

Australia's manufacturing sector and the resources boom

Introduction

- 2.1 The manufacturing sector plays an important role in the Australian economy. It accounts for a little over a tenth of Australian employment and output, but over a fifth of exports. The manufacturing sector exports around a quarter of its output. Manufacturing employs 1.1 million people, about half of whom worked for firms employing under 100 people.
- 2.2 Within manufacturing, food products¹ account for about a fifth of production, machinery almost a fifth, and manufactures intensively using mining resources² over a third (in terms of gross value added in 2004–05).
- 2.3 At a finer degree of disaggregation, Australian manufacturers are moving up the value chain. For example, clothing production now only accounts for less than three per cent of manufacturing and what remains is increasingly high-end fashion or specialist wear such as fire-resistant clothing.
- 2.4 Compared to other sectors, manufacturing has less educated workers and so offers lower wage rates, but due to the prevalence of traditional full-time employment, offers higher incomes.³

1 Including beverages and tobacco.

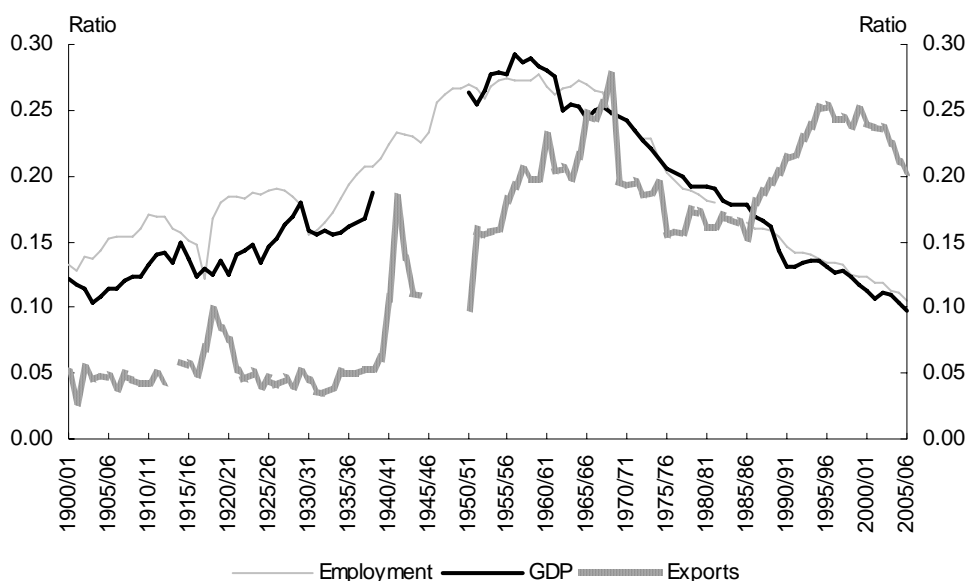
2 Petroleum, coal, chemical, non-metallic mineral products and metal products.

3 Productivity Commission, *Trends in Australian Manufacturing*, April 2003, pp. xxv, xxvii, 102.

Long-term trends in Australian manufacturing

2.5 Australia's manufacturing sector has undergone many changes as it has grown over the decades. Until around the middle of the 20th century, it grew faster than the rest of the economy, notably the rural sector, and so its share of output and employment increased (Figure 2.1).

Figure 2.1 Australian manufacturing sector's share of employment, GDP and exports



Source: Updated from the Treasury, Submission no. 21, p. 3.

2.6 Subsequently, while manufacturing output has continued to increase, the services sector has grown much faster. As a consequence, manufacturing now accounts for a smaller share of GDP and employment (Figure 2.1).

2.7 A portion of the decline reflects outsourcing.⁴ For example, the cleaners and cafeteria staff in a factory may once have been classified as employed in manufacturing, but are now recorded as working in the services sector as they are employed by contractors. But this effect is not large enough to cause the overall trends evident in Figure 2.1.

2.8 This 'rise and fall' in manufacturing's share of the economy is not unusual. The typical pattern of economic development across most advanced economies has been that the manufacturing sector initially increases its share of the economy at the expense of the agricultural sector and then is later itself displaced by the growth of the services sector (Table 2.1, p.11).

⁴ The Australian Chamber of Commerce and Industry (ACCI) note this in *Submission no. 33*, p. 14.

2.9 Manufacturing employment has fallen in most OECD economies since 1990 and has fallen as a proportion of total employment in almost all of them. The decline in manufacturing's share of output is reinforced by the general tendency for the price of manufactures to fall relative to services over time (which is related to the tendency for faster productivity growth in manufacturing than services).⁵

Table 2.1 Proportion of employment in manufacturing⁶ (percentage)

	Australia	Canada	France	Netherlands	United Kingdom	United States
1700	n.a.	n.a.	n.a.	n.a.	22	n.a.
1870	33	28	28	29	42	24
1950	37	36	35	40	47	33
1973	35	30	39	36	42	32
2005	21	22	23	20	22	20

Sources: *A Maddison, Dynamic Forces in Capitalist Development; a Long-run Comparative View, 1991; OECD, Labour Force Statistics 1985–2005, 2006.*

2.10 This pattern of a gradual decline in the share of agriculture and rise in the share of services as economies mature is consistent with the observation that food accounts for most of the consumption of poor households, but as they become more affluent a greater share of spending is on services.

The composition of the manufacturing sector

2.11 Australian manufacturing output has grown at a modest rate over recent years. However, this masks substantial variations within the sector (Table 2.2, p. 12). In particular, there has been a large decline in clothing and textiles, which have been most affected at the low-value end by the growth of textile manufactures in economies with low labour costs.⁷ But there has been solid growth in more sophisticated goods such as machinery, and some mineral products (e.g. bricks, cement) used by the construction industry to meet the housing boom and then the mining boom.

5 D Pilat et al, 'The changing pattern of manufacturing in OECD economies', *OECD Science, Technology and Industry working papers*, no. 2006/9, p. 11.

6 In this table, 'manufacturing' includes mining, construction and utilities.

7 Textile and metal products have been the weakest areas of manufacturing employment in the G7; Pilat et al, 2006, p. 8.

- 2.12 Even within textiles there are some areas of growth in more sophisticated products. For example, Bruck Textiles explained how it had moved from manufacturing standard blinds to specialising in flame-retardant blinds.⁸ Scientific advances are giving scope for more innovative products. For example, the CSIRO is a leader in nanotechnology which can be used in producing advanced textile products.

Table 2.2 Manufacturing GVA (chain volume measures); percentage change 1997–98 to 2005–06

Non-metallic mineral products	62	Wood and paper products	8
Machinery and equipment	26	Metal products	5
Printing, publishing and recorded media	13	Petroleum, coal, chemical	5
Other manufacturing (mostly furniture)	12	Textile, clothing, footwear	-49
Food, beverage and tobacco	10	All manufacturing	11

Source: Australian Bureau of Statistics, *Australian National Accounts: National Income, Expenditure and Product, March quarter 2007, Cat. No. 5206.0*.

- 2.13 Many Australian manufacturers have moved their production offshore, to remain competitive in international markets. These manufactures are no longer recorded in the manufacturing gross value added (GVA) reported in Table 2.2 and nor are they recorded as manufacturing exports in the balance of payments. However they still contribute to the well-being of Australians as the profits from the manufactures accrue to Australian shareholders. These profits appear in the income account of the balance of payments and add to gross national income in the national accounts. Furthermore, often it is the basic manufacturing process that is now conducted offshore and the more high-value design and management functions remain in Australia.

Manufacturing exports before the resources boom

- 2.14 As discussed earlier, manufacturing generally increased its share of Australian exports in the first half of the 20th century and its share declined from around the mid-1960s, largely paralleling movements in manufacturing's share of output and employment (Figure 2.1, page 10).
- 2.15 There was a surge in manufactures' share of exports from the mid-1980s until around the start of the resources boom around 2005. There are a number of factors which likely contributed to the surge, although views differ about their relative importance. Global economic activity expanded

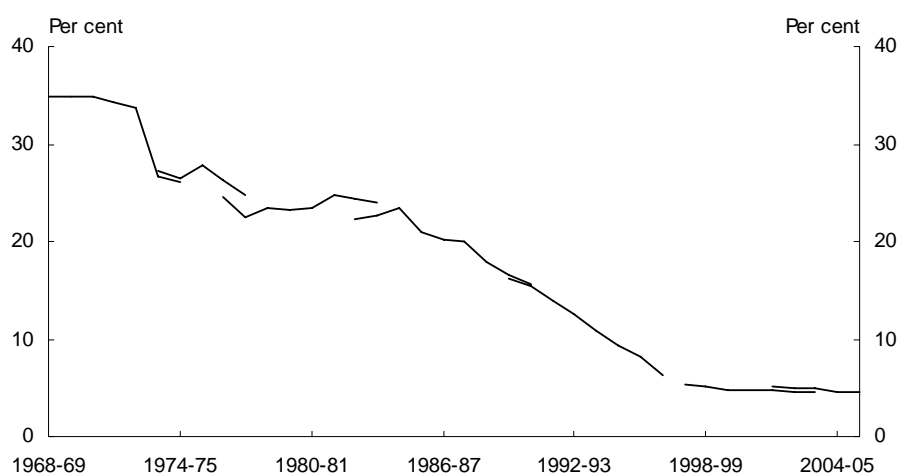
8 Mr B Manwaring, Bruck Textiles, *Transcript*, 8 February 2007, pp. 6 and 16.

more strongly in the 1980s and 1990s than it had during the 1970s. There was a marked depreciation in the Australian dollar in the mid-1980s, which made Australian exporters 'super-competitive'. This encouraged them to incur the fixed costs necessary to enter export markets. Government industry plans and assistance were also targeted at helping manufacturers seek out foreign markets.

2.16 A further spur to exporting came from the reduction in tariffs (Figure 2.2). As a recent study by John Edwards put it, the tariff cuts:

Forced manufacturers to either meet import competition or cease business. If they could meet the competition of foreign producers at home, they could meet it elsewhere. Australian manufacturing began exporting.⁹

Figure 2.2 Effective rate of assistance for Australian manufacturers



Source: Updated from the Treasury, *Submission no. 21*, p. 10.

2.17 There were also attitudinal changes, as detailed by the Treasury:

From the mid-1980s, there was a cultural change among Australian manufacturers — a growing belief in 'internationalisation'. A 'new breed' of manufacturers adopted a more outward outlook, and increased the proportion of production they exported... There were 'demonstration effects' as newly successful exporters encouraged others to enter export markets. There may also have been a 'vanguard effect' whereby exporters entering new markets (establishing a 'beachhead') made it easier for others to follow, such as by sharing their experiences.¹⁰

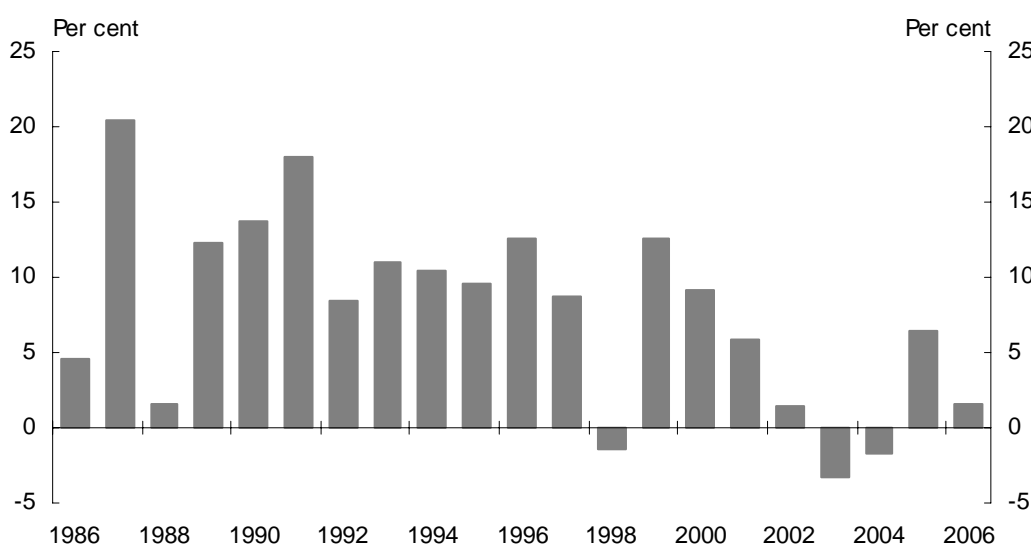
9 J Edwards, 'Export weakness, investment strength', *CEDA Competing from Australia Project Paper*, no. 2, 2007, p. 4.

10 The Treasury, *Submission no. 21*, p.9.

2.18 The beachhead effect could also involve establishing the 'Australian brand' in a new market, making potential customers receptive to Australia as a source of 'cutting edge' designs and innovative products.

2.19 Since around 2000 there has been a slowing in manufacturing export volumes (Figure 2.3). As with manufacturing production, there were differences between different categories of manufacturing exports (Table 2.3, p.15). There were absolute declines in exports of basic manufactured products such as iron and steel, while exports of more sophisticated equipment continued to grow.

Figure 2.3 Australian manufacturing export volumes; annual percentage change



Source: Updated from the Treasury, Submission no. 21, p. 4.

2.20 While manufacturing export growth slowed since 2000 compared to its strong growth in the 1990s, it has been respectable compared with its peers. The Department of Foreign Affairs and Trade submission noted:

Over the past decade Australia's manufacturing export growth has not been dissimilar to that of other OECD countries. Since 1995, in US dollar terms, Australia's manufacturing exports have grown on average, each year, by 3.4 per cent, compared with 3.2 per cent for the UK, 3.6 per cent for the US and 2.6 per cent for Japan.¹¹

2.21 To some extent the slowdown was inevitable as some of the one-off changes mentioned previously had led to very strong percentage growth in the 1990s off a low base (you can only start exporting once). But it also reflects the effect of the resources boom.

11 Department of Foreign Affairs and Trade, Submission no. 38, p. 8.

Table 2.3 Australia's manufacturing export volumes

(annual average percentage change; chain volume measure)				
	1986 to 1994	1994 to 2000	2000 to 2006	(% of total 2006)
By type				
Machinery	15	6	2	(21)
Metals	9	4	-3	(27)
Transport equipment	8	13	1	(13)
Medicine and pharmaceuticals	19	20	10	(11)
Scientific & photographic equipment	11	16	3	(5)
Other	15	5	2	(23)
By input-intensity				
Agricultural	14	7	-2	(3)
Resources	9	5	-3	(28)
Labour	13	4	3	(28)
Mixed	12	11	4	(22)
Knowledge	18	17	4	(18)
By use				
Consumer goods	15	13	4	(36)
Capital goods	12	6	3	(25)
Materials	10	5	-2	(39)
Total	12	8	2	(100)

Source: Updated from the Treasury, Submission, no. 21, p. 3.

China leads to a global resources boom

2.22 The main cause of the current resources boom is the industrialisation of China and its re-emergence since around 1980 as a leading participant in the international economy. China's increased demand for raw materials has driven up mining commodity prices the world over. At the same time, the expansion of China's exports of manufactures has driven down (or at least moderated the growth of) the global price of manufactured goods.

2.23 Most experts expect China's economy to continue to grow strongly for many years. For example, a Reserve Bank of Australia assistant governor pointed out that:

The process of catch-up in China and India may well have quite a way to run. Both Japan and Korea were able to sustain growth rates in the vicinity of 10 per cent per annum for around three decades. But China took off from a much lower base than either

Japan or Korea. This means that today, even after three decades of high growth, it is still well behind the relative income levels of those countries when they started to slow down.¹²

- 2.24 There are still hundreds of millions of Chinese agricultural workers who can be brought into manufacturing plants in China. It is likely that, as labour becomes more expensive in coastal cities like Shanghai, manufacturing activity will move inland. This implies that China's demand for raw materials may continue to grow for many years. Strongly growing demand is also likely from other large emerging economies.
- 2.25 However, this growing demand will not necessarily maintain commodity prices at recent highs because the supply of raw materials is also growing. Over the past five years Australian mining operators have invested over \$55 billion to increase capacity, and production volumes are starting to rise. Other coal and iron ore producers, such as Brazil, China, India, Indonesia, Russia, South Africa and the United States are also ramping up production. Prices may drop before this process is completed if the predominant market sentiment becomes that supply is starting to outpace demand. In the unlikely event that the Chinese economy slows markedly, prices could drop sharply.
- 2.26 This impact of increased global supply on world prices could more than offset the increase in Australian export volumes, bringing an end to (or at least moderating) the 'resources boom' in Australia.

The effect of the resources boom on manufacturing

- 2.27 The adverse impact of the resources boom on the manufacturing sector, particularly through its impact on the exchange rate, was referred to by manufacturing industry bodies, trade unions and government.
- 2.28 The Australian Industry Group's submission stated:

The conditions facing Australian manufacturers in 2006 are particularly challenging. Part of this is the strength of the minerals boom. The surging commodity prices have strengthened the exchange rate, have helped absorb spare capacity and have drawn resources – particularly skilled labour – away from non-booming

12 M Edey, Address to *Australia & Japan Economic Outlook Conference 2007*, March 2007.

sectors such as manufacturing. Australian manufacturing is undergoing a bout of 'Dutch disease'.¹³

2.29 The Department of Industry, Tourism and Resources (DITR) noted that, as Australia is a resources-exporting country:

The increase in resource commodity prices also results in a \$A exchange rate higher than would otherwise be the case, and this, in general, adversely affects the international competitiveness of those export industries not enjoying increased prices.¹⁴

2.30 The phenomenon described by DITR is known as the 'Dutch disease' as it was first raised in the context of the effect the development of natural gas in the 1960s and early 1970s had on manufacturing in the Netherlands.¹⁵ With the development of North Sea oil, and the decline of the UK manufacturing industry, in the 1970s and 1980s, the term was much used in Britain. In Australia it is often referred to as the 'Gregory thesis' as it was described by the ANU economist Bob Gregory in a 1976 paper.¹⁶

2.31 Movements in Australia's trade-weighted (or 'effective') exchange rate (in 'real' terms, i.e. adjusted for relative inflation rates) are compared with our terms of trade in Figure 2.4 (p. 18). Increases in commodity prices had been sufficiently correlated with appreciations of the Australian dollar from its float in 1983 until around 1999 that the dollar is often labelled a 'commodity currency'.¹⁷ This suggests a 'resources boom' would usually lead to an appreciation, with adverse consequences for manufacturing.

13 Australian Industry Group (Ai Group), *Submission no. 36*, p. 2. More recently, Ai Group reported that in a survey most manufacturers claim they would be uncompetitive with the dollar above US\$ 0.85. 'The Australian dollar and manufacturing exports: shaping earnings and prospects', June 2007, as viewed 5 June 2007, <http://pdf.aigroup.asn.au/publications/reports/exports_report_june2007.pdf>. The Australian Manufacturing Workers' Union also argue the resources boom has driven up the exchange rate; *Submission no. 34*, p. ii.

14 Department of Industry, Tourism and Resources (DITR), *Submission no. 31*, p. 6 and their Appendix B. A similar point is made by Department of Foreign Affairs and Trade, *Submission no. 38*, p. 19 and the Treasury, *Submission no. 21*, p. 8.

15 The expression was apparently coined by *The Economist* in its 26 November 1977 issue. More academic versions, by Australian international trade specialist Max Corden, were published in 'Booming sector and de-industrialisation in a small open economy' (co-authored with J Neary), *Economic Journal*, volume 92, 1982 and 'Booming sector and Dutch disease economics: survey and consolidation', *Oxford Economic Papers*, volume 36, 1984.

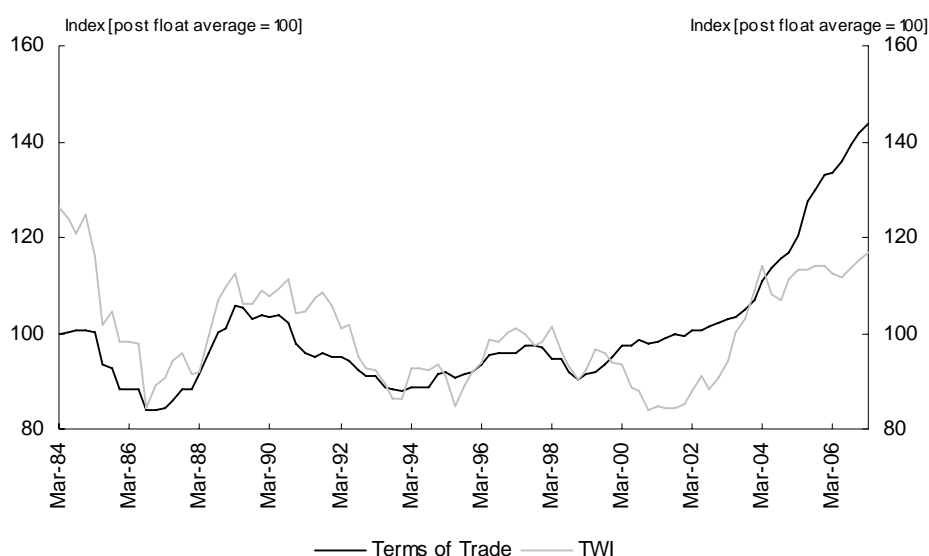
16 R Gregory, 'Some implications of the growth of the mineral sector', *Australian Journal of Agricultural Economics*, vol 20, no 2, August 1976, pp. 71-95.

17 D Gruen and T Kortian, 'Why does the Australian dollar move so closely with the terms of trade?' *Reserve Bank of Australia Research Discussion Paper 9601*, May 1996.

- 2.32 The behaviour since 2000 is less clear-cut. The dollar depreciated in 2000, without a fall in the terms of trade, and then appreciated from 2001, before the resources boom affected Australia's terms of trade.

The foreign exchange market at the time was presumably making its best guesses about likely future developments ... the exchange rate was rising strongly because the market was anticipating that the gathering strength of the world economy would sooner or later generate significant rises in the terms of trade of raw material exporting countries like Australia. And as events unfolded, that anticipation turned out to be broadly correct.¹⁸

Figure 2.4 Terms of trade and real trade-weighted index of the exchange rate



Source: *The Treasury*

- 2.33 This would imply that had the resources boom *not* eventuated, the exchange rate would have *depreciated* over recent years.
- 2.34 A similar phenomenon is occurring across regions. The resource-rich states are benefiting most from the resources boom. While some of the profits accrue to shareholders in the south-eastern states, some of their manufacturers supply mining companies, and they receive a share of the increased tax revenues; the associated exchange rate appreciation has hurt manufacturers and service exporters in those states. The Victorian Government reported an attempt at quantifying this effect:

18 D Gruen, 'A tale of two terms-of-trade booms', *Economic Roundup*, Summer 2006, p. 25. Another view is that "during the period 2002 to 2005 when US official interest rates ... were well below those in Australia the value of the \$A was very strong ... as footloose capital sought out the higher yields offered by Australian securities"; DITR, *Submission no. 31*, p. 29.

The modelling results show that the boom in commodity prices has reduced annual Victorian and NSW GSP growth by up to half of one percentage [sic] in the short term.¹⁹

2.35 However, it is not unusual for there to be differences in growth rates across states.²⁰ Indeed the relative uniformity that occurred between the Olympics and the resources boom was the unusual pattern.

2.36 Global interest rate movements may have moderated the response of the Australian dollar to the resources boom. DITR stated:

It must be acknowledged in this respect however that fortuitous timing of the US (and global) economic recovery together with the associated increase in US interest rates has meant that the \$A exchange rate is not as high as it might otherwise have been had the US recovery been slower in arriving.²¹

2.37 As discussed above, it is hard to judge whether the rise in commodity prices, and the strong Australian dollar, will be sustained. If it only lasts a short while, this could cause problems. The Treasury notes that:

There are concerns expressed that the resources boom may be short-lived. And once a factory is shifted overseas, or a contract lost, it may be difficult to expand manufactures or other non-resource exports again even if, after the resources boom fades, the exchange rate appreciation is reversed.²²

2.38 However, the Treasury go on to say:

Governments are no better placed than firms and investors, responding to signals in the market, to determine whether a shock is temporary. Instead, the government can more effectively help the economy achieve its productive potential by allowing the market to operate unimpeded and allow resources to flow to their most efficient use. This will achieve improved productivity, economic growth and expanded national income in the long term.²³

19 Victorian Government, *Submission no. 40*, p. 2 and Attachment A.

20 M Edey, Address to the *Australia & Japan Economic Outlook Conference 2007*, March 2007.

21 DITR, *Submission no. 31*, p. 21.

22 The Treasury, *Submission no. 21*, p. 13. A further difficulty would arise if commodity prices fall but this is not accompanied by a depreciation. Ai Group's interpretation of Figure 2.4 is that 'the terms of trade can fall a long way before downward pressure will be exerted on the exchange rate', 'Balancing the Risks: Building Australian's Economic Resilience', Ai Group, *Exhibit no. 7*, p. 27.

23 The Treasury, *Submission no. 21*, p. 13. This argument is developed in K Henry, 'Implications of China's re-emergence for the fiscal and economic outlook', *Economic Roundup*, Winter 2006, pp. 39-58.

- 2.39 Furthermore, even if commodity prices do not remain high for long, it was noted that the Dutch 'disease' was not a terminal disease:²⁴

The non-resources sector of the Dutch economy recovered reasonably quickly, after suffering from the early to mid sixties from the discovery of oil and gas.²⁵

- 2.40 Similarly in Australia, the 'Dutch disease' effects may not be that severe. The Australian Chamber of Commerce and Industry downplayed the effect of the appreciated exchange rate on manufacturers:

We do not necessarily see that it is a problem. Obviously, a strong resources sector influences the exchange rate, but that also has major benefits for the manufacturing sector in that a lot of their inputs are cheaper than they otherwise would be.²⁶

Conclusions

- 2.41 The committee notes the changes in the nature of Australia's manufacturing sector and its export performance. It welcomes the shift within manufacturing towards more knowledge-intensive activities.
- 2.42 The committee notes that the resources boom has been associated with a reduction in the relative importance of manufacturing, reinforcing a longer-run trend. It believes that attempting to resist this natural decline in manufacturing's share of the economy would be a mistake, just as it would have been a mistake to try to have preserved Australia as a predominantly agricultural country. Allowing market forces to direct Australia's labour and other resources into their best uses is likely to result in Australia having a more sophisticated manufacturing sector, with a growing share of the economy provided by services.

24 Chair, *Transcript*, 1 December 2006, p. 13.

25 ACCI, *Submission no. 33*, p. 17.

26 Mr G Evans, ACCI, *Transcript*, 2 March 2007, p. 22.