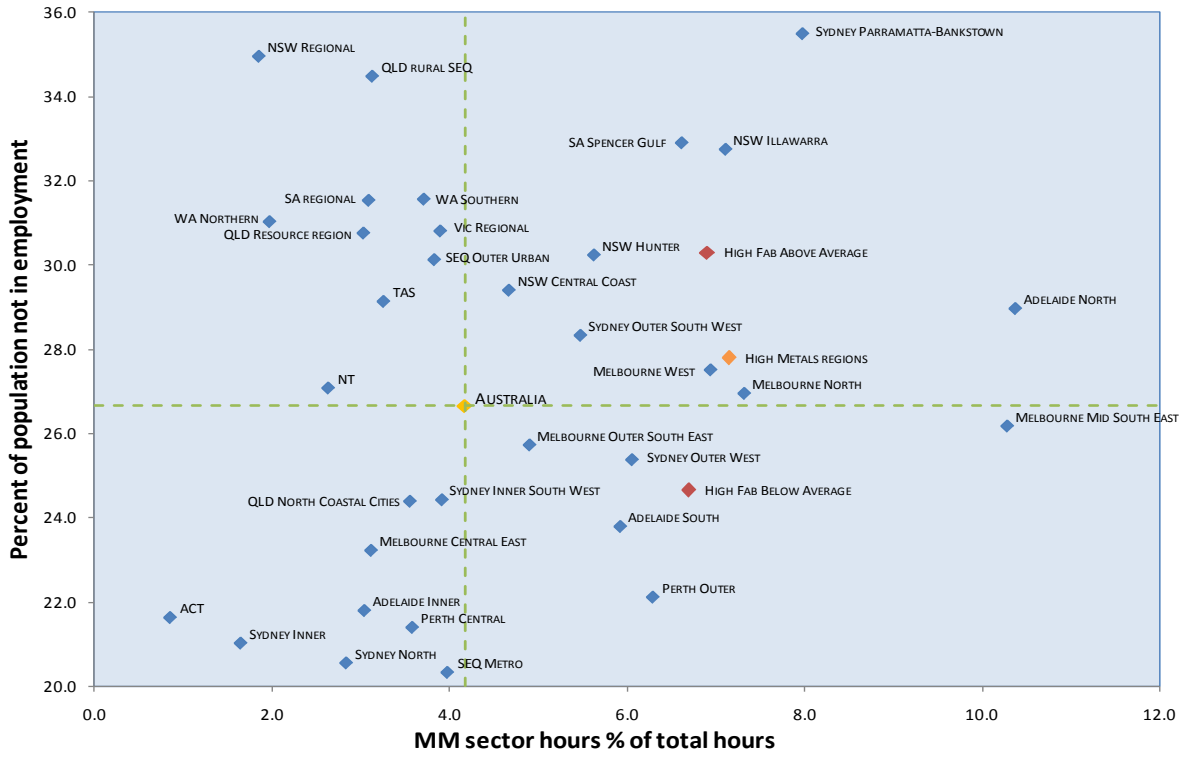


Figure 7.33: Metals capacity per employed person and percentage point change in per cent of population aged 15 to 64 not in employment 2000-2010

Figure 7.34: Metals per cent of total hours and percentage point change in per cent of population aged 15 to 64 not in employment 2000-2010

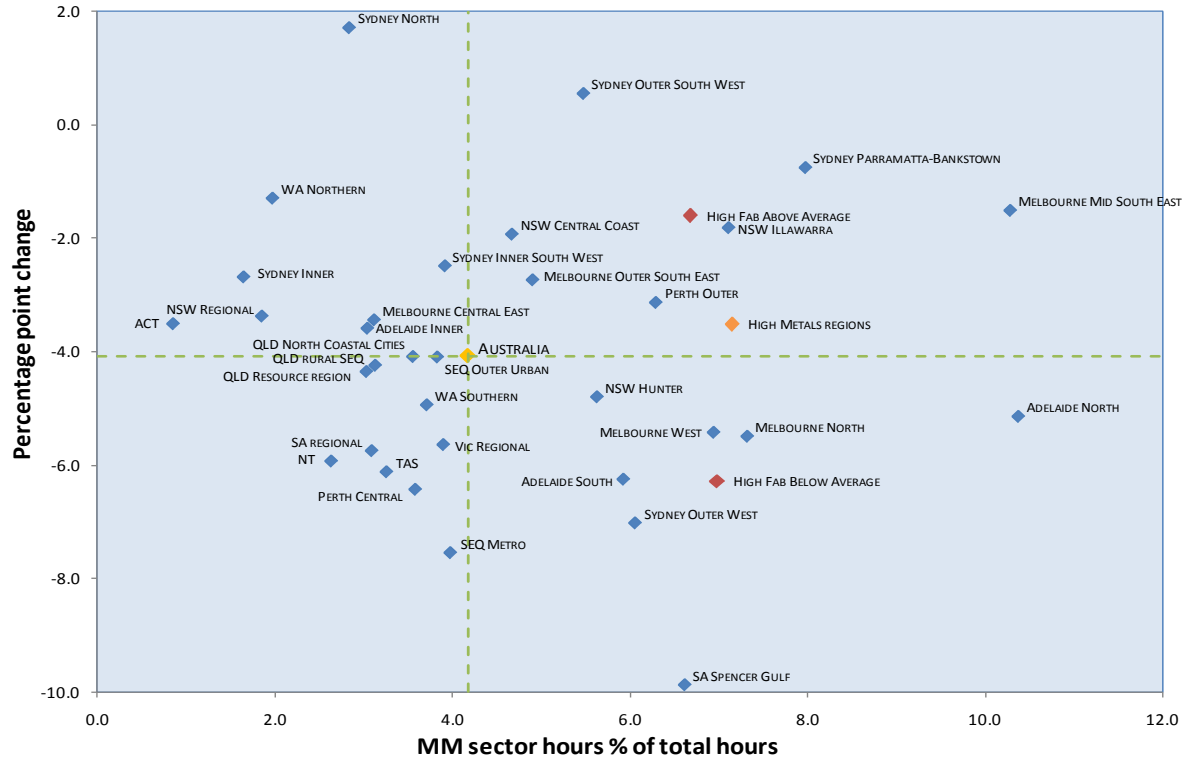


Figure 7.35: Total unemployment rate and headline unemployment rate 2010

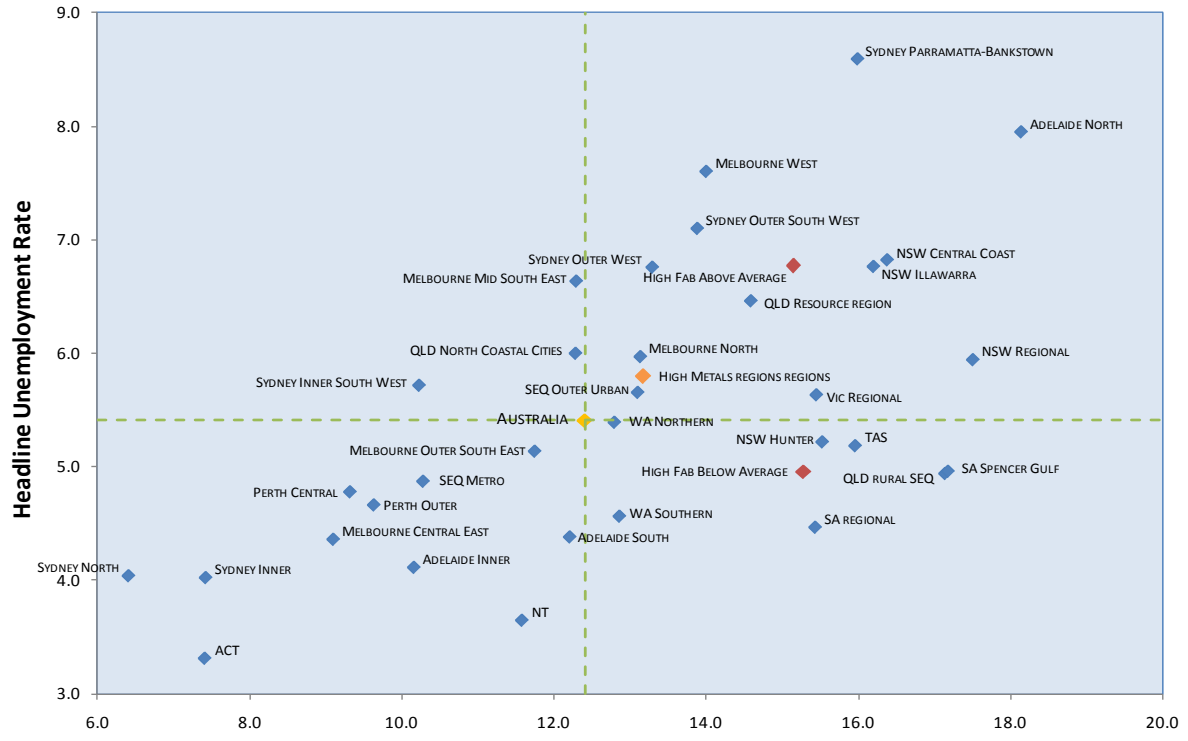


Figure 7.36: Per cent of population aged 21 to 64 years not in employment and headline unemployment rate 2010

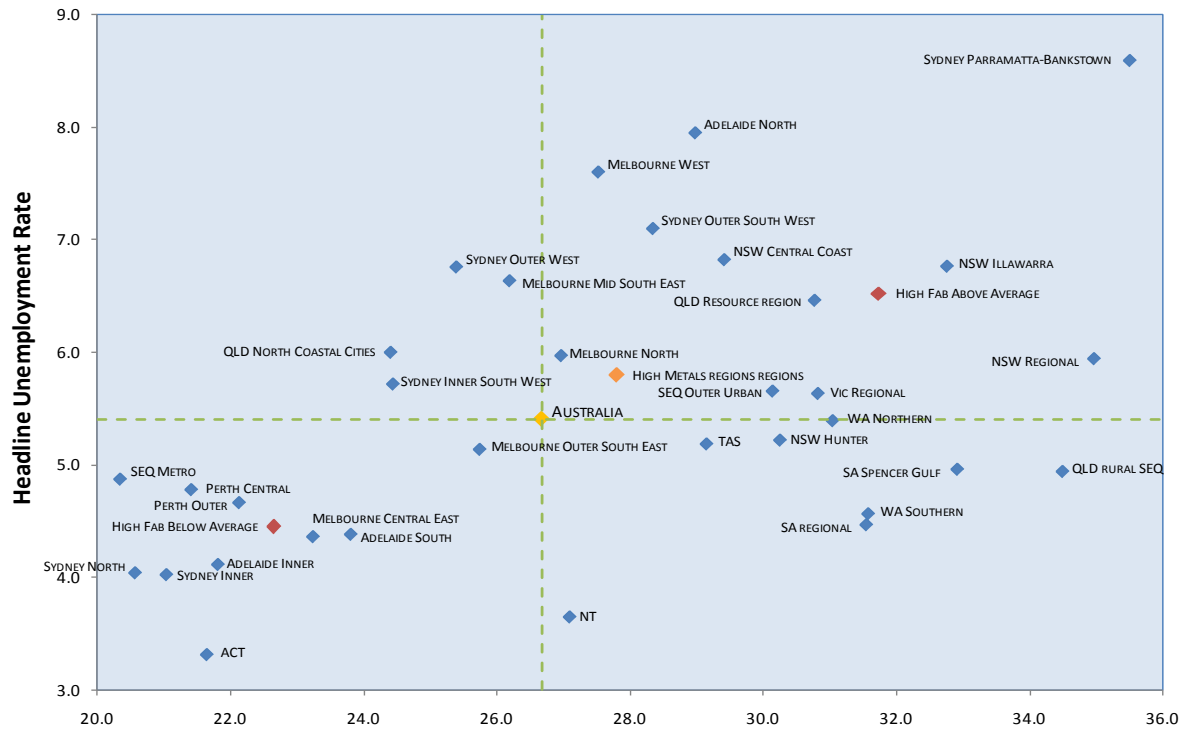


Figure 7.37: Per cent of population aged 21 to 64 years not in employment and total unemployment rate 2010

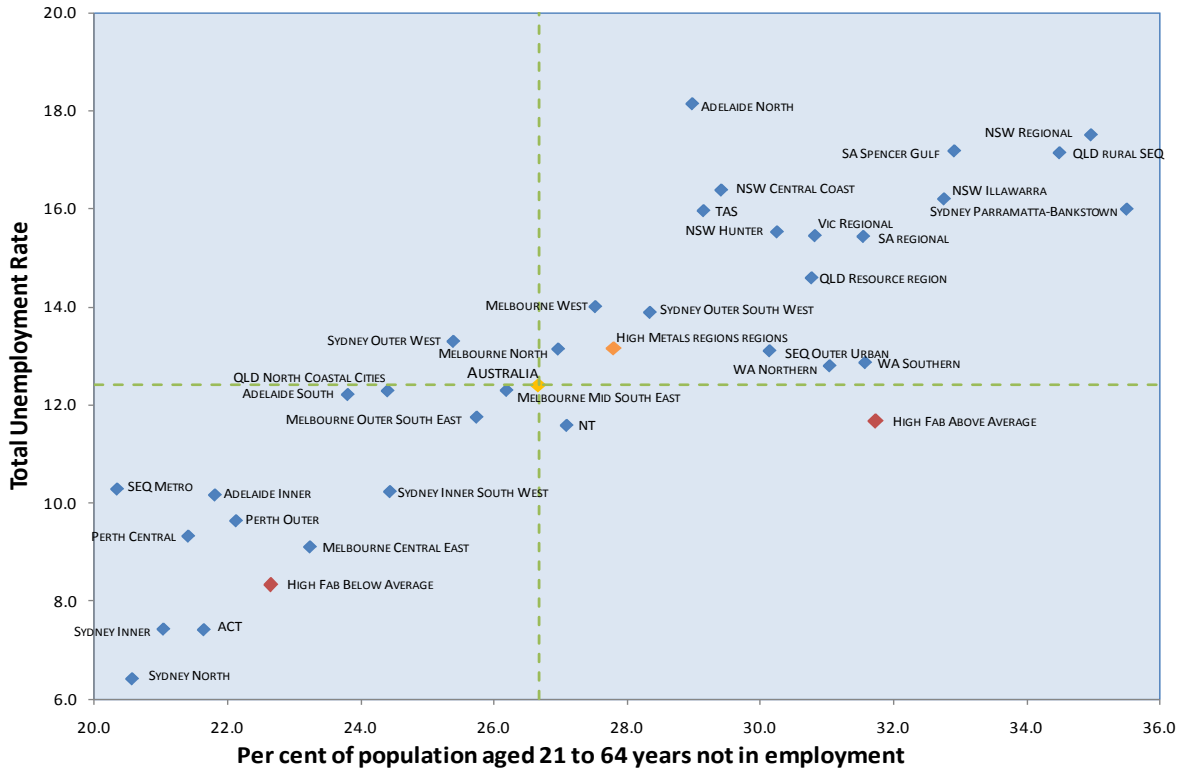


Figure 7.38: Per cent of population aged 15 to 64 years not in employment and headline unemployment rate 2010

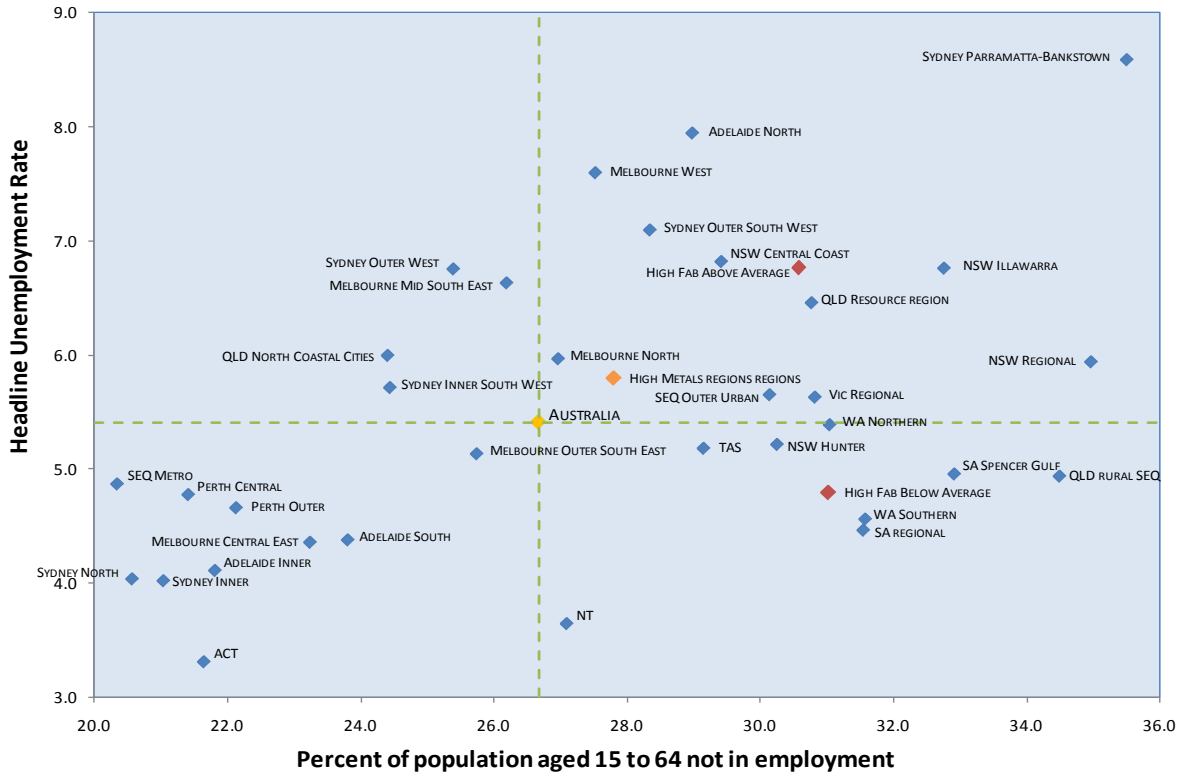


Figure 7.39: Per cent of population aged 15 to 64 years not in employment and total unemployment rate 2010

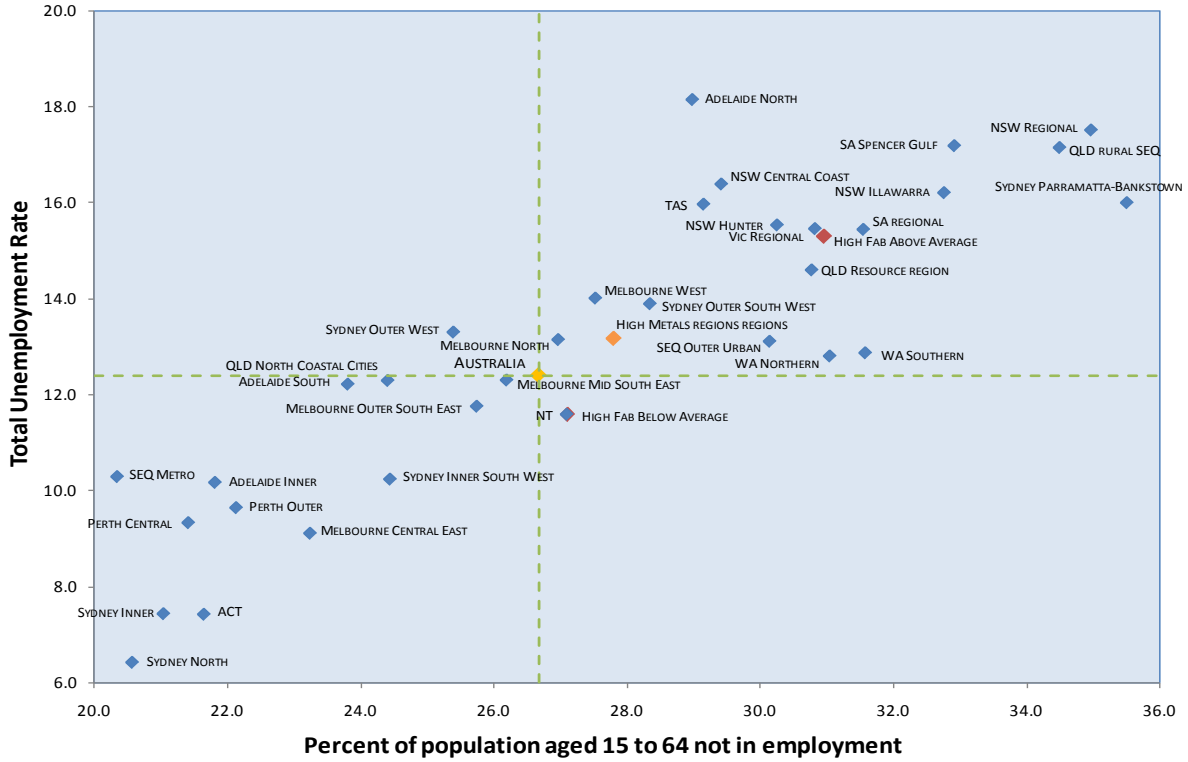


Figure 7.40(a): MM sector hours worked and mining investment per working age population 2010

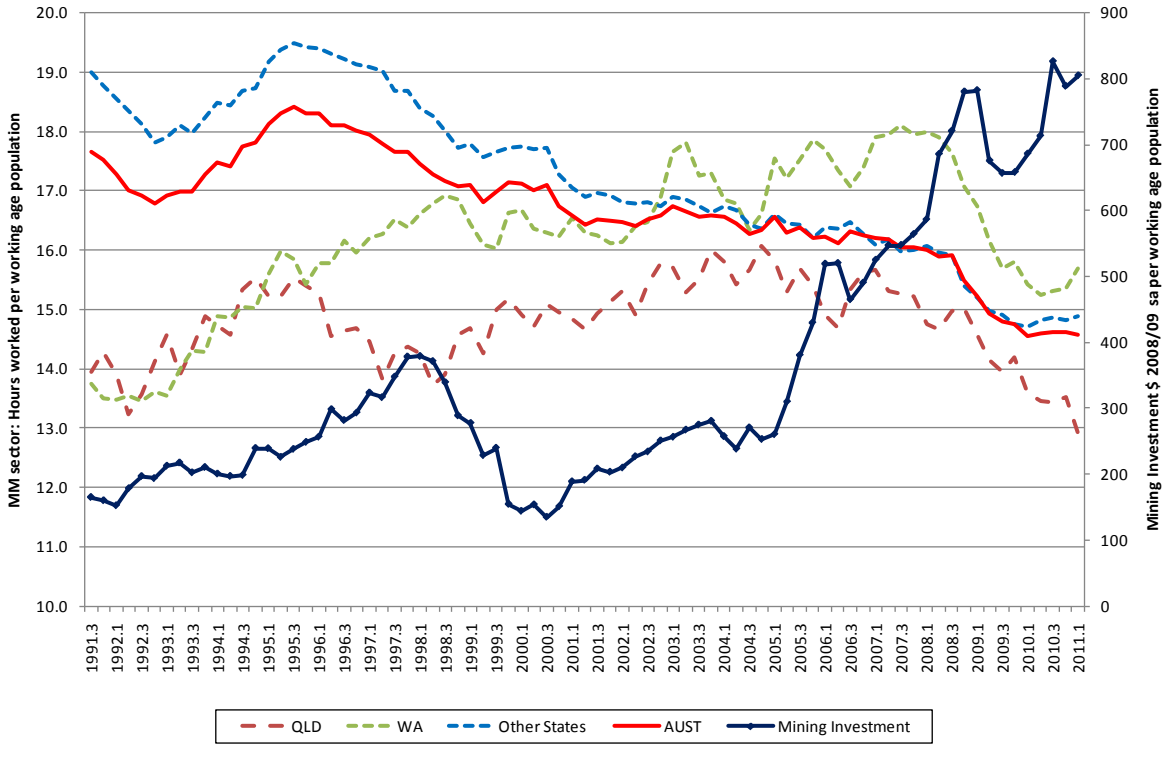


Figure 7.40(b): MM sector hours worked and mining investment per working age population 2010

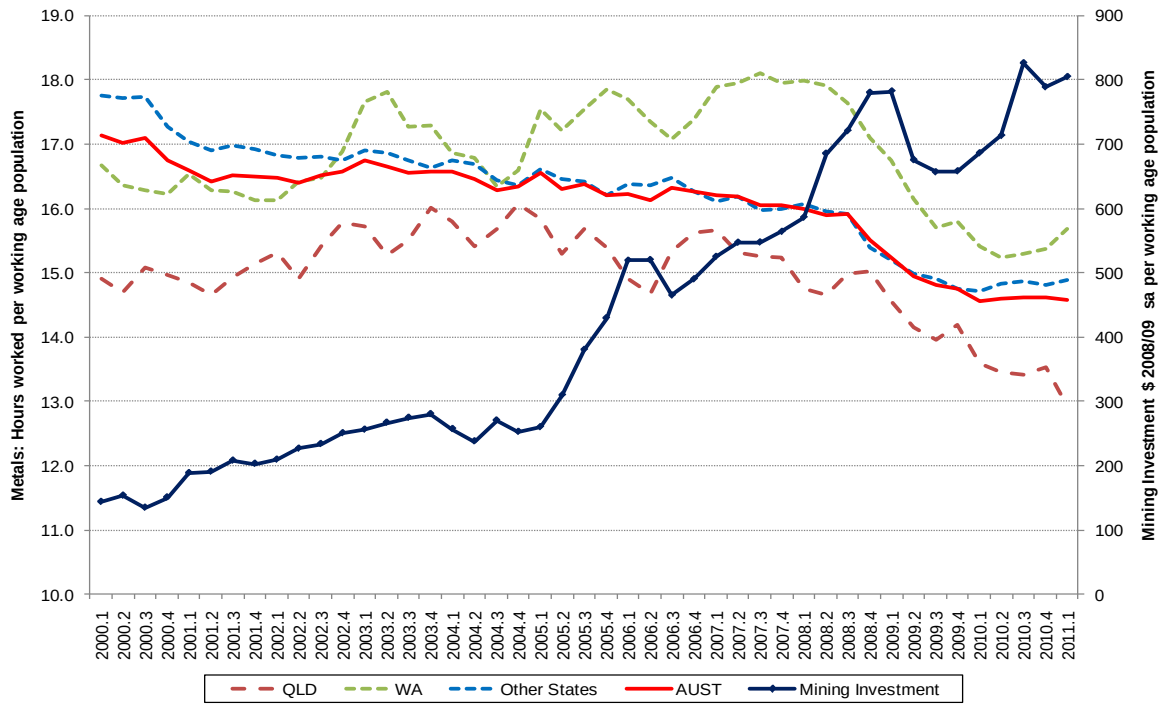
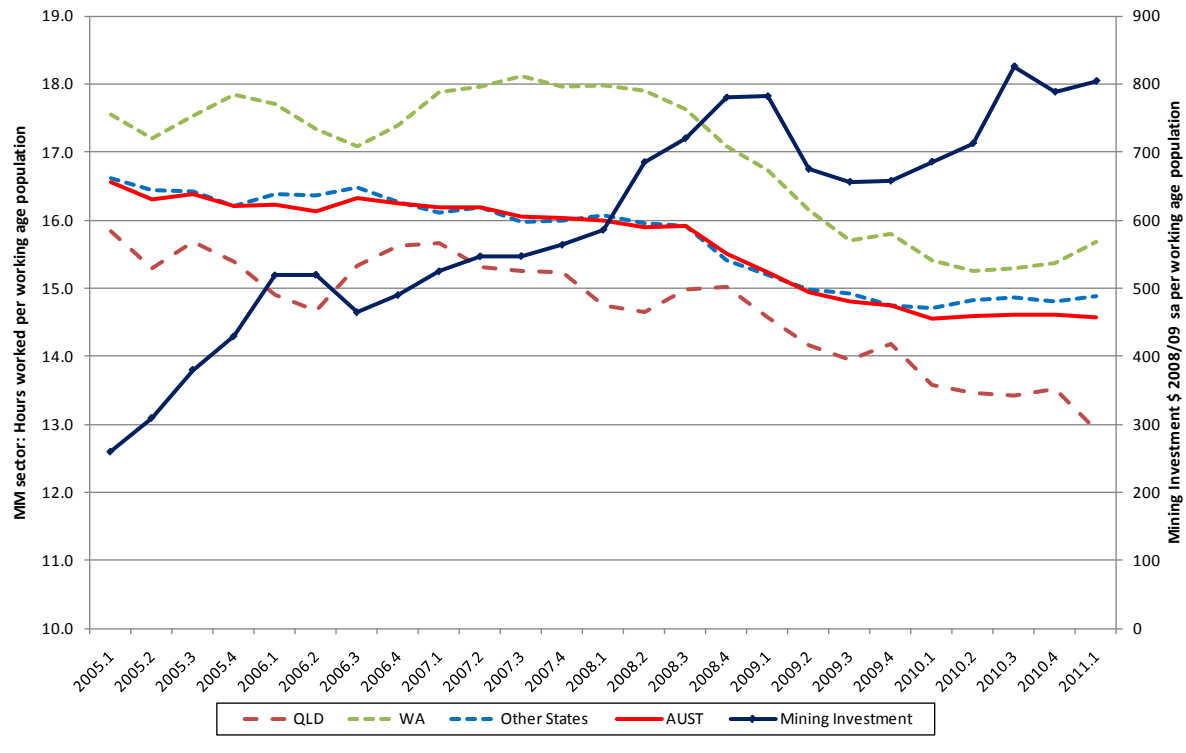


Figure 7.40(c): MM sector hours worked and mining investment per working age population 2010



8. The implications of strategies to increase local content – the macroeconomic context

This chapter explores the costs and benefits of strategies to increase local content, targeted on the MM sector. It is divided into three segments, namely:

(i) the taxation revenue implications of increased local content;

(ii) the macroeconomic benefits of enhanced local content; and

(iii) the net benefits of enhanced local content with particular focus on net taxation revenues.

The argument of this chapter depends on the case made in previous chapters that the current mining expansion is causing substantial crowding out of domestic production which results in under-utilisation of resources, both capital and labour. The Chapter explores ways in which these under-utilised resources could be brought back into production, with obvious benefits to Australian employment and incomes.

The core finding is the Commonwealth Government has it in its power to enhance local content and expand economic activity to achieve very large benefits, not only in the short term by increasing local spinoff from mining construction but in the long term by preventing plant closures. Even better, the proposed actions are budget-neutral.

The regional implications and the impact on unemployment rates are given in Chapter 9.

8.1 Policies to achieve increased local content

Policies to achieve increased local content range from informal negotiation to mandation including financial incentives that compensate the project developers for costs associated with increased local content.

Informal negotiation

As part of the approval process, minimum local content requirements would be agreed to as part of the trade-offs involved in coming to a consensus across a range of issues covering ownership structures, environmental standards and complementary infrastructure provisions (housing, transport infrastructure), etc.

Mandation

Projects deemed marginal to the national interest (based on criteria covering foreign ownership, capital intensity, net balance of payments impacts, etc.) would be required to satisfy minimum local content requirements. The rules defining marginality and the consequent local content requirements would be set before the commencement of the approval process.

Tax incentives

The tax incentive approach could be to offer increased tax concessions and/or resource rent tax (RRT) discounts for increased local content that involves increased costs compared to foreign sourced products. The concessions/discounts would be designed to partially or fully compensate for the additional costs.

For transparency, the bids for the provision of goods and services for an eligible project would need to be conducted by an independent public authority.

Table 8.1 uses the Gorgon-scale LNG project outlined in Chapter 5 to illustrate the cost of the incentives involved. The local content for a major offshore LNG project is approximately 25 to 30 per cent. The table shows the revenue cost of using either an accelerated depreciation loading or a discount to the RRT to maintain the same internal rate of return on the project given an assumed range of additional costs incurred by switching from imported to local content.

Case one will be explained in detail in order to demonstrate how to interpret the table. The underlying base case includes local content at its 'natural' or competitive level of 25 per cent. In case one the policy objective is to increase local content by 10 percentage points, where this is assumed to incur a 10 per cent cost differential. For a $43 billion project this would increase the local content from say $10.8 to $15.1 billion. The cost penalty is 10 per cent or $430 million, which brings total investment outlay to $43,430 million.

In the base case the real internal rate of return on the project (depreciation, interest and profit after taxes) is 7 per cent per annum. In order to maintain the same internal rate of return with the higher cost penalty, a depreciation loading of 10 per cent would have to be given to the project. If the standard allowable depreciation rate was 10 per cent per annum the project would have to be allowed a depreciation rate of 11 per cent per annum, which would allow the project to be written off quicker and earlier.

The foregone Commonwealth taxation revenue is 1.4 per cent for the base case revenue in undiscounted terms and 3.1 per cent in discounted terms. The difference is due to the relatively high loss of taxation revenue in the early years when the depreciation loading instrument is used.

Case four deals with the same 10/10 example but employs a different tax concession: a discount to the 40 per cent RRT rate. In the 10/10 case the discount that would need to be applied to the RRT rate is 4.5 per cent, or a rate reduction of 1.8 percentage points. The foregone revenue in both discounted and undiscounted terms is around 3.5 per cent. In undiscounted terms, this is approximately double the revenue loss when the depreciation loading instrument is used. The reason for this is that as the project would not be paying RRT until the middle of the 2020s at the earliest and therefore would require a larger proportion of tax revenue offsets past the mid-2020s to offset the lack of tax benefits to the project developers in the early years of the project.

The other cases are an approximate linear adjustment from the 10/10 case. Thus, for Case three or the 10/30 per cent case, where a 30 per cent cost disability is assumed, the depreciation loading has to increase to 34 per cent or approximately three times the loading for the 10/10 case, while the discount for the RRT is 14 per cent, again three times the 10/10 case discount.

The same approximate linearity is in evidence for the larger local content cases. For Case 13 or the 30/10 case, a 33 per cent increase in depreciation loading is required, compared to 10 per cent for the 10/10 case.

8.2 Enhanced local content: The macroeconomic benefits

Given that increased local content can be provided using factors of production which are unemployed in the base case, the macroeconomic benefits can readily be calculated using input-output tables and inter-regional trade flow matrices. Table 8.2 shows the macroeconomic benefits from a 15 percentage point increase in local content from a Gorgon scale offshore LNG project. (A 15 per cent benchmark is selected to allow interpolation to 10 percentage points and 20 percentage points, as is considered below.)

A 15 percentage point increase in local content for a $43 billion project gives a GDP benefit of $6.5 billion over four years, or $1.6 billion for one year. The results in the table are for a one year average.

The $1.6 billion GDP benefit is distributed over the MM industries in accordance with the mining industry's current pattern of demand for MM industry products shown in Table 2.2. The distribution is also reflected in the pattern of decline in imports in Table 8.3.

Table 8.2 shows that the annual benefit to GDP at factor cost is $1.6 billion in 2009 prices, with an employment increase of 14,000. The increase in our preferred indicator – net national product – is less, but still substantial at $1.3 billion a year over the four years of enhanced mining construction. The total tax revenue increase for all sources is $376 million or $1.5 billion over four years.

Of interest is the $3bn increase in the capital stock in productive use. This is the capital equivalent of the increase in employment. It represents the notional value of capital which is idle or under-utilised in the base case but is brought into production in the policy case. This is likely to be spread over a large number of enterprises where the capital stock is currently less than fully employed. Up to $30 to $40 billion of existing capacity in the economy may well benefit from enhanced local content.

Table 8.3 shows the distribution of the employment gains across all industries. It is worth noting that half the increase in employment, or 7,000, is in the tertiary sector. Due to (Type II) multiplier effects, for every one employment position created in MM manufacturing, one additional employment position is created in the tertiary sector. Once again, as shown in Chapter 7, these additional positions can be filled by currently under-employed labour.

At this point the case might be considered made. An opportunity exists to increase Australian incomes by employing currently under-employed labour and capital. Why not go for it? However, it should be remembered that the benefits shown in Table 8.3 apply only during the construction phase of the mining boom, whereas the cost of the tax concessions required to compensate the mining industry for the increase in local content runs out for decades. Fiscal prudence demands a more complete account of the costs and benefits.

8.3 Enhanced local content: A net assessment

The task here is to combine the first two parts of this chapter to provide an empirical framework for evaluating the impact of enhanced local content.

Table 8.4 commences this process. This table shows a more detailed time profile of the Commonwealth taxation revenue streams underlying the revenue results given in Table 8.1. The table summarises the year by year results into:

(i) the construction phase – 2011-2014;

(ii) the first half of the production period – 2015-2024; and

(iii) the second half of the production period – 2025-2035.

The results are in terms of difference from the base case which has a "natural" local content of 25 per cent.

Not every case in Table 8.1 is included in Table 8.4. However, a reasonable range is provided. The first case is the 10/10 case or 10 per cent local content enhancement with a 10 per cent cost disability. For the 10/10 case, with the depreciation loading, the total loss of revenue is $845 million in 2009 prices, of which $824 million is foregone in the first half of the production period. For the RRT discount instrument the loss of revenue is $2.1 billion, of which the bulk is foregone over the second half of the production period. Only $172 million is foregone over the first half of the production period.

Table 8.5 uses the results from Table 8.2 to obtain total taxation revenue from enhanced local production over the construction phase. For the 10/10 case this comes to $1.1 billion. For the 10/30 case the total additional taxation revenue from each source is $1.3 billion. This will be higher than in the 10/10 case because of the higher "real" expenditures in the domestic economy because of the higher cost. The same logic applies to the other cases shown in the table.

The short-term entry in Table 8.4 reflects the case where there is no ongoing benefit from the enhanced local content. Domestic production is expanded during the construction phase matched by an equal contraction when investment winds down. However, where significant crowding out occurs in the base case, leading to permanent loss of capacity, additions to local content are likely to have the effect of keeping some capacity operating so that it is still there when the elevated mining investment phase ends and exchange and interest rates return to sustainable levels, rendering the plant profitable again on a long-term basis.

In this case the benefit from enhanced local content over the construction phase will last as long as plant that otherwise would have closed during the construction phase continues in production. The long term entry assumes that the plant continues on to 2035, while the half life assumes that the plant closes at 2024. If the plant continues on for the life of the LNG plant then the total undiscounted taxation revenue from all sources is $6.9 billion, all as a result of the initial enhanced content. For the half life case it is $3.9 billion.

Of course, the relationship between enhanced local content and maintenance of capacity in operations is uncertain, but the one to one relationship assumed in Table 8.5 is likely to be, on average, conservative. This is because, as noted previously, the steel sector appears to be operating at around 50 per cent capacity. Assume that the threshold criterion for continued operation of a plant is that it maintains a capacity utilisation rate of 55 per cent for the last four years. If the plant is currently operating at 50 per cent and under a strategy of increasing local content, assume the plant receives additional orders of 5 per cent of capacity enabling it to maintain production at 55 per cent capacity utilisation for four years. If this does not happen then the plant will close around 2013 or 2014. After 2014, if the mining boom starts to abate and exchange rates and interest rates fall, the plant may well be able to operate at 55 per cent or above for many years from 2014 on even though enhanced local content orders fall to zero.

The important point, however, is that additional orders equal to 5 per cent of capacity can generate additional production up to ten times the orders received under enhanced local content rules. At the other extreme, some of the plants which receive additional orders from enhanced local content may be expected to continue in production irrespective of whether they receive the additional orders or not. Nonetheless, given the current state of the steel sector, the one to one assumption of Table 8.5 is likely to be conservative. If the mining construction boom continues and nothing is done to raise current levels of capacity utilisation in the steel industry, large segments of currently remaining capacity will be closed within a few years.

The potential cost of the closure can be seen from the results in Table 8.6. This table incorporates the net impacts on Government revenue from Tables 8.1 and 8.5. It also has estimates of the cumulative non-discounted increase in GDP at factor cost from the enhanced local content. Table 8.6 has considerable detail because of the need to consider two policy instruments to enhance local content, depreciation loadings and RRT discounts.

The short life cases will be considered first. For the 10/10 case, both total undiscounted and discounted net tax revenue is positive for a total cumulative gap given at factor cost of $4.7 billion in 2009 prices. For the 10/10 case with the RRT loading, the gap gain will be the same but the undiscounted cumulative Government revenue impact will now be negative $1 billion. The discounted tax revenue outcome is positive. Until 2024, the cumulative taxation revenue gain is positive by almost $1 billion. This correlates with the depreciation loading case where there is only a $100 to $200 million cumulative taxation revenue gain by 2024.

The short-term 20/10 case also looks attractive. The 20/20 case for the RRT discount also looks attractive for Governments with a medium-term focus on revenue. The same conclusion applies to the 30/10 case. This would represent the case where Governments had a pessimistic view of long run fossil fuel prices from both the demand and supply perspective and were quite willing to give large discounts to future RRT rates in return for short-term revenues on the grounds that commodity prices may well be such that the RRT revenue that is being given away might not be collected in any case.

For both the half and full life cases there is either a large increase in net taxation revenues or at least a small increase. The only exception is the 10/30 case for the half life assumption and the RRT discount instrument.

For half life and full life cases the gains are large in terms of the cumulative undiscounted gap. The cumulative increase ranges from $16.6 billion for the half life 10/10 case to nearly $90 billion for the full life 30 per cent local content case. These increases are generated at no actual cost to taxation revenue.

The data in Table 8.6 can also be interpreted as showing the very large costs of not doing anything in terms of enhanced local content. If, for the 20/20 case, failure to implement enhanced local content results in the closure of plants over the next one to five years, the cumulative cost to GDP will be around $36 billion if the plant would have remained in production until the mid 2020s and $64 billion if the plant would have gone on operating until 2035. The cost to Government revenue from Table 8.4 would range from $8 to $15 billion in undiscounted terms.

8.4 The policy implications: Reciprocal obligation

Given the above costs and benefits and the current state of the steel sector, no competent Government can avoid seriously considering a policy of enhanced local content. If it confines itself to short term arguments the upper limit of ambition would be the 20/10 or 20/20 case. However, if plant is at risk of closure the longer term cases become relevant. In terms of these cases, the upper limit would be determined by the scale of the plant at risk if nothing is done. However, beyond a 15 to 20 per cent cost disability complementary policies of reciprocal obligation would be desirable. By this is meant that in exchange for enhanced local content local plants with relatively high cost disabilities would be required to satisfy the criterion that they are reasonably expected to be profitable in a post mining boom environment. If that is not the case a complementary investment program would have to be put in place to ensure long-run profitability.

The same requirement would have to be satisfied by firms where the capital stock is nearing the end of its expected life. These firms would also be required to undertake an investment upgrade to ensure that the plants could keep operating beyond the early 2020s.

The impact of a longer mining boom

The analysis of the tables of this section assumes that a more normal environment begins to prevail over the second half of this decade. However, what if this is not the case and the "abnormal" economic conditions extend to 2020? Then the policy would need to continue. The cost to revenue would be greater but not enormously so compared to the benefits. The additional costs can be based on the results of Table 8.4. For another few years the additional undiscounted revenue costs for another five years would be between $2 and $4 billion to lead in a cumulative GDP gain at factor cost of (conservatively) between $35 and $54 billion. The longer the boom the higher will be the risk of plant closure and the higher the benefit multiplier from enhanced local content during the construction phase.

However, the longer the boom lasts the greater the importance of reciprocal obligation responses from the policy beneficiaries. For example, along with plant upgrades there would need to be agreed benchmarks where for a given exchange rate the cost disability declines over time. For example, a cost disability of 20 per cent for a given US$/A$ exchange rate would be expected to decline to 15 per cent by 2015 and 10 per cent by 2020. This would mainly be achieved by the same plant upgrade and modernisation expenditures that would be required to extend the life of plants.

The deemed exchange rate

The costs of the enhanced local content would also be reduced if the "natural" local content was set on the basis of a deemed, rather than the actual, exchange rate. A reasonable deemed exchange rate would be the PPP rate plus, say, 10 per cent, which would give some benefit to the project developers. Such a policy would increase the "natural" or competitive local content and reduce the tax incentives required for further increases in local content.

8.5 The Norwegian precedent

The analysis of this chapter demonstrates the basic arithmetic of why the Norwegian strategy was so successful. The strategy outlined here is different in that it protects capacity already in place. The Norwegians obtained their benefit multipliers by building additional capacity to meet a short-term demand increase from local content enhancement while ensuring that the capacity installed was of sufficient quality to be competitive in the absence of local content support. This meant that even in a stable mining investment profile the next round of local content orders would create additional capacity as the capacity that was previously put in place to sustain previous local content orders was now being used for exports and/or import replacement elsewhere in the economy.

After 30 years of this positive dynamic Norway has created an economy that will be able to survive a steadily contracting resource sector as the oil runs down. For Australia, in contrast, the best that can be hoped for is success in simply keeping what is already in place unless a dramatic change in policy aspirations is achieved.

8.6 Why are the employment and GDP multipliers relatively low?

The implicit multiplier of around 1 for GDP and an employment multiplier of around 10 per $1 million of diverted expenditure to MM products are low, both in terms of other multipliers given above and in terms of other findings. The AEC group "*Impacts of New and Retained Business in the Australian Manufacturing Sector*", December 2008, finds a Type II multiplier for employment of around 17 per $1 million of expenditure.

The answer is that the AEC study undertook the analysis in terms of a direct allocation of imports input-output table. That is, with all the international imports excluded. In the case here a diverted $1 million of demand to local industry would still include all imports used by local industry to produce an Australian finished product. The indirect import of Australian sourced product can be very large. This also explains the low GDP multiplier.

8.7 General mining investment local content increases

The results above are in the context of a particular project. The question is how can the results be carried over into the wider local content framework of mining investment?

Adopting a mining investment benchmark of between $60 to $70 billion which is likely to be the outcome over the next couple of years at least, then a $1.6 billion diversion of demand to the local MM sector would represent an increase in local content of approximately 2.5 percentage points. Therefore, every 1 percentage point increase in local content will generate around $650 million in GDP at factor cost and 5,600 full time equivalent employment positions.

However, what is important for long term benefits is the GDP increase even if, as the next chapter notes, there is little direct employment increase. It is the GDP increase which will keep capacity in place that would otherwise have been shut down.

8.8 The institutional policy framework

The Norwegians have set up a development authority to assist countries to maximise the benefits from resource development by maximising local content form resource development using their domestic template. The agency is the Norwegian Agency for Development Cooperation (NORAD). The focus of the NORAD assistance, in terms of maximising local content, is on the procurement process and the appropriate decisions that need to be made.

In Australia an agency would need to be set up with the objective of maximising local content from resource development both in terms of the construction phase and production stage.

The agency would advise governments during the approval process for a given project of the strategic value of the project, in part by:

(i) assessing the impact on resource requirements during the construction stage; and

(ii) the NNP/GDP and NNP/investment ratios for the production stage.

This would form the basis of the rules for local content that would apply if approval was granted, namely:

(i) the setting of a deemed exchange rate if required for bid evaluation – the less strategic value a project the more likely a deemed exchange rate would be adopted;

(ii) a maximum acceptable domestic cost disability margin;

(iii) the extent to which a domestic cost disability margin is to be compensated for and how it is to be compensated; and

(iv) determining the potential maximum level of local content by project segment.

Once approved the agency would have responsibility for:

(i) communicating well in advance to local companies the contracts available for bid;

(ii) working with local suppliers to maximise their competitiveness in their bids; and

(iii) monitoring the bid process for the contracts included in the potential local content segment of the project to.

Table 8.1 The trade-off between cost disability, tax warranties and a given internal rate of return: Large scale offshore LNG project

	Additional local content (%)	Cost differential (%)	Depreciation loading (%)	Resource rent tax discount (%)	Undiscounted Commonwealth tax revenue foregone ($% of case)	Discounted Commonwealth tax revenue foregone (6% discounted) (% of base case)
Case one	10	10	10	–	-1.4	-3.1
Case two	10	20	21	–	-3.2	-6.3
Case three	10	30	34	–	-4.9	-9.7
Case four	10	10	–	4.5	-3.5	-3.6
Case five	10	20	–	11	-7.8	-7.7
Case six	10	30	–	14	-10.5	-10.5
Case seven	20	10	21	–	-3.3	-6.4
Case eight	20	20	45	–	-6.6	-12.5
Case nine	20	30	79	–	-9.7	-18.3
Case ten	20	10	–	9	-7.3	-7.0
Case eleven	20	20	–	21	-14.3	-14.1
Case twelve	20	30	–	33	-21.8	-21.3
Case thirteen	30	10	33	–	-4.9	-9.6
Case fourteen	30	20	78	–	-9.5	-18.1
Case fifteen	30	30	109	–	-14.5	-25.2
Case sixteen	30	10	–	12	-10.5	-10.5
Case seventeen	30	20	–	33	-21.8	-21.3
Case eighteen	30	30	–	58	-33.8	-32.3

Table 8.2 Increased local content from mining investment: Annual impact on national economic indicators – large scale offshore LNG project
15 percentage point increase in local content on $43 billion project over 4 years

National aggregates		
GDP at factor cost	$2009m	1615.6
Mining gross product at factor cost	$2009m	108.4
Non mining gross product at factor cost	$2009m	1507.2
Gross local product at factor cost	$2009m	1163.2
Net local product at factor cost	$2009m	1018.5
Total employment - full time equivalent	‘000	14.0
Household consumption expenditure at basic values	$2009m	528.2
Per capita household consumption expenditure	index – per cent change	0.1
Capital stock	index – per cent change	3044.8
Factor productivity - net national product		0.0
Household income Formation		
Net national product at factor cost	$2009m	1354.6
Wages and salaries	$2009m	961.6
Mixed income	$2009m	116.9
Interest received dividends	$2009m	93.8
Disposable income	$2009m	739.8
Government revenue		
Household direct taxes	$2009m	198.1
Enterprise direct taxes	$2009m	94.5
Indirect taxes	$2009m	82.8
Total	$2009m	375.5

Table 8.3 Increased local content from mining investment: Annual impact on national industry indicators – large scale offshore LNG project
15 percentage point increase in local content on $43 billion project over 4 years

	Gross output (2009 $m)	Imports (2009 $m)	Supply (2009 $m)	Employment ('000)
Sheep	2.5	0.0	2.5	0.02
Grains	3.6	0.0	3.6	0.01
Beef cattle	6.5	0.0	6.5	0.05
Dairy cattle	3.5	0.0	3.5	0.02
Pigs	0.9	0.0	0.9	0.01
Poultry	2.0	0.0	2.0	0.01
Other agriculture	12.4	1.1	13.6	0.07
Services to agriculture, hunting & trapping	3.3	0.0	3.3	0.01
Forestry and logging	1.8	0.1	1.9	0.01
Commercial fishing	1.9	0.2	2.1	0.01
Coal	12.1	0.0	12.2	0.01
Oil and gas	25.7	16.6	42.3	0.01
Iron ores	18.3	1.8	20.0	0.01
Non-ferrous metal ores	117.6	47.8	165.4	0.13
Other mining	16.9	2.9	19.8	0.04
Services to mining	17.5	0.1	17.6	0.05
Meat and meat products	15.1	0.7	15.8	0.05
Dairy products	11.3	1.2	12.5	0.02
Fruit and vegetable products	3.6	2.0	5.6	0.01
Oils and fats	1.5	1.0	2.4	0.00
Flour mill products and cereal foods	6.0	0.7	6.8	0.01
Bakery products	4.8	0.7	5.5	0.04
Confectionery	3.7	1.1	4.7	0.01
Other food products	9.1	3.5	12.6	0.02
Soft drinks, cordials and syrups	4.5	0.3	4.8	0.01
Beer and malt	4.0	0.6	4.6	0.01
Wine, spirits and tobacco products	4.5	2.8	7.3	0.01
Textile fibres, yarns and woven fabrics	0.7	1.9	2.7	0.00
Textile products	1.7	3.1	4.8	0.01
Knitting mill products	0.9	1.2	2.1	0.00
Clothing	2.3	5.7	8.0	0.02
Footwear	0.5	1.8	2.3	0.00
Leather and leather products	0.6	1.5	2.1	0.00
Sawmill products	3.8	1.1	5.0	0.01
Other wood products	6.8	1.8	8.6	0.04
Pulp, paper and paperboard	1.5	3.1	4.6	0.00
Paper containers and products	4.5	1.2	5.6	0.02
Printing and services to printing	15.5	1.3	16.8	0.07
Publishing, recorded media, etc.	14.1	2.8	16.9	0.06
Petroleum and coal products	27.1	15.3	42.4	0.01
Basic chemicals	16.7	18.9	35.7	0.01

Table 8.3 Increased local content from mining investment: Annual impact on national industry indicators – large scale offshore LNG project 15 percentage point increase in local content on $43 billion project over 4 years (continued)

	Gross output (2009 $m)	Imports (2009 $m)	Supply (2009 $m)	Employment ('000)
Paints	2.4	0.9	3.3	0.01
Medicinal and pharmaceutical products, pesticides	3.9	6.6	10.5	0.01
Soap and detergents	1.6	0.8	2.4	0.00
Cosmetics and toiletry preparations	0.4	1.7	2.1	0.00
Other chemical products	3.0	2.0	5.0	0.01
Rubber products	1.9	5.2	7.1	0.01
Plastic products	12.0	6.0	18.0	0.04
Glass and glass products	6.3	2.1	8.4	0.02
Ceramic products	1.1	2.6	3.7	0.01
Cement, lime and concrete slurry	5.8	0.3	6.1	0.01
Plaster and other concrete products	2.4	0.1	2.5	0.00
Other non-metallic mineral products	1.6	0.5	2.1	0.01
Iron and steel	422.1	-155.2	266.9	1.00
Basic non-ferrous metal and products	283.8	-23.8	260.0	0.17
Structural metal products	155.8	-103.4	52.3	0.26
Sheet metal products	47.2	-31.2	16.0	0.07
Fabricated metal products	259.2	-218.7	40.5	1.13
Motor vehicles and parts, other transport equipment	81.6	-37.6	44.0	0.29
Ships and boats	10.6	-8.6	1.9	0.01
Railway equipment	10.7	-5.0	5.7	0.01
Aircraft	66.3	-46.3	20.0	0.09
Photographic and scientific equipment	29.8	-16.9	12.9	0.11
Electronic equipment	65.9	-28.2	37.7	0.34
Household appliances	33.1	-22.0	11.2	0.06
Other electrical equipment	112.5	-56.8	55.7	0.34
Agricultural, mining, etc. machinery	296.5	-283.0	13.5	1.18
Other machinery and equipment	322.6	-270.5	52.2	1.23
Prefabricated buildings	1.3	0.0	1.3	0.00
Furniture	5.0	3.6	8.6	0.04
Other manufacturing	8.0	4.9	12.9	0.02
Electricity supply	73.3	0.0	73.4	0.10
Gas supply	8.5	0.0	8.5	0.02
Water supply, sewerage and drainage services	18.9	0.0	19.0	0.05
Residential building	6.9	0.0	6.9	0.01
Other construction	11.1	0.0	11.1	0.02
Construction trade services	57.3	0.0	57.4	0.30
Wholesale trade	178.1	0.7	178.8	0.60
Wholesale mechanical repairs	2.8	0.0	2.8	0.01
Other wholesale repairs	16.2	0.0	16.2	0.03

Table 8.3 Increased local content from mining investment: Annual impact on national industry indicators – large scale offshore LNG project 15 percentage point increase in local content on $43 billion project over 4 years (continued)

	Gross output (2009 $m)	Imports (2009 $m)	Supply (2009 $m)	Employment ('000)
Retail trade	106.7	0.9	107.6	0.93
Retail mechanical repairs	24.4	0.0	24.4	0.34
Other retail repairs	1.3	0.0	1.3	0.02
Accommodation, cafes and restaurants	56.7	5.6	62.3	0.40
Road transport	59.5	1.4	60.9	0.29
Rail, pipeline and other transport	15.6	0.8	16.5	0.07
Water transport	5.9	1.2	7.1	0.01
Air and space transport	20.1	6.5	26.6	0.05
Services to transport, storage	60.5	0.2	60.7	0.16
Communication services	72.2	1.3	73.5	0.22
Finance	152.2	1.3	153.5	0.38
Ownership of dwellings	0.0	0.0	0.0	0.00
Other property services	145.7	1.3	147.0	0.22
Scientific research, technical and computer services	76.8	3.7	80.6	0.42
Legal, accounting, marketing and business management services	97.2	5.0	102.2	0.43
Other business services	79.8	2.0	81.9	0.42
Government administration	9.0	0.0	9.0	0.07
Defence	0.2	0.0	0.2	0.00
Education	31.8	1.4	33.3	0.31
Health services	27.7	0.7	28.4	0.26
Community services	3.4	0.0	3.4	0.05
Motion picture, radio and television services	18.3	1.4	19.7	0.05
Libraries, museums and the arts	4.1	0.2	4.3	0.04
Sport, gambling and recreational services	19.8	0.6	20.4	0.11
Personal services	11.2	0.2	11.4	0.18
Other services	12.6	0.0	12.6	0.10
Total	**4151.5**	**-1087.4**	**3064.1**	**14.04**

Table 8.4	The taxation revenue implications of enhanced local content: The case of a large offshore LNG project							
	Enhanced local content (%)	Cost disability (%)	Instrument	Construction period – 2011-2014 (2009 $m)	First half production period – 2015-2024 (2009 $m)	Second half production period – 2025-2035 (2009 $m)	Total undiscounted	Total discounted (6%)
Case one	10	10	Depreciation loading	0	-824	-22	-845	-650
Case two	10	10	RRT discount	0	-172	-1891	-2063	-727
Case two	10	30	Depreciation loading	0	-2776	5	-2771	-1974
Case two	10	30	RRT discount	0	-517	-5613	-6130	-2109
Case three	20	10	Depreciation loading	0	-1726	-200	-1926	-1341
Case three	20	10	RRT discount	0	-345	-3724	-4069	-1412
Case four	20	20	Depreciation loading	0	-3708	-152	-3859	-2615
Case four	20	20	RRT discount	0	-689	-7660	-8349	-2845
Case five	30	10	Depreciation loading	0	-2709	-182	-2892	-1995
Case five	30	10	RRT discount	0	-517	-5613	-6130	-2109

Table 8.5	The gross taxation revenues from enhanced local content (2009 $m)							
	Enhanced local content (%)	Cost disability (%)	Instrument	Construction period – 2011-2014 (2009 $m)	First half production period – 2015-2024 (2009 $m)	Second half production period – 2025-2035 (2009 $m)	Total undiscounted	Total discounted (6%)
Case one	10%	10%	Short term	1101	0	0	1101	998
			Long term	1101	2753	3029	6883	3604
			Half life	1101	2753	0	3855	2651
Case two	10%	30%	Short term	1302	0	0	1302	1180
			Long term	1302	3254	3579	8135	4259
			Half life	1302	3254	0	4556	3134
Case three	20%	10%	Short term	2203	0	0	2203	1997
			Long term	2203	5507	6057	13767	7208
			Half life	2203	5507	0	7709	5303
Case four	20%	20%	Short term	2403	0	0	2403	2178
			Long term	2403	6007	6608	15018	7864
			Half life	2403	6007	0	8410	5785
Case five	30%	10%	Short term	3304	0	0	3304	2995
			Long term	3304	8260	9086	20650	10813
			Half life	3304	8260	0	11564	7954

Table 8.6 Net taxation revenues from enhanced local content (2009 $m)

	Enhanced local content (%)	Cost disability (%)	Instrument	Term	Construction period – 2011-2014 (2009 $m)	First half production period – 2015-2024 (2009 $m)	Second half production period – 2025-2035 (2009 $m)	Total undiscounted	Total discounted (6%)	Total undiscounted GDP at factor cost ($b)
Case	10%	10%	Depreciation loading	Short term	1101	-824	-22	256	349	4.7
Case	10%	10%	Depreciation loading	Long term	1101	1930	3007	6038	2954	29.6
Case	10%	10%	Depreciation loading	Half life	1101	1930	-22	3009	2002	16.6
Case	10%	10%	RRT discount	Short term	1101	-172	-1891	-962	272	4.7
Case	10%	10%	RRT discount	Long term	1101	2581	1138	4820	2877	29.6
Case	10%	10%	RRT discount	Half life	1101	2581	-1891	1791	1925	16.6
Case	10%	30%	Depreciation loading	Short term	1302	-2776	5	-1469	-794	5.6
Case	10%	30%	Depreciation loading	Long term	1302	478	3584	5364	2285	35.0
Case	10%	30%	Depreciation loading	Half life	1302	478	5	1785	1159	19.6
Case	10%	30%	RRT discount	Short term	1302	-517	-5613	-4828	-929	5.6
Case	10%	30%	RRT discount	Long term	1302	2737	-2034	2005	2150	35.0
Case	10%	30%	RRT discount	Half life	1302	2737	-5613	-1575	1025	19.6
Case	20%	10%	Depreciation loading	Short term	2203	-1726	-200	277	656	9.5
Case	20%	10%	Depreciation loading	Long term	2203	3781	5858	11841	5868	59.2
Case	20%	10%	Depreciation loading	Half life	2203	3781	-200	5783	3962	33.2
Case	20%	10%	RRT discount	Short term	2203	-345	-3724	-1866	585	9.5
Case	20%	10%	RRT discount	Long term	2203	5162	2333	9698	5796	59.2
Case	20%	10%	RRT discount	Half life	2203	5162	-3724	3641	3891	33.2

Table 8.6 Net taxation revenues from enhanced local content (2009 $m) – continued

	Enhanced local content (%)	Cost disability (%)	Instrument	Term	Construction period – 2011-2014 (2009 $m)	First half production period – 2015-2024 (2009 $m)	Second half production period – 2025-2035 (2009 $m)	Total undiscounted	Total discounted (6%)	Total undiscounted GDP at factor cost ($b)
Case	20%	20%	Depreciation loading	Short term	2403	-3708	-152	-1457	-437	10.3
Case	20%	20%	Depreciation loading	Long term	2403	2300	6456	11159	5248	64.6
Case	20%	20%	Depreciation loading	Half life	2403	2300	-152	4551	3170	36.2
Case	20%	20%	RRT discount	Short term	2403	-689	-7660	-5946	-667	10.3
Case	20%	20%	RRT discount	Long term	2403	5318	-1052	6669	5018	64.6
Case	20%	20%	RRT discount	Half life	2403	5318	-7660	61	2940	36.2
Case	30%	10%	Depreciation loading	Short term	3304	-2709	-182	412	1000	14.2
Case	30%	10%	Depreciation loading	Long term	3304	5551	8904	17758	8817	88.9
Case	30%	10%	Depreciation loading	Half life	3304	5551	-182	8672	5959	49.8
Case	30%	10%	RRT discount	Short term	3304	-517	-5613	-2826	886	14.2
Case	30%	10%	RRT discount	Long term	3304	7743	3473	14520	8703	88.9
Case	30%	10%	RRT discount	Half life	3304	7743	-5613	5434	5845	49.8

9. Australian regions and mining expansion: Crowding out versus crowding in

So far in this study we have developed the argument on the basis of simple relationships and publicly available data. The process has been transparent and there has been no resort to sophisticated economic models of the kind which generate complaints that full documentation is not available. Readers are encouraged to replicate the results.

However, an important assumption underlying the analysis is that under-employed resources can be brought into production without violating capacity constraints or generating inflation. The argument is that these resources are to be found in regions which are not directly affected by mining construction. To check the assumption it is necessary to resort to regional modelling. This chapter uses NIEIR's 567 LGA input-output inter-regional trade flow model of the Australian economy to estimate regional impacts. The data set underlying the model will be familiar to readers of NIEIR's annual *State of the Regions reports,* published by the Australian Local Government Association.

Where increased local content is used to counter the impact of the crowding out mechanism it makes sense to refer to the local-content strategy as one of crowding-in. Accordingly the strategy in this chapter is to balance the effects of crowding out and crowding in region by region.

The shocks to the model are benchmarked to the macroeconomic results presented in Chapters 2, 3, 4 and 8. Thus, for example, the increase in national import penetration across all industries is derived from the full crowding out case given in Chapter 2. This percentage increase in international imports by industry is then applied to the international imports going into the same industry uniformly across all LGAs in Australia. We do not attempt regional discrimination in terms of increased import intensity since there is no logical way of doing this.

The same approach is adopted for regional international imports of the 15 percentage point local enhancement case given in Table 8.2. The regional assessment of the construction impact is also benchmarked to the national outcome with the construction allocation to LGAs based on the average of the immediate past and immediate future construction activity. The results of the crowding out analysis are given in Table 9.1 to Table 9.4 and the crowding in case in Table 9.5.

9.1 The crowding out case

The current mining boom is typical of its kind in that construction of new mines and related transport and mineral processing facilities is concentrated in a very limited number of mining areas. For the purposes of the present study it has been assumed that mine and related construction will increase employment hours by 20 per cent or more over base case in the following LGAs.

- WA: Ashburton, East Pilbara, Roebourne, Kalgoorlie-Boulder, Collie and Wyndham East Kimberley.
- Qld: Gladstone, Isaac.
- NSW: Singleton.

This may not be the exact list at any time, but it suffices to make the point that the source of the boom lies in nine or so LGAs out of the Australian total of 568.

Hours worked are projected to increase by 5<20 per cent in a further 16 LGAs. These include a few which benefit indirectly as suppliers of services to mining as well LGAs receiving significant mining investment.

- WA: Belmont, Geraldton, Melville, Augusta Margaret River, Katanning, Bunbury, Yalgoo.
- Queensland: Central Highlands, Whitsunday, Mackay.
- NSW: Lithgow, Jerilderie, Broken Hill, Mid-western regional.
- NT: Darwin, Wagait.

It will be noted that the mining construction boom analysed in this study does not extend into Victoria, SA, Tasmania or the ACT. It should also be remembered that construction does not necessarily spill over into adjacent LGAs. Thus employment hours in Singleton LGA are assumed to increase by 26 per cent during the construction boom while employment hours in its neighbour Cessnock stagnate with a 0.7 per cent increase. Similarly employment hours in East Pilbara boom at a 67 per cent increase while increases in several of its neighbours, such as Derby West Kimberley and Ngaanyatjarraku are less than 1 per cent. The regional results reported here thus mask considerable intra-regional differences.

If the mining boom continues it is likely that investment will move around the mining districts somewhat. However the pattern of strong impacts on particular LGAs is likely to continue, as is the regional pattern which concentrates investment in the major mining regions.

A second way to express the localisation of the mining boom is to look at the production phase. Here the assumption is that the increases in employment will be a little more widespread, since mine production is assumed to increase not only from the capacity created by mine construction currently under way but from fuller utilisation of existing capacity. This indicator emphasises the Western Australian nature of the boom. Seventeen of the 18 LGAs where employment hours are expected to increase by more than 10 per cent over base case are located in WA – the exception is Isaac in Queensland with a projected increase of 11 per cent. A further 17 LGAs in WA are projected to experience production-phase employment increases of 3<10 per cent, compared with five in Queensland, five in NSW, one in SA and none in the NT, Victoria or Tasmania.

A boom which is thus concentrated can be expected to create localised full employment – indeed over-full employment. If macroeconomic policy is used to counter these isolated boom conditions there is a considerable risk that the rest of the country will become depressed. However, the demand generated by the boom does generalise to some extent through purchases from and remittances to the rest of the country.

The construction phase of the mining boom: regional effects

During the construction phase, investment in new mines, in transport facilities to serve the mines and various processing facilities increases the demand for labour, construction materials and equipment. Much of the equipment demand is satisfied overseas, financed by the inflow of overseas investment funds. It is not expected that the demand for labour and construction materials will be affected by capacity constraints, for the following reasons.

- The mining industry has a deep pocket and will pay higher wages and prices if required.
- The Commonwealth government is expected to respond to any reports of labour shortage by raising immigration.
- Labour and materials are being made available by the depressive effects of the construction boom on other industries.

Given the lack of capacity constraints, the direct effect of the construction boom will be to raise employment in all regions, particularly WA North. The increase in non-mining regions remote from the scene of action will, however, be very modest – 1 per cent or less in Tasmania, Victoria and most of SA.

The aftermath of the mining boom: regional effects

The growth of mining at the expense of other tradeable industries, especially the knowledge-based industries (see Ch 1), has inevitable regional effects. To assess these effects, we compare the situation as it is likely to apply after the current mining construction boom has ended with the situation before the boom started. In the aftermath case mining production has increased as a result of the investment but mining construction employment has fallen back to pre-boom levels. Workers are available to increase employment in the non-mining industries but, as a result of the boom, knowledge-based products have not been developed, capital has not been invested and capacity has been permanently lost.

The severity of the aftermath of a mining boom depends on several factors.

- The continuing positive effect of employment in mine production.
- The severity of the negative effect on the non-mining industries for each year that the mining construction boom continues.
- The duration of the mining construction boom.

The positive effect of employment in mine production is calculated to increase national employment by around 0.6 per cent over what would have been the case had there been no boom. Though in itself a positive, this is a reduction from the employment generated by mining construction, which may be estimated at a 1.9 per cent increase over the no-boom base case. The poor job yield of the mining industry in the production phase of a mining boom arises because mining is capital intensive and yields few jobs per million dollars invested. The reduction compared to the construction phase is not good, not only because of the need to find jobs for a decade's natural increase in the population but because the immigrants brought in to Australia to service the boom will have added to the population seeking jobs. (This was much discussed during the 1980s as the 'Gregory effect'.)

Like the effect on the demand for labour for construction, the direct effect of the demand for mine operating labour is projected to be positive in all regions. However, the main positive effects are in WA and to a lesser extent Queensland. At the opposite extreme, SA and Victoria are projected to benefit very little (reflecting the assumed response of mine production to the boom) and Tasmania hardly at all. Benefits in NSW and South East Queensland are also projected to be subdued.

Against these benefits it is necessary to offset the disbenefits of the crowding out of non-mining trade-exposed production during the construction phase of the mining boom. The mechanisms of crowding out include the following.

- The high exchange rate, which is partly a consequence of short-term expectations but also reflects flows of funds, including funds to finance the mining boom and funds attracted by high interest rates relative to other countries.
- The high interest rates imposed by the RBA to counter inflation expected to result from the boom, both directly and indirectly through the high exchange rate.
- Shortages of particular skills, though largely alleviated by immigration.
- The diversion of investor expectations to emphasise mining as against other industries.

Similar to the direct benefits, the indirect disbenefits also affect all regions – even regions in the midst of boom. For example, the ill-effects of the high exchange rate on tourism have seriously tarnished the boom in Broome, despite the roaring level of construction activity in nearby shires. This said, the regions that are most seriously vulnerable to disbenefits from crowding out are those with high proportions of knowledge-based industries in their production structure, located far away from the booming regions. Disbenefits are thus considerable in Victoria, NSW and SA, particularly in the manufacturing belts of Sydney, Melbourne and Adelaide.

How much crowding out?

The evidence to date suggests that the optimistic, half crowding out case is close to reality. However, on a per capita basis (after taking into account the inflow of population to support mining construction) the full crowding out case per capita is likely to be closer to reality. However the data in the Tables is in gross terms which makes the half crowding out case appropriate.

The impact of the duration of the boom

Although the net effects calculated for the half and full crowding out cases are for production impacts only and therefore apply after the construction phase has ended, a long construction phase will not prevent negative impacts while elevated construction activity is still occurring.

Taking the example of Inner Sydney, resident employment increases 1.5 per cent compared to what otherwise would have been the case for every year of continued mining construction at approximately current rates. As mining production comes on stream, both the mine production and crowding out effects come into play (respectively 0.2 and -0.6 per cent for each year of the mining construction boom). If the construction impact is divided by the annual net crowding out effect, which for Inner Sydney varies between -0.4 per cent for full crowding out to -0.1 per cent for half crowding out, the result is the number of years in which Inner Sydney will receive an overall positive impact from continuation of the current mining expansion. For the full crowding out case the region receives net positive benefits for no more than 4.1 years but in the half crowding out case Inner Sydney could have a positive outcome for a couple of decades, provided the construction phase continues.

Table 9.4 provides a preliminary estimate of the duration of net benefit from a continuing mining boom, before the negative crowding-out effect catches up with the positive construction and mine production effects. The table summarises a large mass of data, including input-output relationships, calculations of industry profitability and investment reactions to profitability.

Regions expected to receive long-term benefits from a continued boom in mining construction include the mining regions themselves – not only the major boom regions, but most regions where mining-related construction is present. The benefiting regions also include the capitals of the major mining states – Perth and (to a much lesser extent) Brisbane. Judging by recent performance they should probably also include the ACT.

The regions expected to receive negative benefits within a few years include the following. The list includes regions moving to negative benefit after two years of mining boom under the full crowding out scenario, equivalent to moving to negative benefit after six years if half crowding out takes place.

- All of Tasmania.
- All of Victoria.
- SA except for the far north.
- Sydney Parramatta Bankstown and Sydney Outer West.

Even if mining investment continues at high levels, after a few years these regions would have been better off if the mining boom had not occurred. This of course depends on a continuation of current policies. The result could be quite different if tax revenue from the mining expansion is increased and used to support economic development in the adversely impacted regions, and similarly if the local content of mining investment is raised.

This illustration shows how differences between the fast and slow parts of the so-called ‘two speed economy’ can be expected to become more severe as the mining boom proceeds, even if high levels of mining investment continue.

It is important to recognise that much of the construction impact is already in the data. Any further employment increases in the future will depend on investment rising significantly above the average levels of the last three years. This is projected to be the case for 2011-12. However, this largely reflects the increase in LNG investment which has import content approximately twice the average for mining investment outside oil and LNG. Therefore, though investment will increase, the impact on additional construction employment is likely to be muted and not significantly different from the past.

This does not mean that skill shortages will be avoided. However, shortages are more likely to be driven by the workings of the 457 Visa system with the potential outflow of skilled labour as guest worker visas expire. The approach that is most likely to be adopted will be to increase net immigration to offset these outflows. This will increase the risk of per capita full crowding out.

Figure 9.1 emphasises the point that, in the production phase, the great majority of regions are expected to suffer a decrease in employment compared to the base case. The minority of regions which are expected to make long-term gains are equally divided between regions with high underlying not-in-employment rates and regions with low not-in-employment rates. (Because of its extreme response WA North is excluded from Figure 9.1.)

9.2 Australian regions, mining expansion and crowding in policies

Table 9.5 shows the impact on the 33 regions of the local content enhancement case which, at the macro level, is given in Table 8.2. The benchmark is a 14,000 full-time equivalent increase in employment, or close to 16,000 in terms of actual employment.

As noted above, the reduction in imports has been allocated a uniform percentage basis. Policy can influence this allocation. Hence, policy could be designed to shift more of the allocation to regions with spare resources. For example, policies which favour the steel sector rather than (say) fabrication would be useful in directing activity to regions with underutilised resources, such as NSW Illawarra and SA Spencer Gulf, rather than relatively busy regions such as Perth Outer.

Figure 9.2 indicates that there is considerable scope for policy to bring about a more equitable distribution of employment.

Figure 9.1: The relationship between not in employment rate and employment change from full crowding out after five years of investment in mining

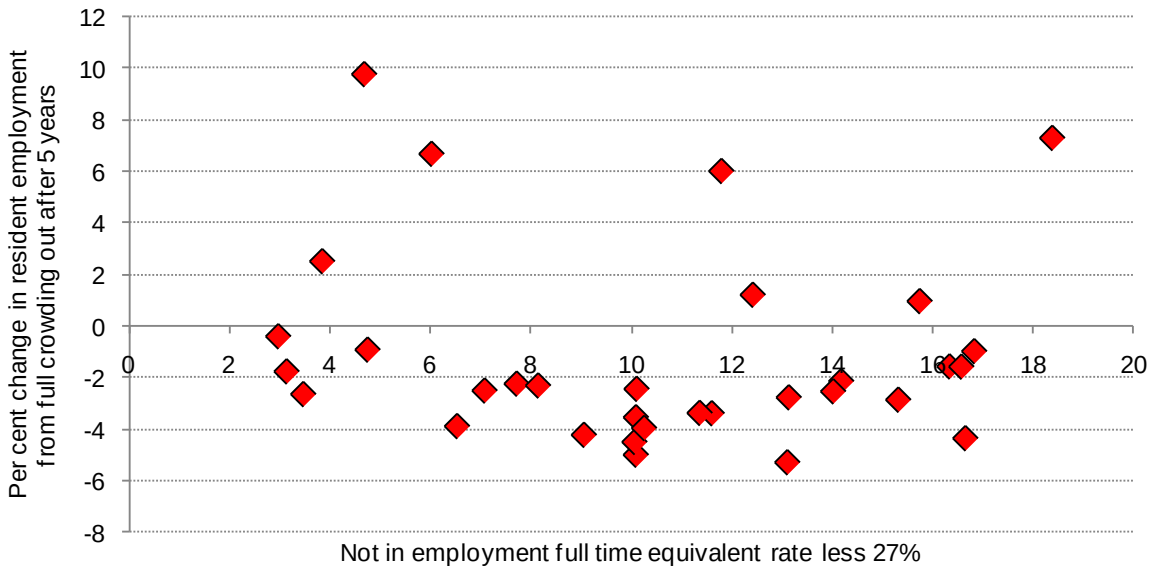
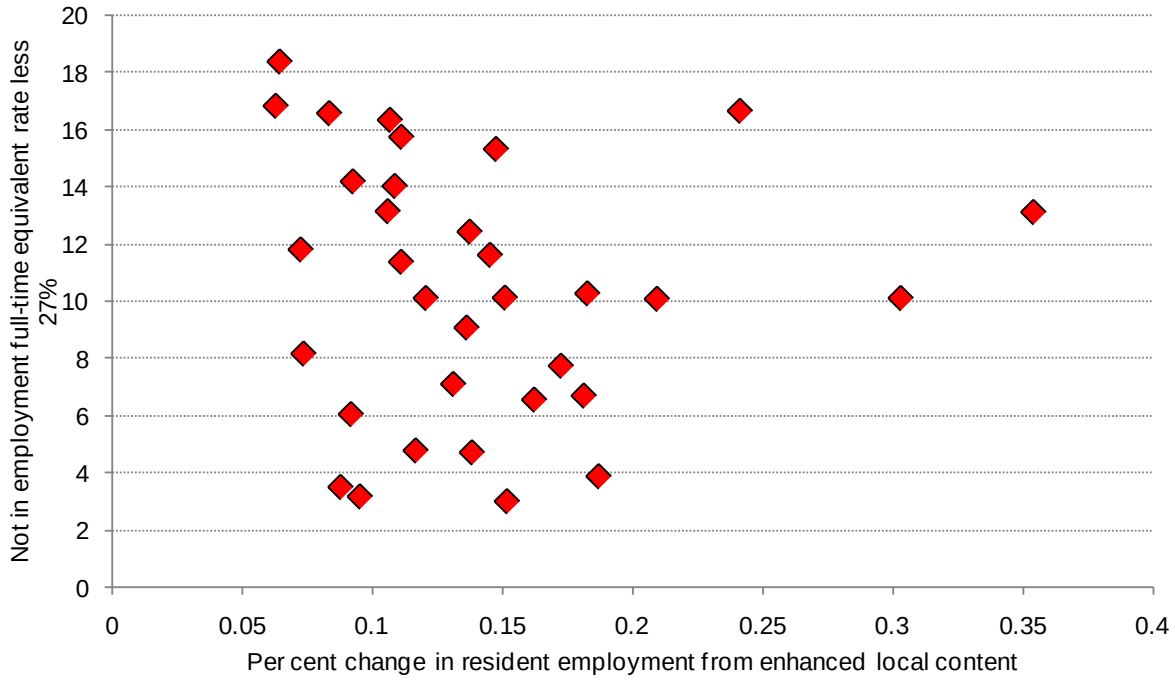


Figure 9.2: The relationship between not in employment rate and employment increase in employment from local content enhancement



9.3 Managing the headline unemployment rate

Although the headline unemployment rate is not a useful measure for either the actual level of unemployed or the relative unemployment rates across regions, it is used by private and public sector institutions to form expectations.

Using the 0.23 coefficient from the equation developed in Chapter 7, the direct headline unemployment rate would change by 0.03 percentage points. However, this assumes that employment increases proportionally to the output increase. Given the low capacity utilisation rates of the steel sector in particular, it is likely that a large part of the output increase would be achieved with very little employment increase. Certainly, the proportion will be no more than the national coefficient of 0.68, developed in Chapter 2. Thus, the direct impact on the headline unemployment rate would be likely to be no more than 0.015 percentage points. Even this is an overestimate, given the tendency of the headline unemployment rate to change inversely with the increase in employment as explained in Chapter 7. Allowing for this would reduce impact on the headline unemployment rate still further.

The important point is that the Government has the power to directly influence the headline unemployment rate. By adopting the rule that for every employment position created in a region one person is shifted from non-unemployment working age social security to unemployment social security the headline unemployment rate may well increase.

In any case, given current policy attitudes and passivity, what can be achieved through increased local content will not completely offset the crowding out effects. This further reduces the importance of what happens to the headline unemployment rate.

Table 9.1 Employment hours: percentage difference from base case

		Production phase					
	Con-struction	Gross expansion	Gross crowding out	Net full crowding out (1 year)	Net half crowding out (1 year)	Net full crowding out (5 years)	Net half crowding out (5 years)
NSW Central Coast	1.2	0.2	-0.9	-0.7	-0.2	-3.4	-1.2
NSW Hunter	3.2	1.0	-0.8	0.2	0.6	1.2	3.2
NSW Illawarra	1.1	0.3	-0.6	-0.3	0.0	-1.6	0.0
NSW Regional	1.3	0.3	-0.5	-0.2	0.1	-1.0	0.4
Sydney Inner	1.5	0.2	-0.6	-0.4	-0.1	-1.8	-0.3
Sydney North	1.5	0.2	-0.7	-0.5	-0.2	-2.6	-0.8
Sydney Outer South West	1.1	0.4	-0.9	-0.5	-0.1	-2.4	-0.2
Sydney Inner South West	1.0	0.2	-0.8	-0.7	-0.3	-3.4	-1.3
Sydney Outer West	0.9	0.2	-1.0	-0.8	-0.3	-3.9	-1.5
Sydney Parramatta-Bankstown	1.3	0.2	-1.1	-0.9	-0.3	-4.4	-1.6
Melbourne Central East	0.7	0.3	-0.8	-0.5	-0.1	-2.5	-0.6
Melbourne Mid South East	1.0	0.3	-1.3	-1.0	-0.4	-5.0	-1.8
Melbourne North	0.7	0.2	-1.1	-0.9	-0.3	-4.5	-1.7
Melbourne Outer South East	0.4	0.1	-0.8	-0.7	-0.3	-3.5	-1.5
Melbourne West	0.6	0.2	-1.0	-0.8	-0.3	-4.0	-1.5
Vic Regional	0.5	0.2	-0.8	-0.6	-0.2	-2.8	-0.9
QLD North Coastal Cities	6.0	1.6	-0.5	1.1	1.4	6.7	7.9
QLD Resource region	4.4	1.8	-0.5	1.4	1.6	7.3	8.6
QLD rural SEQ	1.0	0.3	-0.6	-0.3	0.0	-1.6	-0.1
SEQ Metro	1.0	0.4	-0.6	-0.2	0.1	-0.9	0.6
SEQ Outer Urban	0.6	0.2	-0.6	-0.4	-0.1	-2.1	-0.7
Adelaide South	0.6	0.2	-1.1	-0.9	-0.3	-4.2	-1.6
Adelaide Inner	0.6	0.3	-0.8	-0.5	-0.1	-2.2	-0.4
Adelaide North	1.1	0.3	-1.4	-1.1	-0.4	-5.3	-1.8
SA regional	0.8	0.2	-0.8	-0.5	-0.1	-2.5	-0.7
SA Spencer Gulf	0.8	0.8	-0.6	0.2	0.5	1.0	2.4
Perth Central	2.2	2.5	-0.7	1.8	2.1	9.7	11.6
Perth Outer	1.7	0.9	-1.0	-0.1	0.4	-0.4	2.0
WA Northern	24.0	10.6	-0.4	10.2	10.4	70.4	71.9
WA Southern	3.1	1.5	-0.5	1.0	1.3	6.0	7.3
TAS	0.3	0.1	-0.7	-0.6	-0.2	-2.9	-1.1
NT	5.3	0.8	-0.3	0.5	0.7	2.5	3.3
ACT	0.4	0.2	-0.6	-0.5	-0.1	-2.3	-0.7

Table 9.2 Gross product: percentage difference from base case

		Production phase					
	Con-struction	Gross expansion	Gross crowding out	Net full crowding out (1 year)	Net half crowding out (1 year)	Net full crowding out (5 years)	Net half crowding out (5 years)
NSW Central Coast	1.4	0.2	-0.9	-0.7	-0.2	-3.3	-1.1
NSW Hunter	3.2	1.1	-0.8	0.4	0.8	2.3	4.3
NSW Illawarra	1.1	0.4	-0.6	-0.2	0.1	-1.1	0.4
NSW Regional	1.4	0.4	-0.5	-0.1	0.2	-0.5	0.9
Sydney Inner	1.6	0.3	-0.6	-0.3	0.0	-1.5	-0.1
Sydney North	1.7	0.2	-0.7	-0.5	-0.1	-2.5	-0.7
Sydney Outer South West	1.2	0.5	-0.9	-0.5	0.0	-2.2	0.0
Sydney Inner South West	1.2	0.2	-0.8	-0.7	-0.3	-3.3	-1.3
Sydney Outer West	1.0	0.2	-0.9	-0.8	-0.3	-3.8	-1.5
Sydney Parramatta-Bankstown	1.4	0.2	-1.1	-0.9	-0.3	-4.3	-1.6
Melbourne Central East	0.7	0.3	-0.8	-0.5	-0.1	-2.4	-0.5
Melbourne Mid South East	1.1	0.3	-1.3	-1.0	-0.4	-4.9	-1.7
Melbourne North	0.8	0.2	-1.2	-0.9	-0.3	-4.5	-1.7
Melbourne Outer South East	0.4	0.1	-0.9	-0.7	-0.3	-3.6	-1.4
Melbourne West	0.7	0.2	-1.0	-0.8	-0.3	-4.0	-1.5
Vic Regional	0.6	0.2	-0.8	-0.5	-0.2	-2.7	-0.8
QLD North Coastal Cities	5.7	1.9	-0.5	1.4	1.7	8.4	9.7
QLD Resource region	4.1	2.5	-0.5	2.0	2.2	10.9	12.2
QLD rural SEQ	1.0	0.3	-0.6	-0.2	0.0	-1.2	0.2
SEQ Metro	1.0	0.5	-0.6	-0.1	0.2	-0.6	0.9
SEQ Outer Urban	0.6	0.2	-0.6	-0.4	-0.1	-2.1	-0.6
Adelaide South	0.6	0.2	-1.2	-1.0	-0.4	-4.7	-1.9
Adelaide Inner	0.7	0.3	-0.8	-0.5	-0.1	-2.3	-0.4
Adelaide North	1.2	0.4	-1.5	-1.2	-0.4	-5.8	-2.1
SA regional	0.8	0.3	-0.8	-0.6	-0.1	-2.7	-0.7
SA Spencer Gulf	0.8	0.8	-0.6	0.2	0.5	1.2	2.7
Perth Central	2.5	3.1	-0.7	2.4	2.8	13.5	15.4
Perth Outer	1.9	1.1	-0.9	0.2	0.7	1.0	3.4
WA Northern	22.3	12.9	-0.3	12.6	12.7	90.5	91.8
WA Southern	3.4	2.0	-0.5	1.5	1.7	9.0	10.3
TAS	0.3	0.1	-0.7	-0.6	-0.2	-2.9	-1.1
NT	4.6	1.1	-0.4	0.7	0.9	3.6	4.5
ACT	0.4	0.2	-0.5	-0.4	-0.1	-1.9	-0.6

Table 9.3 Resident employment: percentage difference from base case

		Production phase					
	Con-struction	Gross expansion	Gross crowding out	Net full crowding out (1 year)	Net half crowding out (1 year)	Net full crowding out (5 years)	Net half crowding out (5 years)
NSW Central Coast	1.4	0.2	-0.8	-0.6	-0.2	-2.9	-0.9
NSW Hunter	3.0	0.9	-0.7	0.1	0.5	0.8	2.7
NSW Illawarra	1.0	0.4	-0.6	-0.3	0.0	-1.3	0.2
NSW Regional	1.2	0.3	-0.5	-0.2	0.0	-1.1	0.2
Sydney Inner	1.5	0.2	-0.6	-0.4	-0.1	-1.9	-0.3
Sydney North	1.5	0.2	-0.7	-0.4	-0.1	-2.2	-0.5
Sydney Outer South West	1.1	0.2	-0.8	-0.5	-0.2	-2.7	-0.8
Sydney Inner South West	1.2	0.2	-0.7	-0.5	-0.2	-2.6	-0.8
Sydney Outer West	1.1	0.2	-0.9	-0.7	-0.2	-3.4	-1.2
Sydney Parramatta-Bankstown	1.2	0.2	-0.9	-0.7	-0.3	-3.5	-1.3
Melbourne Central East	0.7	0.3	-0.8	-0.5	-0.1	-2.5	-0.6
Melbourne Mid South East	0.9	0.3	-1.1	-0.8	-0.3	-4.1	-1.4
Melbourne North	0.7	0.2	-0.9	-0.7	-0.2	-3.3	-1.1
Melbourne Outer South East	0.7	0.2	-1.0	-0.8	-0.3	-3.8	-1.4
Melbourne West	0.6	0.2	-0.8	-0.6	-0.2	-3.0	-1.0
Vic Regional	0.6	0.2	-0.7	-0.5	-0.2	-2.6	-0.8
QLD North Coastal Cities	5.7	1.7	-0.5	1.2	1.4	6.6	7.9
QLD Resource region	4.1	1.3	-0.5	0.9	1.1	4.6	5.8
QLD rural SEQ	1.2	0.3	-0.6	-0.3	0.0	-1.3	0.1
SEQ Metro	1.0	0.4	-0.6	-0.2	0.1	-0.9	0.6
SEQ Outer Urban	0.8	0.2	-0.6	-0.4	-0.1	-1.7	-0.4
Adelaide South	0.7	0.3	-1.0	-0.7	-0.2	-3.4	-1.0
Adelaide Inner	0.6	0.3	-0.8	-0.5	-0.1	-2.4	-0.4
Adelaide North	0.9	0.3	-1.1	-0.8	-0.2	-4.0	-1.2
SA regional	0.8	0.3	-0.7	-0.5	-0.1	-2.3	-0.5
SA Spencer Gulf	0.8	0.6	-0.6	0.0	0.3	0.0	1.4
Perth Central	2.3	2.4	-0.7	1.7	2.0	8.7	10.6
Perth Outer	2.5	1.9	-0.8	1.1	1.5	5.5	7.6
WA Northern	22.6	8.2	-0.4	7.7	8.0	49.5	50.9
WA Southern	4.0	1.8	-0.5	1.4	1.6	7.4	8.6
TAS	0.3	0.1	-0.6	-0.5	-0.2	-2.5	-0.9
NT	5.4	1.4	-0.3	1.1	1.3	5.8	6.6
ACT	0.5	0.2	-0.6	-0.5	-0.2	-2.3	-0.8

Table 9.4 Years of net benefit if construction continues		
	Full crowing out	**Half crowding out**
NSW Central Coast	2.4	7.9
NSW Hunter	+ve	+ve
NSW Illawarra	3.7	+ve
NSW Regional	5.2	+ve
Sydney Inner	4.1	22.4
Sydney North	3.4	14.0
Sydney Outer South West	2.1	7.4
Sydney Inner South West	2.3	7.1
Sydney Outer West	1.6	4.5
Sydney Parramatta-Bankstown	1.6	4.6
Melbourne Central East	1.3	5.5
Melbourne Mid South East	1.0	3.1
Melbourne North	1.0	3.0
Melbourne Outer South East	0.9	2.4
Melbourne West	1.0	3.1
Vic Regional	1.1	3.6
QLD North Coastal Cities	+ve	+ve
QLD Resource region	+ve	+ve
QLD rural SEQ	4.4	+ve
SEQ Metro	6.0	+ve
SEQ Outer Urban	2.2	10.0
Adelaide South	1.0	3.5
Adelaide Inner	1.3	7.3
Adelaide North	1.1	3.6
SA regional	1.6	7.8
SA Spencer Gulf	+ve	+ve
Perth Central	+ve	+ve
Perth Outer	+ve	+ve
WA Northern	+ve	+ve
WA Southern	+ve	+ve
TAS	0.6	1.8
NT	+ve	+ve
ACT	1.0	2.8

Note: +ve indicates net benefit persists indefinitely.

Table 9.5	Regional impact: Fifteen percentage point increase in local content – Large scale offshore LNG project (per cent)		
	Resident employment	**Local gross industry product**	**Resident employment as per cent of potential labour supply**
NSW Central Coast	0.1	0.2	1.1
NSW Hunter	0.1	0.2	0.8
NSW Illawarra	0.1	0.1	0.5
NSW Regional	0.1	0.1	0.3
Sydney Inner	0.1	0.1	2.9
Sydney North	0.1	0.1	3.1
Sydney Outer South West	0.2	0.2	1.1
Sydney Inner South West	0.1	0.1	2.2
Sydney Outer West	0.2	0.2	2.1
Sydney Parramatta-Bankstown	0.2	0.2	0.8
Melbourne Central East	0.1	0.2	1.9
Melbourne Mid South East	0.3	0.3	1.9
Melbourne North	0.2	0.2	1.3
Melbourne Outer South East	0.1	0.2	1.6
Melbourne West	0.2	0.2	1.1
Vic Regional	0.1	0.1	0.7
QLD North Coastal Cities	0.1	0.1	1.2
QLD Resource region	0.1	0.1	0.3
QLD rural SEQ	0.1	0.1	0.4
SEQ Metro	0.1	0.1	2.2
SEQ Outer Urban	0.1	0.1	0.5
Adelaide South	0.1	0.2	1.8
Adelaide Inner	0.2	0.2	1.7
Adelaide North	0.4	0.3	1.5
SA regional	0.1	0.1	0.7
SA Spencer Gulf	0.1	0.1	0.5
Perth Central	0.1	0.1	2.2
Perth Outer	0.2	0.2	3.8
WA Northern	0.2	0.1	1.1
WA Southern	0.1	0.1	0.5
TAS	0.1	0.2	0.8
NT	0.2	0.1	2.7
ACT	0.1	0.1	1.0
Total	**0.1**	**0.1**	**1.1**

Appendix A: Input-output tables – indirect allocation of imports and import flow by industry

Table A.1(a) Australia – Indirect allocation of imports – basic values (2008-09 $m)

	Sheep	Grains	Beef cattle	Dairy cattle	Pigs	Poultry	Other agriculture	Services to agriculture; hunting and trapping	Forestry and logging	Commercial fishing	Coal	Oil and gas
Sheep	2.8	2.7	4.5	1.7	1.6	2.3	2.1	1.2	0.0	0.0	0.0	0.0
Grains	46.6	1727.2	95.2	51.0	15.5	35.2	29.9	2.7	0.0	0.0	0.0	0.0
Beef cattle	0.0	0.0	11.3	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairy cattle	0.0	0.0	1.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pigs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Poultry	0.0	0.0	0.0	0.0	0.0	13.3	0.0	0.0	0.0	0.0	0.0	0.0
Other agriculture	165.4	3.4	534.8	124.8	26.1	2.8	382.2	1196.9	4.9	0.1	0.0	0.0
Services to agriculture, hunting and trapping	555.9	615.3	1303.2	297.6	11.9	47.2	1414.0	32.3	10.6	0.0	0.0	0.0
Forestry and logging	4.3	0.1	138.3	7.2	0.0	0.1	99.2	0.0	395.5	0.0	41.3	18.4
Commercial fishing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coal	0.3	0.3	1.1	0.3	0.0	0.0	0.6	0.3	0.0	0.0	150.9	71.5
Oil and gas	2.7	2.8	4.5	2.3	0.8	7.5	5.2	2.2	1.4	0.3	13.4	643.8
Iron ores	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	1.4	0.7
Non-ferrous metal ores	1.1	0.9	4.0	1.1	0.1	0.1	2.4	0.4	0.1	0.0	16.4	7.6
Other mining	0.4	0.6	0.8	0.3	0.2	0.3	1.3	0.2	0.0	0.0	45.3	19.5
Services to mining	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3263.2	1496.3
Meat and meat products	1.2	0.8	11.0	16.7	2.8	12.3	11.2	8.5	0.1	4.6	2.5	1.0
Dairy products	5.9	1.4	48.4	67.2	37.0	25.4	15.2	1.5	0.3	8.6	1.8	0.7
Fruit and vegetable products	1.0	1.4	1.8	1.0	0.8	0.9	1.6	0.7	0.2	0.5	3.2	1.2
Oils and fats	1.7	0.4	7.7	6.9	8.4	5.1	4.2	0.3	0.1	1.9	1.3	0.5
Flour mill products and cereal foods	8.8	3.7	41.6	57.8	26.5	44.2	13.7	2.1	5.9	26.7	2.7	1.0
Bakery products	0.4	1.0	0.7	0.3	0.1	0.7	1.7	0.4	0.5	0.7	13.5	2.7
Confectionery	2.5	0.7	20.5	43.2	7.7	30.6	19.6	14.5	0.1	11.0	1.9	0.7
Other food products	27.9	3.6	205.9	391.5	67.8	283.8	120.0	75.7	0.5	101.1	8.3	3.4
Soft drinks, cordials and syrups	0.7	2.9	1.1	1.1	0.1	0.1	3.5	0.4	0.0	0.1	0.8	0.4
Beer and malt	0.4	1.3	0.7	0.6	0.1	0.1	0.6	0.3	0.1	0.2	3.7	2.0
Wine, spirits and tobacco products (a)	5.4	2.7	42.9	6.4	0.9	0.6	20.6	5.8	3.7	7.4	7.2	6.9
Textile fibres, yarns and woven fabrics	0.8	1.2	1.3	0.6	0.4	0.5	1.5	0.6	0.5	2.5	10.9	6.1
Textile products	0.9	2.3	3.0	0.9	0.2	0.2	7.3	0.6	1.5	4.0	7.8	5.8
Knitting mill products	0.2	0.5	0.4	0.1	0.0	0.1	0.5	0.2	0.2	1.2	2.0	1.0
Clothing	2.9	4.9	5.6	8.7	0.2	0.6	7.6	0.9	1.8	4.6	19.8	6.4
Footwear	0.4	0.6	0.6	0.5	0.2	0.3	0.6	0.3	1.1	2.2	8.3	3.1
Leather and leather products	0.3	0.6	1.0	1.4	0.2	1.0	1.6	0.2	0.2	0.7	1.7	0.7
Sawmill products	1.6	1.2	1.9	1.2	0.5	0.6	1.2	0.6	0.9	1.0	11.8	8.6
Other wood products	1.8	2.3	2.9	1.2	0.9	1.3	2.5	1.6	4.3	12.2	50.7	28.5
Pulp, paper and paperboard	0.5	0.6	0.8	0.3	0.2	0.4	2.8	0.3	0.2	0.2	46.2	19.9
Paper containers and products	0.8	1.3	1.4	0.3	0.1	15.3	19.6	0.3	0.2	0.3	8.8	4.8
Printing and services to printing	1.3	4.3	13.8	0.7	0.3	0.2	11.3	1.3	0.7	1.1	43.8	25.8
Publishing, recorded media, etc.	2.3	6.9	6.0	1.8	0.2	0.3	7.2	0.8	0.8	0.9	17.8	12.7
Petroleum and coal products	184.0	279.1	102.4	84.0	6.7	29.1	379.0	14.8	70.0	166.4	1082.9	224.4

Table A.1(a) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Sheep	Grains	Beef cattle	Dairy cattle	Pigs	Poultry	Other agriculture	Services to agriculture; hunting and trapping	Forestry and logging	Commercial fishing	Coal	Oil and gas
Basic chemicals	130.9	394.8	299.0	88.5	9.1	9.7	821.9	97.9	9.6	8.9	217.4	133.2
Paints	1.3	2.5	5.2	0.8	0.4	1.0	4.4	1.2	1.1	4.6	10.8	4.6
Medicinal and pharmaceutical products, pesticides	112.7	52.0	302.9	138.2	9.6	14.5	188.5	26.4	10.3	0.9	36.5	22.3
Soap and detergents	0.6	1.3	0.7	0.2	0.1	0.1	1.6	2.3	0.6	0.4	7.1	2.0
Cosmetics and toiletry preparations	0.2	0.3	0.6	0.2	0.0	0.0	0.4	0.1	0.1	0.2	0.6	0.4
Other chemical products	2.2	7.7	14.0	1.9	1.1	0.5	3.4	1.1	3.4	1.5	311.4	123.0
Rubber products	0.8	3.9	1.5	0.5	0.1	0.1	8.3	0.4	1.6	8.7	105.6	43.3
Plastic products	3.9	4.0	3.6	3.4	0.7	6.2	35.5	1.8	1.8	14.1	40.4	21.5
Glass and glass products	1.7	2.4	1.6	0.3	0.1	0.2	1.8	0.4	0.6	0.9	19.3	7.3
Ceramic products	0.1	0.1	0.1	0.1	0.0	0.0	0.6	0.7	0.2	0.5	3.7	0.6
Cement, lime and concrete slurry	0.2	0.5	0.4	0.2	0.1	0.1	0.6	0.2	7.0	1.0	16.1	7.6
Plaster and other concrete products	0.2	0.4	0.4	0.2	0.1	0.2	0.5	0.2	5.0	1.0	15.7	4.9
Other non-metallic mineral products	0.2	0.8	0.3	0.1	0.0	0.0	2.3	0.1	2.8	1.4	16.0	10.9
Iron and steel	0.9	2.1	2.8	1.2	0.3	0.6	35.4	0.7	2.7	4.7	471.7	219.8
Basic non-ferrous metal and products	1.5	3.5	2.8	1.2	0.5	1.0	10.6	1.4	1.3	2.9	98.4	106.8
Structural metal products	1.4	3.7	4.4	1.9	0.6	2.1	36.3	1.3	6.5	14.9	238.5	114.9
Sheet metal products	0.7	2.4	1.1	1.8	0.1	0.5	9.0	0.3	1.1	5.0	51.7	22.2
Fabricated metal products	18.0	13.4	10.3	2.1	0.9	2.4	29.7	1.7	17.0	39.7	412.3	203.7
Motor vehicles and parts, other transport equipment	4.8	12.9	8.9	3.1	1.8	2.3	10.6	2.4	6.1	21.3	102.8	51.2
Ships and boats	0.2	0.4	0.4	0.2	0.1	0.1	0.3	0.7	0.4	28.0	10.2	4.5
Railway equipment	0.1	0.2	0.2	0.1	0.0	0.1	0.2	0.1	0.2	0.4	25.9	22.4
Aircraft	0.7	2.3	1.8	0.4	0.1	0.0	1.6	6.7	0.5	0.2	318.4	142.2
Photographic and scientific equipment	2.0	1.7	4.8	2.8	0.2	0.3	3.6	1.2	1.3	8.3	45.5	21.2
Electronic equipment	1.3	4.9	2.8	1.5	0.4	0.8	3.3	0.8	7.1	15.9	59.2	32.9
Household appliances	0.6	1.6	2.6	1.1	0.2	0.3	2.2	0.6	0.9	2.8	29.2	19.8
Other electrical equipment	3.5	4.0	10.2	3.7	1.3	2.1	12.1	1.8	9.2	23.8	138.7	68.3
Agricultural, mining, etc. machinery	9.0	67.4	26.8	6.2	1.5	4.9	21.9	3.6	12.4	23.8	517.7	206.0
Other machinery and equipment	9.0	15.0	14.5	5.9	3.3	4.8	31.5	4.3	74.1	142.8	1053.2	444.5
Prefabricated buildings	0.1	0.2	0.2	0.1	0.0	0.0	0.3	0.1	0.2	0.2	133.9	78.5
Furniture	0.7	1.4	0.9	0.5	0.1	0.3	2.8	0.7	1.0	3.4	22.2	10.4
Other manufacturing	2.3	4.6	5.7	6.5	1.2	4.3	14.8	1.0	1.4	28.2	40.3	21.3
Electricity supply	10.6	21.1	49.9	28.1	4.3	13.2	36.5	3.0	1.1	4.9	410.5	186.7
Gas supply	1.9	2.1	2.4	1.4	0.7	0.8	2.8	1.5	0.1	0.2	6.8	3.5
Water supply, sewerage and drainage services	14.1	218.8	132.5	87.8	22.3	24.7	161.2	4.2	0.7	2.3	70.4	20.5
Residential building	3.2	5.7	13.0	2.9	1.0	1.8	6.3	7.5	0.9	0.8	99.9	58.1
Other construction	9.7	15.8	35.0	9.7	2.1	4.1	15.0	10.5	1.7	1.1	276.0	140.7
Construction trade services	70.5	73.9	130.9	41.8	35.6	58.4	61.0	23.8	10.1	10.2	1221.8	717.8

Table A.1(a) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Sheep	Grains	Beef cattle	Dairy cattle	Pigs	Poultry	Other agriculture	Services to agriculture; hunting and trapping	Forestry and logging	Commercial fishing	Coal	Oil and gas
Wholesale trade	245.1	675.7	346.3	163.9	28.1	68.3	660.9	206.6	118.7	195.2	1690.4	563.5
Wholesale mechanical repairs	14.2	48.0	22.3	11.3	1.6	1.8	19.1	0.2	24.7	6.4	176.9	223.7
Other wholesale repairs	4.7	34.0	15.7	4.8	0.3	2.2	12.5	1.0	2.4	17.9	455.6	331.6
Retail trade	15.9	42.4	27.5	9.1	1.8	4.5	51.3	14.8	12.3	15.5	171.8	70.9
Retail mechanical repairs	56.7	54.8	85.9	28.0	2.0	7.6	82.6	3.4	61.8	41.5	175.6	204.7
Other retail repairs	2.2	1.2	4.1	1.3	1.2	1.9	1.7	0.7	0.0	0.0	0.0	0.0
Accommodation, cafes and restaurants	23.3	45.6	36.1	14.7	0.3	1.5	42.1	1.0	2.1	7.3	134.8	84.7
Road transport	119.4	418.2	299.8	173.6	28.9	74.1	280.6	64.6	23.2	36.9	408.1	154.1
Rail, pipeline and other transport	4.9	18.2	5.7	2.4	0.8	1.4	4.4	1.9	0.3	0.3	1926.3	806.5
Water transport	0.4	0.6	0.1	0.0	0.0	0.0	0.4	0.0	0.1	6.4	45.7	23.5
Air and space transport	7.6	7.5	19.5	5.1	0.8	0.9	14.4	6.4	0.7	1.5	116.8	55.6
Services to transport, storage	29.0	236.4	53.3	13.3	2.8	43.7	39.3	0.6	2.4	13.1	1171.4	531.7
Communication services	45.6	46.3	93.7	21.2	5.6	9.5	46.6	4.2	3.9	7.0	194.1	117.5
Finance	119.5	356.1	262.6	93.8	15.3	44.1	360.6	57.3	40.8	80.6	1195.7	719.1
Ownership of dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other property services	41.2	101.0	106.3	21.3	4.7	11.1	62.0	99.5	4.0	4.8	1740.3	968.8
Scientific research, technical and computer services	23.9	70.9	114.7	6.7	2.3	2.3	126.5	8.6	0.4	0.9	177.3	43.3
Legal, accounting, marketing and business management services	108.8	173.0	232.6	45.7	33.7	36.5	112.6	17.8	5.5	12.5	1086.8	341.3
Other business services	4.1	10.8	41.3	0.0	0.0	0.5	5.7	0.4	1.8	3.0	343.8	88.4
Government administration	3.8	5.0	3.6	0.4	0.1	0.2	9.2	0.7	1.3	3.7	121.1	56.5
Defence	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Education	0.4	2.7	2.9	0.6	0.1	0.7	4.3	0.9	0.3	2.0	70.3	44.4
Health services	1.9	0.0	24.9	9.7	0.7	3.1	1.1	2.8	0.2	1.1	0.0	0.0
Community services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Motion picture, radio and television services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.6	0.9	0.0	5.7	5.4
Libraries, museums and the arts	0.6	0.8	12.7	0.1	0.0	0.0	0.3	0.1	7.4	0.1	0.0	0.0
Sport, gambling and recreational services	14.5	0.1	14.7	7.1	0.9	0.0	0.1	0.0	0.0	0.0	76.7	125.1
Personal services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.3	0.0
Other services	0.1	0.4	0.4	0.0	0.0	0.1	0.1	0.0	0.0	0.0	44.3	0.0
Total intermediate input	**2342.1**	**5978.3**	**5544.0**	**2265.2**	**450.1**	**1040.4**	**6108.6**	**2084.5**	**1023.6**	**1249.5**	**23076.2**	**11485.7**

Table A.1(a) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Sheep	Grains	Beef cattle	Dairy cattle	Pigs	Poultry	Other agriculture	Services to agriculture; hunting and trapping	Forestry and logging	Commercial fishing	Coal	Oil and gas
Wage and salaries	540.6	465.7	913.8	439.0	131.4	163.1	2168.2	843.4	657.4	325.8	4372.7	2921.7
Gross surplus	1967.5	3614.1	4137.0	1699.3	389.9	847.4	5740.9	2199.7	517.4	560.5	29574.1	20246.7
Complementary imports, selected indirect taxes etc.	185.1	393.3	266.6	178.6	28.8	50.5	406.8	116.5	63.5	114.3	8.7	176.4
Gross product at factor cost	2508.2	4079.9	5050.8	2138.3	521.3	1010.5	7909.0	3043.1	1174.8	886.3	33946.8	23168.5
Total output	**5035.4**	**10451.5**	**10861.4**	**4582.2**	**1000.2**	**2101.3**	**14424.4**	**5244.1**	**2261.9**	**2250.1**	**57031.8**	**34830.6**
Local gross product (net of foreign product)	2382.7	3875.9	4798.3	2031.4	495.2	960.0	7513.6	2890.9	1116.1	842.0	16973.4	3475.3
Depreciation expense	218.0	314.7	962.2	124.8	66.3	139.9	634.1	193.0	164.0	127.0	4517.3	7092.2
Net capital stock gross output ratio	1.4	1.0	2.9	0.9	2.1	2.2	1.4	1.2	2.3	1.8	1.2	3.1
Net national product	2470.3	4140.9	4367.3	2186.2	485.3	923.3	7647.1	2950.2	1074.6	871.2	19490.9	8636.3
Direct tax payments and RRT	25.1	45.2	52.6	14.0	29.6	78.8	115.9	124.4	30.7	34.0	5426.3	4307.4

Table A.1(b) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Iron ores	Non-ferrous metal ores	Other mining	Services to mining	Meat and meat products	Dairy products	Fruit and vegetable products	Oils and fats	Flour mill products and cereal foods	Bakery products	Confect-ionery	Other food products
Sheep	0.0	0.0	0.0	0.0	1575.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grains	0.0	0.0	0.0	0.0	0.0	0.0	12.8	163.4	1693.8	5.0	13.1	601.2
Beef cattle	0.0	0.0	0.0	0.0	7479.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairy cattle	0.0	0.0	0.0	0.0	0.0	4062.6	0.0	0.0	0.0	0.0	0.2	0.0
Pigs	0.0	0.0	0.0	0.0	651.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Poultry	0.0	0.0	0.0	0.0	1165.8	0.0	0.0	0.0	0.0	12.5	0.0	3.6
Other agriculture	0.0	0.0	0.0	0.0	0.8	19.1	623.6	41.3	36.6	72.7	100.0	1683.0
Services to agriculture, hunting and trapping	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	0.0	0.0	0.0	3.2
Forestry and logging	0.1	62.3	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Commercial fishing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.0	6.3	1.7	3.0	387.6
Coal	9.7	19.9	0.5	0.1	0.9	0.8	3.6	0.7	4.3	0.6	0.9	8.4
Oil and gas	36.5	20.9	1.7	2.2	42.6	65.1	22.7	7.9	20.4	16.6	5.6	61.0
Iron ores	832.1	0.7	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-ferrous metal ores	55.1	1110.0	5.9	17.0	0.4	0.1	0.0	0.0	0.1	0.0	0.0	0.1
Other mining	6.4	8.5	687.3	0.0	0.1	0.0	0.1	0.7	0.3	0.6	0.4	170.4
Services to mining	4978.8	4248.4	39.3	157.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Meat and meat products	1.6	2.0	0.1	0.6	1382.9	14.1	39.4	71.3	7.8	396.2	6.1	490.4
Dairy products	20.7	1.5	0.1	0.6	14.3	2135.6	36.8	36.7	143.7	253.2	669.4	185.2
Fruit and vegetable products	1.9	3.1	0.2	1.0	17.0	28.8	220.6	5.4	64.7	55.3	62.4	44.4
Oils and fats	0.6	1.2	0.1	0.5	3.1	11.5	14.9	276.7	51.1	48.9	13.7	153.8
Flour mill products and cereal foods	1.7	2.3	0.1	0.7	28.2	31.1	180.2	22.6	1067.2	553.1	159.3	161.1
Bakery products	12.5	9.0	0.7	12.4	21.7	92.8	4.0	0.5	7.3	79.9	153.1	140.5
Confectionery	1.1	1.7	0.1	0.5	8.4	185.8	31.9	20.3	151.9	101.3	165.4	119.9
Other food products	8.6	7.0	0.6	2.4	74.6	257.8	189.9	84.0	253.9	299.0	236.6	694.6
Soft drinks, cordials and syrups	1.5	0.7	0.1	0.1	5.4	9.4	36.2	3.6	17.0	11.8	27.3	22.2
Beer and malt	7.0	8.0	0.2	1.0	0.8	5.4	2.2	0.2	3.2	2.1	4.1	16.2
Wine, spirits and tobacco products (a)	7.7	8.9	0.5	1.5	28.9	2.4	10.4	1.4	6.9	2.1	97.7	8.5
Textile fibres, yarns and woven fabrics	9.1	6.8	0.5	1.1	1.1	3.6	0.7	1.0	1.8	1.7	1.6	5.0
Textile products	5.0	8.6	0.6	1.5	8.8	15.2	1.1	3.6	13.8	8.3	2.0	35.0
Knitting mill products	2.8	1.6	0.2	0.3	0.6	1.0	0.2	0.1	0.7	0.2	0.1	1.1
Clothing	10.7	15.5	0.6	1.4	10.6	8.3	1.3	1.2	3.3	4.2	2.3	7.7
Footwear	5.0	5.1	0.5	0.2	1.3	3.4	0.5	0.5	1.3	0.6	1.3	1.5
Leather and leather products	1.1	1.5	0.1	0.4	3.9	4.5	1.1	1.6	2.6	1.7	2.4	3.2
Sawmill products	10.5	4.9	0.5	2.7	0.8	1.6	1.0	1.0	2.2	1.0	2.4	2.3
Other wood products	46.2	32.8	2.2	8.3	1.8	9.6	2.4	1.1	1.5	0.6	0.6	2.1
Pulp, paper and paperboard	21.4	32.6	1.3	41.4	16.1	42.8	6.9	4.3	19.8	2.9	8.5	16.8
Paper containers and products	7.5	6.3	0.4	4.3	104.3	255.4	61.4	21.7	70.1	21.3	40.8	137.6
Printing and services to printing	17.8	27.9	2.5	26.1	12.1	36.9	4.3	1.4	26.6	5.3	5.7	12.9
Publishing, recorded media, etc.	7.0	13.7	0.5	10.2	3.7	11.8	1.6	0.5	2.9	1.4	3.4	7.9
Petroleum and coal products	607.6	1083.5	48.8	338.3	24.3	91.7	41.1	5.0	26.6	10.3	4.1	53.7
Basic chemicals	150.7	406.9	9.6	84.6	10.1	53.0	12.9	13.9	20.5	15.9	19.9	65.3

Table A.1(b) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Iron ores	Non-ferrous metal ores	Other mining	Services to mining	Meat and meat products	Dairy products	Fruit and vegetable products	Oils and fats	Flour mill products and cereal foods	Bakery products	Confect-ionery	Other food products
Paints	6.3	9.4	0.3	1.3	0.3	1.2	0.2	0.1	0.3	0.2	0.2	1.7
Medicinal and pharmaceutical products, pesticides	7.2	46.5	1.2	13.7	3.4	8.8	1.7	1.1	3.2	1.4	2.5	6.6
Soap and detergents	4.5	9.1	0.3	1.8	7.2	13.7	0.3	0.1	0.6	0.5	0.7	1.9
Cosmetics and toiletry preparations	1.1	0.4	0.1	0.1	0.2	0.5	0.2	0.2	0.2	0.2	0.2	0.5
Other chemical products	173.9	173.6	12.2	6.7	1.0	5.3	0.5	0.5	1.2	0.6	1.4	2.9
Rubber products	41.3	79.9	3.5	9.6	0.2	0.5	0.3	0.3	1.0	0.3	0.7	1.9
Plastic products	24.2	36.6	1.7	15.1	37.1	698.2	103.4	56.3	73.0	59.8	58.0	212.4
Glass and glass products	15.8	14.4	0.7	5.4	0.4	0.7	114.9	0.8	0.4	0.2	1.5	16.8
Ceramic products	2.1	8.2	0.3	1.7	0.2	1.5	0.1	0.3	0.2	0.1	0.1	0.5
Cement, lime and concrete slurry	14.7	36.6	0.9	23.1	0.6	1.7	0.4	0.3	0.7	0.3	0.6	2.7
Plaster and other concrete products	15.6	19.0	0.3	2.8	0.3	1.2	0.2	0.1	0.3	0.1	0.4	0.8
Other non-metallic mineral products	17.3	8.9	0.7	5.4	0.2	1.0	0.3	0.3	0.7	0.3	1.3	1.1
Iron and steel	324.1	247.7	9.4	421.2	1.8	6.7	2.8	1.1	2.9	1.6	2.5	8.5
Basic non-ferrous metal and products	127.9	145.8	8.0	46.4	3.4	38.5	4.2	1.9	4.6	2.8	7.4	50.6
Structural metal products	245.0	284.1	8.7	209.1	1.3	3.4	6.6	0.3	0.8	0.4	0.7	4.2
Sheet metal products	32.9	67.0	1.2	18.4	2.9	140.5	92.1	5.6	4.8	0.9	1.1	31.5
Fabricated metal products	175.6	283.8	12.8	45.8	7.4	10.6	2.7	0.9	2.4	1.5	4.1	9.4
Motor vehicles and parts, other transport equipment	64.0	91.8	7.0	28.9	3.4	9.1	2.1	1.1	3.4	1.8	3.5	5.7
Ships and boats	9.4	6.1	0.4	1.9	1.6	1.0	0.2	0.1	0.7	0.3	0.8	2.6
Railway equipment	4.8	2.8	0.3	0.3	0.2	0.4	0.1	0.0	0.1	0.1	0.3	0.3
Aircraft	29.8	17.6	5.1	34.9	0.1	0.7	0.0	0.0	0.1	0.1	0.0	0.1
Photographic and scientific equipment	22.2	28.3	2.3	7.3	1.3	7.1	0.8	0.5	1.6	0.9	0.9	5.9
Electronic equipment	164.3	94.9	1.9	27.9	1.5	8.8	1.1	0.8	2.0	1.9	3.3	12.7
Household appliances	11.0	21.8	2.1	9.2	1.0	4.9	0.7	0.5	1.3	0.6	1.0	2.1
Other electrical equipment	90.5	63.1	6.5	18.4	5.6	40.1	1.4	1.0	4.9	3.3	4.7	8.5
Agricultural, mining, etc. machinery	218.4	468.4	30.4	32.7	1.8	8.5	1.2	0.6	1.5	0.8	1.0	3.2
Other machinery and equipment	407.6	931.8	64.5	108.5	11.0	26.5	6.3	2.3	6.0	6.4	7.0	21.3
Prefabricated buildings	83.8	94.0	8.4	2.7	0.2	0.5	0.1	0.0	0.2	0.1	0.1	0.3
Furniture	16.3	19.2	1.0	4.3	1.8	6.4	1.2	0.4	1.3	1.5	4.5	3.0
Other manufacturing	46.1	43.2	2.0	11.7	11.4	37.7	4.7	8.0	10.5	31.1	9.1	39.9
Electricity supply	224.9	482.1	2.5	4.0	130.8	193.6	25.6	13.4	67.1	22.2	22.5	74.6
Gas supply	19.8	14.9	0.4	0.0	2.3	4.2	17.5	6.4	16.2	13.3	3.9	45.0
Water supply, sewerage and drainage services	276.2	179.9	13.4	1.9	29.0	32.1	15.0	3.5	15.9	3.5	7.9	29.5
Residential building	211.6	77.9	18.3	45.0	4.6	3.0	1.3	1.0	2.7	1.1	2.3	5.5
Other construction	850.3	195.6	86.1	60.9	6.2	4.1	1.7	1.3	3.7	1.5	3.1	7.4
Construction trade services	5168.1	1004.1	192.5	327.0	15.1	49.5	14.1	13.3	28.6	13.6	33.9	32.9
Wholesale trade	932.5	1596.5	88.9	471.9	384.1	1162.3	256.8	87.1	352.3	188.8	181.5	664.3
Wholesale mechanical repairs	139.0	67.1	9.2	246.9	9.1	7.0	0.0	0.0	0.0	0.0	0.0	0.0
Other wholesale repairs	138.5	100.9	15.7	157.5	25.0	8.6	0.5	0.8	5.6	36.2	2.1	24.9

Table A.1(b) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Iron ores	Non-ferrous metal ores	Other mining	Services to mining	Meat and meat products	Dairy products	Fruit and vegetable products	Oils and fats	Flour mill products and cereal foods	Bakery products	Confect-ionery	Other food products
Retail trade	107.2	108.2	9.4	45.6	215.0	129.6	28.9	7.1	75.0	226.2	162.9	272.1
Retail mechanical repairs	103.2	146.6	34.5	113.3	18.6	14.3	27.4	13.9	52.2	13.8	17.8	72.5
Other retail repairs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accommodation, cafes and restaurants	95.2	68.9	8.2	130.0	5.2	3.5	6.6	5.2	17.1	27.4	25.6	71.5
Road transport	154.2	282.7	49.2	93.2	1064.3	483.7	196.7	78.1	379.4	96.9	62.9	536.3
Rail, pipeline and other transport	119.7	55.4	0.5	3.8	11.8	15.8	8.4	2.1	29.2	5.7	2.2	24.5
Water transport	8.1	22.0	1.8	404.5	1.1	3.4	1.5	2.0	2.0	0.9	2.0	33.0
Air and space transport	150.9	116.3	7.5	93.3	2.7	2.4	16.2	9.7	32.1	6.5	7.5	26.1
Services to transport, storage	231.8	173.7	8.9	98.9	93.8	164.4	15.5	43.5	122.2	42.3	46.2	411.3
Communication services	75.4	369.1	13.4	129.8	45.3	103.3	13.0	5.7	78.7	14.1	12.0	53.7
Finance	749.2	980.1	182.0	333.1	80.8	81.9	39.0	30.8	107.2	37.0	20.3	266.9
Ownership of dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other property services	1089.5	548.9	31.2	73.8	339.8	56.4	7.1	4.6	19.0	24.0	5.3	38.2
Scientific research, technical and computer services	60.0	237.3	3.9	3772.6	41.2	71.3	42.1	3.0	52.5	34.1	11.6	157.5
Legal, accounting, marketing and business management services	411.9	875.8	19.4	334.3	44.9	223.2	37.8	26.6	184.6	30.4	101.6	228.1
Other business services	108.5	560.7	10.8	327.4	133.0	102.0	125.9	6.8	42.2	36.4	9.4	123.9
Government administration	176.0	98.0	6.5	13.2	9.8	3.6	0.8	0.9	9.8	2.3	3.9	36.8
Defence	0.1	0.1	0.0	1.3	0.1	0.1	0.2	0.0	0.3	0.2	0.0	1.1
Education	35.5	49.4	4.6	36.4	15.6	36.0	4.1	4.6	8.7	8.4	7.1	13.2
Health services	0.0	0.0	0.0	1.6	32.1	0.1	0.1	0.1	0.3	0.2	0.5	0.9
Community services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Motion picture, radio and television services	20.8	54.5	0.6	18.7	7.2	48.8	9.2	0.0	10.6	5.9	18.8	55.1
Libraries, museums and the arts	0.1	1.4	0.0	49.8	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0
Sport, gambling and recreational services	9.0	40.3	0.0	95.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	2.4
Personal services	0.0	0.0	0.0	6.9	0.0	0.0	0.2	0.1	0.3	0.6	0.3	1.4
Other services	10.1	11.8	0.1	0.0	3.4	0.4	2.2	0.2	4.8	1.0	1.4	3.3
Total intermediate input	**20960.0**	**19037.4**	**1820.0**	**9326.3**	**15581.8**	**11554.9**	**2831.7**	**1291.0**	**5580.5**	**3002.4**	**2710.3**	**9080.4**

Table A.1(b) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Iron ores	Non-ferrous metal ores	Other mining	Services to mining	Meat and meat products	Dairy products	Fruit and vegetable products	Oils and fats	Flour mill products and cereal foods	Bakery products	Confect-ionery	Other food products
Wage and salaries	967.2	3248.8	769.0	5376.1	3644.3	1383.9	440.5	71.2	578.4	1134.8	947.8	2328.7
Gross surplus	11711.0	16205.2	1573.7	511.2	133.7	108.3	776.0	344.6	442.1	363.8	236.2	820.9
Complementary imports, selected indirect taxes etc.	513.5	599.2	37.1	292.8	451.3	282.1	96.0	55.4	133.1	124.0	105.5	292.0
Gross product at factor cost	12678.2	19454.0	2342.7	5887.3	3778.0	1492.2	1216.5	415.8	1020.5	1498.6	1184.0	3149.6
Total output	**34151.7**	**39090.6**	**4199.8**	**15506.3**	**19811.1**	**13329.1**	**4144.2**	**1762.3**	**6734.2**	**4625.1**	**3999.8**	**12522.1**
Local gross product (net of foreign product)	5705.2	7781.6	1639.9	3532.4	2077.9	671.5	772.5	241.2	578.8	1147.7	805.1	2835.4
Depreciation expense	1459.0	5252.2	407.8	909.4	560.1	406.9	169.1	49.3	192.0	354.0	266.0	477.3
Net capital stock gross output ratio	0.7	2.1	1.5	0.9	0.3	0.3	0.4	0.3	0.3	0.7	0.6	0.3
Net national product	7581.2	10382.8	1774.2	5569.7	3922.9	1542.2	922.8	299.1	853.6	1297.8	1048.8	2952.7
Direct tax payments and RRT	2939.1	3754.5	420.4	114.3	71.7	17.2	13.1	5.1	26.8	31.7	17.6	162.3

Table A.1(c) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Soft drinks, cordials and syrups	Beer and malt	Wine, spirits and tobacco products	Textile fibres, yarns and woven fabrics	Textile products	Knitting mill products	Clothing	Footwear	Leather and leather products	Sawmill products	Other wood products	Pulp, paper and paper-board
Sheep	0.0	0.0	0.0	418.2	0.0	0.0	0.1	0.0	41.3	0.0	0.0	0.0
Grains	10.9	523.3	74.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Beef cattle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairy cattle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pigs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Poultry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other agriculture	214.5	8.1	652.1	0.1	2.8	0.7	1.2	1.4	7.7	0.0	0.0	0.0
Services to agriculture, hunting and trapping	0.0	0.0	0.0	21.1	0.3	9.0	3.9	0.0	42.1	0.0	0.0	0.0
Forestry and logging	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	747.5	164.7	74.1
Commercial fishing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coal	0.0	0.5	0.1	0.4	9.0	0.4	0.0	0.0	0.0	0.2	1.7	2.0
Oil and gas	27.6	10.7	3.0	0.0	8.1	1.1	0.9	0.5	0.2	13.3	23.2	37.0
Iron ores	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-ferrous metal ores	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.4	0.0
Other mining	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Services to mining	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Meat and meat products	0.3	0.9	1.1	0.1	13.2	0.1	19.0	0.2	326.7	0.3	0.5	0.1
Dairy products	7.7	0.3	4.7	0.0	0.1	0.1	0.1	0.0	0.1	0.2	0.4	0.1
Fruit and vegetable products	2.9	2.2	10.2	0.0	0.1	0.1	0.3	0.0	1.7	0.3	0.4	0.1
Oils and fats	0.7	0.1	2.6	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.2	0.1
Flour mill products and cereal foods	2.9	3.1	6.1	0.1	0.1	0.1	0.2	0.0	0.1	0.4	0.5	0.1
Bakery products	0.4	0.3	1.5	0.0	0.1	0.1	0.2	0.0	0.1	0.2	0.4	0.1
Confectionery	0.6	0.8	1.9	0.0	0.1	0.1	0.1	0.0	0.1	0.2	0.4	0.1
Other food products	57.9	16.6	37.1	0.2	0.9	0.3	0.8	0.1	4.2	1.3	2.6	0.4
Soft drinks, cordials and syrups	1.2	3.2	141.3	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1
Beer and malt	10.0	243.4	7.2	0.0	0.1	0.1	0.0	0.0	0.0	0.4	0.3	0.0
Wine, spirits and tobacco products (a)	1.6	1.3	326.2	0.1	0.6	0.5	0.1	0.0	0.0	1.5	2.2	0.4
Textile fibres, yarns and woven fabrics	0.6	0.5	4.5	16.3	222.0	142.9	201.7	6.5	1.4	1.0	1.5	0.3
Textile products	1.7	1.6	2.0	2.4	14.0	7.2	15.2	2.2	2.7	1.9	9.2	0.5
Knitting mill products	0.2	0.1	0.1	3.3	12.2	92.5	131.4	0.2	0.2	0.2	0.3	0.0
Clothing	1.4	0.8	1.0	0.2	2.0	3.6	158.1	8.6	5.6	1.1	1.8	0.2
Footwear	0.5	0.4	0.4	0.1	0.3	0.3	7.4	44.0	7.6	0.7	0.8	0.0
Leather and leather products	1.8	1.8	1.8	0.2	4.5	3.7	8.2	67.4	99.8	3.0	3.1	0.7
Sawmill products	1.1	1.1	1.2	0.2	0.9	1.1	0.6	0.8	0.6	381.5	641.7	26.4
Other wood products	5.5	1.9	2.5	0.1	1.3	0.3	2.2	0.6	0.9	43.9	457.3	0.8
Pulp, paper and paperboard	6.6	7.0	17.7	0.1	1.1	0.5	0.6	0.7	0.1	48.8	49.8	54.0
Paper containers and products	51.0	44.1	72.2	0.1	2.7	2.8	3.4	1.0	0.3	6.1	8.9	18.1
Printing and services to printing	5.9	5.2	4.9	1.4	25.4	27.2	11.2	0.9	0.8	7.9	18.4	6.8
Publishing, recorded media, etc.	1.2	1.6	1.6	0.1	0.9	0.9	11.7	0.3	2.6	1.9	11.2	21.0

Table A.1(c) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Soft drinks, cordials and syrups	Beer and malt	Wine, spirits and tobacco products	Textile fibres, yarns and woven fabrics	Textile products	Knitting mill products	Clothing	Footwear	Leather and leather products	Sawmill products	Other wood products	Pulp, paper and paper-board
Petroleum and coal products	19.7	8.6	7.1	0.5	2.7	0.4	0.9	0.2	0.3	20.4	13.3	8.1
Basic chemicals	45.2	9.1	11.0	4.0	29.2	48.2	8.9	3.9	11.6	64.7	154.9	66.4
Paints	0.2	0.1	0.1	0.0	0.3	0.3	0.1	0.0	0.1	1.5	26.2	0.3
Medicinal and pharmaceutical products, pesticides	2.2	1.3	3.0	0.2	1.4	0.8	1.1	0.9	0.9	7.4	8.2	13.3
Soap and detergents	0.5	0.3	0.3	0.2	1.6	0.2	0.1	0.1	0.1	2.5	2.1	1.6
Cosmetics and toiletry preparations	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1
Other chemical products	1.0	1.9	1.0	0.1	7.8	0.6	1.4	2.0	1.5	41.8	85.4	12.9
Rubber products	0.2	0.1	0.1	0.0	0.4	0.0	0.3	0.8	0.1	0.4	1.2	0.4
Plastic products	243.5	10.9	14.7	1.0	23.5	12.3	8.0	2.9	2.0	9.0	55.5	3.8
Glass and glass products	113.1	41.1	61.3	0.0	1.8	0.1	4.2	1.6	0.6	11.1	16.3	0.1
Ceramic products	0.1	0.1	0.1	0.0	0.1	0.0	0.2	0.1	0.0	0.2	0.8	0.6
Cement, lime and concrete slurry	0.3	0.2	0.3	0.1	0.2	0.2	0.2	0.1	0.1	2.4	2.0	0.6
Plaster and other concrete products	0.2	0.1	0.2	0.0	0.1	0.1	0.1	0.1	0.0	1.0	30.1	0.5
Other non-metallic mineral products	0.0	0.0	0.1	0.0	0.5	0.2	0.1	0.0	0.0	2.8	6.7	0.9
Iron and steel	3.2	3.3	0.5	0.6	4.5	3.9	0.8	1.1	0.8	18.3	55.8	3.2
Basic non-ferrous metal and products	4.3	2.4	1.2	1.0	10.6	5.1	2.4	1.5	1.4	26.3	102.0	3.8
Structural metal products	6.4	4.6	3.3	0.1	6.2	0.2	0.3	0.1	0.2	1.9	124.7	29.0
Sheet metal products	245.0	100.2	5.1	0.0	0.5	0.1	0.2	0.1	0.1	0.6	17.3	0.2
Fabricated metal products	4.9	5.4	2.5	0.1	4.8	7.9	0.6	0.4	0.4	14.3	103.6	8.8
Motor vehicles and parts, other transport equipment	4.7	1.9	1.9	0.1	1.0	0.4	0.6	0.2	0.2	2.2	10.2	0.6
Ships and boats	0.9	0.2	0.3	0.0	0.0	0.0	0.1	0.0	0.0	1.2	1.3	0.4
Railway equipment	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0
Aircraft	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2
Photographic and scientific equipment	1.0	0.7	0.7	0.1	0.2	0.1	3.2	0.2	0.3	10.9	12.9	0.4
Electronic equipment	21.8	2.5	2.0	0.1	0.4	0.4	0.7	0.6	0.6	10.5	12.1	0.4
Household appliances	0.4	1.0	0.4	0.0	0.1	0.1	0.2	0.0	0.1	8.2	9.3	0.1
Other electrical equipment	8.1	7.4	5.7	0.1	0.7	0.4	0.4	0.1	0.2	12.0	16.1	11.2
Agricultural, mining, etc. machinery	1.1	2.3	0.6	0.1	0.2	0.2	0.8	0.1	0.2	11.1	13.7	0.3
Other machinery and equipment	15.3	2.8	1.5	0.4	2.0	0.6	1.4	0.6	0.5	19.5	25.4	6.1
Prefabricated buildings	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.3	2.4	0.0
Furniture	4.6	2.0	1.6	0.2	0.8	0.7	1.1	0.3	0.3	0.8	14.9	0.2
Other manufacturing	7.6	8.1	6.4	1.0	15.5	7.7	39.4	1.2	0.8	5.9	37.9	2.0
Electricity supply	14.8	27.9	7.8	4.6	10.2	12.1	3.2	1.4	2.0	86.0	130.7	57.7
Gas supply	22.0	8.7	1.5	0.1	6.2	0.6	0.7	0.1	0.2	6.2	11.9	25.5
Water supply, sewerage and drainage services	7.0	26.4	1.9	4.9	4.3	11.7	1.1	0.3	1.5	3.3	12.6	11.2
Residential building	1.8	0.7	2.3	0.0	0.9	0.6	0.2	0.1	0.2	4.8	5.1	0.4
Other construction	2.4	0.9	3.0	0.1	1.1	0.8	0.2	0.1	0.3	9.1	9.5	0.6

Table A.1(c) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Soft drinks, cordials and syrups	Beer and malt	Wine, spirits and tobacco products	Textile fibres, yarns and woven fabrics	Textile products	Knitting mill products	Clothing	Footwear	Leather and leather products	Sawmill products	Other wood products	Pulp, paper and paper-board
Construction trade services	14.3	11.7	13.0	0.8	3.6	4.1	2.4	1.3	1.5	63.0	54.2	4.4
Wholesale trade	169.0	149.0	180.9	25.9	50.9	53.5	99.2	20.5	40.2	228.0	323.6	46.2
Wholesale mechanical repairs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.3	8.9	0.7
Other wholesale repairs	11.5	3.9	2.7	1.2	10.2	3.2	0.8	6.4	4.7	57.7	68.0	6.9
Retail trade	11.7	9.3	53.1	1.7	9.7	118.9	58.1	2.8	3.2	14.7	25.6	8.5
Retail mechanical repairs	66.0	11.2	3.5	1.1	15.5	11.5	0.0	8.9	5.3	25.3	15.0	4.3
Other retail repairs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accommodation, cafes and restaurants	166.5	116.3	84.1	0.4	9.5	7.9	7.6	0.1	3.2	16.1	23.0	2.3
Road transport	80.4	177.3	68.0	21.7	21.0	17.6	19.8	13.5	53.0	237.7	129.0	36.9
Rail, pipeline and other transport	7.1	21.7	4.0	2.8	2.1	16.4	0.3	0.5	0.5	8.7	3.1	6.7
Water transport	1.2	0.5	2.4	0.2	3.1	1.1	2.6	1.1	0.3	8.7	3.1	9.3
Air and space transport	4.0	3.7	4.7	0.2	4.4	4.9	7.0	0.4	1.0	3.6	16.9	0.8
Services to transport, storage	133.9	113.2	51.5	1.7	5.4	3.4	21.8	3.5	3.3	279.8	261.9	26.2
Communication services	27.1	10.3	14.0	1.6	8.7	7.1	9.1	2.0	2.0	31.1	79.4	3.5
Finance	28.6	130.8	32.6	8.6	21.0	11.1	12.6	2.4	5.9	46.4	76.8	15.6
Ownership of dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other property services	25.4	3.4	6.5	0.4	2.8	2.0	8.9	1.7	4.2	245.4	192.3	2.2
Scientific research, technical and computer services	43.5	1.3	29.3	1.3	44.4	25.4	8.6	1.5	6.3	29.2	44.7	1.9
Legal, accounting, marketing and business management services	70.4	60.3	59.8	2.4	40.0	21.7	20.5	7.2	9.3	111.9	182.3	10.5
Other business services	50.8	5.5	65.2	0.8	6.8	15.0	31.6	7.8	9.0	105.8	157.4	9.5
Government administration	14.6	2.8	2.4	0.0	0.6	0.6	0.1	0.0	0.1	7.8	7.3	1.5
Defence	0.4	0.0	0.1	0.0	0.1	0.2	0.0	0.0	0.0	0.1	0.1	0.0
Education	10.0	6.7	3.6	0.1	2.0	1.4	16.8	0.3	0.8	5.4	9.7	1.6
Health services	0.9	0.2	4.7	0.0	0.0	0.1	5.8	6.0	0.0	5.2	8.3	0.2
Community services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Motion picture, radio and television services	24.3	5.9	5.5	0.0	0.7	0.2	1.0	0.2	0.0	1.5	31.6	0.0
Libraries, museums and the arts	0.0	0.2	0.3	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Sport, gambling and recreational services	0.5	0.4	7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Personal services	1.2	0.1	0.1	0.0	0.4	0.1	0.0	0.0	0.0	0.4	0.3	0.1
Other services	0.7	0.3	1.2	0.0	0.0	0.0	0.7	0.0	0.2	1.3	1.4	1.8
Total intermediate input	**2184.3**	**2010.5**	**2228.6**	**557.6**	**725.5**	**740.3**	**998.9**	**244.8**	**728.4**	**3232.4**	**4257.9**	**716.6**

Table A.1(c) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Soft drinks, cordials and syrups	Beer and malt	Wine, spirits and tobacco products	Textile fibres, yarns and woven fabrics	Textile products	Knitting mill products	Clothing	Footwear	Leather and leather products	Sawmill products	Other wood products	Pulp, paper and paper-board
Wage and salaries	632.0	442.1	1351.8	405.0	672.2	81.2	732.3	110.9	150.5	448.1	1625.5	240.4
Gross surplus	1401.2	1406.7	2826.7	109.1	145.1	50.6	417.8	76.9	191.0	768.2	607.7	473.3
Complementary imports, selected indirect taxes etc.	94.2	73.9	383.8	144.2	51.1	30.0	82.9	15.9	23.8	93.3	120.5	57.4
Gross product at factor cost	2033.2	1848.8	4178.5	514.2	817.3	131.8	1150.1	187.8	341.5	1216.3	2233.2	713.7
Total output	**4311.6**	**3933.3**	**6790.9**	**1216.0**	**1593.9**	**902.1**	**2231.9**	**448.5**	**1093.7**	**4542.0**	**6611.6**	**1487.7**
Local gross product (net of foreign product)	1016.6	1312.7	3551.7	443.1	795.5	119.6	1125.6	159.2	264.8	1159.1	1896.1	504.0
Depreciation expense	271.2	103.9	503.7	58.1	130.3	14.1	75.7	17.6	22.9	121.5	431.5	419.2
Net capital stock gross output ratio	0.6	0.2	0.7	0.4	0.7	0.1	0.3	0.4	0.2	0.2	0.6	2.5
Net national product	1406.8	1505.5	3733.6	598.4	743.9	146.3	1155.7	180.7	310.6	1161.1	1963.3	340.5
Direct tax payments and RRT	219.8	220.9	89.5	1.6	35.4	2.2	32.5	6.0	3.6	51.3	82.9	11.0

Table A.1(d) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Paper containers and products	Printing and services to printing	Publishing; recorded media and publishing	Petroleum and coal products	Basic chemicals	Paints	Medicinal and pharm-aceutical products, pesticides	Soap and other detergents	Cosmetics and toiletry preparations	Other chemical products	Rubber products	Plastic products
Sheep	0.0	0.0	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grains	0.0	0.0	0.0	0.0	9.0	2.3	90.7	10.4	1.9	5.7	0.0	0.0
Beef cattle	0.0	0.0	0.0	0.0	23.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairy cattle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pigs	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Poultry	0.0	0.0	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other agriculture	0.0	0.7	2.3	0.0	1.4	1.3	0.5	0.8	0.2	0.7	4.6	64.7
Services to agriculture, hunting and trapping	0.0	0.0	0.0	0.0	7.7	3.9	0.0	8.9	5.4	2.9	0.0	0.0
Forestry and logging	13.1	4.5	0.7	0.0	43.4	0.2	27.3	0.0	4.7	29.0	0.0	0.0
Commercial fishing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coal	1.5	0.4	0.1	317.8	101.7	0.0	0.4	0.0	0.0	0.5	0.0	0.1
Oil and gas	41.9	15.0	4.8	15749.6	81.9	0.9	8.6	2.3	0.4	6.0	0.3	15.1
Iron ores	0.0	0.1	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-ferrous metal ores	0.1	0.3	0.1	10.7	122.7	1.2	0.1	0.0	0.0	0.1	0.0	0.2
Other mining	0.0	0.0	0.0	6.3	76.7	0.3	0.3	0.8	0.2	4.6	0.3	1.4
Services to mining	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Meat and meat products	0.2	0.7	0.2	0.5	112.7	7.0	19.4	111.8	6.9	17.8	0.1	0.8
Dairy products	0.2	0.4	0.1	0.4	9.4	0.3	5.3	2.1	1.1	2.3	0.0	0.7
Fruit and vegetable products	0.2	0.6	0.2	0.9	3.1	0.4	1.5	1.2	0.3	1.0	0.0	0.7
Oils and fats	0.1	0.3	0.1	6.5	31.0	9.8	42.2	19.6	3.6	1.2	0.1	0.4
Flour mill products and cereal foods	0.3	0.8	0.2	0.6	42.4	1.9	3.9	3.6	1.0	4.7	0.1	0.8
Bakery products	0.2	0.6	0.2	0.4	1.9	0.1	0.6	0.1	0.0	0.2	0.0	0.7
Confectionery	0.2	0.6	0.1	0.4	2.2	0.1	0.5	0.1	0.0	0.2	0.0	0.6
Other food products	0.9	2.1	0.7	2.7	50.8	9.6	27.6	18.0	6.3	18.8	0.2	2.5
Soft drinks, cordials and syrups	0.3	2.2	0.4	0.6	9.0	0.0	1.0	1.6	0.5	2.8	0.0	0.3
Beer and malt	0.1	0.6	2.0	0.5	0.5	0.1	0.2	0.1	0.0	0.1	0.0	0.3
Wine, spirits and tobacco products (a)	0.5	5.5	13.7	2.7	21.0	0.6	3.5	0.6	0.2	0.7	0.2	1.3
Textile fibres, yarns and woven fabrics	10.6	13.9	2.9	2.9	4.9	0.3	2.6	0.7	0.5	5.8	3.9	54.4
Textile products	1.9	9.0	7.0	0.6	18.1	1.3	3.2	3.1	2.1	3.4	0.5	22.6
Knitting mill products	2.0	1.8	2.3	0.6	0.8	0.0	0.3	0.1	0.0	0.1	0.0	8.9
Clothing	0.8	28.6	33.1	2.2	5.8	0.2	1.8	0.7	0.4	1.4	0.9	8.2
Footwear	0.1	3.8	3.2	1.1	1.3	0.2	0.6	0.4	0.1	0.5	0.6	2.4
Leather and leather products	2.0	5.6	1.3	1.6	3.0	0.7	1.8	1.3	0.4	1.6	2.1	2.9
Sawmill products	2.9	2.6	2.5	0.9	4.3	0.7	2.5	1.4	0.5	2.9	0.5	3.4
Other wood products	2.3	22.0	2.8	10.1	21.6	1.1	4.8	3.3	0.8	5.0	1.4	22.5
Pulp, paper and paperboard	287.6	969.5	381.9	3.9	29.0	1.4	11.0	3.2	0.7	3.4	0.7	16.0
Paper containers and products	154.8	134.2	13.1	1.5	28.7	4.0	115.5	20.5	4.7	11.1	0.7	50.2
Printing and services to printing	39.3	392.0	141.1	5.7	19.5	2.1	17.7	2.7	1.5	5.5	1.2	26.3

Table A.1(d) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Paper containers and products	Printing and services to printing	Publishing; recorded media and publishing	Petroleum and coal products	Basic chemicals	Paints	Medicinal and pharm-aceutical products, pesticides	Soap and other detergents	Cosmetics and toiletry preparations	Other chemical products	Rubber products	Plastic products
Publishing, recorded media, etc.	36.4	45.5	1337.0	10.5	33.4	1.9	36.2	1.8	1.7	16.8	3.5	45.8
Petroleum and coal products	4.0	14.1	14.1	853.8	286.2	27.3	7.9	4.3	3.2	38.3	13.8	37.4
Basic chemicals	157.6	314.3	12.8	855.6	2709.1	169.0	117.4	248.4	52.1	359.6	80.2	2236.2
Paints	1.9	6.2	0.2	6.2	47.0	4.4	1.6	1.1	0.2	4.6	0.2	19.2
Medicinal and pharmaceutical products, pesticides	8.0	26.6	0.4	6.0	896.7	8.9	351.2	6.5	1.5	16.7	6.0	38.5
Soap and detergents	2.7	5.6	0.2	15.0	43.8	2.3	21.7	5.1	1.4	6.5	0.5	4.7
Cosmetics and toiletry preparations	0.1	0.1	0.0	1.1	2.7	0.0	0.6	0.1	0.1	0.3	0.0	0.2
Other chemical products	47.1	163.0	19.5	60.5	149.1	2.0	61.7	6.2	6.9	187.2	1.1	62.0
Rubber products	2.9	9.6	2.3	2.3	7.4	0.3	1.1	0.2	0.1	1.0	15.8	21.0
Plastic products	60.4	442.9	22.3	36.5	185.6	6.2	202.6	105.6	36.9	57.9	7.4	402.1
Glass and glass products	1.2	4.0	0.6	1.7	6.0	0.2	49.2	10.3	0.4	8.2	0.3	19.3
Ceramic products	0.9	0.5	0.5	0.6	1.2	0.1	2.0	0.3	0.1	3.8	0.0	1.4
Cement, lime and concrete slurry	2.1	1.3	0.5	17.3	16.9	0.7	3.6	5.1	0.5	3.7	0.4	3.7
Plaster and other concrete products	1.1	2.2	0.4	1.5	8.1	0.6	0.7	0.2	0.1	0.5	0.2	6.1
Other non-metallic mineral products	0.7	1.1	0.7	0.5	4.2	2.0	0.9	0.7	0.2	1.4	0.6	8.0
Iron and steel	5.1	13.1	4.9	3.2	22.5	2.1	6.5	3.6	1.1	6.1	3.0	18.9
Basic non-ferrous metal and products	22.7	114.9	9.4	98.2	171.6	8.2	20.4	31.4	3.3	18.3	5.8	383.8
Structural metal products	0.6	2.5	1.0	1.7	6.4	1.0	3.2	0.8	0.1	1.5	0.2	25.9
Sheet metal products	1.9	8.2	1.9	8.8	15.5	14.3	37.1	2.0	2.3	12.6	0.1	13.9
Fabricated metal products	7.2	21.8	26.6	4.1	101.0	4.9	49.6	8.4	2.3	36.6	12.4	40.0
Motor vehicles and parts, other transport equipment	2.3	8.4	1.3	3.3	5.4	0.4	3.1	1.0	0.4	1.5	0.9	9.9
Ships and boats	1.3	3.4	6.3	4.7	3.7	0.2	0.4	0.3	0.1	0.4	0.0	0.5
Railway equipment	0.1	0.3	0.1	0.9	0.3	0.0	0.2	0.0	0.0	0.1	0.0	0.9
Aircraft	0.2	0.1	0.1	0.3	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.3
Photographic and scientific equipment	1.7	18.3	15.3	29.5	7.5	0.1	3.7	0.4	0.1	0.5	0.2	3.7
Electronic equipment	1.2	21.4	21.6	27.4	6.5	0.3	1.5	0.7	0.2	1.7	0.9	7.3
Household appliances	0.4	6.8	9.0	21.7	4.5	0.1	1.0	0.3	0.1	0.3	0.1	6.3
Other electrical equipment	10.4	16.3	16.0	30.2	9.9	0.3	3.0	0.8	0.3	1.3	12.4	33.7
Agricultural, mining, etc. machinery	0.9	9.1	11.3	28.0	10.6	0.4	2.5	0.9	0.2	1.2	0.2	2.0
Other machinery and equipment	6.3	17.3	13.6	30.8	31.4	2.6	18.8	5.1	1.4	9.3	1.0	9.2
Prefabricated buildings	0.1	0.3	0.1	0.2	0.4	0.0	0.2	0.0	0.0	0.1	0.0	0.5
Furniture	0.7	1.7	0.7	1.0	3.0	0.2	1.5	0.3	0.1	0.6	0.3	1.8
Other manufacturing	12.9	21.4	3.1	6.7	35.7	2.2	46.7	15.0	7.8	13.7	0.7	35.0
Electricity supply	80.7	109.8	21.7	84.9	164.8	2.6	40.8	6.4	3.1	20.1	7.5	154.4
Gas supply	31.9	11.6	3.7	24.7	41.5	0.6	6.5	1.6	0.2	4.0	0.1	8.7

Table A.1(d) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Paper containers and products	Printing and services to printing	Publishing; recorded media and publishing	Petroleum and coal products	Basic chemicals	Paints	Medicinal and pharm-aceutical products, pesticides	Soap and other detergents	Cosmetics and toiletry preparations	Other chemical products	Rubber products	Plastic products
Water supply, sewerage and drainage services	13.6	17.4	5.8	62.4	54.5	0.9	17.0	3.2	3.1	21.0	1.5	10.5
Residential building	2.7	8.1	5.5	39.8	5.2	0.4	5.7	0.8	0.3	0.9	0.9	5.3
Other construction	3.9	11.1	7.7	166.5	7.0	0.6	7.7	1.0	0.3	1.2	1.2	7.2
Construction trade services	14.3	28.3	14.6	735.4	32.6	5.2	21.3	10.6	3.2	11.4	8.0	35.8
Wholesale trade	117.5	376.9	107.5	660.3	855.1	36.4	386.6	81.2	24.1	113.4	23.6	396.6
Wholesale mechanical repairs	3.2	0.0	0.0	0.0	1.9	0.5	1.0	1.0	0.3	1.1	0.0	0.0
Other wholesale repairs	24.6	47.6	95.1	2.8	48.5	3.0	4.3	1.7	0.3	1.1	7.0	78.7
Retail trade	25.1	69.5	51.5	42.4	70.1	2.9	53.5	11.2	2.4	13.2	2.5	46.3
Retail mechanical repairs	37.0	147.1	76.8	33.1	72.7	4.0	24.6	7.8	1.8	15.8	0.5	23.2
Other retail repairs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accommodation, cafes and restaurants	16.8	95.1	117.0	196.8	72.5	3.7	85.2	8.1	5.9	23.2	0.7	21.4
Road transport	58.6	127.2	44.1	126.4	363.5	12.8	160.8	41.9	11.4	51.1	8.0	179.3
Rail, pipeline and other transport	6.0	4.8	4.7	17.1	25.2	0.4	6.6	1.5	0.4	2.5	0.2	66.1
Water transport	10.3	5.5	5.2	203.7	16.2	0.2	2.2	0.7	0.3	6.2	1.1	9.2
Air and space transport	8.6	80.0	55.1	28.8	30.9	2.9	19.7	6.7	1.9	5.7	1.1	17.6
Services to transport, storage	217.1	126.8	356.8	135.9	383.8	7.3	232.0	10.4	2.9	103.2	4.7	67.4
Communication services	17.1	193.6	173.5	139.9	51.6	8.8	42.5	7.8	2.2	18.6	3.6	66.5
Finance	34.1	171.2	305.1	78.1	118.4	5.9	103.7	16.1	4.4	16.4	10.6	81.1
Ownership of dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other property services	20.4	158.2	554.4	209.9	23.0	5.6	34.1	4.5	2.8	12.5	1.9	44.7
Scientific research, technical and computer services	30.0	251.3	169.3	25.3	135.4	7.0	372.8	27.2	5.7	14.8	19.8	138.7
Legal, accounting, marketing and business management services	180.3	439.3	453.0	848.3	324.4	17.0	340.9	13.6	5.2	32.2	24.7	306.0
Other business services	94.6	425.1	402.4	589.5	138.1	2.8	521.2	39.0	13.0	33.0	111.8	263.1
Government administration	13.9	34.3	115.0	25.4	98.3	5.4	2.9	7.3	1.8	5.6	0.5	9.0
Defence	0.1	0.4	0.4	0.1	0.8	0.0	1.2	0.1	0.0	0.1	0.1	0.5
Education	6.6	27.8	8.4	53.5	20.2	2.6	15.1	0.8	1.3	5.0	1.2	14.8
Health services	1.9	9.6	41.2	1.3	5.2	1.8	83.4	0.2	0.0	0.2	0.1	0.8
Community services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Motion picture, radio and television services	0.6	1.5	113.7	14.9	6.5	4.4	32.6	4.1	9.1	0.0	0.1	11.9
Libraries, museums and the arts	0.8	2.2	52.0	0.0	0.2	1.1	0.0	14.4	1.2	1.9	0.0	0.0
Sport, gambling and recreational services	0.0	0.3	9.2	0.2	1.8	0.0	0.2	0.8	0.2	0.1	1.8	2.0
Personal services	0.6	2.3	8.4	0.0	0.8	0.2	0.5	0.1	0.1	0.1	0.2	0.9
Other services	6.5	9.7	9.4	1.5	4.8	0.2	8.8	1.0	0.4	0.9	0.4	4.9
Total intermediate input	**2046.1**	**5933.9**	**5558.8**	**22850.1**	**8907.7**	**461.9**	**4088.2**	**1018.6**	**278.3**	**1488.3**	**432.3**	**5879.6**

Table A.1(d) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Paper containers and products	Printing and services to printing	Publishing; recorded media and publishing	Petroleum and coal products	Basic chemicals	Paints	Medicinal and pharm-aceutical products, pesticides	Soap and other detergents	Cosmetics and toiletry preparations	Other chemical products	Rubber products	Plastic products
Wage and salaries	1481.4	3226.7	3639.2	618.2	1641.9	532.3	1671.0	261.0	163.8	727.2	374.1	1962.8
Gross surplus	609.9	1742.6	2523.0	2022.5	1241.7	82.3	711.5	259.4	114.6	145.1	195.3	776.1
Complementary imports, selected indirect taxes etc.	125.1	250.9	368.9	363.6	235.5	34.5	173.2	36.2	21.0	52.6	43.9	191.8
Gross product at factor cost	2091.3	4969.3	6162.2	2640.7	2883.6	614.6	2382.5	520.3	278.4	872.2	569.4	2738.9
Total output	**4262.5**	**11154.1**	**12089.9**	**25854.5**	**12026.8**	**1111.0**	**6643.9**	**1575.2**	**577.7**	**2413.2**	**1045.7**	**8810.3**
Local gross product (net of foreign product)	1518.8	4711.0	5955.0	528.1	1441.8	319.6	833.9	208.1	153.1	628.0	56.9	2191.1
Depreciation expense	290.6	662.2	37.0	693.9	734.5	93.3	375.2	70.5	44.0	339.9	56.4	579.5
Net capital stock gross output ratio	0.6	0.5	0.0	0.2	0.6	0.8	0.5	0.4	0.7	1.3	0.5	0.6
Net national product	1853.8	4522.9	6419.3	1118.5	2205.1	569.4	2172.4	406.9	236.1	657.5	450.9	2335.5
Direct tax payments and RRT	18.3	107.3	93.4	41.8	156.7	5.2	296.8	56.6	24.6	50.6	11.7	100.1

Table A.1(e) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Glass and glass products	Ceramic products	Cement, lime and concrete slurry	Plaster and other concrete products	Other non-metallic mineral products	Iron and steel	Basic non-ferrous metal and products	Structural metal products	Sheet metal products	Fabricated metal products	Motor vehicles and parts; other transport equipment	Ships and boats
Sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Beef cattle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairy cattle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pigs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Poultry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other agriculture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.2	0.0	0.0
Services to agriculture, hunting and trapping	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Forestry and logging	0.0	0.0	0.0	0.0	0.0	0.7	8.8	0.0	0.0	0.0	0.0	0.0
Commercial fishing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coal	0.0	0.0	9.7	0.2	0.0	264.5	8.9	0.5	0.2	3.2	1.9	0.1
Oil and gas	108.6	102.7	581.4	7.9	23.7	173.7	228.0	9.3	5.5	12.9	25.6	4.7
Iron ores	0.0	0.0	0.0	0.0	0.0	919.1	2.1	36.0	0.0	18.2	0.5	0.0
Non-ferrous metal ores	0.1	0.0	0.1	75.1	15.2	26.0	36690.9	0.3	0.1	10.9	1.5	0.1
Other mining	58.3	0.0	700.5	202.7	22.9	676.9	339.8	4.4	0.7	4.4	0.6	0.6
Services to mining	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Meat and meat products	0.2	0.0	0.5	0.3	0.0	1.6	1.4	1.1	0.4	0.6	4.0	0.6
Dairy products	0.1	0.0	0.3	0.2	0.0	0.9	1.2	0.6	0.2	0.5	5.5	2.2
Fruit and vegetable products	0.2	0.0	0.4	0.2	0.0	1.2	1.3	0.9	0.2	0.5	4.2	1.8
Oils and fats	0.1	0.0	0.2	0.2	0.0	0.6	0.5	0.3	0.1	0.2	1.5	0.4
Flour mill products and cereal foods	0.2	0.0	0.5	0.3	0.0	1.4	1.5	1.1	0.3	0.6	4.2	0.7
Bakery products	0.2	0.0	0.4	0.2	0.0	1.2	1.3	0.9	0.2	0.5	4.0	0.8
Confectionery	0.1	0.0	0.4	0.2	0.0	1.0	1.1	0.8	0.2	0.4	3.7	1.1
Other food products	0.5	0.0	1.2	1.4	0.1	3.8	3.3	4.8	1.7	2.7	9.7	1.9
Soft drinks, cordials and syrups	0.1	0.0	0.1	0.1	0.0	0.4	0.3	0.2	0.1	0.1	0.7	0.1
Beer and malt	0.1	0.0	0.3	0.1	0.0	0.5	0.4	0.3	0.2	0.2	1.0	0.2
Wine, spirits and tobacco products (a)	1.2	0.0	2.8	1.0	0.1	1.5	1.0	1.3	0.8	1.0	1.6	0.7
Textile fibres, yarns and woven fabrics	1.4	0.0	1.2	2.7	0.2	3.4	1.7	10.8	2.9	4.9	15.6	4.4
Textile products	1.1	0.0	1.0	11.7	0.4	24.0	4.3	12.7	1.6	20.3	17.6	5.4
Knitting mill products	0.1	0.0	0.2	4.8	0.0	1.0	0.7	0.7	1.6	0.6	1.8	0.5
Clothing	0.8	0.0	1.4	1.8	0.2	6.2	5.0	19.7	7.1	10.1	15.3	2.7
Footwear	0.7	0.0	0.8	0.8	0.1	1.7	1.6	1.4	0.7	1.4	2.6	1.4
Leather and leather products	6.1	0.0	4.6	3.6	0.6	3.6	2.5	3.8	1.5	7.7	10.3	3.2
Sawmill products	3.2	0.0	2.3	3.4	0.4	9.2	2.9	114.9	3.7	11.4	6.9	6.4
Other wood products	12.4	0.0	2.6	7.3	0.6	59.5	19.7	59.8	6.2	31.0	28.5	108.5
Pulp, paper and paperboard	2.7	0.0	9.0	23.0	1.0	19.6	6.5	7.5	1.2	4.7	2.7	1.0
Paper containers and products	4.4	0.0	55.5	12.7	1.1	5.8	3.2	6.1	1.4	12.4	14.2	1.7
Printing and services to printing	5.0	0.0	14.0	11.4	1.2	23.8	9.5	39.3	8.0	18.5	54.8	8.1
Publishing, recorded media, etc.	1.2	0.0	13.9	4.5	0.3	18.0	11.4	58.2	7.1	9.2	32.2	4.3

Table A.1(e) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Glass and glass products	Ceramic products	Cement, lime and concrete slurry	Plaster and other concrete products	Other non-metallic mineral products	Iron and steel	Basic non-ferrous metal and products	Structural metal products	Sheet metal products	Fabricated metal products	Motor vehicles and parts; other transport equipment	Ships and boats
Petroleum and coal products	16.8	8.9	247.4	22.0	11.8	201.4	85.9	39.8	18.1	37.8	35.5	25.2
Basic chemicals	246.9	0.0	41.1	87.7	32.0	117.5	196.5	81.8	42.8	132.3	236.8	47.3
Paints	4.4	0.0	0.3	1.1	0.4	50.1	1.6	3.4	4.3	8.2	77.5	21.1
Medicinal and pharmaceutical products, pesticides	9.1	0.0	1.1	3.8	1.2	18.0	16.8	2.6	3.7	12.6	7.2	1.0
Soap and detergents	4.9	0.0	0.5	3.3	0.6	4.3	3.0	0.6	0.6	2.7	2.4	0.3
Cosmetics and toiletry preparations	0.5	0.0	0.1	0.1	0.0	0.3	0.2	0.3	0.0	0.1	0.4	0.1
Other chemical products	6.1	0.0	6.5	25.5	6.0	21.9	4.2	8.9	3.8	17.8	12.1	2.4
Rubber products	0.3	0.0	0.1	1.0	0.1	4.4	7.8	2.0	2.1	7.4	181.0	3.0
Plastic products	21.8	0.0	7.0	15.6	5.8	29.1	23.3	60.0	19.9	26.6	152.7	8.3
Glass and glass products	447.5	0.0	1.7	2.5	1.1	2.3	3.5	236.3	2.2	8.8	226.7	20.4
Ceramic products	1.1	0.0	74.5	34.0	1.5	19.7	7.7	27.6	0.2	30.5	2.5	0.2
Cement, lime and concrete slurry	10.7	0.0	1139.6	525.9	20.6	67.3	46.6	8.9	1.8	5.6	12.7	2.1
Plaster and other concrete products	9.9	0.0	96.4	117.3	10.0	10.5	6.8	20.2	1.3	2.1	6.6	2.1
Other non-metallic mineral products	40.5	0.0	28.5	25.7	8.9	7.1	8.0	13.1	2.5	10.6	12.8	7.1
Iron and steel	48.8	0.0	58.6	101.7	4.6	3531.9	276.7	2584.8	477.7	1209.0	1253.4	393.4
Basic non-ferrous metal and products	153.0	0.0	16.4	40.5	4.9	2273.8	15789.7	1789.8	1274.7	1314.6	732.8	344.9
Structural metal products	24.1	0.0	8.6	120.1	17.1	72.3	74.9	1361.8	44.9	280.0	82.9	78.0
Sheet metal products	0.7	0.0	0.3	3.5	1.3	45.4	12.7	62.8	52.3	24.5	97.1	16.5
Fabricated metal products	10.8	0.0	5.4	16.7	2.1	184.7	61.6	522.3	93.5	207.1	264.7	75.5
Motor vehicles and parts, other transport equipment	29.8	0.0	5.0	5.8	1.4	28.6	13.4	21.3	9.8	15.1	2721.3	17.3
Ships and boats	0.7	0.0	3.6	0.7	0.1	2.6	1.2	4.0	0.5	1.9	6.5	10.4
Railway equipment	0.1	0.0	0.1	0.4	0.0	5.9	0.7	0.4	0.2	0.5	25.2	0.4
Aircraft	0.0	0.0	0.1	0.1	0.0	0.3	0.2	0.1	0.0	0.1	1.6	1.8
Photographic and scientific equipment	0.5	0.0	1.5	1.5	0.1	18.8	19.7	3.5	1.9	3.5	13.8	434.6
Electronic equipment	1.1	0.0	1.3	1.0	0.2	8.7	6.3	25.1	5.9	9.9	41.0	39.9
Household appliances	3.0	0.0	0.7	0.6	0.1	3.2	2.4	2.8	1.2	2.1	46.1	26.6
Other electrical equipment	6.2	0.0	8.2	7.6	0.9	44.8	17.8	51.0	21.2	32.9	66.0	118.2
Agricultural, mining, etc. machinery	2.8	0.0	7.1	8.1	0.5	22.8	22.2	17.1	2.0	56.4	65.8	223.4
Other machinery and equipment	20.3	0.0	21.7	31.8	3.1	84.6	92.9	31.1	20.8	22.1	228.9	159.7
Prefabricated buildings	0.1	0.0	0.2	0.9	0.2	1.3	1.3	38.9	0.6	1.4	1.9	1.4
Furniture	0.9	0.0	1.0	1.5	0.5	12.1	7.7	22.5	14.9	39.8	104.2	32.0
Other manufacturing	5.1	0.0	3.6	8.1	1.7	97.9	195.6	30.1	13.5	11.3	31.5	15.4
Electricity supply	80.9	44.4	204.9	34.0	42.4	995.9	530.0	67.6	26.9	80.2	238.2	32.7
Gas supply	78.0	74.0	432.0	3.3	14.8	104.6	133.3	6.5	4.1	9.1	16.3	2.4
Water supply, sewerage and drainage services	7.9	0.0	16.5	9.6	0.8	95.1	20.7	6.5	1.7	5.9	40.8	3.2
Residential building	1.6	0.0	3.9	2.0	0.1	32.2	11.8	8.3	3.1	3.5	19.4	2.5
Other construction	2.2	0.0	6.1	2.8	0.2	43.6	16.0	11.2	4.2	4.7	26.2	3.4

Table A.1(e) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Glass and glass products	Ceramic products	Cement, lime and concrete slurry	Plaster and other concrete products	Other non-metallic mineral products	Iron and steel	Basic non-ferrous metal and products	Structural metal products	Sheet metal products	Fabricated metal products	Motor vehicles and parts; other transport equipment	Ships and boats
Construction trade services	12.3	0.0	17.7	10.2	1.7	133.2	92.1	32.1	14.0	19.1	62.3	37.4
Wholesale trade	98.1	0.0	238.5	133.8	15.3	736.7	1179.5	551.8	165.1	291.2	1978.0	323.4
Wholesale mechanical repairs	0.2	0.0	13.0	5.6	0.2	6.3	0.8	0.0	0.0	0.0	129.8	0.0
Other wholesale repairs	13.5	0.0	92.5	11.1	0.4	53.8	4.9	53.6	17.2	21.6	61.3	7.5
Retail trade	8.9	0.0	35.6	16.2	1.2	87.8	56.9	54.6	19.9	29.4	208.7	22.5
Retail mechanical repairs	3.4	0.0	24.0	7.0	0.3	15.9	5.3	15.5	6.7	5.2	13.6	4.0
Other retail repairs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accommodation, cafes and restaurants	19.6	0.0	39.6	17.3	3.2	54.7	25.3	101.9	27.9	43.7	90.1	10.9
Road transport	73.5	0.0	564.4	181.4	22.4	621.2	416.1	187.1	48.8	94.4	187.6	43.8
Rail, pipeline and other transport	27.1	0.0	180.5	4.1	2.2	244.3	307.8	13.2	3.9	9.7	18.8	1.6
Water transport	2.4	0.0	25.1	5.9	1.5	64.7	220.6	31.5	5.1	8.2	6.3	0.4
Air and space transport	4.0	0.0	19.5	3.7	0.7	30.1	16.3	35.3	10.9	16.4	47.2	9.2
Services to transport, storage	31.0	0.0	131.4	57.0	3.4	282.9	148.8	217.5	139.1	130.7	276.4	61.1
Communication services	17.7	0.0	73.5	65.2	10.4	80.0	23.9	141.5	24.0	70.5	140.6	32.7
Finance	49.9	0.0	113.9	33.1	7.4	129.3	216.7	134.0	32.2	68.5	237.3	31.5
Ownership of dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other property services	16.3	0.0	35.9	12.2	0.8	1539.3	478.3	194.6	61.3	103.0	1184.2	38.0
Scientific research, technical and computer services	47.2	0.0	245.0	34.4	2.6	282.4	118.4	234.3	74.9	68.9	752.6	20.3
Legal, accounting, marketing and business management services	51.3	0.0	119.4	216.6	13.9	179.1	67.0	246.5	82.9	159.5	265.5	65.1
Other business services	38.7	0.0	228.0	131.3	2.3	248.0	81.2	321.4	78.8	186.2	759.8	44.2
Government administration	2.3	0.0	11.2	3.5	0.2	35.2	3.8	12.9	8.4	6.7	57.7	6.6
Defence	0.2	0.0	0.5	0.2	0.0	0.5	0.3	1.0	0.5	0.3	0.8	0.0
Education	5.9	0.0	27.4	10.4	0.5	35.9	17.3	25.1	4.5	7.6	45.8	5.3
Health services	0.2	0.0	0.8	0.3	0.0	0.8	0.4	1.1	0.2	0.3	31.4	0.7
Community services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Motion picture, radio and television services	1.3	0.0	1.2	11.9	0.6	0.9	0.0	9.1	0.3	5.0	178.8	0.0
Libraries, museums and the arts	0.3	0.0	0.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.9
Sport, gambling and recreational services	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.3	0.1	0.1	0.2	0.0
Personal services	0.1	0.0	0.3	0.2	0.0	1.0	0.1	0.5	0.3	0.4	3.7	1.2
Other services	0.5	0.0	2.8	3.1	0.0	2.2	1.1	8.3	2.6	3.5	17.5	1.6
Total intermediate input	**2034.2**	**230.0**	**6098.7**	**2621.5**	**356.3**	**15381.5**	**58564.0**	**10197.8**	**3062.7**	**5177.8**	**14123.0**	**3107.1**

Table A.1(e) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Glass and glass products	Ceramic products	Cement, lime and concrete slurry	Plaster and other concrete products	Other non-metallic mineral products	Iron and steel	Basic non-ferrous metal and products	Structural metal products	Sheet metal products	Fabricated metal products	Motor vehicles and parts; other transport equipment	Ships and boats
Wage and salaries	608.8	506.7	1330.3	1253.7	536.4	3078.5	2785.6	2201.0	1078.3	2702.5	3198.5	1020.2
Gross surplus	245.8	238.1	483.3	156.8	266.0	2063.9	3315.5	1341.0	463.7	701.8	2743.3	127.4
Complementary imports, selected indirect taxes etc.	65.5	-121.3	193.8	83.1	32.2	337.7	945.5	268.3	114.4	194.6	531.6	94.4
Gross product at factor cost	854.5	744.7	1813.6	1410.5	802.4	5142.4	6101.1	3542.1	1542.0	3404.3	5941.8	1147.6
Total output	**2954.3**	**853.4**	**8106.1**	**4115.1**	**1190.8**	**20861.6**	**65610.6**	**14008.2**	**4719.1**	**8776.8**	**20596.5**	**4349.1**
Local gross product (net of foreign product)	540.0	688.9	1047.1	1096.5	623.7	3856.8	2957.9	2762.7	1046.7	2713.2	2970.9	688.6
Depreciation expense	250.1	119.8	466.7	206.1	89.8	790.8	2277.3	264.2	160.3	280.0	1546.4	91.6
Net capital stock gross output ratio	0.8	1.3	0.5	0.5	0.7	0.3	0.3	0.2	0.3	0.3	0.7	0.2
Net national product	688.8	506.1	1587.1	1312.1	751.5	4464.6	4197.6	3390.1	1454.7	3310.2	4497.3	1230.3
Direct tax payments and RRT	16.4	25.6	109.0	34.9	14.5	313.5	165.3	254.9	68.8	114.9	203.8	96.8

Table A.1(f) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Railway equipment	Aircraft	Photo-graphic and scientific equipment	Electronic equipment	Household appliances	Other electrical equipment	Agricultural, mining and construction machinery, lifting and material handling equipment	Other machinery and equipment	Pre-fabricated buildings	Furniture	Other manufact-uring	Electricity supply
Sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.0
Beef cattle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairy cattle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pigs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Poultry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other agriculture	0.0	0.0	0.3	0.1	0.1	0.2	0.0	0.4	0.2	0.6	22.6	1.0
Services to agriculture, hunting and trapping	0.0	0.0	0.0	1.1	0.0	6.7	0.0	0.0	0.0	0.3	35.0	0.0
Forestry and logging	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.6	0.8	2.0
Commercial fishing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coal	0.0	0.0	0.2	0.4	0.1	0.1	0.1	1.2	0.0	0.0	0.0	3031.1
Oil and gas	1.5	27.3	6.7	3.4	4.8	5.2	10.4	5.1	2.6	7.6	9.6	1835.8
Iron ores	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
Non-ferrous metal ores	0.6	0.0	0.6	0.3	3.1	38.9	7.0	2.6	0.0	0.6	0.0	6.1
Other mining	0.3	2.0	3.5	0.5	1.7	2.7	1.0	1.8	0.3	0.2	62.4	0.5
Services to mining	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Meat and meat products	0.1	1.5	0.8	0.7	1.5	0.7	1.1	0.9	0.1	0.7	7.8	0.9
Dairy products	0.1	2.0	1.4	0.9	1.2	0.7	0.9	1.2	0.3	1.6	1.6	2.7
Fruit and vegetable products	0.7	4.3	0.6	0.6	0.8	0.6	0.7	1.9	0.1	0.5	0.5	1.0
Oils and fats	0.1	0.3	0.2	0.2	0.3	0.2	0.3	0.3	0.0	0.2	0.2	0.8
Flour mill products and cereal foods	0.2	0.9	0.7	0.7	0.8	0.7	0.8	0.9	0.1	0.6	0.6	1.0
Bakery products	0.1	0.7	0.6	0.7	0.8	0.7	0.9	1.2	0.1	0.5	0.5	2.9
Confectionery	0.1	0.8	0.5	0.5	0.6	0.5	0.6	0.7	0.1	0.5	0.5	1.2
Other food products	0.5	2.3	18.0	2.1	2.9	2.2	3.5	3.9	1.3	2.8	6.5	3.7
Soft drinks, cordials and syrups	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.2
Beer and malt	0.0	4.8	0.1	0.1	0.2	0.2	0.2	0.3	0.0	0.1	0.1	0.2
Wine, spirits and tobacco products (a)	0.2	4.5	1.0	0.4	0.7	0.6	0.7	1.0	0.3	0.5	1.4	0.5
Textile fibres, yarns and woven fabrics	2.2	7.4	3.6	0.9	2.1	1.1	2.2	2.5	1.2	68.3	13.5	1.9
Textile products	0.7	0.9	14.5	2.7	3.7	5.9	2.4	4.2	1.0	28.7	14.4	1.1
Knitting mill products	0.1	0.4	0.6	0.3	0.4	0.3	0.3	0.4	0.1	8.2	5.5	0.6
Clothing	0.9	5.0	3.4	2.6	4.6	3.0	5.0	3.4	1.7	7.6	8.5	9.6
Footwear	0.7	3.3	1.6	0.5	0.9	0.6	0.8	1.0	0.5	0.8	3.3	12.7
Leather and leather products	2.9	1.6	10.0	1.1	2.6	1.6	2.5	3.1	1.3	56.3	90.7	5.5
Sawmill products	1.1	2.8	4.5	1.7	2.7	2.7	3.0	3.3	31.0	620.9	65.8	0.8
Other wood products	3.9	9.5	8.0	2.7	8.5	5.3	9.8	12.5	43.6	422.0	82.2	4.2

Table A.1(f) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Railway equipment	Aircraft	Photo-graphic and scientific equipment	Electronic equipment	Household appliances	Other electrical equipment	Agricultural, mining and construction machinery, lifting and material handling equipment	Other machinery and equipment	Pre-fabricated buildings	Furniture	Other manufact-uring	Electricity supply
Pulp, paper and paperboard	0.3	1.2	3.1	1.8	2.4	3.4	0.8	3.2	1.6	9.2	7.9	2.8
Paper containers and products	0.6	3.6	13.9	4.9	21.5	4.4	4.2	5.6	1.0	7.0	7.9	13.7
Printing and services to printing	1.5	4.2	13.5	6.9	19.9	18.2	27.1	32.9	2.4	14.0	20.1	40.0
Publishing, recorded media, etc.	0.6	4.3	6.6	16.0	12.0	11.0	10.8	9.8	1.8	6.6	8.9	13.8
Petroleum and coal products	5.9	10.2	9.6	3.7	7.8	11.4	18.2	31.5	2.7	9.1	9.9	583.3
Basic chemicals	15.5	16.3	166.9	16.5	93.8	216.2	17.4	28.1	22.3	65.3	206.8	150.5
Paints	0.7	5.2	1.7	0.7	11.0	2.6	5.8	8.1	2.4	32.9	29.7	11.7
Medicinal and pharmaceutical products, pesticides	0.3	2.1	5.2	1.0	1.4	1.1	1.2	1.3	0.8	3.8	6.1	23.5
Soap and detergents	0.2	0.4	1.4	0.4	0.5	0.7	0.5	0.6	0.1	1.1	2.8	5.2
Cosmetics and toiletry preparations	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.2	0.2	0.2
Other chemical products	2.8	2.7	25.5	0.9	3.9	2.9	3.4	3.9	2.2	25.1	19.4	8.8
Rubber products	3.8	1.2	6.7	1.7	12.6	3.1	30.1	23.7	0.6	8.2	17.8	108.5
Plastic products	8.4	9.8	147.5	51.1	76.6	45.9	29.5	46.6	6.0	103.6	228.7	17.0
Glass and glass products	7.6	9.6	4.5	1.7	38.4	11.8	7.9	7.9	9.4	48.7	10.1	3.4
Ceramic products	3.5	1.0	8.3	2.3	4.6	19.4	10.9	6.1	1.4	0.9	0.9	5.6
Cement, lime and concrete slurry	1.2	2.5	5.6	1.3	10.2	1.6	6.3	13.0	0.8	1.1	4.2	43.9
Plaster and other concrete products	2.0	2.3	2.7	0.9	1.5	1.7	2.8	3.9	2.3	13.2	5.5	103.2
Other non-metallic mineral products	4.0	4.8	8.3	2.1	3.5	2.0	5.1	3.9	1.3	3.4	7.6	7.9
Iron and steel	105.7	19.3	260.6	54.8	861.1	223.3	1075.3	1285.0	147.2	401.1	480.8	63.3
Basic non-ferrous metal and products	35.5	260.7	920.6	156.6	260.3	1921.8	137.9	328.2	118.6	339.0	940.7	37.6
Structural metal products	153.1	5.8	30.8	14.8	30.0	124.0	135.9	286.0	59.9	45.4	106.2	44.4
Sheet metal products	7.1	44.8	15.7	5.6	114.4	22.6	65.8	118.1	6.5	16.5	26.1	4.3
Fabricated metal products	22.8	135.7	44.4	22.3	95.5	69.3	120.2	137.0	32.5	122.2	63.1	119.4
Motor vehicles and parts, other transport equipment	7.8	53.8	22.8	7.9	54.9	13.4	88.5	22.3	3.7	19.6	92.5	26.7
Ships and boats	0.5	3.5	0.7	0.4	0.6	0.8	2.4	1.2	0.2	0.3	0.5	1.3
Railway equipment	671.4	0.4	0.7	0.9	3.6	2.3	1.6	5.8	0.0	0.9	0.9	3.1
Aircraft	0.0	1066.4	0.1	0.1	0.1	0.1	0.4	0.1	0.0	0.0	0.2	0.5
Photographic and scientific equipment	3.9	59.6	37.3	21.9	26.4	15.6	26.0	26.0	0.3	2.6	8.6	15.9
Electronic equipment	29.8	240.5	238.4	497.2	56.2	88.5	79.6	104.7	7.9	9.0	37.6	33.0
Household appliances	1.5	4.3	8.7	5.2	214.5	19.4	24.9	19.6	0.3	2.0	3.4	7.7
Other electrical equipment	78.6	45.7	148.7	133.0	678.8	539.3	264.1	391.6	4.6	11.6	30.3	957.0
Agricultural, mining, etc. machinery	10.4	12.1	6.5	7.8	8.7	12.4	89.4	40.5	0.8	1.5	6.3	31.8
Other machinery and equipment	99.8	118.5	44.8	66.1	98.0	187.1	273.7	416.8	2.6	9.5	13.7	185.3
Prefabricated buildings	1.6	0.3	0.3	0.3	0.6	1.5	1.4	2.6	1.0	0.7	0.8	0.4

Table A.1(f) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Railway equipment	Aircraft	Photo-graphic and scientific equipment	Electronic equipment	Household appliances	Other electrical equipment	Agricultural, mining and construction machinery, lifting and material handling equipment	Other machinery and equipment	Pre-fabricated buildings	Furniture	Other manufact-uring	Electricity supply
Furniture	2.0	2.5	1.8	4.3	2.7	3.0	5.4	5.5	7.3	43.7	13.5	2.5
Other manufacturing	9.4	6.9	10.3	5.6	20.3	14.2	12.8	24.3	4.8	19.7	41.7	24.4
Electricity supply	13.4	1.6	28.0	116.7	52.6	54.4	67.9	98.4	1.5	23.2	33.6	4829.4
Gas supply	1.2	18.7	3.6	2.9	3.8	3.9	4.7	3.9	1.9	5.6	7.3	585.3
Water supply, sewerage and drainage services	0.9	0.0	4.3	7.9	9.3	5.4	12.2	18.7	0.3	3.9	5.3	97.8
Residential building	1.0	0.1	4.8	1.8	2.9	1.6	2.2	2.5	0.2	0.7	1.2	160.3
Other construction	1.4	0.1	6.5	2.4	4.0	2.2	3.0	3.3	0.3	0.9	1.7	230.4
Construction trade services	17.4	7.8	47.7	16.1	26.6	17.5	23.1	29.4	2.3	7.0	13.4	2220.8
Wholesale trade	78.3	423.5	336.0	352.4	408.7	394.6	413.3	450.0	53.0	297.6	307.1	554.6
Wholesale mechanical repairs	0.0	0.0	0.1	0.1	0.1	0.2	0.6	1.0	0.1	0.4	0.2	67.5
Other wholesale repairs	0.8	0.0	5.2	4.6	1.8	5.0	44.0	42.6	4.9	30.4	19.2	147.6
Retail trade	4.9	31.6	41.7	27.4	27.7	28.0	31.3	31.7	5.0	44.6	94.8	71.1
Retail mechanical repairs	0.1	0.0	1.4	1.2	1.1	3.4	9.3	15.5	6.3	24.4	29.4	234.8
Other retail repairs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accommodation, cafes and restaurants	2.9	0.0	30.7	23.5	18.8	9.5	20.0	19.3	5.2	18.7	26.9	132.7
Road transport	12.7	30.2	63.8	30.9	91.0	56.8	74.7	87.4	13.3	105.6	102.4	166.2
Rail, pipeline and other transport	0.6	4.9	4.0	1.7	4.9	2.9	13.8	28.9	0.8	3.0	5.3	271.9
Water transport	0.4	0.3	3.6	0.7	3.6	3.4	9.4	7.0	0.3	1.4	10.0	48.2
Air and space transport	0.4	1.0	20.9	14.8	25.4	18.7	38.2	32.4	2.6	8.1	9.6	97.4
Services to transport, storage	11.4	2.8	18.5	10.6	16.5	25.2	28.3	50.2	1.9	20.6	51.4	51.7
Communication services	8.6	0.0	61.4	34.8	68.5	62.0	104.3	169.3	5.6	40.0	78.0	352.3
Finance	14.0	19.2	39.3	41.5	38.4	43.3	56.3	50.0	10.0	44.6	39.0	1319.8
Ownership of dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other property services	2.2	13.0	39.5	28.8	21.6	29.8	50.0	73.4	1.6	19.6	40.5	404.6
Scientific research, technical and computer services	13.4	0.0	162.8	232.1	316.0	168.6	169.7	110.7	9.3	27.6	18.3	259.6
Legal, accounting, marketing and business management services	13.5	0.0	207.0	36.9	80.9	59.8	100.5	186.4	10.2	83.0	134.8	341.2
Other business services	1.3	0.0	124.3	88.9	207.8	95.8	201.1	142.6	14.4	103.3	76.2	225.8
Government administration	0.7	0.0	4.1	1.8	4.9	3.0	6.1	4.3	0.4	3.3	2.6	19.1
Defence	0.0	0.0	0.3	0.2	0.2	0.1	0.2	0.1	0.0	0.1	0.1	0.1
Education	1.7	0.0	13.9	13.1	16.4	9.7	18.0	17.1	0.5	3.5	3.5	168.0
Health services	0.0	0.0	0.4	0.6	0.4	0.4	0.6	0.7	0.1	0.3	0.6	1.3
Community services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Motion picture, radio and television services	0.0	0.0	5.4	2.0	17.9	9.2	3.9	1.9	2.0	8.3	1.8	13.4

Table A.1(f) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Railway equipment	Aircraft	Photo-graphic and scientific equipment	Electronic equipment	Household appliances	Other electrical equipment	Agricultural, mining and construction machinery, lifting and material handling equipment	Other machinery and equipment	Pre-fabricated buildings	Furniture	Other manufact-uring	Electricity supply
Libraries, museums and the arts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	12.9	1.2	38.8
Sport, gambling and recreational services	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.4
Personal services	0.0	0.0	2.5	2.5	0.5	0.3	0.3	0.5	0.0	0.6	0.3	0.8
Other services	0.3	0.0	3.0	1.6	3.4	1.3	2.8	2.7	0.3	1.4	1.3	8.8
Total intermediate input	**1520.0**	**2799.2**	**3589.8**	**2244.4**	**4368.5**	**4813.6**	**4151.3**	**5180.8**	**697.8**	**3596.6**	**4012.2**	**20751.8**
Wage and salaries	642.1	1196.2	1636.5	1614.4	642.2	1303.1	1748.0	2023.3	193.7	1446.9	872.4	4349.8
Gross surplus	22.0	-30.6	60.4	296.3	441.3	649.0	476.6	588.8	136.2	485.2	49.4	12228.2
Complementary imports, selected indirect taxes etc.	44.8	118.6	103.5	137.9	110.2	159.5	152.7	146.9	20.4	125.1	75.0	1012.1
Gross product at factor cost	664.1	1165.6	1696.9	1910.7	1083.5	1952.1	2224.7	2612.0	329.9	1932.2	921.8	16578.0
Total output	**2228.9**	**4083.3**	**5390.2**	**4293.0**	**5562.1**	**6925.2**	**6528.7**	**7939.7**	**1048.1**	**5653.9**	**5009.1**	**38341.9**
Local gross product (net of foreign product)	332.1	582.8	1187.9	1528.6	893.1	1702.0	444.9	1518.7	320.0	1835.6	857.3	9946.8
Depreciation expense	38.7	345.2	214.9	165.6	105.7	155.0	160.3	214.9	72.2	162.0	68.7	6093.3
Net capital stock gross output ratio	0.2	0.8	0.4	0.3	0.2	0.2	0.2	0.2	0.6	0.3	0.1	4.2
Net national product	731.0	1213.1	1720.6	1889.5	1036.9	1912.7	2161.4	2502.7	277.2	1903.9	956.0	9052.1
Direct tax payments and RRT	16.3	1.1	118.9	123.7	31.2	99.6	149.5	166.9	22.6	51.8	8.4	126.5

Table A.1(g) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Gas supply	Water supply; sewerage and drainage services	Residential building con-struction	Other con-struction	Con-struction trade services	Wholesale trade	Wholesale mechanical repairs	Other wholesale repairs	Retail trade	Retail mechanical repairs	Other retail repairs	Accomm-odation, cafes and rest-aurants
Sheep	0.0	0.0	0.0	0.0	0.0	77.6	0.0	0.0	502.5	0.0	0.0	181.4
Grains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Beef cattle	0.0	0.0	0.0	0.0	0.0	63.8	0.0	0.0	413.1	0.0	0.0	149.5
Dairy cattle	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	3.6	0.0	0.0	1.3
Pigs	0.0	0.0	0.0	0.0	0.0	36.6	0.0	0.0	236.5	0.0	0.0	85.6
Poultry	0.0	0.0	0.0	0.0	0.0	44.2	0.0	0.0	310.4	0.0	0.0	134.5
Other agriculture	0.0	7.1	67.5	163.4	16.4	10.0	0.0	1.0	354.0	3.3	0.4	532.9
Services to agriculture, hunting and trapping	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Forestry and logging	0.0	0.0	1.7	57.0	6.8	0.0	0.0	0.0	1.4	0.0	0.0	0.7
Commercial fishing	0.0	0.0	1.2	1.8	0.0	0.0	0.0	0.0	206.3	0.0	0.0	148.4
Coal	5.9	1.0	2.8	8.5	2.5	10.6	0.0	1.9	10.0	0.5	0.0	2.4
Oil and gas	0.0	0.0	2.8	8.6	2.4	7962.6	0.9	5.5	122.3	8.0	1.2	177.9
Iron ores	0.3	0.0	1.2	3.6	1.1	4.1	0.0	0.8	1.9	0.2	0.0	1.0
Non-ferrous metal ores	0.7	0.6	3.4	11.4	3.0	575.7	0.1	2.1	5.6	0.6	0.0	3.0
Other mining	0.1	18.8	124.6	352.4	174.2	2.0	0.0	0.4	3.5	0.1	0.0	5.3
Services to mining	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Meat and meat products	0.1	2.7	8.0	24.6	9.1	237.7	0.4	1.6	2723.6	7.1	0.2	1916.3
Dairy products	0.1	12.1	13.2	24.0	6.6	69.2	1.8	3.5	823.1	16.2	1.1	772.2
Fruit and vegetable products	0.2	0.8	4.8	8.6	4.2	11.1	0.4	1.8	302.3	3.2	0.2	316.0
Oils and fats	0.1	1.5	3.0	5.3	2.1	5.6	0.3	0.7	272.7	2.4	0.1	102.3
Flour mill products and cereal foods	0.1	0.8	4.4	7.4	4.7	4.7	0.4	1.8	783.8	3.7	0.2	468.2
Bakery products	1.8	4.2	4.0	6.6	3.9	13.7	0.4	1.6	476.3	3.1	0.2	466.7
Confectionery	0.1	2.1	6.6	11.5	4.5	9.1	0.6	1.7	264.3	4.4	0.3	340.3
Other food products	0.9	3.9	33.7	56.2	19.3	47.6	1.2	4.3	566.6	9.3	0.6	483.2
Soft drinks, cordials and syrups	0.0	0.2	4.6	6.5	0.9	1.8	0.1	0.3	453.4	0.6	0.1	104.5
Beer and malt	0.0	0.4	2.8	4.0	1.8	10.1	0.1	0.7	5.5	1.7	0.2	1758.7
Wine, spirits and tobacco products (a)	0.2	4.8	6.3	9.2	4.5	27.3	0.1	1.7	6.8	3.7	1.3	1430.3
Textile fibres, yarns and woven fabrics	1.6	1.9	41.6	71.2	21.9	13.8	1.3	1.8	34.1	8.0	0.8	51.9
Textile products	1.2	0.7	45.7	99.9	39.2	46.5	0.6	2.4	80.3	7.6	0.5	77.5
Knitting mill products	0.1	0.3	8.3	13.0	3.4	15.0	0.2	0.7	67.7	2.3	0.1	2.5
Clothing	0.6	2.4	17.0	32.8	12.5	53.1	17.0	7.7	37.7	53.2	2.2	34.9
Footwear	0.2	1.2	7.1	9.6	3.7	18.2	0.2	27.0	6.3	2.8	8.3	3.3
Leather and leather products	9.9	4.2	16.6	24.8	14.5	44.0	0.6	1.2	11.3	10.2	0.3	20.8
Sawmill products	0.2	4.8	967.4	160.5	896.1	19.2	0.3	1.4	32.1	2.4	0.2	3.9
Other wood products	0.6	30.8	1776.3	473.4	1469.0	273.1	2.6	3.1	222.1	9.7	0.5	18.3
Pulp, paper and paperboard	0.1	0.3	53.6	82.7	15.7	161.8	0.1	0.9	55.9	1.3	0.3	28.3
Paper containers and products	1.6	7.2	150.6	256.3	44.8	288.0	1.4	7.2	223.9	7.9	2.4	134.8
Printing and services to printing	9.7	15.7	166.1	409.7	58.3	1094.3	4.5	7.0	1822.7	36.9	1.7	215.2

Table A.1(g) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Gas supply	Water supply; sewerage and drainage services	Residential building con-struction	Other con-struction	Con-struction trade services	Wholesale trade	Wholesale mechanical repairs	Other wholesale repairs	Retail trade	Retail mechanical repairs	Other retail repairs	Accomm-odation, cafes and rest-aurants
Publishing, recorded media, etc.	2.9	12.1	59.4	122.5	24.2	471.3	3.6	6.6	824.3	28.8	1.4	104.3
Petroleum and coal products	4.9	376.1	339.6	874.0	772.2	788.0	22.3	147.8	627.0	135.5	30.1	242.0
Basic chemicals	87.4	468.3	388.5	1305.0	912.5	178.7	32.7	25.4	134.4	50.5	15.3	80.8
Paints	0.9	20.5	152.8	226.2	241.5	27.7	6.0	12.1	16.1	25.4	1.6	5.4
Medicinal and pharmaceutical products, pesticides	15.6	177.1	12.2	83.3	62.9	106.4	1.1	2.6	61.1	8.2	0.6	17.8
Soap and detergents	1.3	8.3	4.2	13.6	7.5	30.2	0.7	2.0	20.1	3.5	0.4	40.1
Cosmetics and toiletry preparations	0.1	0.3	0.9	2.4	1.4	3.2	0.1	0.1	1.4	0.4	0.0	3.1
Other chemical products	2.1	5.8	98.7	310.0	229.7	59.6	2.4	5.0	29.1	5.1	1.3	5.7
Rubber products	12.2	3.2	21.7	214.9	74.0	61.7	1.4	19.7	46.3	17.0	2.3	23.6
Plastic products	37.7	55.2	1037.4	1251.2	775.5	416.8	3.0	15.2	221.8	40.2	3.2	163.1
Glass and glass products	0.7	4.0	127.8	167.7	86.6	302.0	20.6	2.5	38.3	114.7	0.3	23.5
Ceramic products	0.4	5.7	494.8	79.3	324.9	8.5	0.1	0.5	8.5	0.6	0.1	16.6
Cement, lime and concrete slurry	1.2	93.0	1454.6	2272.6	2062.2	10.6	0.4	1.5	23.3	2.3	0.4	1.9
Plaster and other concrete products	0.3	5.1	1292.8	840.4	1262.4	22.7	0.3	1.0	10.2	1.6	0.1	4.2
Other non-metallic mineral products	1.6	10.9	303.2	408.0	378.0	38.7	0.2	0.6	18.8	1.2	0.1	1.9
Iron and steel	21.8	75.5	1048.7	3380.4	1715.5	246.0	5.5	18.8	151.9	45.6	3.8	10.4
Basic non-ferrous metal and products	14.0	45.7	709.7	648.0	347.7	81.9	3.1	13.3	155.4	25.0	4.3	37.8
Structural metal products	7.4	84.9	3182.6	3465.1	1532.0	81.8	10.4	14.6	43.0	43.0	1.1	10.8
Sheet metal products	30.0	8.7	341.6	484.0	216.2	142.5	2.5	3.8	119.3	21.5	3.2	54.6
Fabricated metal products	57.0	297.2	978.1	1936.1	849.4	207.4	23.8	89.6	232.6	89.3	21.9	78.6
Motor vehicles and parts, other transport equipment	1.5	13.9	236.5	394.6	283.5	276.1	120.9	25.0	358.6	3151.7	5.6	46.4
Ships and boats	0.4	0.8	90.8	136.1	44.0	81.1	4.5	1.9	3.4	3.9	0.3	3.7
Railway equipment	0.1	0.3	5.9	9.6	4.1	4.1	1.6	2.7	4.6	4.7	0.2	2.3
Aircraft	0.0	0.1	25.7	39.6	12.5	121.8	0.1	1.5	43.1	2.6	0.4	5.6
Photographic and scientific equipment	0.4	14.3	20.4	444.1	23.2	172.2	5.3	128.0	26.7	26.5	10.9	16.9
Electronic equipment	2.4	38.6	106.8	838.2	435.7	124.8	8.7	676.5	21.6	27.4	51.0	69.8
Household appliances	0.4	3.9	681.2	699.2	417.0	24.0	8.8	82.1	42.4	19.6	118.2	81.0
Other electrical equipment	3.3	36.3	322.6	2342.8	675.4	246.5	17.1	182.4	106.1	75.2	37.4	51.6
Agricultural, mining, etc. machinery	1.2	7.5	80.7	141.8	165.9	63.3	94.4	86.8	19.5	221.1	8.8	26.1
Other machinery and equipment	7.1	105.2	142.4	625.6	192.1	335.0	310.0	920.3	90.8	373.9	71.2	175.7
Prefabricated buildings	0.1	0.6	50.7	145.0	37.0	3.9	0.1	0.5	3.0	1.2	0.1	1.1
Furniture	0.4	15.4	299.6	304.8	257.8	91.8	0.9	3.3	58.8	6.3	0.4	69.8
Other manufacturing	8.0	16.8	211.6	442.0	392.5	433.0	4.0	41.5	239.4	98.4	6.0	146.5
Electricity supply	5.9	282.3	104.1	511.1	83.6	629.2	39.0	137.2	1018.9	228.1	44.4	780.9
Gas supply	0.0	1.0	28.4	6.1	10.9	241.4	0.9	3.1	115.3	7.3	1.2	147.1
Water supply, sewerage and drainage services	19.3	437.5	305.2	173.6	72.7	251.7	17.1	24.8	303.9	77.0	5.0	314.5

Table A.1(g) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Gas supply	Water supply; sewerage and drainage services	Residential building con-struction	Other con-struction	Con-struction trade services	Wholesale trade	Wholesale mechanical repairs	Other wholesale repairs	Retail trade	Retail mechanical repairs	Other retail repairs	Accomm-odation, cafes and rest-aurants
Residential building	82.4	62.6	1426.3	1976.7	2201.2	272.1	10.4	70.0	124.0	21.1	1.1	78.3
Other construction	111.3	86.3	2060.2	2681.9	2984.8	436.7	14.0	94.4	168.6	28.5	1.5	236.0
Construction trade services	816.5	950.5	11409.3	13437.6	34416.4	1818.0	145.0	186.0	599.9	119.2	16.1	793.9
Wholesale trade	50.0	454.3	2185.3	3735.2	2509.0	2748.3	211.5	917.9	1684.4	1772.0	119.4	1242.9
Wholesale mechanical repairs	31.8	36.1	101.6	217.0	59.2	58.0	1.1	0.0	326.6	0.0	0.0	0.5
Other wholesale repairs	163.9	52.2	130.9	178.5	65.4	580.2	0.0	0.0	717.2	0.0	0.0	26.8
Retail trade	12.3	40.8	246.7	629.0	278.1	1133.9	13.2	55.4	2407.6	122.1	8.0	2591.2
Retail mechanical repairs	47.9	61.7	178.2	502.8	896.0	983.4	0.0	81.2	1145.6	0.0	13.7	38.0
Other retail repairs	0.0	0.0	13.5	22.8	13.1	30.9	0.0	0.0	56.3	0.0	0.0	19.9
Accommodation, cafes and restaurants	15.0	40.2	47.7	58.0	14.9	741.6	1.5	11.2	399.5	24.4	5.3	57.3
Road transport	11.6	101.1	951.5	1442.4	1067.0	1165.0	7.0	63.5	627.4	43.8	19.4	457.8
Rail, pipeline and other transport	2.1	1.1	62.5	115.2	28.3	119.1	0.3	3.0	51.0	2.2	0.6	42.0
Water transport	13.9	0.3	2.7	6.4	4.2	106.4	0.1	3.7	35.7	0.5	0.0	5.1
Air and space transport	30.2	53.5	100.4	138.6	28.8	1073.1	2.0	28.1	316.5	9.7	1.9	53.6
Services to transport, storage	2.8	24.7	340.7	3216.6	388.1	9971.6	17.1	28.7	836.2	89.7	7.6	314.1
Communication services	87.5	145.1	651.6	1502.5	254.9	3174.9	59.8	240.2	3128.5	299.4	26.2	690.2
Finance	198.5	726.6	3588.5	3531.2	4367.5	3189.9	92.6	231.5	2512.4	473.9	38.8	822.3
Ownership of dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other property services	321.3	5.1	2756.3	6657.4	2162.0	8439.6	17.2	778.5	3756.4	216.3	3.8	1641.6
Scientific research, technical and computer services	55.2	30.5	268.4	6336.1	770.9	1473.4	2.6	18.5	456.6	1.8	0.0	356.6
Legal, accounting, marketing and business management services	1056.0	716.9	1858.2	5165.5	2486.5	5575.1	160.5	376.6	6778.3	706.9	56.8	1129.9
Other business services	377.3	103.9	957.4	2934.4	1299.2	1537.0	120.0	691.2	3894.1	87.6	1.3	603.3
Government administration	1.7	38.7	263.7	480.9	83.8	122.0	8.4	8.8	180.2	54.3	2.7	12.6
Defence	0.0	0.0	0.7	0.7	0.1	8.6	0.0	0.0	2.6	0.0	0.0	3.1
Education	27.9	26.9	48.4	43.9	10.8	34.2	1.0	2.5	61.9	73.8	0.7	60.8
Health services	0.0	3.9	0.2	7.7	0.1	13.8	1.1	1.9	17.1	11.1	0.8	6.1
Community services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Motion picture, radio and television services	17.4	20.3	46.3	28.6	15.7	285.2	1.3	1.1	1100.2	17.2	0.0	1201.1
Libraries, museums and the arts	59.2	52.5	40.5	7.3	0.9	52.0	0.0	0.0	74.8	11.4	0.0	178.4
Sport, gambling and recreational services	0.0	0.1	230.8	354.9	128.7	159.8	0.0	0.0	113.6	10.0	0.0	20.9
Personal services	0.0	1.6	15.7	59.2	6.4	18.8	0.7	0.6	55.5	4.5	0.0	21.2
Other services	0.0	4.6	141.1	448.8	62.1	13.9	0.0	0.0	21.7	5.3	0.0	6.7
Total intermediate input	**3979.6**	**6703.7**	**48433.5**	**83660.5**	**74435.0**	**62974.9**	**1696.7**	**6686.0**	**48332.7**	**9401.2**	**801.4**	**25751.0**

Table A.1(g) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Gas supply	Water supply; sewerage and drainage services	Residential building con-struction	Other con-struction	Con-struction trade services	Wholesale trade	Wholesale mechanical repairs	Other wholesale repairs	Retail trade	Retail mechanical repairs	Other retail repairs	Accomm-odation, cafes and rest-aurants
Wage and salaries	182.0	3433.8	4083.5	13386.6	21744.5	30714.1	385.1	1445.1	28803.5	9540.3	1126.1	13483.2
Gross surplus	921.7	6065.4	7435.6	19748.4	17409.6	18696.5	263.9	396.5	18241.2	333.8	324.1	8546.5
Complementary imports, selected indirect taxes etc.	105.7	19.6	1053.2	1768.0	1902.2	4577.7	77.3	359.9	3340.4	901.2	102.1	2747.5
Gross product at factor cost	1103.7	9499.2	11519.1	33135.0	39154.1	49410.6	649.0	1841.6	47044.7	9874.1	1450.2	22029.7
Total output	**5189.0**	**16222.5**	**61005.8**	**118563.5**	**115491.3**	**116963.3**	**2423.0**	**8887.5**	**98717.8**	**20176.6**	**2353.8**	**50528.2**
Local gross product (net of foreign product)	772.6	9404.2	10943.2	28164.8	37196.4	32116.9	551.6	1473.3	42340.3	9479.2	1392.2	20047.1
Depreciation expense	428.5	2717.7	354.7	743.5	2326.6	4202.5	220.0	704.1	4960.3	249.9	8.8	2806.6
Net capital stock gross output ratio	2.2	4.5	0.1	0.1	0.2	0.5	1.3	1.1	0.7	0.2	0.1	1.1
Net national product	627.1	6770.3	11934.5	31841.1	38907.5	47314.1	514.9	1611.5	44820.4	10592.8	1538.7	21660.4
Direct tax payments and RRT	17.0	52.8	563.9	1215.3	1492.2	4332.2	66.2	91.8	2452.0	100.6	2.5	354.3

Table A.1(h) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Road transport	Rail, pipeline and other transport	Water transport	Air and space transport	Services to transport; storage	Commun-ication services	Finance	Ownership of dwellings	Other property services	Scientific research, technical and computer services	Legal, accounting, marketing and business management services	Other business services
Sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	59.7	0.0	23.6
Grains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Beef cattle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dairy cattle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pigs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Poultry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other agriculture	0.9	1.4	0.0	0.0	44.2	1.0	5.0	0.0	107.7	47.1	89.3	7.9
Services to agriculture, hunting and trapping	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	92.1	0.0	7.9
Forestry and logging	3.6	14.4	0.0	0.0	1.6	6.4	0.0	0.0	0.0	1.4	0.6	0.7
Commercial fishing	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	6.5	0.1	3.0
Coal	2.0	9.9	1.0	1.0	5.9	4.0	2.3	0.0	26.0	1.0	1.4	2.7
Oil and gas	13.8	35.5	0.0	3.0	31.6	164.4	8.0	3.8	66.8	33.2	42.5	25.0
Iron ores	0.6	0.9	0.0	0.3	1.7	1.7	1.0	0.0	10.5	0.4	0.6	1.2
Non-ferrous metal ores	4.6	25.5	0.3	1.0	8.0	4.9	2.7	0.0	40.4	1.2	1.7	3.3
Other mining	0.3	0.9	0.0	0.1	0.8	0.8	0.5	5.3	10.7	2.9	2.1	1.8
Services to mining	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Meat and meat products	3.8	1.4	0.1	1.4	3.6	20.3	9.3	1.3	18.4	41.5	34.7	19.1
Dairy products	7.6	3.9	0.1	6.7	10.7	84.3	13.4	0.4	23.8	124.0	26.7	54.7
Fruit and vegetable products	3.2	0.3	0.1	1.5	2.2	10.4	0.8	0.3	6.8	7.7	6.2	4.0
Oils and fats	1.7	0.3	0.0	0.6	1.4	5.4	0.3	0.2	2.5	7.6	4.4	2.1
Flour mill products and cereal foods	3.8	0.4	0.1	1.6	2.6	4.8	0.8	0.4	3.8	44.5	22.2	19.6
Bakery products	4.0	1.6	2.0	4.4	4.5	25.7	8.0	0.3	9.3	16.6	18.7	6.9
Confectionery	3.4	0.7	0.0	1.3	2.4	13.2	0.4	0.3	5.0	13.1	5.5	5.3
Other food products	15.3	2.4	0.2	10.1	15.3	28.6	7.3	28.5	19.3	74.5	36.6	30.3
Soft drinks, cordials and syrups	0.9	0.4	0.0	0.3	1.1	1.5	0.9	0.5	3.2	1.8	1.6	0.8
Beer and malt	2.5	0.7	0.0	2.1	3.8	2.5	4.2	0.6	3.7	3.5	2.2	1.5
Wine, spirits and tobacco products (a)	5.4	1.6	0.0	5.8	13.6	14.3	43.6	0.8	11.1	8.2	6.4	3.7
Textile fibres, yarns and woven fabrics	6.2	1.9	0.5	2.1	3.3	15.2	2.3	2.6	7.2	12.7	3.4	4.6
Textile products	35.9	9.6	1.3	2.0	11.5	33.4	1.1	12.8	12.2	24.6	2.7	11.5
Knitting mill products	3.2	0.6	0.0	0.7	2.0	6.7	0.2	0.9	5.1	10.9	9.1	4.9
Clothing	12.7	6.4	0.3	5.9	35.7	41.0	2.0	1.4	13.2	30.2	10.4	12.7
Footwear	3.6	1.1	0.1	1.4	3.5	11.3	0.3	0.7	2.8	4.5	2.9	2.3
Leather and leather products	11.2	6.9	2.9	33.7	2.0	34.8	4.6	0.6	1.4	14.2	19.0	15.0
Sawmill products	14.8	3.8	1.8	3.3	28.2	11.9	1.1	9.0	28.4	4.4	5.2	4.3
Other wood products	42.0	7.1	1.3	5.1	105.0	33.7	1.8	203.6	49.8	10.4	6.4	7.6
Pulp, paper and paperboard	21.7	6.0	3.1	27.9	6.5	102.0	31.1	1.2	10.5	17.5	42.7	11.2
Paper containers and products	11.7	12.2	2.1	21.3	9.3	44.4	5.0	2.4	14.1	27.7	26.0	11.0
Printing and services to printing	49.4	31.7	3.7	14.7	58.5	751.2	174.0	9.4	272.3	636.2	640.2	301.8

Table A.1(h) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Road transport	Rail, pipeline and other transport	Water transport	Air and space transport	Services to transport; storage	Commun-ication services	Finance	Ownership of dwellings	Other property services	Scientific research, technical and computer services	Legal, accounting, marketing and business management services	Other business services
Publishing, recorded media, etc.	22.9	37.9	3.3	12.1	78.6	550.4	72.9	5.7	178.0	367.2	354.4	188.7
Petroleum and coal products	2945.2	300.1	124.4	2843.6	638.6	541.7	9.9	13.3	167.8	323.6	423.7	188.2
Basic chemicals	24.5	28.5	5.3	31.9	37.4	80.4	12.4	94.2	119.1	183.8	90.9	67.5
Paints	1.4	1.3	1.2	0.5	1.7	2.1	0.4	15.4	15.4	13.4	9.2	3.9
Medicinal and pharmaceutical products, pesticides	6.6	3.3	0.1	3.5	27.0	12.8	1.3	12.0	47.9	84.5	20.7	19.8
Soap and detergents	6.6	2.9	0.1	1.0	5.0	8.7	0.6	1.4	24.4	40.2	51.5	17.9
Cosmetics and toiletry preparations	0.3	0.3	0.0	0.1	0.4	0.6	0.1	0.5	1.7	1.0	0.7	0.5
Other chemical products	4.6	1.8	0.4	4.0	3.7	17.1	1.2	5.0	53.9	93.0	121.7	42.5
Rubber products	202.7	1.6	0.0	0.5	63.1	87.9	0.6	1.7	5.5	33.3	5.4	12.9
Plastic products	71.0	16.0	2.6	102.7	88.3	541.1	5.8	127.3	41.4	57.0	13.0	15.1
Glass and glass products	15.7	5.6	0.0	0.5	5.9	12.7	5.1	36.2	11.3	6.1	3.8	2.8
Ceramic products	1.3	0.2	0.0	0.2	1.5	29.2	0.3	31.4	3.1	2.3	1.4	1.1
Cement, lime and concrete slurry	2.4	0.7	0.1	1.1	2.0	10.0	1.0	61.8	9.3	14.1	2.7	7.2
Plaster and other concrete products	1.4	2.9	0.1	0.5	1.2	8.9	0.3	27.5	4.3	2.5	1.4	1.3
Other non-metallic mineral products	1.1	0.6	0.0	0.2	1.7	7.2	0.1	42.5	4.1	3.2	2.1	2.0
Iron and steel	18.0	93.8	0.4	1.8	9.2	78.1	1.8	278.5	24.6	26.4	11.9	9.4
Basic non-ferrous metal and products	23.1	24.4	0.4	6.8	21.9	107.9	7.1	198.1	70.6	37.6	27.7	20.0
Structural metal products	18.7	343.6	0.6	2.4	20.4	37.6	2.3	255.7	52.1	8.4	5.3	6.4
Sheet metal products	185.3	34.9	0.9	4.3	34.4	367.4	1.0	77.6	24.1	11.9	8.4	6.1
Fabricated metal products	65.3	40.1	14.3	15.8	81.2	147.9	8.1	129.5	75.6	121.1	33.5	29.0
Motor vehicles and parts, other transport equipment	1686.2	12.7	0.5	6.7	222.2	376.0	7.6	3.9	103.4	68.4	34.2	27.9
Ships and boats	2.1	1.6	203.1	0.8	10.0	3.3	1.8	1.1	8.8	6.2	3.0	3.0
Railway equipment	11.2	1415.3	0.0	0.4	3.0	4.7	1.3	1.4	6.0	3.1	1.3	1.1
Aircraft	1.0	0.6	0.0	1396.2	313.0	2.1	0.3	1.0	5.4	11.4	3.5	4.7
Photographic and scientific equipment	9.9	4.7	0.8	17.1	57.9	242.3	4.4	4.1	36.4	251.0	42.3	33.0
Electronic equipment	45.7	7.3	1.3	17.4	445.2	1653.8	26.7	13.5	122.9	589.3	365.8	154.6
Household appliances	16.5	17.7	0.6	12.3	18.0	23.7	2.2	48.6	19.9	16.3	6.9	7.1
Other electrical equipment	168.1	12.4	2.3	20.5	115.8	858.9	17.6	50.3	62.3	202.1	54.1	30.3
Agricultural, mining, etc. machinery	13.7	28.5	0.9	16.8	40.6	46.8	3.0	6.7	37.4	61.5	16.5	14.0
Other machinery and equipment	61.4	38.0	2.6	18.0	44.1	211.1	6.9	12.9	54.5	511.4	48.6	45.5
Prefabricated buildings	1.5	4.8	0.0	0.4	1.5	2.5	0.2	2.8	5.0	0.8	0.5	0.7
Furniture	23.1	3.6	0.1	2.9	13.0	34.2	6.7	30.2	90.2	73.1	17.3	24.2
Other manufacturing	26.5	35.9	0.4	7.1	58.2	154.1	6.3	13.7	54.9	50.6	35.5	23.1
Electricity supply	194.4	360.3	52.3	39.5	970.2	452.0	183.9	55.1	494.5	409.0	655.2	375.2
Gas supply	6.9	12.8	3.0	3.0	25.7	81.3	8.9	4.1	28.0	23.7	40.2	18.9
Water supply, sewerage and drainage services	309.5	89.2	25.1	20.7	308.1	290.3	90.0	5.4	842.7	668.4	632.4	415.3

Table A.1(h) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Road transport	Rail, pipeline and other transport	Water transport	Air and space transport	Services to transport; storage	Commun-ication services	Finance	Ownership of dwellings	Other property services	Scientific research, technical and computer services	Legal, accounting, marketing and business management services	Other business services
Residential building	46.9	40.5	1.2	14.9	128.7	212.4	95.1	140.8	412.8	132.8	185.8	93.9
Other construction	72.5	131.7	2.2	21.8	271.4	293.5	127.7	261.6	607.7	181.9	272.8	128.0
Construction trade services	112.7	781.6	5.9	31.1	608.3	2469.9	69.8	1690.5	852.6	381.8	515.0	242.2
Wholesale trade	2254.8	168.5	42.4	1199.9	1057.7	2242.3	147.7	182.1	806.9	1221.8	726.1	402.7
Wholesale mechanical repairs	34.9	8.1	15.5	0.0	36.3	81.3	1.1	0.0	75.3	17.6	1.6	0.2
Other wholesale repairs	126.2	32.9	51.8	77.7	469.3	841.6	652.7	3.1	328.6	378.3	365.2	298.3
Retail trade	330.6	43.3	3.1	383.7	208.8	474.9	70.2	22.5	717.1	150.9	154.2	123.9
Retail mechanical repairs	3449.1	47.0	58.8	43.9	712.6	874.5	107.4	0.0	438.5	172.4	288.3	260.1
Other retail repairs	51.5	28.9	21.1	14.7	23.5	17.9	47.8	1101.7	20.2	23.0	27.7	20.1
Accommodation, cafes and restaurants	190.8	15.9	8.1	63.9	298.3	450.1	374.7	0.0	32.6	427.5	1517.1	503.5
Road transport	1316.0	75.8	6.2	224.4	480.7	552.6	118.7	53.1	169.5	261.4	309.1	105.9
Rail, pipeline and other transport	4.4	5.8	0.1	13.1	84.3	124.6	15.4	1.5	129.1	63.5	89.4	39.1
Water transport	4.4	1.2	538.4	0.1	3.6	103.0	0.2	0.2	31.9	70.5	34.3	32.9
Air and space transport	46.2	3.8	3.8	630.6	176.4	457.0	254.7	0.1	62.3	447.2	980.7	369.7
Services to transport, storage	657.8	56.4	779.9	1799.6	4290.9	640.4	186.9	6.4	1442.2	551.6	1196.2	868.0
Communication services	1024.9	55.9	17.6	144.4	1667.5	1423.3	2294.2	16.7	1504.6	1691.8	2715.7	485.0
Finance	621.5	272.2	24.1	203.5	979.6	1049.8	38547.2	6419.4	4853.0	907.9	2759.4	908.9
Ownership of dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other property services	1248.9	870.6	6.1	588.9	2877.4	4006.9	2084.5	2137.6	25413.5	343.0	4270.5	2567.0
Scientific research, technical and computer services	994.2	55.0	84.5	318.0	2612.6	729.9	1314.0	28.5	2609.3	8223.7	5533.2	1324.1
Legal, accounting, marketing and business management services	2225.3	62.4	68.8	419.3	1623.2	716.0	4022.6	484.0	5179.3	4483.5	4616.3	1336.6
Other business services	268.9	84.2	10.2	151.2	1880.2	613.3	1773.9	3.4	4243.4	2383.9	3290.8	1268.5
Government administration	488.8	16.8	0.9	1.6	456.0	306.1	82.5	5.3	100.0	425.8	471.3	105.1
Defence	7.9	0.4	0.1	0.7	19.6	5.7	6.1	0.0	3.7	9.8	8.3	4.3
Education	52.3	19.2	3.5	19.2	223.6	50.9	610.9	0.0	219.1	478.2	572.2	308.9
Health services	2.5	1.3	0.8	0.2	92.2	84.3	21.7	0.0	11.8	14.3	11.9	10.9
Community services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Motion picture, radio and television services	63.1	0.8	2.8	18.3	26.9	104.1	344.3	0.0	1295.6	1565.7	2116.0	848.0
Libraries, museums and the arts	30.4	12.8	17.4	34.5	25.3	43.2	138.5	0.0	120.8	163.1	356.0	89.2
Sport, gambling and recreational services	3.6	0.1	0.0	4.1	10.7	27.6	103.1	0.0	131.4	179.9	35.2	89.2
Personal services	0.7	1.3	0.0	0.0	1.1	29.6	3.3	0.6	35.6	53.3	77.5	28.4
Other services	18.6	0.8	0.0	0.0	30.8	19.6	9.1	0.0	71.6	46.6	58.1	31.3
Total intermediate input	**22235.3**	**6070.1**	**2243.5**	**11195.6**	**25567.4**	**27612.5**	**54460.0**	**14515.9**	**55611.8**	**31211.1**	**37773.6**	**15326.2**

Table A.1(h) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Road transport	Rail, pipeline and other transport	Water transport	Air and space transport	Services to transport; storage	Commun-ication services	Finance	Ownership of dwellings	Other property services	Scientific research, technical and computer services	Legal, accounting, marketing and business management services	Other business services
Wage and salaries	11377.5	6017.6	460.9	4270.7	9375.8	9635.8	44476.7	0.0	13748.6	25996.8	25657.4	23608.4
Gross surplus	8060.9	632.9	1176.8	894.4	15354.8	16546.4	37406.5	98383.9	27291.5	3241.2	7478.0	8761.0
Complementary imports, selected indirect taxes etc.	2710.7	287.8	106.2	1573.0	1995.7	1465.6	4961.3	10668.5	2553.4	1409.6	3020.7	933.5
Gross product at factor cost	19438.4	6650.6	1637.7	5165.1	24730.6	26182.2	81883.2	98383.9	41040.1	29238.0	33135.3	32369.4
Total output	**44384.4**	**13008.5**	**3987.5**	**17933.7**	**52293.7**	**55260.3**	**141304.5**	**123568.2**	**99205.4**	**61858.7**	**73929.7**	**48629.1**
Local gross product (net of foreign product)	15550.7	6517.6	982.6	3202.4	22257.5	23564.0	65506.6	98383.9	36936.1	24852.3	31478.6	27514.0
Depreciation expense	4405.2	2987.1	332.6	2985.1	6025.2	5564.1	6726.1	0.0	6407.1	3363.5	2372.8	1376.3
Net capital stock gross output ratio	1.7	3.9	1.4	2.8	2.0	1.8	0.7	0.0	1.3	1.1	0.6	0.6
Net national product	18020.8	4000.4	1100.3	4793.8	19834.9	21325.8	77401.0	109052.3	35538.3	28096.1	33949.7	31683.1
Direct tax payments and RRT	344.5	61.0	42.0	197.5	329.4	1944.1	14633.0	0.0	2354.3	722.8	1699.2	826.1

Table A.1(i) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Govern-ment admin-istration	Defence	Education	Health services	Community services	Motion picture, radio and television services	Libraries, museums and the arts	Sport, gambling and recreational services	Personal services	Other services	Private consump-tion	Govern-ment consump-tion
Sheep	0.0	0.0	0.0	0.0	9.9	0.0	0.0	0.0	0.0	108.0	7.4	0.0
Grains	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Beef cattle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.6	0.0
Dairy cattle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pigs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0
Poultry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	425.4	0.0
Other agriculture	70.6	5.5	8.3	9.2	6.6	264.7	43.5	569.2	62.6	31.9	5925.9	0.0
Services to agriculture, hunting and trapping	54.0	16.1	0.0	0.0	5.2	3.0	0.8	2.8	3.4	25.5	45.5	192.3
Forestry and logging	0.0	0.0	0.0	0.0	0.0	0.7	0.2	0.6	0.1	2.4	29.6	227.9
Commercial fishing	0.0	0.0	0.0	0.0	0.5	4.4	1.9	5.3	0.1	9.6	1175.7	178.3
Coal	13.8	15.1	1.3	2.1	0.1	1.9	0.7	2.3	0.5	1.0	16.6	1.7
Oil and gas	65.7	67.5	57.8	93.0	16.2	9.6	4.7	12.9	8.0	34.3	593.8	4.7
Iron ores	1.5	1.1	0.2	0.5	0.0	0.5	0.2	0.7	0.2	0.4	0.9	0.0
Non-ferrous metal ores	48.6	54.9	0.7	1.9	0.2	1.5	0.6	2.0	0.5	1.5	2.2	0.1
Other mining	8.7	2.6	0.1	2.7	1.2	30.5	8.3	27.1	2.0	7.1	2.5	0.0
Services to mining	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	83.9
Meat and meat products	3.0	11.0	31.0	7.4	4.7	17.6	7.5	88.1	4.8	69.0	6367.9	4.8
Dairy products	3.3	4.6	126.4	20.7	19.9	6.8	4.3	29.1	2.8	179.2	5704.6	0.0
Fruit and vegetable products	1.4	8.9	12.7	9.7	2.4	2.1	2.2	5.3	2.2	7.9	3525.6	0.0
Oils and fats	1.2	1.5	10.9	6.6	1.2	2.1	1.4	4.9	5.4	3.0	1098.4	19.4
Flour mill products and cereal foods	13.8	11.7	14.9	17.3	5.3	35.6	14.4	35.1	7.8	21.3	2301.1	0.0
Bakery products	9.2	31.5	73.0	29.2	17.2	5.5	3.3	9.9	0.6	10.1	3064.9	0.0
Confectionery	2.9	8.7	8.0	4.0	1.4	24.2	11.1	128.5	7.4	14.3	2473.2	0.0
Other food products	25.8	30.2	26.6	45.8	6.3	142.6	77.8	750.2	47.0	38.7	5368.5	40.0
Soft drinks, cordials and syrups	1.3	42.5	1.6	3.0	2.3	10.0	6.5	16.5	1.2	5.5	3399.4	0.0
Beer and malt	6.0	3.6	2.2	0.9	0.1	0.5	0.4	0.9	0.2	3.4	1868.5	0.0
Wine, spirits and tobacco products (a)	109.1	5.4	16.3	5.9	0.2	1.6	0.8	1.4	1.1	6.7	4116.7	0.0
Textile fibres, yarns and woven fabrics	8.9	17.0	10.0	12.8	1.3	4.0	1.8	3.3	2.7	11.1	583.5	0.0
Textile products	15.3	20.4	21.4	113.7	5.0	13.0	4.9	16.8	19.9	73.7	1727.1	0.0
Knitting mill products	1.5	37.4	5.3	251.3	9.1	13.0	3.4	12.8	0.7	5.4	1201.4	0.0
Clothing	3.3	146.9	34.7	69.7	15.4	15.6	8.0	35.0	7.0	124.8	4877.6	0.0
Footwear	0.7	4.0	5.4	21.2	1.8	10.4	4.9	11.0	1.0	7.4	1507.7	0.0
Leather and leather products	10.3	66.3	19.8	7.4	0.4	4.2	14.2	110.9	1.7	3.7	290.1	0.0
Sawmill products	5.8	7.2	11.4	5.7	0.9	7.1	3.5	4.1	1.4	2.7	24.9	0.1
Other wood products	93.1	20.3	176.1	15.1	3.1	56.2	31.0	21.8	5.2	11.4	192.2	0.1
Pulp, paper and paperboard	170.3	7.7	4.6	10.3	1.5	4.2	19.9	2.8	8.3	32.3	119.2	0.0
Paper containers and products	82.3	9.2	63.6	296.9	41.1	6.3	5.1	5.4	18.8	28.4	1102.5	0.0
Printing and services to printing	621.7	163.2	563.9	116.5	20.5	150.9	146.3	182.4	136.0	227.5	1120.2	3.6
Publishing, recorded media, etc.	223.6	34.1	1238.7	47.3	8.2	87.6	144.1	62.5	62.3	116.3	5728.1	0.1

Table A.1(i) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Govern-ment admin-istration	Defence	Education	Health services	Community services	Motion picture, radio and television services	Libraries, museums and the arts	Sport, gambling and recreational services	Personal services	Other services	Private consump-tion	Govern-ment consump-tion
Petroleum and coal products	111.8	296.9	11.1	238.1	19.5	31.0	12.8	52.6	44.0	291.8	8894.9	7.8
Basic chemicals	54.2	85.1	127.8	475.2	17.4	116.6	30.4	160.7	141.4	146.1	474.4	10.9
Paints	2.1	2.8	0.9	1.6	0.4	12.2	2.5	11.6	1.7	2.9	36.7	0.0
Medicinal and pharmaceutical products, pesticides	3.0	7.0	23.8	873.1	32.4	67.5	5.6	456.5	28.8	37.1	4530.3	4566.6
Soap and detergents	9.0	8.8	8.4	27.5	3.4	2.3	1.5	2.5	20.1	21.6	1302.4	2.0
Cosmetics and toiletry preparations	0.4	0.9	0.4	2.1	0.6	2.0	0.1	1.9	24.1	1.4	1772.7	2.9
Other chemical products	30.8	83.0	7.9	9.7	2.5	5.5	2.1	5.7	17.2	30.8	307.4	3.2
Rubber products	122.3	219.1	11.8	25.4	4.0	12.7	3.6	13.8	4.9	46.5	1560.3	0.7
Plastic products	76.0	69.4	70.1	92.9	6.7	22.8	12.7	19.8	51.7	53.8	1138.8	0.5
Glass and glass products	13.0	7.9	16.4	27.3	1.6	5.4	3.6	5.7	2.3	9.8	564.5	0.0
Ceramic products	1.4	2.3	8.6	9.8	4.4	1.8	0.8	1.9	3.7	2.7	285.9	0.0
Cement, lime and concrete slurry	4.8	3.3	3.4	2.9	1.9	1.6	0.6	1.4	7.3	12.0	19.4	0.0
Plaster and other concrete products	25.1	3.7	6.7	2.5	0.4	2.8	1.3	1.7	3.7	6.7	12.9	0.0
Other non-metallic mineral products	3.5	4.4	2.5	2.7	1.0	2.0	0.7	1.2	43.6	10.0	18.1	0.0
Iron and steel	29.5	64.6	38.2	15.6	3.0	20.0	9.2	12.0	14.3	23.7	54.8	1.6
Basic non-ferrous metal and products	53.5	63.7	43.2	29.0	4.2	50.3	11.3	67.5	68.4	25.0	210.7	4.7
Structural metal products	25.7	31.9	201.3	7.0	0.7	27.2	27.1	25.8	5.4	7.0	72.5	0.1
Sheet metal products	11.2	19.4	22.7	44.2	1.8	14.4	11.0	14.6	3.9	9.2	115.6	0.1
Fabricated metal products	91.0	529.8	85.5	74.5	11.7	165.6	46.2	136.3	20.4	124.6	771.7	0.1
Motor vehicles and parts, other transport equipment	26.7	138.4	107.1	17.4	3.2	29.9	11.2	27.1	8.5	47.3	13825.9	1.6
Ships and boats	4.8	2432.6	1.7	1.3	0.2	3.3	0.9	3.0	0.3	4.7	705.5	1.6
Railway equipment	2.6	2.5	1.1	2.4	0.1	0.5	0.2	0.7	0.2	0.7	7.6	2.5
Aircraft	1.6	286.8	2.6	0.8	1.0	14.0	1.2	10.0	0.1	17.8	29.3	1.0
Photographic and scientific equipment	57.3	225.4	465.2	2462.5	4.7	21.6	8.2	62.8	9.0	78.1	3338.2	5.7
Electronic equipment	137.9	139.5	515.0	65.7	11.8	314.3	80.5	343.2	16.7	77.5	5072.1	0.1
Household appliances	4.4	37.1	10.7	45.8	5.8	76.3	26.0	121.5	2.8	14.6	4923.8	0.0
Other electrical equipment	57.7	55.3	64.3	57.5	6.6	142.6	42.6	133.8	12.1	69.8	878.8	0.1
Agricultural, mining, etc. machinery	15.3	30.4	29.0	15.8	2.5	13.4	4.5	12.6	2.6	25.0	360.7	0.1
Other machinery and equipment	38.9	288.0	224.1	76.4	10.5	42.4	15.3	45.2	23.1	102.8	560.2	0.1
Prefabricated buildings	1.7	12.4	4.4	0.9	0.1	0.7	0.8	0.8	0.3	1.0	10.3	0.0
Furniture	118.7	73.8	310.4	12.8	1.9	18.7	25.4	12.7	6.1	25.4	3721.4	0.1
Other manufacturing	22.8	73.6	245.8	129.8	12.1	66.8	38.0	65.3	13.4	45.2	3059.1	0.1
Electricity supply	460.4	97.0	1300.4	389.3	62.0	181.9	57.3	216.5	104.9	281.7	10485.1	138.6
Gas supply	22.2	3.2	50.4	64.2	13.3	6.3	2.6	7.3	6.4	13.9	1180.8	38.2
Water supply, sewerage and drainage services	283.9	141.0	98.4	132.1	21.4	39.2	16.6	41.1	63.5	171.2	5137.4	1600.2
Residential building	125.0	53.3	12.5	45.9	3.9	27.6	10.1	31.6	16.2	35.7	118.0	15.2
Other construction	274.1	186.0	20.2	67.0	6.5	37.9	13.9	43.2	21.9	51.9	242.4	4735.5

Table A.1(i) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Government administration	Defence	Education	Health services	Community services	Motion picture, radio and television services	Libraries, museums and the arts	Sport, gambling and recreational services	Personal services	Other services	Private consumption	Government consumption
Construction trade services	1488.1	1600.1	59.8	78.0	12.3	19.0	11.5	20.4	14.6	37.5	333.7	17.5
Wholesale trade	572.8	680.5	1203.0	1758.6	80.7	564.6	199.6	754.0	264.7	562.9	21163.2	327.0
Wholesale mechanical repairs	24.6	0.0	3.2	0.0	0.0	1.4	0.2	2.2	0.2	2.4	0.0	0.0
Other wholesale repairs	6.9	11.3	157.6	48.9	22.3	43.3	22.9	47.4	50.4	109.8	307.3	0.0
Retail trade	121.7	80.8	445.4	264.9	28.3	198.4	81.9	239.9	50.6	158.7	73800.0	3524.6
Retail mechanical repairs	165.5	68.8	60.7	243.7	14.2	90.8	42.4	147.9	25.8	137.3	6289.4	0.0
Other retail repairs	42.3	0.0	36.8	20.6	6.6	11.3	4.0	3.2	11.0	17.5	632.0	0.0
Accommodation, cafes and restaurants	459.9	72.4	203.2	21.4	23.0	187.2	64.1	187.5	54.9	150.6	40298.5	4.2
Road transport	471.6	146.9	339.0	500.1	18.9	182.1	62.5	437.9	87.8	150.4	10866.1	1350.7
Rail, pipeline and other transport	6.9	6.4	17.0	18.9	3.6	7.6	3.8	9.2	2.5	10.2	3706.5	7.7
Water transport	71.6	10.6	11.8	1.1	6.8	32.5	5.2	180.5	7.0	64.0	521.3	0.0
Air and space transport	521.7	155.9	235.1	67.7	9.3	127.3	42.3	184.2	31.8	65.9	10831.5	0.0
Services to transport, storage	1121.2	483.3	260.2	181.8	12.7	101.1	42.6	111.7	16.4	98.2	1673.5	9283.5
Communication services	1860.6	103.4	1237.3	1073.7	110.9	639.4	226.3	953.1	457.8	1068.4	16106.3	101.1
Finance	2552.1	289.6	1068.3	1544.6	109.1	608.8	289.4	669.3	261.3	371.4	45437.1	9.8
Ownership of dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	123568.2	-128.1
Other property services	574.8	108.5	324.6	502.0	53.6	928.1	348.4	1382.9	211.5	419.6	1313.3	71.8
Scientific research, technical and computer services	2501.4	64.2	325.7	228.0	39.4	94.7	160.8	83.8	78.4	650.3	108.0	1764.0
Legal, accounting, marketing and business management services	1855.3	310.0	645.7	1703.3	80.7	814.8	279.7	1075.0	450.1	523.5	3159.1	356.0
Other business services	874.5	43.7	503.0	1278.9	124.4	553.7	303.4	902.9	489.3	863.4	1333.6	4443.8
Government administration	1494.3	46.8	284.7	114.4	13.9	18.9	20.0	16.5	65.1	17.7	1418.9	48922.7
Defence	14.9	0.3	1.9	0.5	0.2	0.5	1.0	0.5	0.6	5.0	0.0	21228.7
Education	204.3	43.9	790.6	80.4	16.4	36.2	98.8	22.9	51.5	295.3	21449.0	33316.9
Health services	46.6	63.0	53.4	513.6	5.0	28.3	2.2	44.7	3.8	38.1	24071.2	48432.9
Community services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3005.3	13455.3
Motion picture, radio and television services	113.2	85.7	11.5	14.0	9.5	2681.2	210.1	401.6	69.9	83.0	1942.5	1520.6
Libraries, museums and the arts	46.3	12.6	618.8	24.4	14.3	217.4	419.4	167.1	1.0	83.3	1002.1	3513.4
Sport, gambling and recreational services	65.6	109.8	190.3	156.2	44.4	527.2	43.5	550.0	15.8	67.2	15380.8	2093.7
Personal services	3.0	45.2	52.7	563.7	2.4	40.1	6.3	12.8	14.8	9.4	9234.8	175.6
Other services	35.0	26.6	30.7	62.8	5.1	4.1	1.8	8.5	12.9	16.9	9898.3	14551.0
Total intermediate input	**21317.3**	**11306.2**	**15872.0**	**17842.1**	**1362.1**	**11299.2**	**4109.9**	**12950.5**	**4038.9**	**9230.5**	**590653.7**	**220243.3**

Table A.1(i) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Govern-ment admin-istration	Defence	Education	Health services	Community services	Motion picture, radio and television services	Libraries, museums and the arts	Sport, gambling and recreational services	Personal services	Other services	Private consump-tion	Govern-ment consump-tion
Wage and salaries	33990.3	4939.6	43194.9	47633.5	11047.5	2589.0	2429.2	4976.9	4569.6	13807.1		
Gross surplus	1185.4	4547.2	3581.8	6523.6	3720.9	2427.6	949.3	2780.3	1754.7	2053.0		
Complementary imports, selected indirect taxes etc.	1170.3	726.4	1320.9	1862.4	333.3	482.0	163.4	566.8	266.6	808.0		
Gross product at factor cost	35175.6	9486.8	46776.7	54157.1	14768.4	5016.6	3378.5	7757.2	6324.3	15860.1		
Total output	**57663.3**	**21519.4**	**63969.6**	**73861.6**	**16463.7**	**16797.8**	**7651.8**	**21274.5**	**10629.7**	**25898.6**		
Local gross product (net of foreign product)	35175.6	9486.8	46308.9	53074.0	14620.7	4615.2	3344.7	7369.3	6318.0	15860.1		
Depreciation expense	4806.4	1296.3	4457.6	3583.5	977.2	2007.7	204.8	1852.7	807.1	1354.5		
Net capital stock gross output ratio	1.2	0.9	1.6	1.0	1.2	2.0	0.4	1.5	1.4	1.0		
Net national product	31539.5	8916.9	43669.1	52464.2	14107.6	3494.7	3344.2	6497.4	5786.4	15305.1		
Direct tax payments and RRT	0.0	0.0	112.9	414.6	25.0	186.0	41.7	495.4	69.5	60.7		

Table A.1(j) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Construction investment	Equipment investment	Inventory investment	Exports	Imports	Total supply
Sheep	0.0	367.1	-8.6	1647.8	0.0	5035.0
Grains	0.0	0.0	-64.1	5317.2	23.3	10475.0
Beef cattle	0.0	2254.6	-37.6	490.2	0.0	10861.0
Dairy cattle	0.0	459.2	0.6	51.7	0.0	4582.0
Pigs	0.0	0.0	-14.4	0.0	0.0	1000.0
Poultry	0.0	0.0	-19.6	7.6	1.0	2102.0
Other agriculture	0.0	0.0	-25.3	1107.8	1126.7	15551.1
Services to agriculture, hunting and trapping	0.0	0.0	-48.4	415.5	18.3	5262.0
Forestry and logging	0.0	0.0	-16.7	111.2	102.8	2365.0
Commercial fishing	0.0	0.0	0.2	229.1	156.4	2407.0
Coal	0.0	568.0	142.9	52157.8	32.3	57064.0
Oil and gas	0.0	3201.7	341.7	18127.4	16774.2	51605.0
Iron ores	0.0	3.6	1.0	32651.7	357.3	34509.0
Non-ferrous metal ores	0.0	131.6	-0.9	9500.7	9595.9	48687.0
Other mining	0.0	4.5	2.5	815.0	546.3	4746.0
Services to mining	0.0	1368.5	0.0	6.0	136.0	15642.0
Meat and meat products	0.0	47.0	58.2	5537.6	687.4	20499.0
Dairy products	0.0	24.2	-5.5	2415.1	1078.9	14408.0
Fruit and vegetable products	0.0	39.6	28.7	994.7	1766.8	5911.0
Oils and fats	0.0	12.5	9.1	409.1	987.5	2750.0
Flour mill products and cereal foods	0.0	42.1	5.5	1048.5	759.8	7494.0
Bakery products	0.0	34.9	-6.1	383.2	709.7	5335.0
Confectionery	0.0	29.8	16.3	555.0	947.6	4947.0
Other food products	0.0	117.0	-21.5	3924.2	3334.0	15856.0
Soft drinks, cordials and syrups	0.0	9.6	-7.1	207.8	288.4	4600.0
Beer and malt	0.0	11.0	-1.4	385.9	498.0	4431.0
Wine, spirits and tobacco products (a)	0.0	20.5	-0.9	2592.8	2394.4	9185.0
Textile fibres, yarns and woven fabrics	0.0	49.3	-5.6	341.6	1056.4	2272.0
Textile products	0.0	603.1	10.9	187.9	2251.2	3845.0
Knitting mill products	0.0	14.8	7.1	60.5	1181.3	2083.0
Clothing	0.0	89.3	-16.7	611.9	4758.5	6990.0
Footwear	0.0	19.2	-9.0	78.6	1493.1	1942.0
Leather and leather products	0.0	26.0	7.0	853.1	1106.3	2200.1
Sawmill products	0.0	35.1	13.2	987.7	822.0	5364.0
Other wood products	0.0	151.8	14.3	165.0	880.4	7492.0
Pulp, paper and paperboard	0.0	10.0	23.0	574.9	2482.1	3970.0
Paper containers and products	0.0	20.7	1.8	316.7	789.2	5052.0
Printing and services to printing	0.0	35.6	-8.2	194.6	754.1	11908.0
Publishing, recorded media, etc.	0.0	1152.1	19.6	337.0	2714.7	14805.0
Petroleum and coal products	0.0	6828.1	92.0	2642.1	14397.1	40252.0
Basic chemicals	0.0	172.6	16.5	2173.1	9762.1	21789.0

Table A.1(j) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Construction investment	Equipment investment	Inventory investment	Exports	Imports	Total supply
Paints	0.0	31.2	2.5	145.3	411.3	1522.1
Medicinal and pharmaceutical products, pesticides	0.0	55.9	-15.5	2483.2	9844.1	16487.9
Soap and detergents	0.0	13.3	-0.5	264.2	617.0	2192.0
Cosmetics and toiletry preparations	0.0	4.5	-1.2	277.5	1547.9	2126.0
Other chemical products	0.0	27.7	-6.9	477.0	1685.0	4098.0
Rubber products	0.0	80.2	1.0	256.5	3039.2	4085.0
Plastic products	0.0	708.8	2.2	716.3	3940.7	12751.0
Glass and glass products	0.0	28.8	4.3	284.6	691.0	3645.0
Ceramic products	0.0	6.0	4.0	94.9	886.2	1740.0
Cement, lime and concrete slurry	0.0	25.0	17.4	50.4	193.1	8299.0
Plaster and other concrete products	0.0	32.2	46.0	59.3	131.9	4247.0
Other non-metallic mineral products	0.0	9.3	16.5	117.5	592.7	1784.0
Iron and steel	0.0	383.3	-46.3	4080.5	7997.3	28859.1
Basic non-ferrous metal and products	0.0	250.0	-90.0	34003.4	2731.1	68342.0
Structural metal products	0.0	331.5	60.6	278.3	937.8	14946.0
Sheet metal products	0.0	1068.1	11.8	234.8	795.4	5514.0
Fabricated metal products	0.0	1497.4	14.2	816.2	5436.2	14213.0
Motor vehicles and parts, other transport equipment	0.0	15318.3	-46.7	3036.8	23214.4	43811.0
Ships and boats	0.0	812.1	-4.5	301.8	676.6	5026.0
Railway equipment	0.0	832.0	-1.4	66.7	967.5	3196.0
Aircraft	0.0	1657.8	-10.8	528.8	2087.9	6171.0
Photographic and scientific equipment	0.0	2919.4	1.5	1587.5	8477.2	13867.0
Electronic equipment	0.0	9613.6	-66.6	1075.3	21106.0	25399.0
Household appliances	0.0	1394.0	29.0	259.5	4344.5	9907.0
Other electrical equipment	0.0	1723.6	-35.2	776.9	7133.4	14059.0
Agricultural, mining, etc. machinery	0.0	9682.2	23.9	1012.9	8328.9	14858.0
Other machinery and equipment	0.0	7899.6	15.1	1612.1	13274.8	21214.9
Prefabricated buildings	0.0	253.4	0.9	37.7	10.3	1058.0
Furniture	0.0	2510.0	2.3	156.1	3245.5	8899.0
Other manufacturing	0.0	515.5	32.2	1137.4	4283.0	9292.0
Electricity supply	0.0	5618.9	3.1	64.7	12.7	38355.0
Gas supply	0.0	875.6	176.1	1.8	-0.5	5189.0
Water supply, sewerage and drainage services	0.0	748.0	0.0	12.1	21.4	16244.0
Residential building	51613.0	0.0	0.0	130.7	0.0	61006.0
Other construction	99055.0	0.0	0.0	188.4	20.2	118584.0
Construction trade services	25628.0	0.0	-0.7	397.5	0.0	115491.0
Wholesale trade	0.0	21039.4	-31.1	14076.1	11.6	116975.0
Wholesale mechanical repairs	0.0	0.0	0.0	0.0	0.0	2423.0
Other wholesale repairs	0.0	0.0	0.0	1.1	16.6	8904.0
Retail trade	0.0	2497.6	4.3	4075.8	590.5	99308.0

Table A.1(j) Australia – Indirect allocation of imports – basic values (2008-09 $m) – continued

	Construction investment	Equipment investment	Inventory investment	Exports	Imports	Total supply
Retail mechanical repairs	0.0	0.0	0.0	20.8	3.6	20180.0
Other retail repairs	0.0	0.0	0.0	0.0	0.0	2354.0
Accommodation, cafes and restaurants	0.0	1.4	0.0	5417.0	4598.4	55127.0
Road transport	0.0	2825.7	-18.0	7703.3	1266.9	45651.0
Rail, pipeline and other transport	0.0	109.8	-0.7	4429.1	744.5	13752.9
Water transport	0.0	10.0	0.1	975.7	223.2	4211.0
Air and space transport	0.0	80.1	0.0	4633.4	5801.9	23736.0
Services to transport, storage	0.0	86.0	-0.2	3364.9	168.3	52462.0
Communication services	0.0	3980.2	0.0	816.4	872.1	56132.0
Finance	0.0	142.8	0.0	1452.6	1181.5	142486.0
Ownership of dwellings	0.0	0.0	0.0	528.9	400.8	123969.0
Other property services	0.0	8623.5	0.0	569.0	754.8	99960.0
Scientific research, technical and computer services	0.0	12778.6	0.0	2651.9	3136.6	64995.0
Legal, accounting, marketing and business management services	0.0	965.5	0.0	2311.8	2932.0	76862.1
Other business services	0.0	0.0	0.0	969.8	1221.0	49850.0
Government administration	0.0	347.8	0.0	40.9	0.0	57663.0
Defence	0.0	84.7	0.0	83.6	0.0	21519.0
Education	0.0	64.7	0.0	4788.0	1259.3	65229.0
Health services	0.0	26.9	0.0	611.9	695.6	74557.0
Community services	0.0	0.0	0.0	4.4	1.2	16465.0
Motion picture, radio and television services	0.0	565.1	0.0	231.5	1078.6	17876.0
Libraries, museums and the arts	0.0	86.1	0.0	161.6	432.8	8085.0
Sport, gambling and recreational services	0.0	0.0	0.0	595.9	582.7	21856.9
Personal services	0.0	0.0	0.0	162.6	154.6	10784.0
Other services	0.0	0.0	0.0	48.1	3.6	25902.0
Total intermediate input	**176295.9**	**139197.4**	**587.3**	**268365.4**	**253586.6**	**2603026.0**
Wage and salaries						
Gross surplus						
Complementary imports, selected indirect taxes etc.						
Gross product at factor cost						
Total output						
Local gross product (net of foreign product)						
Depreciation expense						
Net capital stock gross output ratio						
Net national product						
Direct tax payments and RRT						

Table A.2(a) Ratio of imports to supply – 2009

	Sheep	Grains	Beef cattle	Dairy cattle	Pigs	Poultry	Other agriculture	Services to agriculture, hunting and trapping	Forestry and logging	Commercial fishing	Coal	Oil and gas
Sheep	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef cattle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy cattle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other agriculture	0.03	0.90	0.01	0.02	0.08	0.90	0.06	0.00	0.10	0.00	0.00	0.00
Services to agriculture, hunting and trapping	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00
Forestry and logging	0.04	0.04	0.04	0.04	0.03	0.04	0.04	0.00	0.04	0.00	0.01	0.01
Commercial fishing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oil and gas	0.04	0.04	0.03	0.05	0.05	0.11	0.05	0.05	0.11	0.05	0.05	0.00
Iron ores	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Non-ferrous metal ores	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other mining	0.90	0.90	0.90	0.90	0.90	0.90	0.61	0.90	0.00	0.00	0.30	0.76
Services to mining	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02
Meat and meat products	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.01
Dairy products	0.02	0.04	0.01	0.05	0.07	0.00	0.02	0.07	0.00	0.00	0.00	0.00
Fruit and vegetable products	0.49	0.31	0.40	0.28	0.35	0.44	0.22	0.30	0.02	0.05	0.06	0.07
Oils and fats	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.01	0.06	0.07
Flour mill products and cereal foods	0.10	0.21	0.04	0.01	0.03	0.02	0.05	0.14	0.27	0.06	0.00	0.00
Bakery products	0.10	0.07	0.09	0.07	0.02	0.07	0.17	0.05	0.24	0.06	0.17	0.14
Confectionery	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00
Other food products	0.04	0.03	0.03	0.03	0.03	0.03	0.09	0.11	0.01	0.03	0.01	0.01
Soft drinks, cordials and syrups	0.04	0.20	0.04	0.18	0.02	0.02	0.04	0.03	0.01	0.01	0.00	0.00
Beer and malt	0.10	0.11	0.08	0.08	0.05	0.06	0.06	0.08	0.05	0.05	0.10	0.11
Wine, spirits and tobacco products (a)	0.28	0.52	0.19	0.28	0.19	0.08	0.26	0.33	0.26	0.27	0.15	0.09
Textile fibres, yarns and woven fabrics	0.74	0.45	0.66	0.63	0.85	0.84	0.31	0.54	0.75	0.86	0.72	0.82
Textile products	0.70	0.75	0.76	0.85	0.80	0.38	0.90	0.71	0.82	0.69	0.46	0.57
Knitting mill products	0.00	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.02	0.23	0.03	0.02
Clothing	0.70	0.54	0.70	0.78	0.24	0.50	0.65	0.11	0.48	0.62	0.39	0.26
Footwear	0.61	0.37	0.59	0.37	0.76	0.69	0.29	0.41	0.78	0.85	0.81	0.77
Leather and leather products	0.00	0.01	0.00	0.00	0.00	0.00	0.16	0.00	0.01	0.01	0.01	0.01
Sawmill products	0.41	0.41	0.51	0.37	0.65	0.79	0.33	0.38	0.75	0.57	0.39	0.67
Other wood products	0.40	0.29	0.39	0.37	0.46	0.44	0.23	0.29	0.20	0.23	0.11	0.26
Pulp, paper and paperboard	0.57	0.25	0.51	0.59	0.43	0.21	0.12	0.33	0.11	0.09	0.90	0.90
Paper containers and products	0.19	0.14	0.20	0.08	0.06	0.59	0.05	0.07	0.12	0.04	0.16	0.13
Printing and services to printing	0.11	0.18	0.07	0.05	0.01	0.01	0.08	0.05	0.04	0.15	0.04	0.03
Publishing, recorded media, etc.	0.04	0.06	0.08	0.06	0.03	0.02	0.05	0.00	0.03	0.02	0.01	0.00
Petroleum and coal products	0.50	0.50	0.40	0.48	0.45	0.40	0.49	0.41	0.52	0.51	0.50	0.50

Table A.2(a) Ratio of imports to supply – 2009 (continued)

	Sheep	Grains	Beef cattle	Dairy cattle	Pigs	Poultry	Other agriculture	Services to agriculture, hunting and trapping	Forestry and logging	Commercial fishing	Coal	Oil and gas
Basic chemicals	0.28	0.33	0.24	0.24	0.52	0.50	0.32	0.35	0.74	0.64	0.46	0.64
Paints	0.14	0.11	0.17	0.17	0.22	0.30	0.10	0.04	0.29	0.27	0.26	0.26
Medicinal and pharmaceutical products, pesticides	0.73	0.26	0.73	0.82	0.66	0.59	0.57	0.24	0.37	0.42	0.62	0.67
Soap and detergents	0.04	0.02	0.03	0.04	0.03	0.03	0.01	0.24	0.08	0.26	0.29	0.25
Cosmetics and toiletry preparations	0.26	0.25	0.42	0.22	0.12	0.03	0.20	0.21	0.02	0.82	0.04	0.09
Other chemical products	0.12	0.08	0.09	0.11	0.15	0.26	0.05	0.19	0.14	0.44	0.17	0.17
Rubber products	0.27	0.26	0.42	0.50	0.50	0.22	0.03	0.54	0.90	0.90	0.66	0.66
Plastic products	0.46	0.23	0.38	0.39	0.62	0.11	0.25	0.27	0.42	0.29	0.16	0.34
Glass and glass products	0.50	0.47	0.47	0.39	0.33	0.40	0.41	0.38	0.41	0.29	0.11	0.27
Ceramic products	0.33	0.15	0.28	0.24	0.55	0.46	0.03	0.90	0.01	0.01	0.42	0.01
Cement, lime and concrete slurry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.04	0.03
Plaster and other concrete products	0.11	0.06	0.10	0.09	0.14	0.12	0.04	0.06	0.16	0.12	0.04	0.05
Other non-metallic mineral products	0.05	0.04	0.05	0.05	0.10	0.11	0.01	0.04	0.12	0.12	0.15	0.13
Iron and steel	0.17	0.08	0.11	0.08	0.27	0.21	0.00	0.09	0.18	0.13	0.39	0.49
Basic non-ferrous metal and products	0.09	0.04	0.07	0.07	0.18	0.10	0.39	0.06	0.29	0.12	0.32	0.47
Structural metal products	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.02	0.08	0.12	0.06	0.06
Sheet metal products	0.03	0.04	0.03	0.25	0.10	0.03	0.00	0.21	0.28	0.38	0.06	0.07
Fabricated metal products	0.36	0.29	0.29	0.28	0.42	0.33	0.12	0.48	0.44	0.53	0.45	0.47
Motor vehicles and parts, other transport equipment	0.29	0.41	0.33	0.27	0.24	0.20	0.34	0.19	0.33	0.49	0.27	0.22
Ships and boats	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.02
Railway equipment	0.02	0.01	0.01	0.23	0.00	0.00	0.00	0.01	0.36	0.24	0.46	0.49
Aircraft	0.23	0.28	0.39	0.47	0.37	0.00	0.44	0.13	0.52	0.01	0.54	0.54
Photographic and scientific equipment	0.30	0.16	0.18	0.12	0.28	0.19	0.23	0.46	0.55	0.66	0.42	0.34
Electronic equipment	0.27	0.07	0.18	0.14	0.48	0.34	0.45	0.22	0.76	0.74	0.80	0.62
Household appliances	0.08	0.04	0.04	0.03	0.12	0.10	0.04	0.04	0.39	0.19	0.40	0.34
Other electrical equipment	0.66	0.42	0.59	0.54	0.67	0.67	0.61	0.40	0.46	0.59	0.58	0.61
Agricultural, mining, etc. machinery	0.38	0.34	0.45	0.39	0.50	0.41	0.42	0.47	0.25	0.44	0.44	0.41
Other machinery and equipment	0.77	0.56	0.71	0.65	0.87	0.84	0.16	0.69	0.84	0.86	0.80	0.82
Prefabricated buildings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
Furniture	0.02	0.01	0.02	0.00	0.06	0.02	0.00	0.01	0.02	0.03	0.01	0.03
Other manufacturing	0.09	0.06	0.07	0.03	0.07	0.04	0.21	0.07	0.08	0.76	0.05	0.06
Electricity supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gas supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water supply, sewerage and drainage services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Residential building	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Other construction	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.01
Construction trade services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wholesale trade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01

Table A.2(a) Ratio of imports to supply – 2009

	Sheep	Grains	Beef cattle	Dairy cattle	Pigs	Poultry	Other agriculture	Services to agriculture, hunting and trapping	Forestry and logging	Commercial fishing	Coal	Oil and gas
Wholesale mechanical repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other wholesale repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Retail trade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Retail mechanical repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other retail repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accommodation, cafes and restaurants	0.18	0.21	0.15	0.18	0.38	0.21	0.08	0.14	0.07	0.05	0.07	0.07
Road transport	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Rail, pipeline and other transport	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water transport	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Air and space transport	0.43	0.40	0.40	0.41	0.42	0.36	0.35	0.00	0.11	0.00	0.20	0.27
Services to transport, storage	0.01	0.01	0.02	0.02	0.01	0.00	0.01	0.05	0.01	0.03	0.00	0.00
Communication services	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
Finance	0.02	0.03	0.02	0.01	0.00	0.01	0.04	0.01	0.03	0.01	0.05	0.03
Ownership of dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other property services	0.00	0.01	0.02	0.01	0.01	0.01	0.01	0.03	0.03	0.03	0.01	0.01
Scientific research, technical and computer services	0.08	0.03	0.05	0.06	0.13	0.07	0.09	0.01	0.09	0.05	0.06	0.08
Legal, accounting, marketing and business management services	0.09	0.07	0.09	0.12	0.12	0.21	0.07	0.14	0.69	0.27	0.05	0.17
Other business services	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.03	0.02	0.05	0.03	0.03
Government administration	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Defence	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Education	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Health services	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.08	0.08	0.00	0.00
Community services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Motion picture, radio and television services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Libraries, museums and the arts	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.02	0.04	0.00	0.00
Sport, gambling and recreational services	0.01	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.02
Personal services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.08	0.00
Other services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.2(b) Ratio of imports to supply – 2009 (continued)

	Iron ores	Non-ferrous metal ores	Other mining	Services to mining	Meat and meat products	Dairy products	Fruit and vegetable products	Oils and fats	Flour mill products and cereal foods	Bakery products	Confec-tionery	Other food products
Sheep	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.03	0.00	0.00
Beef cattle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy cattle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other agriculture	0.00	0.00	0.00	0.00	0.90	0.16	0.08	0.44	0.90	0.44	0.50	0.07
Services to agriculture, hunting and trapping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forestry and logging	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Commercial fishing	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.22	0.90	0.07	0.90	0.08
Coal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oil and gas	0.04	0.05	0.02	0.11	0.11	0.11	0.05	0.05	0.05	0.05	0.06	0.06
Iron ores	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Non-ferrous metal ores	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other mining	0.33	0.20	0.00	0.00	0.00	0.00	0.90	0.37	0.90	0.48	0.90	0.00
Services to mining	0.01	0.00	0.03	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meat and meat products	0.02	0.01	0.00	0.01	0.05	0.06	0.12	0.01	0.05	0.08	0.03	0.09
Dairy products	0.20	0.01	0.01	0.01	0.08	0.07	0.07	0.08	0.08	0.07	0.11	0.08
Fruit and vegetable products	0.05	0.09	0.09	0.01	0.10	0.17	0.42	0.31	0.58	0.36	0.68	0.14
Oils and fats	0.01	0.09	0.05	0.07	0.02	0.01	0.53	0.70	0.39	0.36	0.42	0.65
Flour mill products and cereal foods	0.01	0.00	0.00	0.00	0.13	0.17	0.26	0.16	0.05	0.05	0.31	0.07
Bakery products	0.22	0.14	0.17	0.23	0.20	0.25	0.03	0.05	0.04	0.25	0.20	0.26
Confectionery	0.00	0.00	0.00	0.00	0.71	0.13	0.52	0.90	0.40	0.34	0.40	0.37
Other food products	0.00	0.01	0.00	0.02	0.17	0.40	0.52	0.15	0.35	0.40	0.22	0.18
Soft drinks, cordials and syrups	0.00	0.06	0.00	0.01	0.04	0.04	0.07	0.04	0.05	0.04	0.05	0.04
Beer and malt	0.10	0.12	0.08	0.12	0.08	0.08	0.15	0.15	0.10	0.17	0.04	0.05
Wine, spirits and tobacco products (a)	0.11	0.31	0.15	0.18	0.29	0.02	0.69	0.07	0.38	0.15	0.19	0.27
Textile fibres, yarns and woven fabrics	0.63	0.65	0.69	0.03	0.45	0.27	0.59	0.50	0.66	0.30	0.77	0.24
Textile products	0.38	0.61	0.83	0.51	0.87	0.52	0.43	0.90	0.90	0.90	0.28	0.90
Knitting mill products	0.01	0.05	0.05	0.01	0.40	0.02	0.05	0.04	0.40	0.15	0.04	0.32
Clothing	0.51	0.35	0.23	0.00	0.75	0.20	0.14	0.32	0.39	0.57	0.52	0.30
Footwear	0.75	0.74	0.79	0.00	0.61	0.61	0.54	0.73	0.64	0.67	0.77	0.47
Leather and leather products	0.01	0.01	0.01	0.00	0.19	0.70	0.78	0.90	0.90	0.59	0.90	0.48
Sawmill products	0.69	0.35	0.71	0.75	0.00	0.00	0.61	0.84	0.71	0.74	0.86	0.56
Other wood products	0.16	0.07	0.17	0.44	0.00	0.02	0.02	0.02	0.09	0.01	0.03	0.02
Pulp, paper and paperboard	0.90	0.90	0.90	0.57	0.03	0.12	0.01	0.33	0.60	0.18	0.13	0.31
Paper containers and products	0.26	0.20	0.12	0.27	0.06	0.21	0.07	0.06	0.13	0.14	0.11	0.10
Printing and services to printing	0.06	0.04	0.04	0.04	0.06	0.05	0.14	0.02	0.07	0.16	0.26	0.04
Publishing, recorded media, etc.	0.01	0.02	0.02	0.03	0.01	0.02	0.00	0.01	0.00	0.03	0.01	0.05
Petroleum and coal products	0.52	0.52	0.48	0.53	0.46	0.32	0.17	0.27	0.29	0.33	0.23	0.36

Table A.2(b) Ratio of imports to supply – 2009 (continued)

	Iron ores	Non-ferrous metal ores	Other mining	Services to mining	Meat and meat products	Dairy products	Fruit and vegetable products	Oils and fats	Flour mill products and cereal foods	Bakery products	Confec-tionery	Other food products
Basic chemicals	0.62	0.65	0.54	0.80	0.14	0.17	0.21	0.29	0.42	0.22	0.54	0.30
Paints	0.20	0.28	0.26	0.21	0.02	0.04	0.01	0.02	0.03	0.11	0.07	0.18
Medicinal and pharmaceutical products, pesticides	0.15	0.72	0.61	0.75	0.21	0.24	0.31	0.43	0.37	0.29	0.36	0.38
Soap and detergents	0.17	0.29	0.18	0.25	0.53	0.19	0.07	0.05	0.06	0.41	0.42	0.18
Cosmetics and toiletry preparations	0.01	0.04	0.02	0.11	0.02	0.01	0.03	0.01	0.03	0.03	0.03	0.02
Other chemical products	0.17	0.18	0.14	0.48	0.05	0.19	0.22	0.45	0.22	0.18	0.28	0.39
Rubber products	0.82	0.63	0.71	0.77	0.05	0.08	0.51	0.55	0.65	0.59	0.26	0.64
Plastic products	0.31	0.11	0.32	0.32	0.37	0.28	0.21	0.20	0.42	0.40	0.40	0.33
Glass and glass products	0.17	0.09	0.32	0.16	0.00	0.00	0.13	0.15	0.26	0.32	0.18	0.13
Ceramic products	0.30	0.49	0.54	0.01	0.00	0.02	0.00	0.00	0.01	0.02	0.18	0.00
Cement, lime and concrete slurry	0.03	0.13	0.06	0.09	0.00	0.06	0.00	0.00	0.05	0.00	0.01	0.12
Plaster and other concrete products	0.05	0.05	0.05	0.02	0.00	0.01	0.00	0.00	0.02	0.00	0.01	0.01
Other non-metallic mineral products	0.10	0.07	0.13	0.16	0.03	0.02	0.10	0.10	0.10	0.10	0.06	0.20
Iron and steel	0.44	0.37	0.45	0.39	0.13	0.13	0.15	0.55	0.37	0.32	0.64	0.11
Basic non-ferrous metal and products	0.32	0.46	0.47	0.45	0.08	0.28	0.10	0.26	0.27	0.33	0.37	0.51
Structural metal products	0.11	0.09	0.02	0.16	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00
Sheet metal products	0.24	0.15	0.10	0.02	0.05	0.04	0.02	0.04	0.03	0.03	0.03	0.03
Fabricated metal products	0.38	0.44	0.42	0.25	0.31	0.17	0.07	0.28	0.21	0.26	0.22	0.39
Motor vehicles and parts, other transport equipment	0.25	0.37	0.25	0.36	0.01	0.01	0.04	0.09	0.07	0.08	0.13	0.08
Ships and boats	0.01	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Railway equipment	0.04	0.19	0.12	0.07	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.04
Aircraft	0.50	0.50	0.53	0.54	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.01
Photographic and scientific equipment	0.35	0.35	0.62	0.57	0.01	0.01	0.11	0.25	0.22	0.27	0.40	0.45
Electronic equipment	0.90	0.89	0.68	0.68	0.05	0.12	0.24	0.43	0.32	0.51	0.48	0.39
Household appliances	0.29	0.38	0.46	0.51	0.18	0.11	0.27	0.47	0.36	0.37	0.54	0.20
Other electrical equipment	0.61	0.40	0.53	0.69	0.35	0.47	0.22	0.44	0.42	0.49	0.56	0.40
Agricultural, mining, etc. machinery	0.46	0.45	0.39	0.65	0.11	0.08	0.08	0.24	0.17	0.17	0.38	0.08
Other machinery and equipment	0.76	0.79	0.84	0.76	0.20	0.37	0.19	0.50	0.39	0.27	0.51	0.26
Prefabricated buildings	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Furniture	0.01	0.02	0.03	0.05	0.12	0.19	0.03	0.14	0.07	0.08	0.17	0.13
Other manufacturing	0.14	0.08	0.04	0.03	0.18	0.21	0.05	0.01	0.03	0.01	0.03	0.01
Electricity supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gas supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water supply, sewerage and drainage services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Residential building	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other construction	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Construction trade services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wholesale trade	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.2(b) Ratio of imports to supply – 2009 (continued)

	Iron ores	Non-ferrous metal ores	Other mining	Services to mining	Meat and meat products	Dairy products	Fruit and vegetable products	Oils and fats	Flour mill products and cereal foods	Bakery products	Confec-tionery	Other food products
Wholesale mechanical repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other wholesale repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Retail trade	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01
Retail mechanical repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other retail repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accommodation, cafes and restaurants	0.06	0.06	0.06	0.13	0.32	0.26	0.06	0.09	0.10	0.05	0.13	0.07
Road transport	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rail, pipeline and other transport	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water transport	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Air and space transport	0.42	0.37	0.39	0.04	0.17	0.18	0.39	0.44	0.44	0.41	0.30	0.33
Services to transport, storage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Communication services	0.01	0.00	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.03	0.02	0.02
Finance	0.03	0.03	0.03	0.02	0.01	0.01	0.04	0.03	0.03	0.02	0.05	0.03
Ownership of dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other property services	0.01	0.03	0.03	0.02	0.00	0.04	0.04	0.04	0.03	0.04	0.04	0.03
Scientific research, technical and computer services	0.08	0.03	0.12	0.03	0.05	0.03	0.05	0.04	0.04	0.04	0.03	0.05
Legal, accounting, marketing and business management services	0.27	0.04	0.22	0.07	0.08	0.06	0.09	0.16	0.05	0.12	0.11	0.03
Other business services	0.02	0.03	0.03	0.04	0.03	0.05	0.03	0.01	0.00	0.01	0.02	0.02
Government administration	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Defence	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Education	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Health services	0.00	0.00	0.00	0.06	0.08	0.05	0.03	0.07	0.06	0.06	0.08	0.05
Community services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Motion picture, radio and television services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Libraries, museums and the arts	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Sport, gambling and recreational services	0.01	0.02	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01
Personal services	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.02	0.01	0.01	0.01
Other services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.2(c) Ratio of imports to supply – 2009 (continued)

	Soft drinks, cordials and syrups	Beer and malt	Wine, spirits and tobacco products	Textile fibres, yarns and woven fabrics	Textile products	Knitting mill products	Clothing	Footwear	Leather and leather products	Sawmill products	Other wood products	Pulp, paper and paper-board
Sheep	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef cattle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy cattle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other agriculture	0.00	0.15	0.10	0.90	0.31	0.90	0.82	0.90	0.20	0.00	0.00	0.00
Services to agriculture, hunting and trapping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forestry and logging	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Commercial fishing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oil and gas	0.05	0.05	0.07	0.06	0.05	0.07	0.06	0.09	0.05	0.08	0.07	0.06
Iron ores	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Non-ferrous metal ores	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.53	0.00	0.00
Other mining	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Services to mining	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meat and meat products	0.00	0.00	0.05	0.26	0.02	0.07	0.00	0.90	0.00	0.00	0.00	0.05
Dairy products	0.00	0.04	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruit and vegetable products	0.48	0.64	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.01	0.05
Oils and fats	0.01	0.02	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.08	0.04	0.26
Flour mill products and cereal foods	0.19	0.30	0.09	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.00	0.06
Bakery products	0.00	0.02	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Confectionery	0.01	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other food products	0.08	0.18	0.27	0.00	0.00	0.00	0.01	0.01	0.00	0.11	0.01	0.16
Soft drinks, cordials and syrups	0.00	0.07	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.09	0.01	0.03
Beer and malt	0.00	0.04	0.05	0.03	0.09	0.09	0.00	0.00	0.00	0.11	0.10	0.10
Wine, spirits and tobacco products (a)	0.00	0.01	0.25	0.07	0.14	0.10	0.00	0.00	0.01	0.11	0.19	0.19
Textile fibres, yarns and woven fabrics	0.67	0.73	0.90	0.73	0.90	0.90	0.90	0.90	0.75	0.76	0.52	0.79
Textile products	0.66	0.19	0.57	0.06	0.78	0.16	0.27	0.90	0.81	0.86	0.62	0.90
Knitting mill products	0.21	0.07	0.02	0.07	0.41	0.50	0.70	0.06	0.29	0.03	0.03	0.03
Clothing	0.40	0.16	0.12	0.16	0.31	0.06	0.77	0.62	0.42	0.27	0.16	0.07
Footwear	0.56	0.59	0.55	0.54	0.66	0.64	0.56	0.74	0.65	0.67	0.48	0.09
Leather and leather products	0.90	0.90	0.90	0.29	0.56	0.84	0.34	0.87	0.22	0.90	0.90	0.90
Sawmill products	0.74	0.77	0.67	0.78	0.83	0.89	0.70	0.90	0.83	0.16	0.16	0.03
Other wood products	0.15	0.38	0.45	0.02	0.02	0.01	0.13	0.62	0.55	0.13	0.13	0.14
Pulp, paper and paperboard	0.11	0.05	0.55	0.60	0.53	0.35	0.04	0.68	0.34	0.90	0.90	0.90
Paper containers and products	0.04	0.07	0.06	0.67	0.73	0.11	0.08	0.10	0.07	0.20	0.24	0.90
Printing and services to printing	0.04	0.08	0.08	0.08	0.09	0.09	0.04	0.04	0.04	0.05	0.07	0.06
Publishing, recorded media, etc.	0.00	0.01	0.01	0.00	0.00	0.02	0.06	0.02	0.06	0.00	0.04	0.05

Table A.2(c) Ratio of imports to supply – 2009 (continued)

	Soft drinks, cordials and syrups	Beer and malt	Wine, spirits and tobacco products	Textile fibres, yarns and woven fabrics	Textile products	Knitting mill products	Clothing	Footwear	Leather and leather products	Sawmill products	Other wood products	Pulp, paper and paper-board
Petroleum and coal products	0.21	0.26	0.28	0.17	0.30	0.17	0.31	0.26	0.27	0.42	0.35	0.27
Basic chemicals	0.17	0.75	0.67	0.54	0.41	0.46	0.46	0.77	0.50	0.66	0.69	0.77
Paints	0.02	0.01	0.02	0.13	0.23	0.25	0.13	0.06	0.17	0.24	0.24	0.21
Medicinal and pharmaceutical products, pesticides	0.47	0.33	0.15	0.31	0.32	0.34	0.27	0.36	0.35	0.35	0.50	0.73
Soap and detergents	0.29	0.39	0.25	0.20	0.19	0.27	0.07	0.03	0.11	0.18	0.19	0.18
Cosmetics and toiletry preparations	0.01	0.05	0.04	0.00	0.00	0.00	0.00	0.06	0.11	0.21	0.05	0.24
Other chemical products	0.26	0.14	0.40	0.38	0.23	0.26	0.79	0.24	0.81	0.85	0.25	0.84
Rubber products	0.46	0.50	0.38	0.15	0.15	0.36	0.58	0.48	0.47	0.60	0.29	0.38
Plastic products	0.22	0.41	0.39	0.31	0.40	0.23	0.40	0.43	0.55	0.48	0.52	0.38
Glass and glass products	0.13	0.12	0.13	0.25	0.10	0.36	0.00	0.00	0.00	0.31	0.08	0.15
Ceramic products	0.01	0.01	0.01	0.07	0.03	0.01	0.00	0.00	0.02	0.06	0.18	0.03
Cement, lime and concrete slurry	0.05	0.00	0.01	0.04	0.03	0.00	0.03	0.00	0.10	0.28	0.05	0.32
Plaster and other concrete products	0.05	0.06	0.05	0.00	0.01	0.00	0.02	0.08	0.06	0.11	0.01	0.01
Other non-metallic mineral products	0.00	0.00	0.00	0.11	0.07	0.12	0.00	0.00	0.00	0.11	0.18	0.21
Iron and steel	0.01	0.00	0.03	0.84	0.63	0.89	0.64	0.87	0.81	0.79	0.26	0.22
Basic non-ferrous metal and products	0.02	0.00	0.01	0.47	0.45	0.48	0.45	0.50	0.47	0.50	0.30	0.36
Structural metal products	0.00	0.00	0.00	0.00	0.12	0.00	0.01	0.01	0.00	0.00	0.10	0.00
Sheet metal products	0.28	0.10	0.41	0.06	0.08	0.09	0.06	0.07	0.07	0.08	0.03	0.05
Fabricated metal products	0.17	0.16	0.34	0.23	0.36	0.03	0.21	0.31	0.31	0.23	0.48	0.26
Motor vehicles and parts, other transport equipment	0.01	0.01	0.02	0.01	0.02	0.01	0.01	0.02	0.01	0.10	0.11	0.05
Ships and boats	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Railway equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.03	0.04	0.04
Aircraft	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Photographic and scientific equipment	0.31	0.14	0.14	0.00	0.02	0.01	0.74	0.35	0.40	0.00	0.00	0.20
Electronic equipment	0.04	0.22	0.28	0.30	0.51	0.49	0.50	0.74	0.65	0.04	0.04	0.16
Household appliances	0.12	0.04	0.12	0.00	0.03	0.00	0.01	0.00	0.00	0.01	0.01	0.37
Other electrical equipment	0.63	0.64	0.61	0.21	0.39	0.39	0.02	0.00	0.01	0.09	0.10	0.56
Agricultural, mining, etc. machinery	0.04	0.02	0.06	0.06	0.15	0.19	0.14	0.37	0.17	0.07	0.04	0.45
Other machinery and equipment	0.04	0.12	0.23	0.68	0.85	0.57	0.17	0.45	0.45	0.40	0.34	0.33
Prefabricated buildings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00
Furniture	0.25	0.55	0.66	0.00	0.00	0.00	0.00	0.04	0.03	0.07	0.26	0.01
Other manufacturing	0.25	0.57	0.40	0.20	0.17	0.21	0.05	0.16	0.22	0.09	0.03	0.17
Electricity supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gas supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water supply, sewerage and drainage services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Residential building	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.2(c) Ratio of imports to supply – 2009 (continued)

	Soft drinks, cordials and syrups	Beer and malt	Wine, spirits and tobacco products	Textile fibres, yarns and woven fabrics	Textile products	Knitting mill products	Clothing	Footwear	Leather and leather products	Sawmill products	Other wood products	Pulp, paper and paper-board
Construction trade services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wholesale trade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
Wholesale mechanical repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other wholesale repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Retail trade	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01
Retail mechanical repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other retail repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accommodation, cafes and restaurants	0.05	0.04	0.05	0.06	0.05	0.04	0.04	0.04	0.04	0.09	0.10	0.08
Road transport	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rail, pipeline and other transport	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water transport	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Air and space transport	0.33	0.44	0.36	0.00	0.39	0.00	0.00	0.00	0.00	0.38	0.43	0.40
Services to transport, storage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Communication services	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.02
Finance	0.06	0.01	0.02	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01
Ownership of dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other property services	0.04	0.04	0.04	0.04	0.04	0.03	0.02	0.02	0.01	0.00	0.01	0.02
Scientific research, technical and computer services	0.05	0.03	0.04	0.03	0.03	0.05	0.04	0.04	0.05	0.06	0.06	0.08
Legal, accounting, marketing and business management services	0.09	0.09	0.08	0.17	0.06	0.13	0.07	0.27	0.14	0.12	0.06	0.13
Other business services	0.02	0.00	0.04	0.01	0.01	0.02	0.02	0.02	0.04	0.03	0.02	0.06
Government administration	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Defence	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Education	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Health services	0.06	0.07	0.07	0.00	0.00	0.00	0.08	0.08	0.01	0.08	0.08	0.08
Community services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Motion picture, radio and television services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Libraries, museums and the arts	0.00	0.02	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Sport, gambling and recreational services	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Personal services	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
Other services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.2(d) Ratio of imports to supply – 2009 (continued)

	Paper containers and products	Printing and services to printing	Publishing, recorded media, etc.	Petroleum and coal products	Basic chemicals	Paints	Medicinal and pharma-ceutical products, pesticides	Soap and detergents	Cosmetics and toiletry preparations	Other chemical products	Rubber products	Plastic products
Sheep	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.00	0.00
Beef cattle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy cattle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other agriculture	0.00	0.08	0.14	0.00	0.64	0.48	0.90	0.68	0.77	0.73	0.32	0.14
Services to agriculture, hunting and trapping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forestry and logging	0.00	0.17	0.03	0.00	0.60	0.17	0.63	0.00	0.67	0.66	0.00	0.00
Commercial fishing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oil and gas	0.05	0.05	0.05	0.56	0.07	0.06	0.05	0.06	0.07	0.06	0.10	0.07
Iron ores	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Non-ferrous metal ores	0.00	0.00	0.00	0.00	0.03	0.03	0.00	0.55	0.00	0.07	0.00	0.36
Other mining	0.00	0.00	0.00	0.37	0.02	0.90	0.90	0.52	0.67	0.10	0.90	0.90
Services to mining	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meat and meat products	0.01	0.02	0.00	0.00	0.07	0.08	0.07	0.07	0.07	0.08	0.12	0.02
Dairy products	0.00	0.00	0.00	0.00	0.00	0.22	0.03	0.00	0.24	0.45	0.00	0.00
Fruit and vegetable products	0.11	0.01	0.00	0.34	0.35	0.56	0.32	0.59	0.54	0.53	0.05	0.04
Oils and fats	0.06	0.12	0.01	0.22	0.60	0.66	0.69	0.66	0.70	0.22	0.25	0.15
Flour mill products and cereal foods	0.06	0.00	0.00	0.03	0.08	0.23	0.23	0.25	0.26	0.27	0.00	0.01
Bakery products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Confectionery	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.01	0.10	0.08	0.00	0.00
Other food products	0.13	0.04	0.00	0.05	0.22	0.16	0.15	0.16	0.14	0.19	0.09	0.05
Soft drinks, cordials and syrups	0.08	0.04	0.04	0.28	0.07	0.13	0.06	0.09	0.06	0.07	0.09	0.05
Beer and malt	0.09	0.11	0.14	0.05	0.04	0.12	0.01	0.08	0.07	0.07	0.06	0.07
Wine, spirits and tobacco products (a)	0.06	0.20	0.29	0.13	0.49	0.15	0.17	0.08	0.08	0.07	0.08	0.15
Textile fibres, yarns and woven fabrics	0.90	0.84	0.34	0.77	0.23	0.79	0.30	0.83	0.33	0.90	0.73	0.90
Textile products	0.42	0.83	0.90	0.22	0.90	0.90	0.90	0.90	0.90	0.90	0.70	0.90
Knitting mill products	0.24	0.53	0.58	0.03	0.16	0.03	0.01	0.02	0.02	0.23	0.03	0.67
Clothing	0.10	0.78	0.90	0.35	0.23	0.22	0.05	0.33	0.31	0.49	0.15	0.28
Footwear	0.08	0.74	0.87	0.69	0.41	0.71	0.40	0.72	0.69	0.67	0.82	0.69
Leather and leather products	0.90	0.90	0.90	0.84	0.76	0.90	0.84	0.90	0.90	0.90	0.90	0.75
Sawmill products	0.54	0.61	0.50	0.11	0.56	0.89	0.55	0.86	0.80	0.54	0.88	0.45
Other wood products	0.20	0.31	0.43	0.35	0.17	0.47	0.24	0.37	0.39	0.31	0.49	0.15
Pulp, paper and paperboard	0.90	0.85	0.54	0.58	0.90	0.89	0.01	0.28	0.35	0.63	0.44	0.45
Paper containers and products	0.54	0.48	0.33	0.18	0.21	0.33	0.04	0.07	0.16	0.11	0.45	0.44
Printing and services to printing	0.09	0.05	0.04	0.05	0.07	0.04	0.06	0.07	0.10	0.10	0.06	0.06
Publishing, recorded media, etc.	0.06	0.04	0.85	0.03	0.05	0.02	0.05	0.02	0.02	0.02	0.02	0.03

Table A.2(d) Ratio of imports to supply – 2009 (continued)

	Paper containers and products	Printing and services to printing	Publishing, recorded media, etc.	Petroleum and coal products	Basic chemicals	Paints	Medicinal and pharma-ceutical products, pesticides	Soap and detergents	Cosmetics and toiletry preparations	Other chemical products	Rubber products	Plastic products
Petroleum and coal products	0.43	0.24	0.27	0.53	0.30	0.47	0.29	0.17	0.25	0.51	0.49	0.20
Basic chemicals	0.60	0.60	0.61	0.59	0.49	0.65	0.50	0.62	0.37	0.52	0.70	0.51
Paints	0.20	0.15	0.07	0.23	0.03	0.41	0.22	0.15	0.17	0.36	0.21	0.71
Medicinal and pharmaceutical products, pesticides	0.51	0.71	0.27	0.32	0.21	0.77	0.72	0.62	0.59	0.58	0.79	0.76
Soap and detergents	0.22	0.13	0.38	0.33	0.19	0.22	0.90	0.38	0.49	0.20	0.23	0.22
Cosmetics and toiletry preparations	0.21	0.12	0.05	0.15	0.03	0.15	0.20	0.63	0.60	0.33	0.17	0.09
Other chemical products	0.72	0.51	0.53	0.56	0.45	0.21	0.90	0.52	0.74	0.45	0.31	0.35
Rubber products	0.31	0.51	0.53	0.36	0.24	0.34	0.44	0.52	0.38	0.31	0.13	0.14
Plastic products	0.49	0.40	0.48	0.51	0.28	0.29	0.33	0.32	0.34	0.31	0.25	0.35
Glass and glass products	0.04	0.14	0.19	0.01	0.15	0.37	0.28	0.19	0.23	0.13	0.44	0.24
Ceramic products	0.02	0.01	0.00	0.01	0.08	0.21	0.04	0.17	0.15	0.67	0.00	0.06
Cement, lime and concrete slurry	0.52	0.25	0.01	0.69	0.58	0.23	0.45	0.65	0.48	0.38	0.21	0.28
Plaster and other concrete products	0.29	0.09	0.07	0.11	0.00	0.04	0.01	0.03	0.02	0.03	0.10	0.03
Other non-metallic mineral products	0.06	0.08	0.16	0.00	0.28	0.42	0.09	0.12	0.12	0.29	0.11	0.23
Iron and steel	0.48	0.49	0.70	0.01	0.22	0.66	0.41	0.75	0.70	0.54	0.76	0.50
Basic non-ferrous metal and products	0.42	0.37	0.50	0.44	0.23	0.25	0.37	0.46	0.43	0.34	0.49	0.52
Structural metal products	0.01	0.03	0.04	0.00	0.06	0.01	0.01	0.01	0.00	0.02	0.01	0.10
Sheet metal products	0.16	0.17	0.55	0.09	0.06	0.02	0.03	0.08	0.03	0.25	0.09	0.05
Fabricated metal products	0.35	0.25	0.37	0.16	0.48	0.43	0.50	0.46	0.42	0.60	0.38	0.27
Motor vehicles and parts, other transport equipment	0.05	0.03	0.03	0.03	0.06	0.09	0.09	0.09	0.10	0.12	0.13	0.09
Ships and boats	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00
Railway equipment	0.02	0.01	0.00	0.00	0.03	0.02	0.05	0.02	0.01	0.05	0.01	0.00
Aircraft	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Photographic and scientific equipment	0.32	0.33	0.13	0.00	0.09	0.20	0.10	0.13	0.06	0.06	0.55	0.33
Electronic equipment	0.23	0.59	0.49	0.03	0.12	0.61	0.32	0.56	0.57	0.25	0.75	0.73
Household appliances	0.37	0.05	0.03	0.00	0.02	0.15	0.10	0.13	0.13	0.11	0.51	0.66
Other electrical equipment	0.59	0.22	0.20	0.06	0.09	0.38	0.09	0.33	0.36	0.26	0.61	0.72
Agricultural, mining, etc. machinery	0.48	0.05	0.02	0.01	0.12	0.58	0.20	0.46	0.49	0.39	0.45	0.14
Other machinery and equipment	0.82	0.39	0.18	0.08	0.54	0.71	0.76	0.73	0.73	0.69	0.64	0.29
Prefabricated buildings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Furniture	0.00	0.03	0.06	0.02	0.03	0.09	0.06	0.10	0.14	0.07	0.04	0.02
Other manufacturing	0.14	0.07	0.18	0.10	0.51	0.49	0.76	0.72	0.79	0.42	0.24	0.08
Electricity supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gas supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water supply, sewerage and drainage services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Residential building	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other construction	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.2(d) Ratio of imports to supply – 2009 (continued)

	Paper containers and products	Printing and services to printing	Publishing, recorded media, etc.	Petroleum and coal products	Basic chemicals	Paints	Medicinal and pharma-ceutical products, pesticides	Soap and detergents	Cosmetics and toiletry preparations	Other chemical products	Rubber products	Plastic products
Construction trade services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wholesale trade	0.00	0.00	0.00	0.08	0.01	0.03	0.00	0.00	0.01	0.01	0.02	0.00
Wholesale mechanical repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other wholesale repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Retail trade	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.01	0.02	0.00	0.02	0.02
Retail mechanical repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other retail repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accommodation, cafes and restaurants	0.15	0.11	0.24	0.33	0.12	0.13	0.10	0.10	0.09	0.13	0.09	0.10
Road transport	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rail, pipeline and other transport	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water transport	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Air and space transport	0.40	0.00	0.00	0.39	0.40	0.44	0.12	0.45	0.36	0.45	0.43	0.43
Services to transport, storage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Communication services	0.01	0.02	0.02	0.03	0.02	0.02	0.03	0.01	0.02	0.01	0.02	0.01
Finance	0.02	0.02	0.03	0.01	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.02
Ownership of dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other property services	0.03	0.03	0.00	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Scientific research, technical and computer services	0.04	0.10	0.07	0.07	0.06	0.04	0.09	0.08	0.05	0.04	0.05	0.09
Legal, accounting, marketing and business management services	0.03	0.03	0.02	0.08	0.02	0.09	0.01	0.21	0.17	0.10	0.12	0.04
Other business services	0.02	0.04	0.02	0.01	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.03
Government administration	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Defence	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Education	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Health services	0.08	0.07	0.08	0.08	0.08	0.08	0.08	0.07	0.06	0.07	0.06	0.06
Community services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Motion picture, radio and television services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Libraries, museums and the arts	0.02	0.01	0.01	0.00	0.00	0.02	0.00	0.02	0.02	0.02	0.00	0.00
Sport, gambling and recreational services	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.01	0.01
Personal services	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.00
Other services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.2(e) Ratio of imports to supply – 2009 (continued)

	Glass and glass products	Ceramic products	Cement, lime and concrete slurry	Plaster and other concrete products	Other non-metallic mineral products	Iron and steel	Basic non-ferrous metal and products	Structural metal products	Sheet metal products	Fabricated metal products	Motor vehicles and parts, other transport equipment	Ships and boats
Sheep	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef cattle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy cattle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other agriculture	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.13	0.28	0.00	0.00
Services to agriculture, hunting and trapping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forestry and logging	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Commercial fishing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oil and gas	0.06	0.05	0.05	0.08	0.06	0.06	0.07	0.05	0.05	0.06	0.06	0.07
Iron ores	0.00	0.00	0.00	0.00	0.00	0.09	0.07	0.17	0.00	0.12	0.00	0.00
Non-ferrous metal ores	0.00	0.00	0.06	0.03	0.02	0.05	0.30	0.00	0.00	0.03	0.00	0.00
Other mining	0.30	0.00	0.02	0.09	0.13	0.14	0.35	0.38	0.90	0.39	0.76	0.90
Services to mining	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meat and meat products	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Dairy products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.10
Fruit and vegetable products	0.22	0.00	0.00	0.04	0.10	0.01	0.05	0.01	0.02	0.02	0.13	0.50
Oils and fats	0.15	0.00	0.03	0.03	0.13	0.05	0.05	0.01	0.07	0.09	0.01	0.01
Flour mill products and cereal foods	0.00	0.00	0.00	0.03	0.04	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Bakery products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.11
Confectionery	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other food products	0.04	0.00	0.01	0.06	0.13	0.02	0.01	0.06	0.10	0.11	0.00	0.00
Soft drinks, cordials and syrups	0.29	0.00	0.01	0.07	0.15	0.01	0.10	0.01	0.03	0.05	0.02	0.00
Beer and malt	0.09	0.00	0.11	0.08	0.08	0.04	0.03	0.05	0.09	0.07	0.04	0.08
Wine, spirits and tobacco products (a)	0.09	0.00	0.22	0.08	0.05	0.12	0.08	0.12	0.16	0.14	0.07	0.13
Textile fibres, yarns and woven fabrics	0.86	0.00	0.76	0.81	0.77	0.24	0.39	0.90	0.78	0.83	0.50	0.63
Textile products	0.59	0.00	0.29	0.90	0.90	0.90	0.59	0.41	0.79	0.76	0.90	0.56
Knitting mill products	0.05	0.00	0.05	0.68	0.46	0.02	0.01	0.10	0.21	0.35	0.02	0.02
Clothing	0.26	0.00	0.18	0.37	0.27	0.34	0.30	0.71	0.74	0.66	0.16	0.29
Footwear	0.74	0.00	0.62	0.67	0.72	0.56	0.54	0.47	0.59	0.39	0.30	0.69
Leather and leather products	0.73	0.00	0.90	0.90	0.90	0.88	0.75	0.72	0.88	0.42	0.69	0.90
Sawmill products	0.67	0.00	0.79	0.48	0.80	0.17	0.38	0.20	0.39	0.26	0.15	0.29
Other wood products	0.21	0.00	0.49	0.34	0.40	0.37	0.54	0.19	0.27	0.28	0.14	0.10
Pulp, paper and paperboard	0.68	0.00	0.44	0.90	0.90	0.90	0.88	0.75	0.62	0.67	0.10	0.15
Paper containers and products	0.14	0.00	0.05	0.21	0.22	0.29	0.22	0.12	0.10	0.05	0.09	0.10
Printing and services to printing	0.05	0.00	0.06	0.12	0.12	0.09	0.00	0.11	0.10	0.12	0.07	0.08
Publishing, recorded media, etc.	0.00	0.00	0.05	0.04	0.03	0.04	0.04	0.02	0.03	0.02	0.00	0.02

Table A.2(e) Ratio of imports to supply – 2009 (continued)

	Glass and glass products	Ceramic products	Cement, lime and concrete slurry	Plaster and other concrete products	Other non-metallic mineral products	Iron and steel	Basic non-ferrous metal and products	Structural metal products	Sheet metal products	Fabricated metal products	Motor vehicles and parts, other transport equipment	Ships and boats
Petroleum and coal products	0.18	0.35	0.20	0.27	0.27	0.42	0.40	0.15	0.16	0.29	0.22	0.10
Basic chemicals	0.66	0.00	0.86	0.67	0.64	0.56	0.60	0.29	0.68	0.63	0.47	0.67
Paints	0.20	0.00	0.16	0.19	0.42	0.27	0.14	0.12	0.25	0.28	0.26	0.30
Medicinal and pharmaceutical products, pesticides	0.74	0.00	0.30	0.59	0.69	0.66	0.68	0.24	0.69	0.72	0.14	0.17
Soap and detergents	0.15	0.00	0.21	0.32	0.13	0.21	0.31	0.14	0.24	0.19	0.13	0.07
Cosmetics and toiletry preparations	0.20	0.00	0.11	0.19	0.22	0.00	0.00	0.11	0.10	0.11	0.01	0.03
Other chemical products	0.41	0.00	0.69	0.78	0.60	0.49	0.28	0.26	0.62	0.54	0.20	0.27
Rubber products	0.25	0.00	0.36	0.52	0.16	0.60	0.11	0.05	0.29	0.08	0.82	0.20
Plastic products	0.44	0.00	0.34	0.33	0.39	0.34	0.19	0.21	0.41	0.37	0.31	0.32
Glass and glass products	0.31	0.00	0.47	0.35	0.23	0.26	0.18	0.28	0.18	0.09	0.31	0.18
Ceramic products	0.14	0.00	0.00	0.00	0.02	0.68	0.71	0.73	0.02	0.80	0.01	0.05
Cement, lime and concrete slurry	0.20	0.00	0.09	0.08	0.09	0.04	0.08	0.04	0.09	0.08	0.07	0.00
Plaster and other concrete products	0.04	0.00	0.04	0.04	0.02	0.02	0.03	0.03	0.07	0.06	0.02	0.06
Other non-metallic mineral products	0.45	0.00	0.27	0.47	0.60	0.27	0.24	0.06	0.17	0.12	0.30	0.12
Iron and steel	0.59	0.00	0.50	0.30	0.34	0.32	0.14	0.23	0.30	0.38	0.24	0.26
Basic non-ferrous metal and products	0.15	0.00	0.46	0.22	0.41	0.07	0.03	0.22	0.11	0.27	0.27	0.26
Structural metal products	0.06	0.00	0.00	0.04	0.16	0.09	0.00	0.05	0.13	0.08	0.04	0.12
Sheet metal products	0.05	0.00	0.06	0.03	0.00	0.07	0.02	0.04	0.17	0.10	0.09	0.04
Fabricated metal products	0.46	0.00	0.35	0.25	0.18	0.36	0.23	0.22	0.31	0.26	0.39	0.35
Motor vehicles and parts, other transport equipment	0.31	0.00	0.19	0.18	0.24	0.24	0.13	0.13	0.16	0.09	0.54	0.12
Ships and boats	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01
Railway equipment	0.02	0.00	0.04	0.02	0.03	0.44	0.04	0.01	0.01	0.02	0.48	0.00
Aircraft	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.03
Photographic and scientific equipment	0.35	0.00	0.45	0.28	0.32	0.64	0.70	0.20	0.52	0.51	0.28	0.72
Electronic equipment	0.18	0.00	0.13	0.16	0.19	0.40	0.50	0.25	0.70	0.66	0.60	0.73
Household appliances	0.18	0.00	0.13	0.16	0.19	0.19	0.20	0.15	0.20	0.33	0.38	0.64
Other electrical equipment	0.73	0.00	0.67	0.64	0.72	0.59	0.48	0.57	0.62	0.59	0.49	0.88
Agricultural, mining, etc. machinery	0.76	0.00	0.26	0.21	0.59	0.34	0.36	0.17	0.24	0.65	0.11	0.61
Other machinery and equipment	0.82	0.00	0.86	0.66	0.84	0.68	0.55	0.28	0.54	0.39	0.63	0.53
Prefabricated buildings	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00
Furniture	0.05	0.00	0.04	0.03	0.02	0.03	0.00	0.40	0.83	0.79	0.90	0.04
Other manufacturing	0.26	0.00	0.30	0.33	0.13	0.27	0.18	0.08	0.52	0.21	0.09	0.20
Electricity supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gas supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water supply, sewerage and drainage services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Residential building	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.2(e) Ratio of imports to supply – 2009 (continued)

	Glass and glass products	Ceramic products	Cement, lime and concrete slurry	Plaster and other concrete products	Other non-metallic mineral products	Iron and steel	Basic non-ferrous metal and products	Structural metal products	Sheet metal products	Fabricated metal products	Motor vehicles and parts, other transport equipment	Ships and boats
Construction trade services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wholesale trade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wholesale mechanical repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other wholesale repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Retail trade	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00
Retail mechanical repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other retail repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accommodation, cafes and restaurants	0.06	0.00	0.07	0.05	0.05	0.12	0.06	0.08	0.10	0.10	0.09	0.13
Road transport	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Rail, pipeline and other transport	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water transport	0.00	0.00	0.00	0.00	0.00	0.31	0.00	0.00	0.07	0.00	0.00	0.00
Air and space transport	0.41	0.00	0.41	0.15	0.00	0.25	0.36	0.43	0.40	0.41	0.28	0.25
Services to transport, storage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Communication services	0.02	0.00	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03
Finance	0.01	0.00	0.01	0.02	0.00	0.01	0.00	0.03	0.03	0.03	0.03	0.05
Ownership of dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other property services	0.03	0.00	0.03	0.04	0.04	0.01	0.00	0.01	0.01	0.01	0.00	0.03
Scientific research, technical and computer services	0.04	0.00	0.03	0.05	0.05	0.02	0.03	0.07	0.06	0.07	0.02	0.05
Legal, accounting, marketing and business management services	0.26	0.00	0.10	0.05	0.14	0.08	0.14	0.04	0.07	0.05	0.04	0.20
Other business services	0.04	0.00	0.08	0.04	0.02	0.00	0.00	0.03	0.03	0.02	0.03	0.02
Government administration	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Defence	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Education	0.04	0.00	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Health services	0.06	0.00	0.06	0.07	0.07	0.06	0.06	0.05	0.03	0.06	0.08	0.05
Community services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Motion picture, radio and television services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Libraries, museums and the arts	0.02	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Sport, gambling and recreational services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Personal services	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.01	0.01
Other services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.2(f) Ratio of imports to supply – 2009 (continued)

	Railway equipment	Aircraft	Photo-graphic and scientific equipment	Electronic equip-ment	Household appliances	Other electrical equip-ment	Agri-cultural, mining, etc. machinery	Other machinery and equipment	Pre-fabricated buildings	Furniture	Other manu-facturing	Electricity supply
Sheep	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef cattle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy cattle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other agriculture	0.00	0.00	0.14	0.24	0.54	0.15	0.77	0.47	0.00	0.18	0.15	0.12
Services to agriculture, hunting and trapping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forestry and logging	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.18	0.17	0.03
Commercial fishing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oil and gas	0.05	0.06	0.07	0.05	0.05	0.06	0.08	0.06	0.05	0.06	0.05	0.02
Iron ores	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Non-ferrous metal ores	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.00	0.62	0.01	0.00
Other mining	0.90	0.90	0.90	0.90	0.90	0.40	0.90	0.90	0.90	0.90	0.90	0.00
Services to mining	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meat and meat products	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.01	0.01
Dairy products	0.00	0.14	0.10	0.11	0.14	0.11	0.11	0.11	0.17	0.14	0.12	0.15
Fruit and vegetable products	0.62	0.61	0.04	0.00	0.04	0.01	0.00	0.19	0.00	0.00	0.01	0.02
Oils and fats	0.01	0.01	0.03	0.00	0.01	0.00	0.01	0.01	0.01	0.02	0.03	0.05
Flour mill products and cereal foods	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.00
Bakery products	0.00	0.00	0.02	0.04	0.05	0.04	0.05	0.10	0.00	0.00	0.00	0.17
Confectionery	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other food products	0.00	0.00	0.02	0.08	0.09	0.08	0.08	0.12	0.14	0.16	0.16	0.02
Soft drinks, cordials and syrups	0.01	0.01	0.10	0.00	0.00	0.03	0.00	0.01	0.01	0.00	0.02	0.04
Beer and malt	0.01	0.12	0.01	0.02	0.03	0.05	0.05	0.07	0.03	0.04	0.04	0.00
Wine, spirits and tobacco products (a)	0.15	0.38	0.03	0.06	0.06	0.12	0.11	0.10	0.04	0.09	0.05	0.05
Textile fibres, yarns and woven fabrics	0.81	0.90	0.69	0.39	0.38	0.38	0.31	0.40	0.90	0.85	0.87	0.60
Textile products	0.40	0.19	0.90	0.44	0.61	0.47	0.35	0.25	0.20	0.73	0.23	0.18
Knitting mill products	0.05	0.01	0.44	0.02	0.07	0.01	0.03	0.02	0.08	0.13	0.48	0.04
Clothing	0.30	0.55	0.29	0.29	0.36	0.23	0.23	0.33	0.71	0.56	0.67	0.61
Footwear	0.76	0.74	0.66	0.37	0.50	0.45	0.49	0.54	0.74	0.48	0.57	0.76
Leather and leather products	0.90	0.70	0.83	0.67	0.80	0.69	0.72	0.88	0.90	0.90	0.43	0.90
Sawmill products	0.81	0.75	0.71	0.40	0.48	0.39	0.39	0.53	0.23	0.19	0.32	0.02
Other wood products	0.31	0.41	0.40	0.23	0.21	0.26	0.18	0.15	0.13	0.17	0.40	0.07
Pulp, paper and paperboard	0.14	0.10	0.31	0.59	0.09	0.77	0.30	0.48	0.70	0.28	0.46	0.36
Paper containers and products	0.12	0.15	0.08	0.14	0.04	0.15	0.09	0.14	0.17	0.08	0.34	0.06
Printing and services to printing	0.21	0.08	0.07	0.13	0.10	0.10	0.08	0.12	0.02	0.05	0.06	0.15
Publishing, recorded media, etc.	0.02	0.04	0.03	0.05	0.03	0.03	0.01	0.02	0.02	0.02	0.02	0.04

Table A.2(f) Ratio of imports to supply – 2009 (continued)

	Railway equipment	Aircraft	Photo-graphic and scientific equipment	Electronic equip-ment	Household appliances	Other electrical equip-ment	Agri-cultural, mining, etc. machinery	Other machinery and equipment	Pre-fabricated buildings	Furniture	Other manu-facturing	Electricity supply
Petroleum and coal products	0.25	0.42	0.31	0.18	0.23	0.45	0.16	0.08	0.18	0.21	0.18	0.33
Basic chemicals	0.72	0.63	0.57	0.38	0.45	0.41	0.60	0.59	0.88	0.53	0.73	0.76
Paints	0.20	0.29	0.25	0.16	0.26	0.26	0.26	0.26	0.24	0.27	0.36	0.27
Medicinal and pharmaceutical products, pesticides	0.28	0.44	0.53	0.07	0.19	0.14	0.15	0.14	0.41	0.55	0.49	0.74
Soap and detergents	0.33	0.02	0.35	0.35	0.35	0.35	0.40	0.38	0.16	0.16	0.21	0.38
Cosmetics and toiletry preparations	0.06	0.09	0.08	0.02	0.07	0.05	0.03	0.03	0.10	0.10	0.10	0.09
Other chemical products	0.26	0.14	0.47	0.14	0.14	0.44	0.18	0.13	0.35	0.40	0.63	0.53
Rubber products	0.59	0.75	0.45	0.23	0.45	0.17	0.90	0.55	0.60	0.28	0.41	0.90
Plastic products	0.36	0.53	0.43	0.41	0.37	0.29	0.31	0.28	0.47	0.34	0.29	0.31
Glass and glass products	0.12	0.50	0.32	0.23	0.30	0.20	0.11	0.15	0.28	0.28	0.27	0.28
Ceramic products	0.75	0.03	0.90	0.78	0.61	0.90	0.74	0.74	0.70	0.02	0.01	0.00
Cement, lime and concrete slurry	0.01	0.00	0.19	0.01	0.00	0.15	0.00	0.01	0.01	0.02	0.05	0.08
Plaster and other concrete products	0.04	0.08	0.03	0.03	0.03	0.03	0.05	0.03	0.06	0.01	0.11	0.05
Other non-metallic mineral products	0.22	0.32	0.26	0.28	0.29	0.20	0.22	0.14	0.09	0.09	0.10	0.09
Iron and steel	0.20	0.26	0.39	0.35	0.32	0.29	0.32	0.31	0.29	0.58	0.43	0.53
Basic non-ferrous metal and products	0.23	0.72	0.33	0.21	0.45	0.17	0.33	0.33	0.30	0.27	0.36	0.45
Structural metal products	0.09	0.02	0.13	0.15	0.08	0.16	0.14	0.15	0.08	0.06	0.12	0.00
Sheet metal products	0.02	0.15	0.15	0.14	0.15	0.17	0.11	0.11	0.09	0.09	0.14	0.13
Fabricated metal products	0.09	0.50	0.39	0.34	0.41	0.28	0.36	0.29	0.29	0.48	0.28	0.51
Motor vehicles and parts, other transport equipment	0.10	0.24	0.24	0.18	0.50	0.28	0.48	0.19	0.25	0.30	0.40	0.44
Ships and boats	0.00	0.11	0.00	0.00	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.01
Railway equipment	0.52	0.00	0.00	0.00	0.07	0.05	0.08	0.41	0.00	0.02	0.02	0.05
Aircraft	0.01	0.54	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01
Photographic and scientific equipment	0.68	0.75	0.76	0.66	0.45	0.43	0.55	0.61	0.26	0.45	0.57	0.07
Electronic equipment	0.88	0.90	0.87	0.90	0.53	0.75	0.78	0.76	0.82	0.79	0.88	0.33
Household appliances	0.18	0.35	0.63	0.51	0.55	0.72	0.66	0.66	0.26	0.16	0.17	0.25
Other electrical equipment	0.87	0.64	0.54	0.55	0.66	0.53	0.72	0.71	0.62	0.56	0.60	0.58
Agricultural, mining, etc. machinery	0.22	0.17	0.35	0.18	0.18	0.21	0.47	0.23	0.18	0.08	0.11	0.28
Other machinery and equipment	0.86	0.87	0.77	0.78	0.58	0.85	0.74	0.80	0.38	0.19	0.43	0.83
Prefabricated buildings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Furniture	0.40	0.09	0.12	0.55	0.03	0.03	0.03	0.03	0.04	0.50	0.71	0.02
Other manufacturing	0.25	0.16	0.07	0.04	0.06	0.13	0.04	0.09	0.13	0.07	0.14	0.22
Electricity supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gas supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water supply, sewerage and drainage services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Residential building	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.2(f) Ratio of imports to supply – 2009 (continued)

	Railway equipment	Aircraft	Photo-graphic and scientific equipment	Electronic equip-ment	Household appliances	Other electrical equip-ment	Agri-cultural, mining, etc. machinery	Other machinery and equipment	Pre-fabricated buildings	Furniture	Other manu-facturing	Electricity supply
Construction trade services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wholesale trade	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01
Wholesale mechanical repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other wholesale repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Retail trade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00
Retail mechanical repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other retail repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accommodation, cafes and restaurants	0.10	0.00	0.08	0.09	0.09	0.12	0.09	0.10	0.07	0.10	0.09	0.08
Road transport	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Rail, pipeline and other transport	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water transport	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Air and space transport	0.12	0.00	0.33	0.29	0.27	0.24	0.20	0.22	0.44	0.43	0.44	0.40
Services to transport, storage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Communication services	0.02	0.00	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01
Finance	0.01	0.06	0.01	0.03	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.00
Ownership of dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other property services	0.04	0.00	0.03	0.02	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03
Scientific research, technical and computer services	0.02	0.00	0.05	0.02	0.02	0.02	0.03	0.02	0.05	0.09	0.05	0.04
Legal, accounting, marketing and business management services	0.46	0.00	0.09	0.09	0.10	0.08	0.07	0.06	0.61	0.08	0.28	0.07
Other business services	0.01	0.00	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.01
Government administration	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Defence	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Education	0.04	0.00	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Health services	0.00	0.00	0.06	0.07	0.07	0.07	0.07	0.07	0.08	0.07	0.08	0.08
Community services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Motion picture, radio and television services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Libraries, museums and the arts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.01
Sport, gambling and recreational services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Personal services	0.07	0.00	0.01	0.01	0.01	0.02	0.02	0.02	0.01	0.00	0.01	0.01
Other services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.2(g) Ratio of imports to supply – 2009 (continued)

	Gas supply	Water supply, sewerage and drainage services	Residential building	Other con-struction	Con-struction trade services	Whole-sale trade	Wholesale mechanical repairs	Other wholesale repairs	Retail trade	Retail mechanical repairs	Other retail repairs	Accomm-odation, cafes and rest-aurants
Sheep	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef cattle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy cattle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other agriculture	0.00	0.08	0.65	0.43	0.05	0.09	0.00	0.14	0.10	0.10	0.10	0.09
Services to agriculture, hunting and trapping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forestry and logging	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.06
Commercial fishing	0.00	0.00	0.90	0.90	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.04
Coal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oil and gas	0.00	0.00	0.00	0.00	0.00	0.54	0.05	0.02	0.06	0.05	0.05	0.06
Iron ores	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Non-ferrous metal ores	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00
Other mining	0.00	0.36	0.14	0.05	0.09	0.00	0.00	0.00	0.87	0.00	0.00	0.30
Services to mining	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meat and meat products	0.05	0.05	0.08	0.05	0.10	0.06	0.00	0.00	0.04	0.01	0.01	0.04
Dairy products	0.01	0.17	0.09	0.09	0.06	0.19	0.15	0.13	0.10	0.16	0.16	0.09
Fruit and vegetable products	0.03	0.04	0.03	0.05	0.02	0.37	0.03	0.05	0.29	0.01	0.02	0.32
Oils and fats	0.21	0.19	0.02	0.04	0.04	0.02	0.07	0.00	0.51	0.06	0.01	0.20
Flour mill products and cereal foods	0.00	0.01	0.00	0.01	0.01	0.02	0.00	0.00	0.08	0.00	0.00	0.18
Bakery products	0.23	0.23	0.00	0.00	0.00	0.20	0.01	0.01	0.10	0.00	0.01	0.14
Confectionery	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.33	0.00	0.00	0.34
Other food products	0.04	0.10	0.22	0.26	0.15	0.32	0.00	0.01	0.34	0.00	0.00	0.37
Soft drinks, cordials and syrups	0.07	0.09	0.06	0.07	0.00	0.01	0.01	0.00	0.07	0.00	0.00	0.05
Beer and malt	0.00	0.09	0.07	0.06	0.07	0.11	0.00	0.08	0.11	0.09	0.11	0.12
Wine, spirits and tobacco products (a)	0.11	0.18	0.14	0.13	0.13	0.26	0.01	0.15	0.24	0.16	0.09	0.37
Textile fibres, yarns and woven fabrics	0.80	0.48	0.75	0.73	0.41	0.14	0.65	0.36	0.42	0.10	0.83	0.88
Textile products	0.90	0.28	0.25	0.45	0.41	0.80	0.90	0.64	0.78	0.90	0.58	0.90
Knitting mill products	0.18	0.02	0.34	0.33	0.19	0.34	0.00	0.00	0.35	0.22	0.00	0.19
Clothing	0.31	0.29	0.41	0.45	0.20	0.65	0.00	0.33	0.51	0.03	0.47	0.69
Footwear	0.30	0.56	0.62	0.23	0.20	0.72	0.00	0.82	0.56	0.47	0.84	0.51
Leather and leather products	0.90	0.90	0.79	0.70	0.67	0.86	0.01	0.00	0.54	0.00	0.01	0.90
Sawmill products	0.01	0.68	0.17	0.15	0.17	0.15	0.00	0.05	0.11	0.00	0.02	0.23
Other wood products	0.11	0.05	0.06	0.10	0.08	0.15	0.00	0.01	0.36	0.00	0.01	0.14
Pulp, paper and paperboard	0.02	0.01	0.34	0.33	0.35	0.79	0.01	0.00	0.61	0.11	0.01	0.13
Paper containers and products	0.19	0.21	0.16	0.22	0.26	0.15	0.22	0.11	0.14	0.21	0.09	0.31
Printing and services to printing	0.12	0.07	0.08	0.08	0.05	0.07	0.04	0.00	0.09	0.01	0.05	0.05

Table A.2(g) Ratio of imports to supply – 2009 (continued)

	Gas supply	Water supply, sewerage and drainage services	Residential building	Other con-struction	Con-struction trade services	Whole-sale trade	Wholesale mechanical repairs	Other wholesale repairs	Retail trade	Retail mechanical repairs	Other retail repairs	Accomm-odation, cafes and rest-aurants
Publishing, recorded media, etc.	0.03	0.04	0.05	0.05	0.02	0.00	0.03	0.03	0.01	0.03	0.04	0.01
Petroleum and coal products	0.25	0.50	0.45	0.54	0.53	0.35	0.50	0.45	0.37	0.48	0.46	0.30
Basic chemicals	0.82	0.79	0.38	0.51	0.56	0.52	0.90	0.65	0.63	0.59	0.90	0.30
Paints	0.01	0.26	0.26	0.46	0.36	0.58	0.25	0.26	0.65	0.24	0.24	0.21
Medicinal and pharmaceutical products, pesticides	0.78	0.77	0.11	0.45	0.52	0.59	0.41	0.15	0.62	0.37	0.46	0.38
Soap and detergents	0.25	0.27	0.37	0.24	0.16	0.24	0.29	0.25	0.41	0.27	0.26	0.36
Cosmetics and toiletry preparations	0.16	0.15	0.01	0.07	0.08	0.19	0.08	0.00	0.10	0.00	0.09	0.73
Other chemical products	0.49	0.33	0.16	0.31	0.26	0.52	0.42	0.22	0.41	0.21	0.38	0.09
Rubber products	0.90	0.56	0.26	0.83	0.78	0.75	0.04	0.67	0.90	0.08	0.68	0.79
Plastic products	0.23	0.19	0.34	0.27	0.32	0.47	0.17	0.26	0.45	0.07	0.57	0.24
Glass and glass products	0.36	0.23	0.04	0.14	0.13	0.13	0.20	0.08	0.17	0.20	0.05	0.13
Ceramic products	0.00	0.00	0.42	0.64	0.43	0.38	0.01	0.01	0.40	0.00	0.02	0.90
Cement, lime and concrete slurry	0.13	0.08	0.01	0.00	0.01	0.02	0.07	0.07	0.03	0.05	0.05	0.02
Plaster and other concrete products	0.03	0.02	0.03	0.08	0.05	0.03	0.04	0.11	0.04	0.02	0.06	0.05
Other non-metallic mineral products	0.11	0.24	0.32	0.44	0.39	0.32	0.04	0.07	0.14	0.03	0.04	0.09
Iron and steel	0.39	0.41	0.20	0.34	0.32	0.40	0.13	0.28	0.50	0.03	0.43	0.09
Basic non-ferrous metal and products	0.50	0.46	0.10	0.24	0.20	0.23	0.04	0.31	0.42	0.06	0.50	0.18
Structural metal products	0.00	0.00	0.05	0.07	0.05	0.05	0.01	0.11	0.01	0.01	0.08	0.01
Sheet metal products	0.30	0.15	0.19	0.10	0.12	0.05	0.02	0.09	0.22	0.01	0.01	0.90
Fabricated metal products	0.36	0.60	0.49	0.39	0.44	0.40	0.28	0.50	0.41	0.22	0.57	0.54
Motor vehicles and parts, other transport equipment	0.03	0.15	0.48	0.46	0.45	0.42	0.45	0.25	0.53	0.50	0.22	0.23
Ships and boats	0.00	0.01	0.20	0.20	0.21	0.00	0.00	0.04	0.00	0.03	0.01	0.12
Railway equipment	0.00	0.17	0.00	0.00	0.00	0.01	0.04	0.23	0.02	0.04	0.25	0.24
Aircraft	0.00	0.01	0.42	0.41	0.44	0.00	0.00	0.01	0.00	0.00	0.01	0.48
Photographic and scientific equipment	0.03	0.70	0.20	0.80	0.10	0.77	0.39	0.79	0.37	0.51	0.77	0.25
Electronic equipment	0.56	0.75	0.57	0.68	0.69	0.81	0.45	0.85	0.48	0.42	0.89	0.74
Household appliances	0.01	0.46	0.32	0.62	0.45	0.35	0.53	0.50	0.32	0.09	0.08	0.46
Other electrical equipment	0.51	0.61	0.47	0.45	0.41	0.55	0.50	0.52	0.46	0.37	0.67	0.48
Agricultural, mining, etc. machinery	0.22	0.43	0.10	0.07	0.13	0.42	0.43	0.42	0.09	0.27	0.49	0.15
Other machinery and equipment	0.29	0.79	0.11	0.29	0.22	0.76	0.88	0.86	0.26	0.65	0.83	0.54
Prefabricated buildings	0.02	0.00	0.02	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Furniture	0.00	0.03	0.07	0.30	0.10	0.55	0.01	0.00	0.32	0.00	0.01	0.45
Other manufacturing	0.01	0.41	0.05	0.06	0.07	0.67	0.07	0.24	0.43	0.24	0.01	0.41
Electricity supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gas supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water supply, sewerage and drainage services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.2(g) Ratio of imports to supply – 2009 (continued)

	Gas supply	Water supply, sewerage and drainage services	Residential building	Other con-struction	Con-struction trade services	Whole-sale trade	Wholesale mechanical repairs	Other wholesale repairs	Retail trade	Retail mechanical repairs	Other retail repairs	Accomm-odation, cafes and rest-aurants
Residential building	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Construction trade services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wholesale trade	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
Wholesale mechanical repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other wholesale repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Retail trade	0.01	0.02	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Retail mechanical repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other retail repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accommodation, cafes and restaurants	0.22	0.16	0.19	0.14	0.16	0.22	0.04	0.13	0.13	0.09	0.08	0.06
Road transport	0.01	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.00	0.00	0.01
Rail, pipeline and other transport	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water transport	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.04
Air and space transport	0.36	0.44	0.12	0.32	0.18	0.10	0.24	0.06	0.41	0.13	0.36	0.28
Services to transport, storage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
Communication services	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.02
Finance	0.00	0.01	0.04	0.04	0.01	0.02	0.05	0.03	0.03	0.05	0.07	0.02
Ownership of dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other property services	0.03	0.00	0.00	0.01	0.01	0.00	0.03	0.03	0.01	0.03	0.03	0.01
Scientific research, technical and computer services	0.06	0.08	0.06	0.02	0.03	0.05	0.14	0.14	0.04	0.14	0.14	0.05
Legal, accounting, marketing and business management services	0.08	0.03	0.03	0.02	0.03	0.04	0.30	0.32	0.02	0.02	0.04	0.02
Other business services	0.02	0.03	0.00	0.01	0.00	0.02	0.06	0.06	0.01	0.06	0.06	0.03
Government administration	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Defence	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Education	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Health services	0.00	0.08	0.00	0.07	0.00	0.07	0.08	0.08	0.08	0.07	0.08	0.05
Community services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Motion picture, radio and television services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Libraries, museums and the arts	0.04	0.04	0.01	0.04	0.01	0.01	0.00	0.00	0.01	0.04	0.00	0.01
Sport, gambling and recreational services	0.00	0.00	0.02	0.02	0.02	0.01	0.00	0.00	0.01	0.02	0.00	0.04
Personal services	0.00	0.01	0.04	0.05	0.06	0.01	0.01	0.01	0.01	0.02	0.00	0.01
Other services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.2(h) Ratio of imports to supply – 2009 (continued)

	Road transport	Rail, pipeline and other transport	Water transport	Air and space transport	Services to transport, storage	Commun -ication services	Finance	Ownership of dwellings	Other property services	Scientific research, technical & computer services	Legal, accounting, marketing & business management services	Other business services
Sheep	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef cattle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy cattle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other agriculture	0.13	0.09	0.00	0.00	0.05	0.20	0.10	0.00	0.20	0.06	0.23	0.03
Services to agriculture, hunting and trapping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
Forestry and logging	0.04	0.00	0.00	0.00	0.04	0.03	0.00	0.00	0.00	0.01	0.04	0.01
Commercial fishing	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.14	0.06	0.14
Coal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oil and gas	0.10	0.03	0.00	0.03	0.04	0.07	0.06	0.05	0.02	0.07	0.05	0.05
Iron ores	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Non-ferrous metal ores	0.02	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other mining	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.27	0.56	0.77	0.62
Services to mining	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meat and meat products	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Dairy products	0.10	0.15	0.01	0.03	0.06	0.13	0.21	0.00	0.13	0.12	0.16	0.13
Fruit and vegetable products	0.01	0.00	0.01	0.01	0.01	0.38	0.01	0.01	0.40	0.26	0.35	0.36
Oils and fats	0.01	0.02	0.01	0.00	0.03	0.02	0.01	0.12	0.01	0.01	0.01	0.02
Flour mill products and cereal foods	0.00	0.01	0.00	0.01	0.01	0.01	0.03	0.00	0.01	0.13	0.25	0.21
Bakery products	0.07	0.20	0.26	0.09	0.12	0.21	0.20	0.00	0.12	0.25	0.26	0.24
Confectionery	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01
Other food products	0.13	0.00	0.00	0.24	0.21	0.15	0.17	0.18	0.12	0.22	0.26	0.27
Soft drinks, cordials and syrups	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.01
Beer and malt	0.09	0.06	0.00	0.11	0.09	0.08	0.11	0.00	0.03	0.10	0.10	0.08
Wine, spirits and tobacco products (a)	0.15	0.06	0.00	0.24	0.18	0.22	0.25	0.01	0.14	0.32	0.37	0.26
Textile fibres, yarns and woven fabrics	0.24	0.64	0.83	0.64	0.36	0.15	0.69	0.33	0.38	0.67	0.43	0.60
Textile products	0.85	0.90	0.90	0.88	0.63	0.83	0.56	0.08	0.57	0.87	0.47	0.84
Knitting mill products	0.02	0.02	0.14	0.06	0.06	0.36	0.03	0.00	0.14	0.46	0.51	0.43
Clothing	0.32	0.64	0.29	0.36	0.73	0.60	0.54	0.28	0.51	0.59	0.54	0.65
Footwear	0.51	0.71	0.32	0.43	0.56	0.77	0.42	0.56	0.41	0.69	0.70	0.71
Leather and leather products	0.63	0.90	0.90	0.90	0.01	0.90	0.90	0.01	0.01	0.87	0.90	0.90
Sawmill products	0.18	0.44	0.78	0.45	0.08	0.20	0.00	0.19	0.09	0.35	0.36	0.26
Other wood products	0.12	0.28	0.13	0.05	0.13	0.07	0.01	0.07	0.14	0.27	0.28	0.22
Pulp, paper and paperboard	0.36	0.46	0.38	0.42	0.48	0.08	0.15	0.06	0.14	0.21	0.12	0.21
Paper containers and products	0.09	0.17	0.11	0.09	0.21	0.24	0.36	0.89	0.33	0.40	0.59	0.50
Printing and services to printing	0.09	0.01	0.01	0.07	0.04	0.04	0.09	0.01	0.03	0.06	0.03	0.04

Table A.2(h) Ratio of imports to supply – 2009 (continued)

	Road transport	Rail, pipeline and other transport	Water transport	Air and space transport	Services to transport, storage	Commun -ication services	Finance	Ownership of dwellings	Other property services	Scientific research, technical & computer services	Legal, accounting, marketing & business management services	Other business services
Publishing, recorded media, etc.	0.01	0.03	0.00	0.00	0.02	0.04	0.01	0.00	0.01	0.02	0.01	0.01
Petroleum and coal products	0.50	0.51	0.53	0.30	0.40	0.33	0.33	0.18	0.28	0.42	0.36	0.35
Basic chemicals	0.33	0.59	0.90	0.73	0.38	0.35	0.67	0.65	0.30	0.45	0.56	0.50
Paints	0.03	0.17	0.78	0.00	0.05	0.04	0.01	0.32	0.16	0.21	0.25	0.20
Medicinal and pharmaceutical products, pesticides	0.20	0.38	0.00	0.18	0.31	0.31	0.00	0.71	0.15	0.31	0.39	0.33
Soap and detergents	0.30	0.50	0.21	0.40	0.33	0.37	0.23	0.11	0.23	0.30	0.29	0.30
Cosmetics and toiletry preparations	0.05	0.02	0.03	0.01	0.03	0.03	0.00	0.01	0.03	0.31	0.13	0.29
Other chemical products	0.06	0.22	0.38	0.18	0.13	0.11	0.30	0.20	0.65	0.70	0.79	0.70
Rubber products	0.90	0.57	0.85	0.58	0.90	0.90	0.71	0.09	0.58	0.81	0.74	0.86
Plastic products	0.18	0.22	0.28	0.31	0.23	0.40	0.47	0.28	0.36	0.25	0.32	0.32
Glass and glass products	0.18	0.00	0.00	0.00	0.17	0.05	0.17	0.16	0.08	0.12	0.14	0.13
Ceramic products	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.90	0.20	0.27	0.44	0.26
Cement, lime and concrete slurry	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.09	0.04	0.09	0.16	0.08
Plaster and other concrete products	0.00	0.01	0.04	0.01	0.00	0.01	0.00	0.14	0.02	0.06	0.05	0.04
Other non-metallic mineral products	0.02	0.02	0.00	0.00	0.00	0.02	0.00	0.55	0.07	0.15	0.10	0.14
Iron and steel	0.08	0.10	0.06	0.08	0.14	0.20	0.01	0.41	0.30	0.27	0.52	0.52
Basic non-ferrous metal and products	0.05	0.28	0.00	0.00	0.04	0.25	0.00	0.29	0.12	0.34	0.28	0.21
Structural metal products	0.03	0.16	0.06	0.01	0.03	0.02	0.01	0.04	0.03	0.03	0.05	0.01
Sheet metal products	0.02	0.04	0.03	0.02	0.04	0.23	0.01	0.25	0.10	0.67	0.80	0.55
Fabricated metal products	0.45	0.08	0.90	0.13	0.76	0.42	0.32	0.48	0.25	0.53	0.48	0.45
Motor vehicles and parts, other transport equipment	0.60	0.06	0.05	0.05	0.50	0.50	0.07	0.03	0.05	0.33	0.35	0.31
Ships and boats	0.02	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Railway equipment	0.46	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00
Aircraft	0.00	0.00	0.01	0.02	0.04	0.01	0.00	0.00	0.12	0.42	0.44	0.49
Photographic and scientific equipment	0.13	0.12	0.00	0.00	0.32	0.61	0.26	0.00	0.17	0.76	0.63	0.63
Electronic equipment	0.70	0.39	0.38	0.10	0.63	0.84	0.78	0.00	0.70	0.86	0.89	0.87
Household appliances	0.02	0.54	0.00	0.00	0.00	0.15	0.19	0.32	0.04	0.37	0.16	0.35
Other electrical equipment	0.34	0.47	0.59	0.15	0.21	0.51	0.48	0.56	0.22	0.59	0.47	0.46
Agricultural, mining, etc. machinery	0.16	0.34	0.13	0.00	0.16	0.17	0.13	0.06	0.05	0.33	0.34	0.30
Other machinery and equipment	0.35	0.58	0.33	0.00	0.11	0.65	0.52	0.27	0.15	0.84	0.76	0.71
Prefabricated buildings	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Furniture	0.22	0.01	0.08	0.00	0.21	0.22	0.04	0.00	0.42	0.81	0.19	0.08
Other manufacturing	0.36	0.55	0.03	0.22	0.57	0.50	0.34	0.03	0.14	0.32	0.42	0.30
Electricity supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gas supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water supply, sewerage and drainage services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.2(h) Ratio of imports to supply – 2009 (continued)

	Road transport	Rail, pipeline and other transport	Water transport	Air and space transport	Services to transport, storage	Commun -ication services	Finance	Ownership of dwellings	Other property services	Scientific research, technical & computer services	Legal, accounting, marketing & business management services	Other business services
Residential building	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
Other construction	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Construction trade services	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.01	0.01
Wholesale trade	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Wholesale mechanical repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other wholesale repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Retail trade	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Retail mechanical repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other retail repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accommodation, cafes and restaurants	0.16	0.04	0.21	0.39	0.14	0.08	0.10	0.00	0.38	0.07	0.06	0.06
Road transport	0.00	0.08	0.02	0.00	0.03	0.02	0.17	0.00	0.03	0.04	0.05	0.05
Rail, pipeline and other transport	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water transport	0.00	0.74	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00
Air and space transport	0.39	0.09	0.44	0.03	0.38	0.00	0.43	0.00	0.25	0.41	0.43	0.43
Services to transport, storage	0.00	0.01	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00
Communication services	0.01	0.02	0.04	0.06	0.05	0.03	0.02	0.01	0.01	0.02	0.01	0.02
Finance	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.02	0.01	0.01
Ownership of dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other property services	0.01	0.00	0.01	0.00	0.01	0.01	0.02	0.00	0.00	0.03	0.01	0.00
Scientific research, technical and computer services	0.05	0.04	0.02	0.02	0.06	0.05	0.04	0.01	0.02	0.13	0.02	0.04
Legal, accounting, marketing and business management services	0.02	0.13	0.08	0.05	0.03	0.06	0.03	0.02	0.02	0.04	0.05	0.09
Other business services	0.02	0.01	0.01	0.02	0.04	0.05	0.00	0.00	0.03	0.04	0.05	0.06
Government administration	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Defence	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Education	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.00	0.04	0.04	0.04	0.04
Health services	0.00	0.06	0.08	0.00	0.07	0.07	0.07	0.00	0.07	0.06	0.05	0.07
Community services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Motion picture, radio and television services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.18	0.33
Libraries, museums and the arts	0.00	0.01	0.01	0.00	0.00	0.00	0.02	0.00	0.01	0.01	0.01	0.01
Sport, gambling and recreational services	0.04	0.00	0.00	0.05	0.04	0.04	0.01	0.00	0.01	0.01	0.01	0.01
Personal services	0.01	0.01	0.00	0.00	0.08	0.01	0.04	0.90	0.02	0.01	0.01	0.01
Other services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.2(i) Ratio of imports to supply – 2009 (continued)

	Government administration	Defence	Education	Health services	Community services	Motion picture, radio and television services	Libraries, museums and the arts	Sport, gambling and recreational services	Personal services	Other services	Households	Current government expenditure
Sheep	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef cattle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy cattle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other agriculture	0.04	0.11	0.07	0.10	0.00	0.10	0.09	0.12	0.05	0.02	0.07	0.00
Services to agriculture, hunting and trapping	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
Forestry and logging	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.04	0.04	0.00	0.09	0.00
Commercial fishing	0.00	0.00	0.00	0.09	0.13	0.01	0.01	0.01	0.14	0.14	0.07	0.00
Coal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oil and gas	0.05	0.06	0.06	0.06	0.06	0.06	0.07	0.06	0.06	0.09	0.10	0.00
Iron ores	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Non-ferrous metal ores	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other mining	0.30	0.43	0.00	0.90	0.66	0.30	0.43	0.11	0.57	0.27	0.00	0.00
Services to mining	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Meat and meat products	0.00	0.02	0.04	0.05	0.02	0.02	0.02	0.02	0.03	0.02	0.05	0.36
Dairy products	0.00	0.07	0.08	0.14	0.12	0.09	0.10	0.08	0.10	0.12	0.10	0.00
Fruit and vegetable products	0.01	0.50	0.39	0.23	0.40	0.03	0.05	0.04	0.52	0.29	0.37	0.00
Oils and fats	0.01	0.02	0.36	0.20	0.17	0.07	0.04	0.03	0.18	0.06	0.35	0.40
Flour mill products and cereal foods	0.18	0.20	0.22	0.21	0.23	0.26	0.25	0.09	0.25	0.16	0.13	0.00
Bakery products	0.26	0.21	0.23	0.28	0.28	0.14	0.16	0.10	0.12	0.17	0.12	0.00
Confectionery	0.00	0.72	0.01	0.00	0.01	0.01	0.02	0.01	0.26	0.22	0.21	0.00
Other food products	0.02	0.09	0.17	0.09	0.15	0.16	0.28	0.13	0.11	0.13	0.36	0.26
Soft drinks, cordials and syrups	0.01	0.31	0.02	0.06	0.07	0.17	0.11	0.23	0.06	0.10	0.07	0.00
Beer and malt	0.10	0.11	0.11	0.03	0.04	0.08	0.12	0.10	0.08	0.10	0.15	0.00
Wine, spirits and tobacco products (a)	0.23	0.19	0.20	0.67	0.22	0.23	0.16	0.27	0.15	0.23	0.42	0.00
Textile fibres, yarns and woven fabrics	0.47	0.67	0.34	0.75	0.72	0.66	0.51	0.44	0.60	0.58	0.78	0.00
Textile products	0.46	0.87	0.50	0.90	0.84	0.85	0.88	0.55	0.90	0.90	0.57	0.00
Knitting mill products	0.03	0.78	0.43	0.56	0.45	0.81	0.77	0.80	0.40	0.19	0.63	0.00
Clothing	0.07	0.76	0.66	0.56	0.70	0.59	0.64	0.46	0.60	0.69	0.80	0.00
Footwear	0.10	0.51	0.66	0.69	0.77	0.82	0.84	0.33	0.63	0.75	0.85	0.00
Leather and leather products	0.90	0.90	0.90	0.76	0.66	0.21	0.90	0.35	0.90	0.81	0.90	0.00
Sawmill products	0.28	0.48	0.41	0.40	0.73	0.66	0.52	0.35	0.55	0.46	0.01	0.00
Other wood products	0.12	0.20	0.08	0.36	0.56	0.13	0.12	0.15	0.35	0.33	0.19	0.00
Pulp, paper and paperboard	0.28	0.37	0.12	0.07	0.29	0.12	0.10	0.07	0.11	0.13	0.53	0.00
Paper containers and products	0.30	0.33	0.26	0.13	0.09	0.32	0.24	0.35	0.19	0.26	0.30	0.00
Printing and services to printing	0.05	0.06	0.10	0.07	0.04	0.04	0.03	0.04	0.03	0.05	0.13	0.00
Publishing, recorded media, etc.	0.03	0.03	0.15	0.03	0.02	0.17	0.14	0.05	0.01	0.03	0.18	0.00

Table A.2(i) Ratio of imports to supply – 2009 (continued)

	Government administration	Defence	Education	Health services	Community services	Motion picture, radio and television services	Libraries, museums and the arts	Sport, gambling and recreational services	Personal services	Other services	Households	Current government expenditure
Petroleum and coal products	0.36	0.47	0.29	0.29	0.41	0.25	0.26	0.25	0.39	0.39	0.27	0.00
Basic chemicals	0.31	0.39	0.67	0.10	0.60	0.61	0.71	0.50	0.52	0.57	0.25	0.23
Paints	0.10	0.21	0.04	0.10	0.08	0.22	0.25	0.21	0.24	0.17	0.06	0.00
Medicinal and pharmaceutical products, pesticides	0.05	0.39	0.67	0.73	0.49	0.34	0.34	0.77	0.39	0.42	0.73	0.79
Soap and detergents	0.25	0.36	0.33	0.39	0.35	0.24	0.29	0.20	0.31	0.32	0.35	0.18
Cosmetics and toiletry preparations	0.03	0.07	0.08	0.43	0.88	0.81	0.14	0.65	0.89	0.73	0.82	0.29
Other chemical products	0.44	0.34	0.39	0.12	0.14	0.28	0.39	0.13	0.66	0.12	0.25	0.28
Rubber products	0.78	0.78	0.78	0.79	0.90	0.90	0.90	0.86	0.70	0.90	0.83	0.33
Plastic products	0.30	0.21	0.42	0.31	0.41	0.39	0.36	0.28	0.38	0.30	0.31	0.28
Glass and glass products	0.11	0.22	0.10	0.09	0.10	0.05	0.06	0.02	0.21	0.18	0.32	0.00
Ceramic products	0.18	0.66	0.50	0.90	0.90	0.31	0.51	0.30	0.75	0.68	0.77	0.00
Cement, lime and concrete slurry	0.02	0.03	0.02	0.01	0.07	0.01	0.02	0.01	0.14	0.06	0.02	0.00
Plaster and other concrete products	0.05	0.06	0.06	0.04	0.04	0.08	0.08	0.05	0.03	0.02	0.01	0.00
Other non-metallic mineral products	0.09	0.16	0.05	0.11	0.23	0.09	0.11	0.07	0.75	0.27	0.02	0.00
Iron and steel	0.46	0.52	0.11	0.41	0.64	0.57	0.43	0.34	0.63	0.48	0.04	0.00
Basic non-ferrous metal and products	0.22	0.34	0.22	0.18	0.30	0.56	0.39	0.59	0.57	0.34	0.20	0.00
Structural metal products	0.00	0.12	0.14	0.01	0.03	0.01	0.10	0.00	0.22	0.02	0.01	0.00
Sheet metal products	0.30	0.45	0.21	0.53	0.41	0.61	0.78	0.57	0.31	0.66	0.18	0.00
Fabricated metal products	0.44	0.78	0.35	0.45	0.55	0.56	0.50	0.51	0.39	0.66	0.58	0.00
Motor vehicles and parts, other transport equipment	0.20	0.32	0.40	0.13	0.29	0.30	0.26	0.31	0.33	0.40	0.48	0.00
Ships and boats	0.04	0.15	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.20	0.00
Railway equipment	0.00	0.07	0.15	0.29	0.20	0.00	0.00	0.00	0.05	0.03	0.00	0.00
Aircraft	0.16	0.34	0.01	0.28	0.52	0.51	0.38	0.50	0.01	0.52	0.13	0.00
Photographic and scientific equipment	0.67	0.72	0.71	0.74	0.62	0.65	0.66	0.71	0.63	0.68	0.65	0.24
Electronic equipment	0.89	0.85	0.90	0.65	0.82	0.90	0.90	0.90	0.83	0.81	0.87	0.00
Household appliances	0.16	0.46	0.15	0.48	0.49	0.59	0.61	0.63	0.42	0.55	0.50	0.00
Other electrical equipment	0.54	0.48	0.46	0.57	0.59	0.62	0.63	0.60	0.63	0.61	0.53	0.00
Agricultural, mining, etc. machinery	0.19	0.30	0.30	0.21	0.37	0.37	0.38	0.26	0.35	0.36	0.31	0.00
Other machinery and equipment	0.42	0.62	0.85	0.64	0.78	0.63	0.62	0.52	0.72	0.69	0.46	0.00
Prefabricated buildings	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Furniture	0.42	0.45	0.33	0.42	0.47	0.10	0.16	0.14	0.39	0.64	0.37	0.00
Other manufacturing	0.21	0.55	0.69	0.61	0.52	0.44	0.63	0.51	0.25	0.19	0.73	0.00
Electricity supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gas supply	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water supply, sewerage and drainage services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Residential building	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other construction	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.2(i) Ratio of imports to supply – 2009 (continued)

	Govern-ment admin-istration	Defence	Education	Health services	Community services	Motion picture, radio and television services	Libraries, museums and the arts	Sport, gambling and recreational services	Personal services	Other services	House-holds	Current govern-ment expend-iture
Construction trade services	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00
Wholesale trade	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.13
Wholesale mechanical repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other wholesale repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Retail trade	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Retail mechanical repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other retail repairs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Accommodation, cafes and restaurants	0.12	0.20	0.15	0.16	0.17	0.08	0.09	0.08	0.18	0.17	0.08	0.00
Road transport	0.17	0.02	0.05	0.07	0.01	0.03	0.02	0.02	0.01	0.01	0.09	0.00
Rail, pipeline and other transport	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00
Water transport	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00
Air and space transport	0.43	0.27	0.38	0.27	0.32	0.33	0.35	0.38	0.26	0.27	0.22	0.00
Services to transport, storage	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Communication services	0.02	0.03	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.00
Finance	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.01	0.02	0.01	0.00	0.00
Ownership of dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other property services	0.03	0.02	0.02	0.03	0.03	0.01	0.01	0.01	0.03	0.03	0.04	0.00
Scientific research, technical and computer services	0.05	0.05	0.06	0.08	0.06	0.07	0.06	0.07	0.05	0.06	0.01	0.00
Legal, accounting, marketing and business management services	0.02	0.07	0.06	0.02	0.05	0.06	0.06	0.02	0.03	0.03	0.01	0.01
Other business services	0.04	0.04	0.03	0.02	0.02	0.04	0.02	0.02	0.06	0.02	0.04	0.00
Government administration	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Defence	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Education	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.00
Health services	0.07	0.08	0.07	0.06	0.08	0.10	0.03	0.11	0.08	0.11	0.02	0.00
Community services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Motion picture, radio and television services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Libraries, museums and the arts	0.01	0.01	0.02	0.01	0.02	0.01	0.60	0.01	0.01	0.01	0.02	0.00
Sport, gambling and recreational services	0.01	0.02	0.00	0.04	0.02	0.01	0.02	0.01	0.01	0.01	0.03	0.00
Personal services	0.02	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.01	0.02	0.00
Other services	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.2(j) Ratio of imports to supply – 2009 (continued)

	Construction investment	equipment investment	Inventories
Sheep	0.00	0.00	0.00
Grains	0.00	0.00	0.00
Beef cattle	0.00	0.00	0.00
Dairy cattle	0.00	0.00	0.00
Pigs	0.00	0.00	0.00
Poultry	0.00	0.00	0.00
Other agriculture	0.00	0.00	0.00
Services to agriculture, hunting and trapping	0.00	0.00	0.00
Forestry and logging	0.00	0.00	0.01
Commercial fishing	0.00	0.00	0.00
Coal	0.00	0.00	0.00
Oil and gas	0.00	0.00	0.00
Iron ores	0.00	0.00	0.00
Non-ferrous metal ores	0.00	0.00	0.00
Other mining	0.00	0.00	0.00
Services to mining	0.00	0.01	0.00
Meat and meat products	0.00	0.00	0.00
Dairy products	0.00	0.00	0.00
Fruit and vegetable products	0.00	0.04	0.00
Oils and fats	0.00	0.00	0.00
Flour mill products and cereal foods	0.00	0.00	0.00
Bakery products	0.00	0.01	0.51
Confectionery	0.00	0.00	0.00
Other food products	0.00	0.01	0.14
Soft drinks, cordials and syrups	0.00	0.00	0.07
Beer and malt	0.00	0.00	0.12
Wine, spirits and tobacco products (a)	0.00	0.00	0.00
Textile fibres, yarns and woven fabrics	0.00	0.00	0.04
Textile products	0.00	0.26	0.00
Knitting mill products	0.00	0.00	0.00
Clothing	0.00	0.02	0.83
Footwear	0.00	0.01	0.75
Leather and leather products	0.00	0.00	0.00
Sawmill products	0.00	0.04	0.00
Other wood products	0.00	0.10	0.00
Pulp, paper and paperboard	0.00	0.00	0.00
Paper containers and products	0.00	0.10	0.00
Printing and services to printing	0.00	0.01	0.13
Publishing, recorded media, etc.	0.00	0.42	0.00
Petroleum and coal products	0.00	0.29	0.00

Table A.2(j) Ratio of imports to supply – 2009 (continued)

	Construction investment	equipment investment	Inventories
Basic chemicals	0.00	0.01	0.00
Paints	0.00	0.00	0.00
Medicinal and pharmaceutical products, pesticides	0.00	0.01	0.89
Soap and detergents	0.00	0.00	0.68
Cosmetics and toiletry preparations	0.00	0.00	0.77
Other chemical products	0.00	0.03	0.29
Rubber products	0.00	0.44	0.00
Plastic products	0.00	0.30	0.00
Glass and glass products	0.00	0.12	0.00
Ceramic products	0.00	0.00	0.00
Cement, lime and concrete slurry	0.00	0.01	0.00
Plaster and other concrete products	0.00	0.01	0.00
Other non-metallic mineral products	0.00	0.04	0.00
Iron and steel	0.00	0.04	0.42
Basic non-ferrous metal and products	0.00	0.01	0.00
Structural metal products	0.00	0.02	0.00
Sheet metal products	0.00	0.10	0.00
Fabricated metal products	0.00	0.19	0.00
Motor vehicles and parts, other transport equipment	0.00	0.72	0.61
Ships and boats	0.00	0.17	0.13
Railway equipment	0.00	0.48	0.62
Aircraft	0.00	0.54	0.54
Photographic and scientific equipment	0.00	0.73	0.00
Electronic equipment	0.00	0.89	0.90
Household appliances	0.00	0.44	0.00
Other electrical equipment	0.00	0.63	0.53
Agricultural, mining, etc. machinery	0.00	0.67	0.00
Other machinery and equipment	0.00	0.68	0.00
Prefabricated buildings	0.00	0.02	-0.04
Furniture	0.00	0.39	-0.01
Other manufacturing	0.00	0.10	0.00
Electricity supply	0.00	0.00	0.00
Gas supply	0.00	0.00	0.00
Water supply, sewerage and drainage services	0.00	0.00	0.00
Residential building	0.00	0.00	0.00
Other construction	0.00	0.00	0.00
Construction trade services	0.00	0.00	0.00
Wholesale trade	0.00	0.00	0.00

Table A.2(j) Ratio of imports to supply – 2009 (continued)

	Construction investment	equipment investment	Inventories
Wholesale mechanical repairs	0.00	0.00	0.00
Other wholesale repairs	0.00	0.00	0.00
Retail trade	0.00	0.00	0.00
Retail mechanical repairs	0.00	0.00	0.00
Other retail repairs	0.00	0.00	0.00
Accommodation, cafes and restaurants	0.00	0.00	0.00
Road transport	0.00	0.00	0.00
Rail, pipeline and other transport	0.00	0.00	0.00
Water transport	0.00	0.15	0.00
Air and space transport	0.00	0.27	0.00
Services to transport, storage	0.00	0.00	0.00
Communication services	0.00	0.00	0.00
Finance	0.00	0.00	0.00
Ownership of dwellings	0.00	0.00	0.00
Other property services	0.00	0.00	0.00
Scientific research, technical and computer services	0.00	0.04	0.00
Legal, accounting, marketing and business management services	0.00	0.01	0.00
Other business services	0.00	0.00	0.00
Government administration	0.00	0.00	0.00
Defence	0.00	0.00	0.00
Education	0.00	0.00	0.00
Health services	0.00	0.00	0.00
Community services	0.00	0.00	0.00
Motion picture, radio and television services	0.00	0.00	0.00
Libraries, museums and the arts	0.00	0.01	0.00
Sport, gambling and recreational services	0.00	0.00	0.00
Personal services	0.00	0.00	0.00
Other services	0.00	0.00	0.00

Appendix B: The algebra of the input-output analysis

The analysis makes use of the input-output structure for 2008-09 that NIEIR has estimated by updating the 2005-06 ABS estimates of the National Input-Output Tables. The key coefficients underlying the model are derived from the tables in Appendix A.

The model consists of the following equations:

$$\boldsymbol{y = Ay - M^i y + M^c c + M^o f + ex} \quad (1)$$

Where:

$\boldsymbol{y}$ = 102 * 1 vector of industry outputs, in 2008-09 millions.

$\boldsymbol{A}$ = 102 * 102 matrix of input-output coefficients with indirect allocation of imports.

$\boldsymbol{M^i}$ = 102 * 102 matrix of import coefficients or the share of imports in inter-industry flows.

$\boldsymbol{M^c}$ = 102 * 102 diagonal matrix of one minus the import share in consumption expenditure by industry.

$\boldsymbol{c}$ = 102 * 1 vector of private consumption expenditures by industry, in 2008-09 millions.

$\boldsymbol{M^o}$ = 102 * 102 diagonal matrix of one minus the import share in other final demand by industry.

$\boldsymbol{f}$ = 102 * 1 matrix by other final demand by industry, in 2008-09 millions.

$\boldsymbol{ex}$ = 102 * 1 vector of exports by industry, in 2008-09 millions.

Industry gross domestic product is given by:

$$\boldsymbol{gp = G \,.\, y} \quad (2)$$

Where:

$\boldsymbol{gp}$ = 102 * 1 vector of gross product by industry, in 2008-09 $m.

$\boldsymbol{G}$ = 102 * 102 diagonal matrix of industry gross product/total output rates.

$$gdp = \boldsymbol{i' \,.\, gp} \quad (3)$$

Where:

$\boldsymbol{i}$ = 102^{x1} unity vector.

gdp = total GDP at factor cost, in 2008-09 $m.

Total employment is given by:

$$\boldsymbol{e = E \,.\, gd} \quad (4)$$

Where:

$\boldsymbol{e}$ = 102 * 1 vector of full time equivalent employment by industry.

$\boldsymbol{E}$ = 102 * 102 diagonal matrix of employment to gross product ratios by industry.

Net national product is given by:

$$\boldsymbol{np = N\, gp} \quad (5)$$

Where:

$\boldsymbol{np}$ = 102 *1 vector of net product by industry, in 2008-09 $m.

$\boldsymbol{N}$ = 102 * 102 diagonal matrix of net national product/gross product ratios by industry.

$$nnp = \boldsymbol{i}' \boldsymbol{.}\ \boldsymbol{np}$$

Where:

nnp = total net national product at factor cost, in 2008-09 $m.

Total household disposable income is given by:

$$hdi = \boldsymbol{i}' \boldsymbol{Dnp} + ohdi \qquad (6)$$

Where:

hdi = household disposable income, in 2008-09 $m.

$ohdi$ = other net household disposable income derived from accumulated wealth and income transfers.

$\boldsymbol{D}$ = 102 * 102 matrix of coefficients converting industry net product into household disposable income.

The D matrix coefficients are in combination of the industry:

(i) depreciation rate;

(ii) dividend rate; and

(iii) company direct tax rate,

(iv) share of public company surplus in gross operating surplus;

and the overall average tax rate.

$$c_i = \propto (hdi)^{ie_i} \qquad (7)$$

Where:

c_i = The i is the industry element in the $\boldsymbol{c}$ vector.

ie_i = Consumption income elasticity for industry i.

Indirect taxes are divided by applying the estimated 2008-09 indirect tax rate to the relevant cell of the input-output table where the table is reconstructed from the model estimates.

That is:

$$\boldsymbol{itr} = \boldsymbol{IT\ A\ \ Iy\ i} + \boldsymbol{IT^2 c} + \boldsymbol{IT^3 f} + \boldsymbol{IT^4 ex} + \boldsymbol{IT^5 gd} \qquad (8)$$

Where:

$\boldsymbol{itr}$ = 102 * 1 vector of indirect taxes paid by industry, 2008-09 $m.

$\boldsymbol{I}$ = 102 * 102 unitary matrix.

$\boldsymbol{IT}$ = 102 * 102 diagonal matrix of indirect tax rates on intermediate industry flows by industry.

$\boldsymbol{IT^2}$, $\boldsymbol{IT^3}$, $\boldsymbol{IT^4}$, $\boldsymbol{IT^5}$ are 102 * 102 diagonal matrices of indirect tax rates on consumption, other final demand, exports and gross product by industry.

The vectors $\boldsymbol{f}$, $\boldsymbol{ex}$ and $opdi$ are exogenous and only altered to obtain the various sensitivity studies given in the body of the text. The model produces the standard Type II multipliers.

In the main the sensitivity studies are derived by adjusting the $\boldsymbol{f}$ vector. The gross crowding out study is derived by adjusting $\boldsymbol{M^i}$, $\boldsymbol{M^c c}$, $\boldsymbol{M^o}$ and $\boldsymbol{ex}$ pro rata until equality is achieved with the mining production increase in terms of increasing imports and contracting exports. Mining exports in the export vector are left unchanged.

Appendix C: Assignment of LGAs to 33 regions

Gosford (C)	NSW Central Coast
Wyong (A)	NSW Central Coast
Bathurst Regional (A)	NSW Central West
Bland (A)	NSW Central West
Blayney (A)	NSW Central West
Cabonne (A)	NSW Central West
Cowra (A)	NSW Central West
Dubbo (C)	NSW Central West
Forbes (A)	NSW Central West
Gilgandra (A)	NSW Central West
Lithgow (C)	NSW Central West
Mid-Western Regional (A)	NSW Central West
Narromine (A)	NSW Central West
Oberon (A)	NSW Central West
Orange (C)	NSW Central West
Parkes (A)	NSW Central West
Warrumbungle Shire (A)	NSW Central West
Weddin (A)	NSW Central West
Wellington (A)	NSW Central West
Balranald (A)	NSW Far West
Bogan (A)	NSW Far West
Bourke (A)	NSW Far West
Brewarrina (A)	NSW Far West
Broken Hill (C)	NSW Far West
Carrathool (A)	NSW Far West
Central Darling (A)	NSW Far West
Cobar (A)	NSW Far West
Conargo (A)	NSW Far West
Coonamble (A)	NSW Far West
Deniliquin (A)	NSW Far West
Hay (A)	NSW Far West
Jerilderie (A)	NSW Far West
Lachlan (A)	NSW Far West
Murray (A)	NSW Far West
Wakool (A)	NSW Far West
Walgett (A)	NSW Far West
Warren (A)	NSW Far West
Wentworth (A)	NSW Far West
Unincorporated NSW	NSW Far West
Cessnock (C)	NSW Hunter
Dungog (A)	NSW Hunter
Gloucester (A)	NSW Hunter
Great Lakes (A)	NSW Hunter
Lake Macquarie (C)	NSW Hunter
Maitland (C)	NSW Hunter
Muswellbrook (A)	NSW Hunter
Newcastle (C)	NSW Hunter
Port Stephens (A)	NSW Hunter
Singleton (A)	NSW Hunter
Upper Hunter Shire (A)	NSW Hunter
Kiama (A)	NSW Illawarra
Shellharbour (C)	NSW Illawarra
Shoalhaven (C)	NSW Illawarra
Wingecarribee (A)	NSW Illawarra
Wollongong (C)	NSW Illawarra
Bellingen (A)	NSW Mid North Coast
Clarence Valley (A)	NSW Mid North Coast
Coffs Harbour (C)	NSW Mid North Coast
Greater Taree (C)	NSW Mid North Coast
Kempsey (A)	NSW Mid North Coast
Nambucca (A)	NSW Mid North Coast
Port Macquarie-Hastings (A)	NSW Mid North Coast
Armidale Dumaresq (A)	NSW North
Glen Innes Severn (A)	NSW North
Gunnedah (A)	NSW North
Guyra (A)	NSW North
Gwydir (A)	NSW North
Inverell (A)	NSW North
Liverpool Plains (A)	NSW North
Moree Plains (A)	NSW North
Narrabri (A)	NSW North
Tamworth Regional (A)	NSW North
Tenterfield (A)	NSW North
Uralla (A)	NSW North
Walcha (A)	NSW North
Ballina (A)	NSW Richmond Tweed
Byron (A)	NSW Richmond Tweed
Kyogle (A)	NSW Richmond Tweed
Lismore (C)	NSW Richmond Tweed
Richmond Valley (A)	NSW Richmond Tweed
Tweed (A)	NSW Richmond Tweed
Albury (C)	NSW Riverina
Berrigan (A)	NSW Riverina
Coolamon (A)	NSW Riverina
Cootamundra (A)	NSW Riverina
Corowa Shire (A)	NSW Riverina
Greater Hume Shire (A)	NSW Riverina
Griffith (C)	NSW Riverina
Junee (A)	NSW Riverina
Leeton (A)	NSW Riverina
Lockhart (A)	NSW Riverina
Murrumbidgee (A)	NSW Riverina
Narrandera (A)	NSW Riverina
Temora (A)	NSW Riverina
Urana (A)	NSW Riverina
Wagga Wagga (C)	NSW Riverina
Bega Valley (A)	NSW Southern Tablelands
Bombala (A)	NSW Southern Tablelands
Boorowa (A)	NSW Southern Tablelands
Cooma-Monaro (A)	NSW Southern Tablelands
Eurobodalla (A)	NSW Southern Tablelands
Goulburn Mulwaree (A)	NSW Southern Tablelands
Gundagai (A)	NSW Southern Tablelands
Harden (A)	NSW Southern Tablelands
Palerang (A)	NSW Southern Tablelands
Queanbeyan (C)	NSW Southern Tablelands

Snowy River (A)	NSW Southern Tablelands
Tumbarumba (A)	NSW Southern Tablelands
Tumut Shire (A)	NSW Southern Tablelands
Upper Lachlan Shire (A)	NSW Southern Tablelands
Yass Valley (A)	NSW Southern Tablelands
Young (A)	NSW Southern Tablelands
Botany Bay (C)	Sydney Central
Canada Bay (A)	Sydney Central
Hunters Hill (A)	Sydney Central
Lane Cove (A)	Sydney Central
Leichhardt (A)	Sydney Central
North Sydney (A)	Sydney Central
Ryde (C)	Sydney Central
Sydney (C)	Sydney Central
Willoughby (C)	Sydney Central
Randwick (C)	Sydney Eastern Beaches
Waverley (A)	Sydney Eastern Beaches
Woollahra (A)	Sydney Eastern Beaches
Manly (A)	Sydney Northern Beaches
Mosman (A)	Sydney Northern Beaches
Pittwater (A)	Sydney Northern Beaches
Warringah (A)	Sydney Northern Beaches
Ashfield (A)	Sydney Old West
Burwood (A)	Sydney Old West
Canterbury (C)	Sydney Old West
Marrickville (A)	Sydney Old West
Strathfield (A)	Sydney Old West
The Hills Shire (A)	Sydney Outer North
Hornsby (A)	Sydney Outer North
Ku-ring-gai (A)	Sydney Outer North
Camden (A)	Sydney Outer South West
Campbelltown (C)	Sydney Outer South West
Liverpool (C)	Sydney Outer South West
Wollondilly (A)	Sydney Outer South West
Blacktown (C)	Sydney Outer West
Blue Mountains (C)	Sydney Outer West
Hawkesbury (C)	Sydney Outer West
Penrith (C)	Sydney Outer West
Auburn (A)	Sydney Parramatta-Bankstown
Bankstown (C)	Sydney Parramatta-Bankstown
Fairfield (C)	Sydney Parramatta-Bankstown
Holroyd (C)	Sydney Parramatta-Bankstown
Parramatta (C)	Sydney Parramatta-Bankstown
Hurstville (C)	Sydney South
Kogarah (C)	Sydney South
Rockdale (C)	Sydney South
Sutherland Shire (A)	Sydney South
Unincorporated Vic	not included
Glen Eira (C)	Melbourne Central
Melbourne (C)	Melbourne Central
Port Phillip (C)	Melbourne Central
Stonnington (C)	Melbourne Central
Yarra (C)	Melbourne Central
Boroondara (C)	Melbourne East
Knox (C)	Melbourne East
Maroondah (C)	Melbourne East
Whitehorse (C)	Melbourne East
Darebin (C)	Melbourne North
Hume (C)	Melbourne North
Moonee Valley (C)	Melbourne North
Moreland (C)	Melbourne North
Banyule (C)	Melbourne North East
Manningham (C)	Melbourne North East
Nillumbik (S)	Melbourne North East
Whittlesea (C)	Melbourne North East
Yarra Ranges (S)	Melbourne North East
Cardinia (S)	Melbourne Outer South East
Casey (C)	Melbourne Outer South East
Frankston (C)	Melbourne Outer South East
Mornington Peninsula (S)	Melbourne Outer South East
Bayside (C)	Melbourne Mid South East
Greater Dandenong (C)	Melbourne Mid South East
Kingston (C)	Melbourne Mid South East
Monash (C)	Melbourne Mid South East
Brimbank (C)	Melbourne West
Hobsons Bay (C)	Melbourne West
Maribyrnong (C)	Melbourne West
Melton (S)	Melbourne West
Wyndham (C)	Melbourne West
Ararat (RC)	VIC Ballarat
Ballarat (C)	VIC Ballarat
Central Goldfields (S)	VIC Ballarat
Hepburn (S)	VIC Ballarat
Moorabool (S)	VIC Ballarat
Pyrenees (S)	VIC Ballarat
Campaspe (S)	VIC Bendigo
Greater Bendigo (C)	VIC Bendigo
Loddon (S)	VIC Bendigo
Macedon Ranges (S)	VIC Bendigo
Mitchell (S)	VIC Bendigo
Mount Alexander (S)	VIC Bendigo
Greater Geelong (C)	VIC Geelong
Queenscliffe (B)	VIC Geelong
Bass Coast (S)	VIC Gippsland
Baw Baw (S)	VIC Gippsland
East Gippsland (S)	VIC Gippsland
Latrobe (C)	VIC Gippsland
South Gippsland (S)	VIC Gippsland
Wellington (S)	VIC Gippsland
Buloke (S)	VIC Mallee Wimmera
Gannawarra (S)	VIC Mallee Wimmera
Hindmarsh (S)	VIC Mallee Wimmera
Horsham (RC)	VIC Mallee Wimmera
Mildura (RC)	VIC Mallee Wimmera
Northern Grampians (S)	VIC Mallee Wimmera
Swan Hill (RC)	VIC Mallee Wimmera
West Wimmera (S)	VIC Mallee Wimmera
Yarriambiack (S)	VIC Mallee Wimmera
Alpine (S)	VIC North East
Benalla (RC)	VIC North East
Greater Shepparton (C)	VIC North East
Indigo (S)	VIC North East

Mansfield (S)	VIC North East
Moira (S)	VIC North East
Murrindindi (S)	VIC North East
Strathbogie (S)	VIC North East
Towong (S)	VIC North East
Wangaratta (RC)	VIC North East
Wodonga (RC)	VIC North East
Colac-Otway (S)	VIC West
Corangamite (S)	VIC West
Glenelg (S)	VIC West
Golden Plains (S)	VIC West
Moyne (S)	VIC West
Southern Grampians (S)	VIC West
Surf Coast (S)	VIC West
Warrnambool (C)	VIC West
Unincorporated QLD	not included
Cairns (R)	QLD Cairns
Cassowary Coast (R)	QLD Cairns
Tablelands (R)	QLD Cairns
Yarrabah (S)	QLD Cairns
Dalby (R)	QLD Darling Downs
Goondiwindi (R)	QLD Darling Downs
Southern Downs (R)	QLD Darling Downs
Toowoomba (R)	QLD Darling Downs
Banana (S)	QLD Fitzroy
Central Highlands (R)	QLD Fitzroy
Gladstone (R)	QLD Fitzroy
Rockhampton (R)	QLD Fitzroy
Woorabinda (S)	QLD Fitzroy
Isaac (R)	QLD Mackay
Mackay (R)	QLD Mackay
Whitsunday (R)	QLD Mackay
Burdekin (S)	QLD North
Charters Towers (R)	QLD North
Hinchinbrook (S)	QLD North
Palm Island (S)	QLD North
Townsville (C)	QLD North
Aurukun (S)	QLD Resource region
Balonne (S)	QLD Resource region
Barcaldine (R)	QLD Resource region
Barcoo (S)	QLD Resource region
Blackall Tambo (R)	QLD Resource region
Boulia (S)	QLD Resource region
Bulloo (S)	QLD Resource region
Burke (S)	QLD Resource region
Carpentaria (S)	QLD Resource region
Cloncurry (S)	QLD Resource region
Cook (S)	QLD Resource region
Croydon (S)	QLD Resource region
Diamantina (S)	QLD Resource region
Doomadgee (S)	QLD Resource region
Etheridge (S)	QLD Resource region
Flinders (S)	QLD Resource region
Hope Vale (S)	QLD Resource region
Kowanyama (S)	QLD Resource region
Lockhart River (S)	QLD Resource region
Longreach (R)	QLD Resource region
McKinlay (S)	QLD Resource region
Mapoon (S)	QLD Resource region
Mornington (S)	QLD Resource region
Mount Isa (C)	QLD Resource region
Murweh (S)	QLD Resource region
Napranum (S)	QLD Resource region
Northern Peninsula Area (R)	QLD Resource region
Paroo (S)	QLD Resource region
Pormpuraaw (S)	QLD Resource region
Quilpie (S)	QLD Resource region
Richmond (S)	QLD Resource region
Roma (R)	QLD Resource region
Torres (S)	QLD Resource region
Torres Strait Island (R)	QLD Resource region
Weipa (T)	QLD Resource region
Winton (S)	QLD Resource region
Wujal Wujal (S)	QLD Resource region
Bundaberg (R)	QLD Wide Bay Burnett
Cherbourg (S)	QLD Wide Bay Burnett
Fraser Coast (R)	QLD Wide Bay Burnett
Gympie (R)	QLD Wide Bay Burnett
North Burnett (R)	QLD Wide Bay Burnett
South Burnett (R)	QLD Wide Bay Burnett
Brisbane (C)	SEQ Brisbane City
Logan (C)	SEQ Brisbane South
Redland (C)	SEQ Brisbane South
Gold Coast (C)	SEQ Gold Coast
Moreton Bay (R)	SEQ Moreton Bay
Sunshine Coast (R)	SEQ Sunshine Coast
Ipswich (C)	SEQ West Moreton
Lockyer Valley (R)	SEQ West Moreton
Scenic Rim (R)	SEQ West Moreton
Somerset (R)	SEQ West Moreton
Adelaide (C)	Adelaide Inner
Burnside (C)	Adelaide Inner
Holdfast Bay (C)	Adelaide Inner
Marion (C)	Adelaide Inner
Mitcham (C)	Adelaide Inner
Norwood Payneham St Peters (C)	Adelaide Inner
Unley (C)	Adelaide Inner
Walkerville (M)	Adelaide Inner
West Torrens (C)	Adelaide Inner
Campbelltown (C)	Adelaide North
Charles Sturt (C)	Adelaide North
Gawler (T)	Adelaide North
Playford (C)	Adelaide North
Port Adelaide Enfield (C)	Adelaide North
Prospect (C)	Adelaide North
Salisbury (C)	Adelaide North
Adelaide Hills (DC)	Adelaide South
Alexandrina (DC)	Adelaide South
Mount Barker (DC)	Adelaide South
Onkaparinga (C)	Adelaide South
Tea Tree Gully (C)	Adelaide South
Victor Harbor (C)	Adelaide South
Yankalilla (DC)	Adelaide South
Grant (DC)	SA Mallee South East
Kangaroo Island (DC)	SA Mallee South East

Karoonda East Murray (DC)	SA Mallee South East
Kingston (DC)	SA Mallee South East
Mount Gambier (C)	SA Mallee South East
Murray Bridge (RC)	SA Mallee South East
Naracoorte and Lucindale (DC)	SA Mallee South East
Robe (DC)	SA Mallee South East
Southern Mallee (DC)	SA Mallee South East
Tatiara (DC)	SA Mallee South East
The Coorong (DC)	SA Mallee South East
Wattle Range (DC)	SA Mallee South East
Barossa (DC)	SA Mid North Riverland
Barunga West (DC)	SA Mid North Riverland
Berri and Barmera (DC)	SA Mid North Riverland
Clare and Gilbert Valleys (DC)	SA Mid North Riverland
Copper Coast (DC)	SA Mid North Riverland
Goyder (DC)	SA Mid North Riverland
Light (RegC)	SA Mid North Riverland
Loxton Waikerie (DC)	SA Mid North Riverland
Mallala (DC)	SA Mid North Riverland
Mid Murray (DC)	SA Mid North Riverland
Northern Areas (DC)	SA Mid North Riverland
Orroroo/Carrieton (DC)	SA Mid North Riverland
Peterborough (DC)	SA Mid North Riverland
Renmark Paringa (DC)	SA Mid North Riverland
Wakefield (DC)	SA Mid North Riverland
Yorke Peninsula (DC)	SA Mid North Riverland
Anangu Pitjantjatjara (AC)	SA Spencer Gulf
Ceduna (DC)	SA Spencer Gulf
Cleve (DC)	SA Spencer Gulf
Coober Pedy (DC)	SA Spencer Gulf
Elliston (DC)	SA Spencer Gulf
Flinders Ranges (DC)	SA Spencer Gulf
Franklin Harbour (DC)	SA Spencer Gulf
Kimba (DC)	SA Spencer Gulf
Wudinna (DC)	SA Spencer Gulf
Lower Eyre Peninsula (DC)	SA Spencer Gulf
Maralinga Tjarutja (AC)	SA Spencer Gulf
Mount Remarkable (DC)	SA Spencer Gulf
Port Augusta (C)	SA Spencer Gulf
Port Lincoln (C)	SA Spencer Gulf
Port Pirie City and Dists (M)	SA Spencer Gulf
Roxby Downs (M)	SA Spencer Gulf
Streaky Bay (DC)	SA Spencer Gulf
Tumby Bay (DC)	SA Spencer Gulf
Whyalla (C)	SA Spencer Gulf
Unincorporated SA	SA Spencer Gulf
Unincorporated WA	not included
Belmont (C)	Perth Central
Cambridge (T)	Perth Central
Canning (C)	Perth Central
Claremont (T)	Perth Central
Cottesloe (T)	Perth Central
East Fremantle (T)	Perth Central
Fremantle (C)	Perth Central
Mosman Park (T)	Perth Central
Nedlands (C)	Perth Central
Peppermint Grove (S)	Perth Central
Perth (C)	Perth Central
South Perth (C)	Perth Central
Stirling (C)	Perth Central
Subiaco (C)	Perth Central
Victoria Park (T)	Perth Central
Vincent (T)	Perth Central
Bassendean (T)	Perth Outer North
Bayswater (C)	Perth Outer North
Joondalup (C)	Perth Outer North
Mundaring (S)	Perth Outer North
Swan (C)	Perth Outer North
Wanneroo (C)	Perth Outer North
Armadale (C)	Perth Outer South
Cockburn (C)	Perth Outer South
Gosnells (C)	Perth Outer South
Kalamunda (S)	Perth Outer South
Kwinana (T)	Perth Outer South
Melville (C)	Perth Outer South
Rockingham (C)	Perth Outer South
Carnamah (S)	WA Gascoyne Goldfields
Carnarvon (S)	WA Gascoyne Goldfields
Chapman Valley (S)	WA Gascoyne Goldfields
Coolgardie (S)	WA Gascoyne Goldfields
Coorow (S)	WA Gascoyne Goldfields
Cue (S)	WA Gascoyne Goldfields
Dundas (S)	WA Gascoyne Goldfields
Esperance (S)	WA Gascoyne Goldfields
Exmouth (S)	WA Gascoyne Goldfields
Geraldton-Greenough (C)	WA Gascoyne Goldfields
Irwin (S)	WA Gascoyne Goldfields
Kalgoorlie/Boulder (C)	WA Gascoyne Goldfields
Laverton (S)	WA Gascoyne Goldfields
Leonora (S)	WA Gascoyne Goldfields
Meekatharra (S)	WA Gascoyne Goldfields
Menzies (S)	WA Gascoyne Goldfields
Mingenew (S)	WA Gascoyne Goldfields
Morawa (S)	WA Gascoyne Goldfields
Mount Magnet (S)	WA Gascoyne Goldfields
Mullewa (S)	WA Gascoyne Goldfields
Murchison (S)	WA Gascoyne Goldfields
Ngaanyatjarraku (S)	WA Gascoyne Goldfields
Northampton (S)	WA Gascoyne Goldfields
Perenjori (S)	WA Gascoyne Goldfields
Ravensthorpe (S)	WA Gascoyne Goldfields
Sandstone (S)	WA Gascoyne Goldfields
Shark Bay (S)	WA Gascoyne Goldfields
Three Springs (S)	WA Gascoyne Goldfields
Upper Gascoyne (S)	WA Gascoyne Goldfields
Wiluna (S)	WA Gascoyne Goldfields
Yalgoo (S)	WA Gascoyne Goldfields
Augusta-Margaret River (S)	WA Peel South West
Boddington (S)	WA Peel South West
Boyup Brook (S)	WA Peel South West
Bridgetown-Greenbushes (S)	WA Peel South West
Bunbury (C)	WA Peel South West
Busselton (S)	WA Peel South West
Capel (S)	WA Peel South West
Collie (S)	WA Peel South West

Dardanup (S)	WA Peel South West
Donnybrook-Balingup (S)	WA Peel South West
Harvey (S)	WA Peel South West
Mandurah (C)	WA Peel South West
Manjimup (S)	WA Peel South West
Murray (S)	WA Peel South West
Nannup (S)	WA Peel South West
Serpentine-Jarrahdale (S)	WA Peel South West
Waroona (S)	WA Peel South West
Ashburton (S)	WA Pilbara Kimberley
Broome (S)	WA Pilbara Kimberley
Derby-West Kimberley (S)	WA Pilbara Kimberley
East Pilbara (S)	WA Pilbara Kimberley
Halls Creek (S)	WA Pilbara Kimberley
Port Hedland (T)	WA Pilbara Kimberley
Roebourne (S)	WA Pilbara Kimberley
Wyndham-East Kimberley (S)	WA Pilbara Kimberley
Albany (C)	WA Wheatbelt Great Southern
Beverley (S)	WA Wheatbelt Great Southern
Brookton (S)	WA Wheatbelt Great Southern
Broomehill-Tambellup (S)	WA Wheatbelt Great Southern
Bruce Rock (S)	WA Wheatbelt Great Southern
Chittering (S)	WA Wheatbelt Great Southern
Corrigin (S)	WA Wheatbelt Great Southern
Cranbrook (S)	WA Wheatbelt Great Southern
Cuballing (S)	WA Wheatbelt Great Southern
Cunderdin (S)	WA Wheatbelt Great Southern
Dalwallinu (S)	WA Wheatbelt Great Southern
Dandaragan (S)	WA Wheatbelt Great Southern
Denmark (S)	WA Wheatbelt Great Southern
Dowerin (S)	WA Wheatbelt Great Southern
Dumbleyung (S)	WA Wheatbelt Great Southern
Gingin (S)	WA Wheatbelt Great Southern
Gnowangerup (S)	WA Wheatbelt Great Southern
Goomalling (S)	WA Wheatbelt Great Southern
Jerramungup (S)	WA Wheatbelt Great Southern
Katanning (S)	WA Wheatbelt Great Southern
Kellerberrin (S)	WA Wheatbelt Great Southern
Kent (S)	WA Wheatbelt Great Southern
Kojonup (S)	WA Wheatbelt Great Southern
Kondinin (S)	WA Wheatbelt Great Southern
Koorda (S)	WA Wheatbelt Great Southern
Kulin (S)	WA Wheatbelt Great Southern
Lake Grace (S)	WA Wheatbelt Great Southern
Merredin (S)	WA Wheatbelt Great Southern
Moora (S)	WA Wheatbelt Great Southern
Mount Marshall (S)	WA Wheatbelt Great Southern
Mukinbudin (S)	WA Wheatbelt Great Southern
Narembeen (S)	WA Wheatbelt Great Southern
Narrogin (T)	WA Wheatbelt Great Southern
Narrogin (S)	WA Wheatbelt Great Southern
Northam (S)	WA Wheatbelt Great Southern
Nungarin (S)	WA Wheatbelt Great Southern
Pingelly (S)	WA Wheatbelt Great Southern
Plantagenet (S)	WA Wheatbelt Great Southern
Quairading (S)	WA Wheatbelt Great Southern
Tammin (S)	WA Wheatbelt Great Southern
Toodyay (S)	WA Wheatbelt Great Southern
Trayning (S)	WA Wheatbelt Great Southern
Victoria Plains (S)	WA Wheatbelt Great Southern
Wagin (S)	WA Wheatbelt Great Southern
Wandering (S)	WA Wheatbelt Great Southern
West Arthur (S)	WA Wheatbelt Great Southern
Westonia (S)	WA Wheatbelt Great Southern
Wickepin (S)	WA Wheatbelt Great Southern
Williams (S)	WA Wheatbelt Great Southern
Wongan-Ballidu (S)	WA Wheatbelt Great Southern
Woodanilling (S)	WA Wheatbelt Great Southern
Wyalkatchem (S)	WA Wheatbelt Great Southern
Yilgarn (S)	WA Wheatbelt Great Southern
York (S)	WA Wheatbelt Great Southern
Unincorporated Tas	not included
Brighton (M)	TAS Hobart-South
Central Highlands (M)	TAS Hobart-South
Clarence (C)	TAS Hobart-South
Derwent Valley (M)	TAS Hobart-South

Glamorgan/Spring Bay (M)	TAS Hobart-South
Glenorchy (C)	TAS Hobart-South
Hobart (C)	TAS Hobart-South
Huon Valley (M)	TAS Hobart-South
Kingborough (M)	TAS Hobart-South
Sorell (M)	TAS Hobart-South
Southern Midlands (M)	TAS Hobart-South
Tasman (M)	TAS Hobart-South
Break O'Day (M)	TAS North
Dorset (M)	TAS North
Flinders (M)	TAS North
George Town (M)	TAS North
Launceston (C)	TAS North
Meander Valley (M)	TAS North
Northern Midlands (M)	TAS North
West Tamar (M)	TAS North
Burnie (C)	TAS North West
Central Coast (M)	TAS North West
Circular Head (M)	TAS North West
Devonport (C)	TAS North West
Kentish (M)	TAS North West
King Island (M)	TAS North West
Latrobe (M)	TAS North West
Waratah/Wynyard (M)	TAS North West
West Coast (M)	TAS North West
Coomalie (S)	NT Darwin
Darwin (C)	NT Darwin
Litchfield (M)	NT Darwin
Palmerston (C)	NT Darwin
Alice Springs (T)	NT Lingiari
Barkly (S)	NT Lingiari
Belyuen (S)	NT Lingiari
Central Desert (S)	NT Lingiari
East Arnhem (S)	NT Lingiari
Katherine (T)	NT Lingiari
MacDonnell (S)	NT Lingiari
Roper Gulf (S)	NT Lingiari
Tiwi Islands (S)	NT Lingiari
Victoria-Daly (S)	NT Lingiari
Wagait (S)	NT Lingiari
West Arnhem (S)	NT Lingiari
Unincorporated NT	NT Lingiari
Unincorporated ACT	ACT

Appendix D: Unemployment measure definitions

NIEIR unemployed

NIEIR unemployed is defined as the Survey Unemployed from the Department of Education, Employment and Workplace Relations (DEWR) plus the excess of Disability Support Pensioners (i.e. the difference between the actual number of people on Disability Support Pensions and the expected number, based on population trends of people on Disability Support Pensions).

Structural unemployed

Structural unemployed is defined as those on Long Term Unemployment benefits plus those on Disability Support Pensions, half of the people receiving Single Parent Payments and half of the unemployed migrants from non-English speaking countries.

Total unemployed

Total unemployed is intended to include those missed by the official surveys. Essentially it is the NIEIR Unemployed plus the Structural Unemployed less any overlap. This in effect is defined as; DEWR unemployed plus those on Disability Support Pensions and half of those on Single Parent Payments.