

AUSTRALIAN EXPORTS AND DEVELOPING ASIA¹

Introduction

Despite a noticeable reorientation of Australia's exports toward the rapidly expanding economies of developing Asia, export volumes – in aggregate terms – have grown only modestly this decade. While developments in resource exports have received considerable attention, there has been less discussion of the broader experience of the Australian export sector.² Accordingly, this article examines recent trends in Australia's exports in light of developing Asia's growing importance in the world economy, and considers the prospects for further export growth.

Export Performance and Developing Asia

Australia's export volumes have grown at an average annual rate of 2½ per cent this decade, compared with an average rate of 8 per cent over the 1990s (Table 1). While there has been a significant slowdown in the pace of growth of each major export category since 2000, the sub-categories of coal and iron ore as well as education exports are notable exceptions, having broadly matched or exceeded their 1990s average growth rate.

	Export volumes Average growth		Export values Share of total ^(a)	
	1990s	2000–2007	2000	2007
Total exports	8.0	2.4		
Resources	7.9	2.6	36.3	46.5
– Coal and metal ores & minerals	4.9	5.4	16.2	26.7
– Other resources	9.1	–0.7	20.1	19.9
Services	8.7	3.0	24.0	22.5
– Education ^(b)	14.6	12.9	2.9	5.9
– Tourism ^(b)	9.5	–0.4	7.2	5.4
– Other	7.3	1.5	13.9	11.3
Manufactures^(c)	12.0	3.2	17.3	13.9
Rural	7.1	–2.5	18.5	11.1

(a) The components do not sum to 100 since the heterogeneous 'other goods' balance of payments category is not shown.
 (b) Education and tourism services deflated by the headline CPI.
 (c) Excludes pharmaceutical exports due to the large degree of re-exporting activity in this category.
 Sources: ABS; RBA

1 The article was prepared by Dan Andrews and Robert Arculus of Economic Analysis Department.

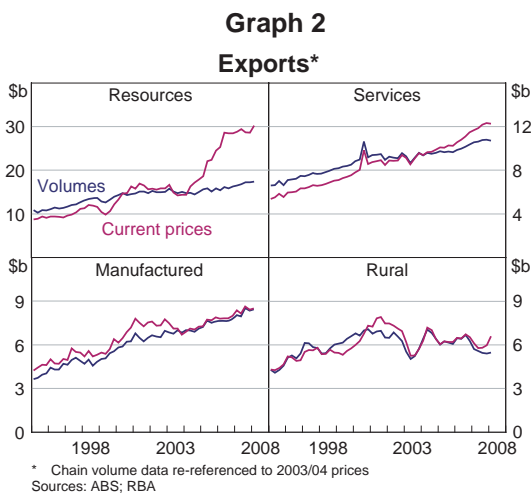
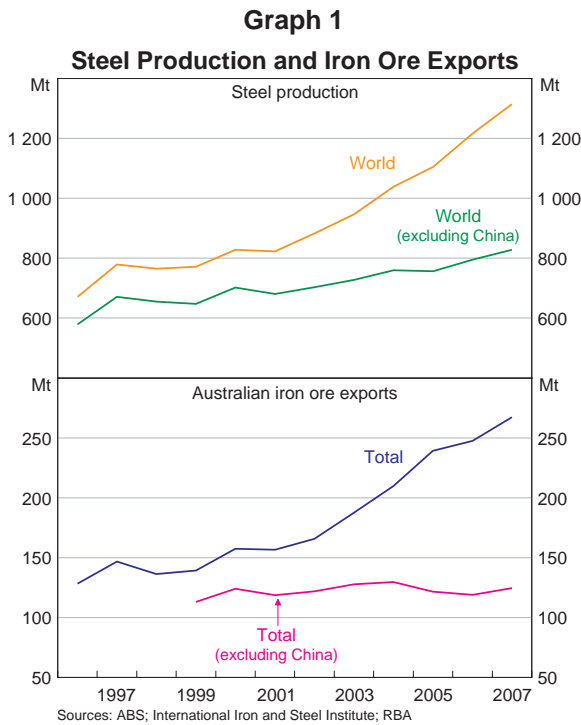
2 For more details, see RBA (2005) and O'Connor and Orsmond (2007).

While the growth in Australia's coal and iron ore export volumes over this decade compares favourably with the 1990s, it is fairly modest when considered in light of the surge in world demand for these commodities. As previously discussed, this demand largely reflects the increasing importance of developing Asia – notably China – in the world economy, and the resource-intensive nature of the current stage of Asia's growth.³ Heavy infrastructure investment in China in particular has resulted in significant increases in imports of thermal coal and iron ore,

the latter a direct consequence of the rapid expansion of the Chinese steel industry (Graph 1). Similarly, India has accounted for around one-third of the growth in world coking coal imports over recent years, due to rapid growth in its own steel industry.

For a number of reasons, Australia is not the only major resource exporter to have encountered difficulties meeting this rapid increase in global resources demand. Consequently, resource commodity prices have risen sharply, with coal and iron ore prices more than tripling over the past five years. These price developments have been reflected in a sharp rise in the value of resource exports; as a result, the share of resources in total nominal exports has risen from 36 per cent in 2000 to 46 per cent in 2007 (Table 1). The share is projected to rise further to around 53 per cent in 2008. Remarkably, this compositional shift has occurred despite only a modest increase in the volume (or quantity) of resource exports (Graph 2).

In contrast, the recent performance of other export categories has been broadly similar in value and volume terms. The prices received for Australia's manufactured exports have been fairly subdued over this decade, partly reflecting competition



³ For further details, see RBA (2007).

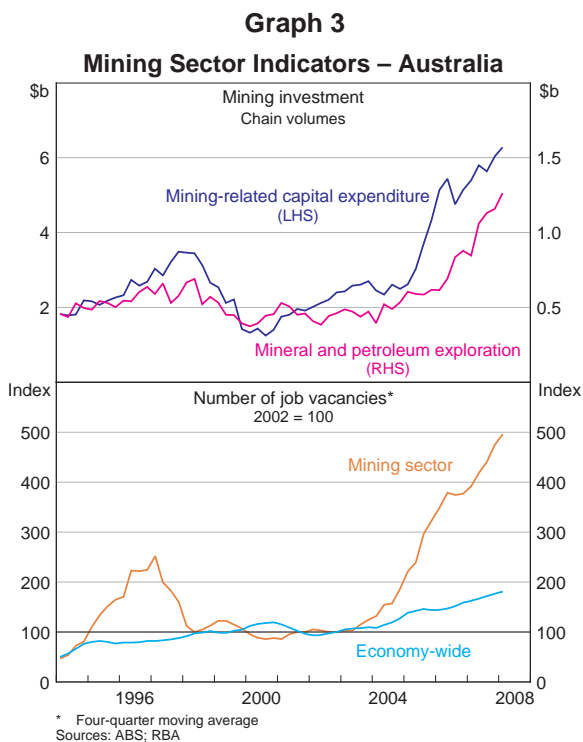
from low-cost Asian manufacturers, while service prices have tended to rise because of the heavy share of locally employed labour in these exports (primarily tourism and education).⁴

Resource Exports

The overall slowdown in the growth of resource export volumes this decade has largely reflected weakness in commodities other than coal and iron ore (Table 1). This has been mainly concentrated in exports of oil and gold, due to the depletion of oil fields as well as the closure of unprofitable metals refining and mining operations. More recently, the sharp rise in LNG exports – as new capacity has come online – has provided some offset to this trend.

As previously noted, while coal and iron ore export volumes have risen at a solid pace this decade, this increase was nonetheless modest given the surge in demand from developing Asia. The slow supply response reflects a number of factors including labour and equipment shortages, long lead times for investment, and transport capacity problems (the latter is discussed in Box A).⁵

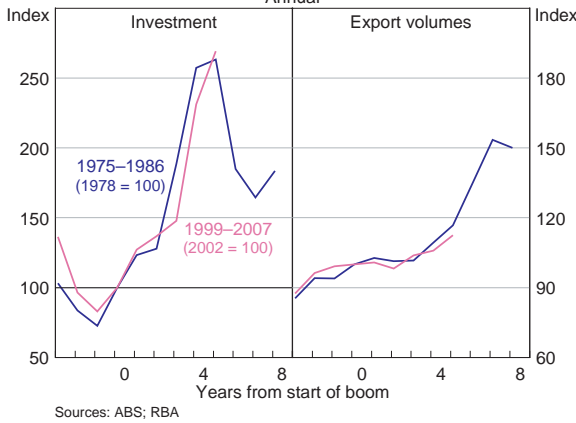
Attempts to expand output have generally been constrained by shortages of skilled labour. This is reflected in a sharp increase in job vacancies and wages in the mining sector relative to the broader economy (Graph 3); according to the national accounts, the annual rate of increase in average earnings in the mining sector over recent years has exceeded the economy-wide measure by almost 2 percentage points. However, labour shortages have largely been a global phenomenon, due to the relative stickiness of the supply of skilled labour in the short-run coupled with the unanticipated nature of the rise in commodities demand. Similarly, there have been considerable difficulties in obtaining equipment, with suppliers of mining-related machinery struggling to increase production sufficiently to keep pace with demand. For example, Rio Tinto estimates that, over the past few years, the time needed to obtain tyres has increased from three months to two years, while lead times for larger pieces of equipment



⁴ This article focuses on non-rural exports. For a discussion on recent developments in the rural sector, see Ortac, La Cava and Deverell (2008).

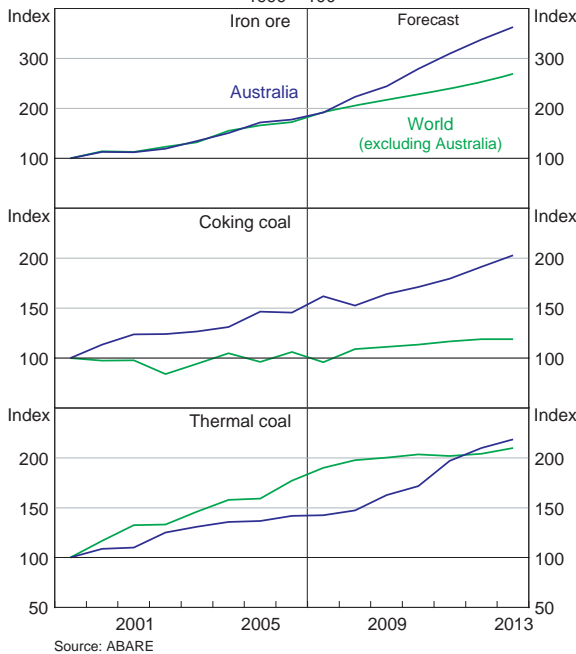
⁵ It is also possible that resource deposits have become more difficult to extract, though technological gains are likely to have provided some offset.

Graph 4
Mining Sector Activity
Annual



Sources: ABS; RBA

Graph 5
Bulk Commodity Export Volumes
1999 = 100



Source: ABARE

have roughly doubled to at least three years (Bauert 2007).

More generally, the mining sector tends to experience significant lead times in both the identification and the development of resource deposits, partly due to its capital-intensive nature. For example, the Olympic Dam mine in South Australia took about 14 years to begin production after discovery.⁶ The slow response due to long lead times has been exacerbated by the decline in resource-related investment in Australia (as well as globally) during the late 1990s (Graph 3), which was partly a product of an extended period of low mineral prices. This run-down in investment exacerbated the mining sector's difficulties in meeting the subsequent surge in resources demand from developing Asia. The current experience can be compared to the late 1970s mining boom, where mining investment increased for about five years but it took a further one to two years after the peak in investment before there was significant growth in resource export volumes (Graph 4).

Given that many of these constraints on mining sector activity have been experienced internationally, Australia's global market share in its two largest exports – iron ore and coking coal – has remained fairly stable over the past few years (Graph 5).⁷ In contrast, despite solid

6 However, such lags depend on the nature of the mining project. Recently, for instance, Fortescue Metals achieved a turnaround of around five years between the acquisition of the initial tenements and the first iron ore shipments from their Cloudbreak project in the Pilbara.

7 Market share can also be measured in terms of global production, though these data are less disaggregated and likely to be of a lower quality than the exports data. On this basis, Australia's global market share in iron ore has declined somewhat over this decade, largely reflecting rapid growth in China's domestic production.

growth in exports, Australia's market share in thermal coal has declined, largely because of the rapid expansion in exports from Indonesia and Russia.

Manufactured and Services Exports

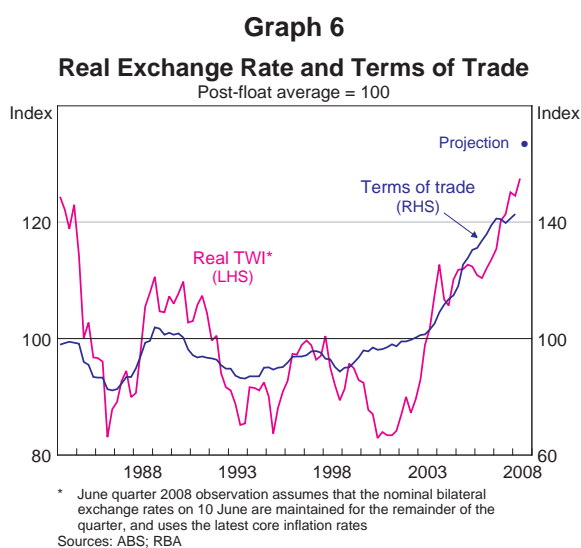
The rise in resource prices – partly a result of strong Asian demand – has boosted Australia's terms of trade, which have risen by around 40 per cent since 2002, and are set to rise by around another 20 per cent in the middle of this year (Graph 6). The impact of the higher terms of trade has contributed to the trend appreciation of the Australian dollar over this period, and has had various effects across different sectors of the economy.⁸ By making Australian exports more expensive in international markets, the appreciation of the exchange rate implies a loss of competitiveness for Australian exporters. For manufacturers, these adverse effects have been reinforced in recent years by the emergence of low-cost manufactures in developing Asia. In contrast, the effect of the appreciation on services exports as a whole has been offset to some extent by developing Asia's vigorous demand for education services.⁹ More broadly, it is possible that high resource prices have resulted in a diversion of some investment flows toward mining at the expense of these sectors.

Growth in manufactured exports volumes has slowed noticeably from the double-digit growth seen in the 1990s, to an annual rate of around 3 per cent this decade (Table 1).¹⁰ The relative weakness of manufactured exports has been reflected in a decline in Australia's share in global manufacturing trade (Graph 7). While there are a number of explanations for this trend, Australia's manufactured exports are likely to have been crowded out in some markets by significant increases in Chinese exports. Indeed, the value of manufactured exports from China has risen at an annual average rate of around 26 per cent since 2000, with China's share of world manufactures trade more than doubling (to around 11 per cent) over this period. In the US – the second-largest destination for Australia's manufactured exports – the relative importance of Australian exporters has declined, though the extent of this decline is more modest abstracting from the rapid growth in US imports sourced from China.

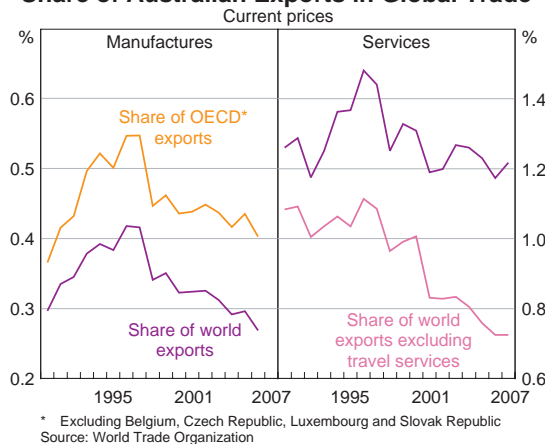
⁸ The appreciation of the Australian dollar over this period also reflects other factors, including the widening interest rate differential between Australia and other industrialised economies.

⁹ For more details, see 'Australia's Exports of Education Services' in this Bulletin.

¹⁰ This definition of manufactured exports excludes exports of medical products (such as pharmaceuticals) since much of the recent strength in this component reflects re-exporting activity, with a simultaneous increase in imports of medical products over this period.



Graph 7
Share of Australian Exports in Global Trade
 Current prices



Increased competition from China is only a partial explanation for the relatively slow growth of manufactured exports, since Australia's share of OECD manufactured exports also declined over this period.¹¹ It is likely that Australian manufactured exports have been hampered to some extent by the trend appreciation of the exchange rate; previous Bank research highlights the important influence of the exchange rate on manufactured exports (see Norman 2006 and Dvornak, Kohler and Menzies 2003). Export

competitiveness indices constructed by the OECD show that Australia experienced one of the largest declines in competitiveness among OECD manufacturing exporters over the first half of this decade, though it should be noted that this period began with the real exchange rate at a level that was very low by historical standards.

Services export volumes have grown more slowly this decade than in the 1990s, which may be partly because the threat of international terrorism has constrained global tourism (Table 1, Graph 7). Australia's share of global services exports has been lower than the average for the 1990s, and would have fallen more significantly had it not been for strong growth in education exports (which are classified under travel services). Education exports volumes have grown at an average annual rate of 13 per cent since 2000, largely reflecting strong demand from India and China as well as structural changes in the Australian education market. Excluding education, growth in other services exports has been subdued, averaging under 1 per cent annually, partly due to the adverse effect of the higher exchange rate.

The Changing Direction of Australia's Trade

Reflecting the changing nature of world demand, there has been a noticeable shift in Australia's exports towards developing Asia – particularly China and India – while the relative importance of more traditional markets such as the United States has declined (Table 2). The reorientation has been substantial; in nominal terms, China is now Australia's second largest export market (up from 7th in 1999), while India has jumped from being the 13th largest export market in 1999 to the 7th largest in 2007.¹²

This shift partly reflects the resource-intensive nature of Australia's exports to developing Asia and the recent sharp rise in resource *prices*. Australia's iron ore export volumes to China have increased very strongly (Graph 1) while annual growth in hard coking coal export

¹¹ Australia's declining OECD market share may also reflect strong growth in intra-European trade of manufactures.

¹² Comprehensive bilateral trade data are available only in nominal terms.

Table 2: Australian Exports of Goods and Services by Destination

Current prices; per cent

	Share of exports 2007	Average annual growth 1999–2007	Share of exports (rank) 1999
Japan	16.0	7.1	17.2 (1)
China	12.8	24.8	4.1 (7)
United States	7.3	2.5	11.2 (2)
South Korea	7.1	10.5	5.9 (5)
New Zealand	6.0	5.0	7.5 (3)
United Kingdom	5.4	6.5	6.1 (4)
India	5.2	24.7	1.7 (13)
<i>Memo items:</i>			
Europe ^(a)	7.5	6.3	8.5
Other east Asia ^(b)	16.7	5.0	21.0

(a) Excludes United Kingdom

(b) Excludes Japan, China and South Korea

Source: ABS

volumes to India has been in excess of 20 per cent over recent years. Education exports to both destinations have also been rising rapidly. Japan remains Australia's largest export market, with its share broadly stable over recent years because of the sharp rise in commodity prices (Japan is a traditional market for Australian resources). However, Japan's share of Australia's total services exports has fallen from around 11 per cent in 1999 to 5½ per cent in 2007, consistent with the levelling out of Japanese tourist flows to international destinations outside of east Asia as well as more recent declines in the number of Japanese students in Australia.

The proportion of Australian exports directed to the US has fallen significantly, from 11 per cent in 1999 to 7 per cent recently (Table 2). This is partly because Australia's US-bound exports are predominantly services and manufactures, which have increased in value only modestly compared with mining exports. However, the importance of the US as a market for Australia's services exports has also declined, from a share of 15½ per cent in 1999 to 12 per cent in 2007. This may reflect the fact that Australia's services exports to the US are less concentrated in the fast-growing travel services category.

Discussion

Despite the reorientation of exports toward developing Asia, Australia's export volumes – in aggregate terms – have grown only modestly this decade in comparison with the 1990s. While this partly reflects a number of supply-side constraints on resource export volumes, the inability to expand resources supply quickly – in response to strong demand from Asia – has by and large been a global phenomenon. The ensuing sharp rise in global resource commodity prices has been one factor that has contributed to the sizeable appreciation of the Australian dollar over recent years. While the adverse effect of the higher exchange rate on manufactured exports is likely to have been reinforced by the expansion of low-cost manufactures from developing Asia, services exports have been supported to some extent by developing Asia's demand for education services as well as structural changes in Australia's education market.

Developing Asia is likely to affect the structure of the Australian economy for some time to come. The emergence of China and India should underpin future growth in Australian resource exports, with current per capita consumption of energy and minerals in both countries well below that of developed economies. China's future infrastructure demands – with more than 75 million people expected to move to urban areas over the next five years – implies ongoing strong demand for iron ore and coal. India's growth is also likely to be resource intensive. The Indian Government plans to construct five 'Ultra Mega' coal-fired power plants (the first commencing operations in 2012), with each plant expected to consume up to 15 Mt of imported thermal coal annually, which would be roughly equivalent to 13 per cent of Australia's thermal coal exports in 2007 (ABARE 2008). India's plans to expand its steel industry will also require considerable imports of coking coal, which is Australia's second-largest export. Of course, climate change – and the extent to which related policies increase the relative global price of energy products – may have important implications for the future composition of Australia's resource exports.

The large increases in mining-related investment and exploration expenditure over recent years holds out the prospect for a significant supply response in the period ahead (Graphs 3 and 5). For example, if the current stated plans of BHP Billiton, Rio Tinto and Fortescue Metals are realised, Australia's iron ore production will more than double by 2015. LNG exports will also be boosted as the North West Shelf Venture's fifth compression train comes online in late 2008, and by the completion of several major projects, such as Woodside's \$12 billion development of the Pluto gas field. Moreover, while transport capacity and shortages of skilled labour and equipment remain important constraints on growth, there is some evidence of co-ordinated investment along the coal supply chain.

To the extent that global resources supply increases significantly, some retracement in the current strength of resource prices is possible. However, the ongoing demand for resources from developing Asia is expected to be such that resource prices remain at an elevated level for a considerable period of time. If this were to occur, it would be likely to continue to significantly affect the structure of the Australian economy, with a further reallocation of the economy's factors of production toward the mining and related sectors.¹³ The expected strength in mining activity could also benefit manufacturers exposed to the mining sector. In addition, to the extent that education services are a 'superior' good – that is, relative demand for education increases with real incomes – continued growth in developing Asia augurs well for Australia's education exports.

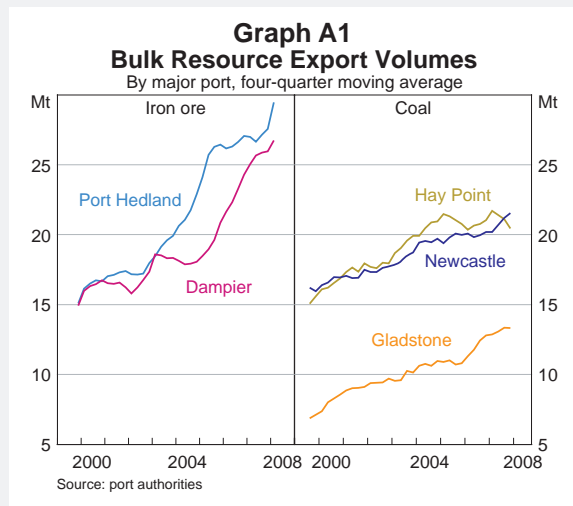
¹³ For more details, see Henry (2006).

Box A: Transport Capacity in the Resources Sector

Capacity constraints in transport infrastructure have been an ongoing impediment to growth in bulk resources export volumes. In 2005, the Bank produced a survey of existing coal and iron ore supply chains, including estimates of the likely scale of rail and port expansions by 2007.¹⁴ While actual transport capacity for iron ore increased by 27 per cent relative to an anticipated rise of 15 per cent, the increase in coal transport capacity was below expectation, rising by 8 per cent compared with an expectation of 13 per cent.

One reason why supply chain expansions have been particularly difficult in the coal industry is that the fragmented ownership structure has complicated attempts to co-ordinate simultaneous investments, in contrast to the iron ore industry where the supply chains of large producers tend to be vertically integrated. Expansions of rail capacity have generally lagged capacity expansions at ports, especially on Queensland's Goonyella supply chain, which carries coal from mines in the Bowen Basin to the Port of Hay Point.¹⁵ Consequently, growth in export volumes from Hay Point – which accounts for at least one-third of Australia's coal exports – has slowed considerably over recent years (Graph A1).¹⁶ In contrast, coal exports from the smaller Port of Gladstone have picked up noticeably since 2005, partly reflecting increased ship-loading capacity and extensions to the port's second rail loop.

A further easing in capacity bottlenecks is expected over coming years. The Goonyella system is scheduled to take delivery of some 20 electric locomotives during late 2008 and 2009 (see O'Donnell 2008), while the Australian Rail Track Corporation is planning to increase rail capacity in the Hunter Valley in line with extensions to port capacity. Table A1 provides an update on expected transport capacity expansions. While coal capacity is estimated to expand by 17 per cent by 2009, further improvements in



¹⁴ For details, see RBA (2005).

¹⁵ The Port of Hay Point includes the Dalrymple Bay and Hay Point coal terminals. See O'Donnell (2007).

¹⁶ Weather-related disruptions and construction activity have also been factors constraining export volume growth.

co-ordination between producers, infrastructure operators and governments are still necessary. Meanwhile, iron ore transport capacity is anticipated to rise by a further 36 per cent between 2007 and 2009.

Table A1: Mining Sector Supply Chain Transport Capacity^(a)
Million tonnes

	2005	2007	2009 ^(b)
Iron ore:			
– Port Hedland (WA)	100	118	174
– Dampier (WA)	80	120	140
– Cape Lambert (WA)	52	55	80
– Others	8	11	20
Total	240	304	414
Coal:			
– Hay Point (Qld)	90	92	112
– Gladstone (Qld)	45	59	71
– Newcastle (NSW)	89	93	102
– Others	32	32	38
Total	256	276	323

(a) Numbers reflect the anticipated minimum of either rail or port capacity in each year.

(b) RBA estimates based on publicly available information on port and rail projects.

Source: RBA

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