AUSTRALIAN MANUFACTURING WORKERS' UNION

AMWU Submission to the House of Representatives Standing Committee on Economics, Finance and Public Administration Inquiry into the state of Australia's manufactured export and import competing base now and beyond the resources boom.

August 2006

Executive Summary

Manufacturing is in recession. For the first time since the early 1990s, the manufacturing sector is declining in terms of output.

Since the election of the Howard Government in 1996, 95,000 manufacturing jobs have disappeared. This is the equivalent of 183 manufacturing jobs being lost each and every week of the last decade. In the last two years this employment decline has accelerated, with the equivalent of 308 jobs being lost each and every week.

The malaise in the Australian manufacturing industry is directly related to poor trade performance. Over the past 15 years each $1 million increase in real exports has been matched by an almost $4 million increase in real imports. The real manufacturing trade deficit is approaching 15 per cent of GDP. The number of Australian manufacturing industries with an export share of production over 20 per cent is now less than the number of industries with an import share in domestic demand of greater than 50 per cent.

The area where Australia's trade performance has been weakest is in elaborately transformed manufactures (ETM). In the period 1989-1996, ETM exports grew at more than double ETM imports (average annual growth 17.5% vs. 8.4%), since then it has been the reverse with ETM imports growing at almost twice the speed of exports (average annual growth 7.4% vs. 3.9%). The reduction in industry policy after 1996 was indisputably a cause of this reverse.

Manufacturing investment in research and development as a share of GDP has fallen over the last ten years. Manufacturing R&D expenditure peaked at 0.47% of GDP in 1995-96, in the latest statistics (2004-05) it was 0.39%, a 0.1% reduction from the previous year. We are falling behind our competitors and the challenge that manufacturers failed was to maintain, if not increase, R&D expenditure intensity over the last ten years.

Manufacturing is paying the price for Australia having an unbalanced, debt ridden economy. Australia's increasing national and household indebtedness arises from structural imbalances that see a mining and resources boom forcing interest rates upwards while the country's manufacturing industries are struggling to compete in a global market.

Both interest rates and the Australian dollar are higher they otherwise would be due to the resources boom. Pressure on interest rates is also increased by domestic consumption levels that are bolstered by increasing household debt.

Exporters and import competing manufacturers are disadvantaged by both of these factors and by the lack of an industry policy framework suited to the needs of a major trading economy. Australia's economic policy frameworks are tilted towards internal consumption and "low risk" industries. Manufacturing exports are falling as a proportion of GDP while imports are rising, reversing the positive trends of the 1980's and early 90's.

To completely configure the economy to suit the needs of an industry (mining) that employs only 1.3% of the Australian workforce is incredibly shortsighted. A billion dollar increase in manufacturing exports produces the following benefits over a billion dollar increase in mining exports:

- An extra $86 million in gross domestic product at basic prices.
- If saved national income is added to the gross domestic product result the superiority increases to $552 million. That is, further rounds of economic activity accruing to a manufacturing expansion that a similar mining expansion would not experience due to its lesser linkages to the rest of the economy.
- $114 million additional wages.
- 4.8 million additional hours of work, or 26,700 full time equivalent employment positions.

Even at the height of the resources boom, to import one plasma television, we need to export 6,500 tonnes of Iron Ore.

In addition to these structural imbalances, Australian manufacturing is confronting issues around productivity and risk premiums. Traditional measures of productivity in manufacturing suggest Australia is about average in the outcomes it achieved relative to its competitors. But the tyranny of distance and the collapse of manufacturing exports have put substantial downward pressure on productivity growth. This and the higher risk premium investors attach to investment in complex manufacturing are as much or more of a drag on productivity as conventional issues of firm level productive performance.

The trends identified in this submission pose a gloomy future for manufacturing. If current trends continue, our economic modelling predicts stagnation of manufacturing output and job losses of up to 200,000. Up to half of these losses would be directly attributable to increased import penetration and offshoring of local production. In other words, Australia is in danger of having its manufacturing sector hollowed out.

This submission concludes that we can not just keep the ‘cream’ of manufacturing. We need critical mass to maintain supply chains, build clusters, innovate successfully, win export markets and enjoy a balanced economy.

The AMWU rejects arguments that it is natural for manufacturing to decline in developed nations, and that there is nothing we can do to compete with low cost Asian producers. There are many examples of small, industrialised economies with successful manufacturing sectors. In the case of Ireland it was possible to use aggressive industry and innovation policies and incentives to develop and maintain a manufacturing base. Lower corporate tax rates played a small role, but a commitment to education, building business capability and innovation was much more important. Wages in Ireland were among the lowest in the European Union when they commenced their growth leap. Since then wages have grown, but they are still successfully competing against the low paid Eastern European countries that have recently joined the EU.

Ireland is managing to maintain its manufacturing base and expand into growth industries because it doesn’t compete on wages. Most of the multinationals are so embedded in the Irish economy and so dependant on the very skilled Irish workforce

and highly capable, innovative, Irish SMEs that it is not worth it for them to move to Eastern Europe for the cheaper labour.

Industry assistance policies are effective because of the high risk nature of manufacturing. Market forces will not produce the level of assistance required in manufacturing compatible with the desired overall level of economic growth. Governments can be very effective in driving manufacturing growth because they have the resources to offer incentives to neutralise the high risk nature of manufacturing. The more incentives offered, the greater the reduction in risk and the faster the rate of growth of manufacturing. In this context economic growth "is a phenomenon that can be easily manipulated by government policy".

The AMWU also rejects arguments put forward from bodies such as the Federal Treasury that we should ignore the danger of having the manufacturing sector hollowed out and unable to rebuild once the mining boom recedes. Treasury argues that government should leave it to the market to operate unimpeded and allow resources to flow to their most efficient use. This ignores the lessons of our own history, one such example being the disastrous end of minerals boom in the late 1970s leaving a greatly weakened manufacturing sector, and of international experience. If the Treasury thesis had been slavishly followed in other countries, Ireland would still be producing potato chips rather than computer chips, and Singapore would still be concentrating on low cost textile production rather than being a world leader in knowledge intensive manufacturing. Government can and should make decisions involving the industrial structure of the economy. To leave it to the whims of the market is to invite disaster.

To avoid this danger, the AMWU has proposed a sustained $1 billion policy package (that is additional to all current funding). Economic modelling conducted by National Economic has shown that if this $1 billion program was maintained from 2007 to 2020 it would make a significant contribution to expanding the demand for Australian manufactured products, including:

- Creating at a minimum almost 280,000 direct and indirect jobs.
- Increasing GDP by at least $54 billion in 2005 prices.

The AMWU has also proposed reforms to existing industry policy mechanisms, namely:

- Restoring the 150 per cent R&D tax concession and leaving it unchanged for at least a decade.
- Putting in place a 175% tax concession for firms with an R&D expenditure of 2 per cent or more of their sales and a business plan with milestones for upgrading the firm's R&D capability.
- Implement a fundamental review of Invest Australia through a strategy-based consultancy, supported by both the States and the Commonwealth, to get better outcomes from that organisation.
- Re focus investment incentives for major projects almost exclusively on new FDI in knowledge intensive manufacturing activities with the highest incentives for greenfield sites, as well as investments that strengthen supply chains in the manufacturing regions.
- Increase the emphasis in the investment promotion program on attracting large global companies to establish R&D/engineering/product development

centres in Australia with the accompanying manufacturing prototype capability.

- End cost recovery for the Industry Capability Network (ICN) and help purchasers find Australian suppliers with the capability to supply for both domestic and export markets.
- The AUSFTA Procurement Agreement still allows Australia to give preference and use offsets for small and medium size enterprises. A concerted effort will be required to do this and plans to do this must be developed and implemented now.
- A major overhaul of Austrade.
- Increased investment in supporting physical, social, R&D and environmental infrastructure.

Introduction

1. The Australian Manufacturing Workers' Union (AMWU) welcomes the invitation to make submissions to the House of Representatives Economics Committee regarding the state of Australia's manufactured export and import competing base now and beyond the resources boom.

2. The full name of the AMWU is the Automotive, Food, Metals, Engineering, Printing and Kindred Industries Union. The AMWU represents approximately 140,000 workers in a broad range of sectors and occupations within Australia's manufacturing industry

3. This submission addresses the terms of reference of this inquiry:

   - Australia's dominance in commodities exports and the impacts of this on the economy following the resources boom;
   - the state of the country's manufacturing sector (and the goods and associated services) including opportunities and challenges from the expansion in global trade (in particular by China); and
   - policies for realising these opportunities.

4. It is the AMWU's submission that Australian Manufacturing is in crisis, facing long term decline. This crisis is partly caused by the resources boom forcing up the Australian dollar. This boom in commodity exports, in association with the massive explosion in personal debt, has masked the impact of our manufacturing decline and has led to complacency from the Federal Government regarding policy intervention.

5. The submission

   - Summarises the state of Australian Manufacturing, including key statistics around output, employment, trade, investment and innovation.
   - Examines why manufacturing is in crisis.
   - Discusses why it matters that manufacturing is declining.
   - Demonstrates why the mining boom will not ensure the sustainability of the Australian economy.
   - Shows why policy support is needed and why it can be effective.
   - Sets out potential policy solutions.

6. Attached to this submission are copies of "The State of Australian Manufacturing", produced for the AMWU by the National Institute of Economic and Industry Research (NIEIR) and "The Future of Australian Manufacturing", produced by the AMWU and NIEIR. The submission incorporates the main findings of these studies, but reference should be made to the attachments for further details.

State of Manufacturing

1. Policies that were supposed to create a productive and growing manufacturing sector have left the sector in long term decline. Figure 1 indicates that the rate of decline of the Australian manufacturing sector in total activity has been sustained at a long term rate of 0.3 percentage points decline per annum.

2. In 1979-80, manufacturing value added in GDP was just under 20 per cent. In 2004-05 the share is just above 12 per cent. Moreover, the rate of decline appears to be accelerating.

3. Over recent quarters the trend for manufacturing production is, at best, stagnant and, at worst, declining by around 1 per cent per annum. The share of total hours worked in the economy has fallen from 18.5 per cent in 1990 to 12.4 per cent in 2005.

4. Table 1 indicates that with the exception of manufacturing export growth over the early 1990s, most manufacturing performance indicators have registered a poor performance, compared to the corresponding indicator for the economy as a whole. Over recent years, manufacturing export performance has been particularly poor.

Figure 1 - Share of Australian Manufacturing in Total GDP at Factor Cost - per cent

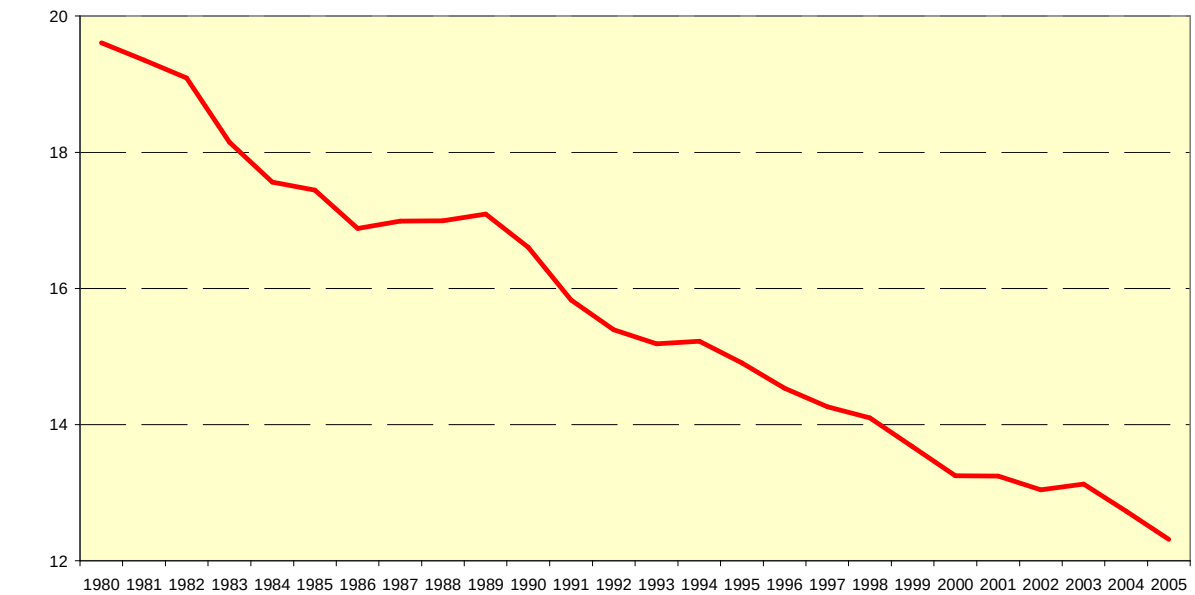


Table 1 Australian manufacturing and total industry indicators: 1990-2005 (average annual growth between span years)				
	1990-1996	1996-2000	2000-2005	1990-2005
Real output				
Manufacturing	0.6%	2.0%	1.7%	1.4%
All industries	2.2%	4.3%	3.1%	3.1%
Total hours worked (in million hours)				
Manufacturing	-2.4	-0.7	-1.0	-1.5
All industries	0.7	1.4	1.5	1.1
Labour productivity				
Manufacturing	3.2%	2.8%	2.7%	2.9%
All industries	1.6%	2.9%	1.5%	1.9%
Capital stock				
Manufacturing	2.7%	3.0%	2.4%	2.7%
All industries	1.7%	3.1%	3.2%	2.6%
Exports of goods and services				
Manufacturing	9.6%	6.8%	0.6%	5.8%
All industries	7.7%	6.5%	2.2%	5.5%
Imports of goods and services				
Manufacturing	4.6%	7.4%	8.1%	6.5%
All industries	4.3%	5.7%	7.2%	5.6%
Domestic demand				
Manufacturing	0.8%	3.1%	4.3%	2.6%
All industries	2.0%	4.3%	3.7%	3.2%

Employment

5. As Table 1 highlights total hours worked in manufacturing have declined by an annual average of 1.5% in the period 1990 to 2005. While some of this has to do with outsourcing and the reclassification of jobs previously defined as manufacturing as now service jobs, most of the job losses are attributable to low output growth and increasing import penetration.

6. As Figure 2 highlights there has been a significant downward trend in manufacturing employment in the last 10 years. Table 2 sets out manufacturing employment growth over the last 10 years. Since the election of the Coalition in 1996, Australia has lost the equivalent of 183 jobs each and every week of this period. Since Prime Minister Howard's re-election in 2004 the rate is running at 308 jobs per week.

Figure 2 - Manufacturing Employment

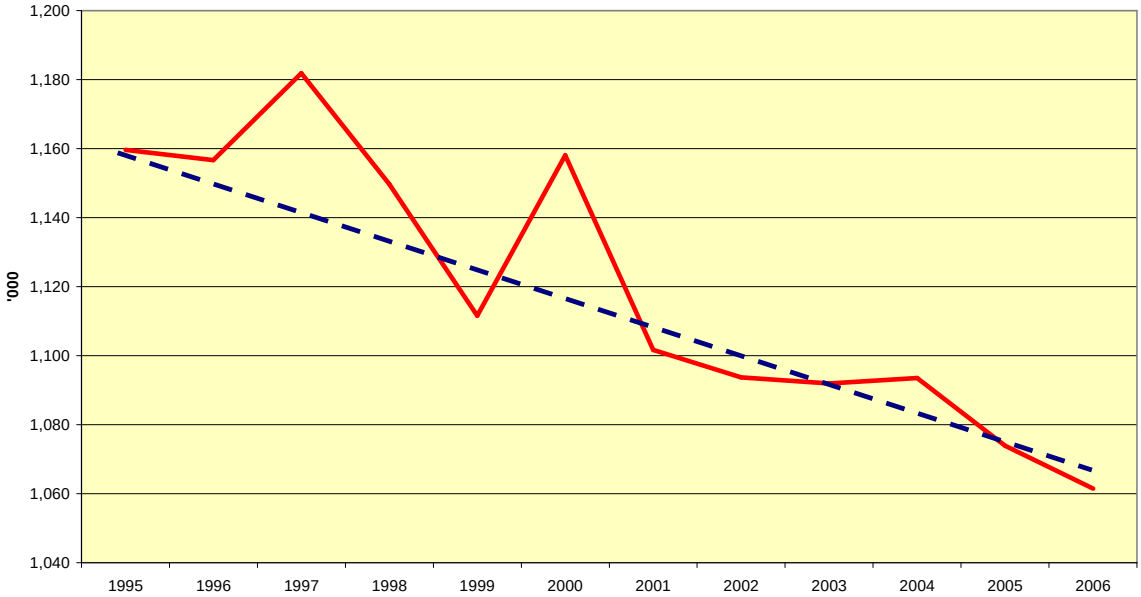
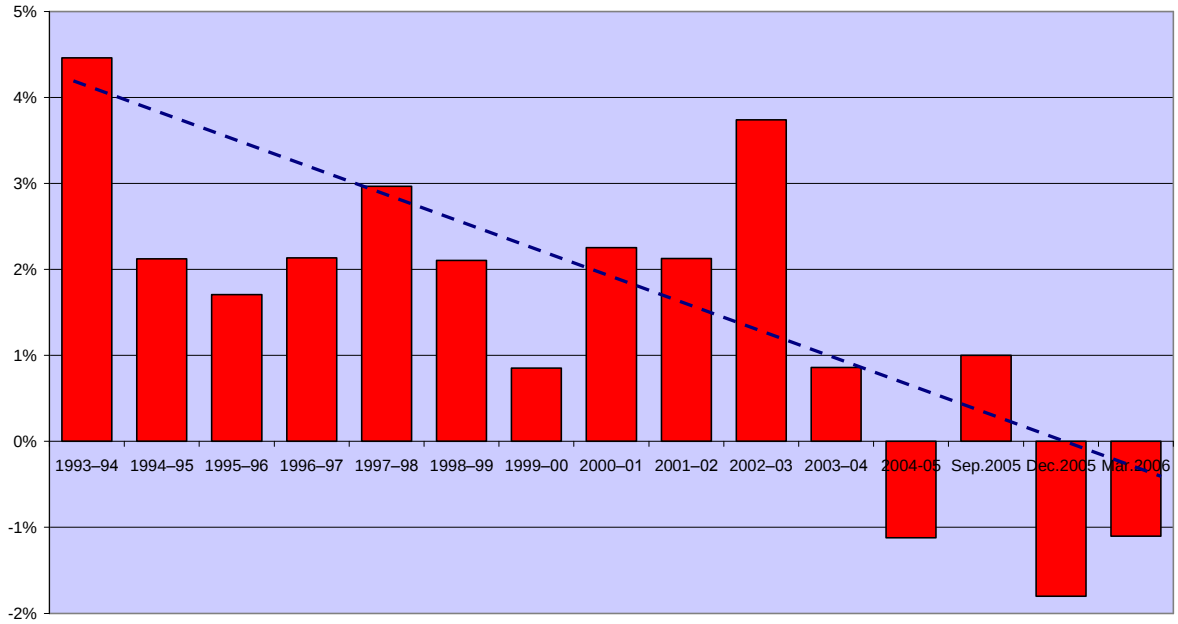


Table 2	Manufacturing Employment Growth			
	Manufacturing Employment Growth	Manufacturing Employment Growth Per Month	Manufacturing Employment Growth Per Week	Manufacturing Employment Growth Per Day
NSW 1996-2006	-67,270	-561	-129	-18
NSW 2004-2006	-23,100	-962	-222	-32
VIC 1996-2006	-51,562	-430	-99	-14
VIC 2004-2006	-13,900	-579	-134	-19
QLD 1996-2006	14,006	117	27	4
QLD 2004-2006	600	25	6	1
SA 1996-2006	1,835	15	4	1
SA 2004-2006	-1,700	-71	-16	-2
WA 1996-2006	10,415	87	20	3
WA 2004-2006	7,500	313	72	10
TAS 1996-2006	-2,542	-21	-5	-1
TAS 2004-2006	-500	-21	-5	-1
Aust 1996-2006	-95,178	-793	-183	-26
Aust 2004-2006	-32,000	-1,333	-308	-44

Output

7. As detailed in Table 1 manufacturing output has grown at half the rate of the rest of the economy over the last 15 years (1.4% versus 3.1%). Figure 3 charts the growth in manufacturing output according to the ABS National Accounts. It should be noted that the manufacturing sector is in recession as it has experienced two consecutive quarters of negative growth. In 2004-05 the sector actually contracted by 1.1%.

Figure 3 - Annual Manufacturing Output Growth



8. More worrying perhaps than the total manufacturing malaise is that the malaise extends to almost all manufacturing industries. Some of these industries have a capacity for sustained growth, without which there is no foundation to build a better manufacturing future.

9. Table 3 indicates that outside commodity metal processing, there are only a small number of industries that have exhibited strong growth over both the entire 1990 to 2005 period and recent years. The construction linked non-metallic minerals industries have done reasonably well, as would be expected from the recent strength of the construction industry. However, these industries have limited export potential and their growth rates will rise and fall with the domestic construction sector. Beverages have done well in recent years, but the over-supply in the wine industry will limit prospects for medium term growth. The performance of the food and machinery industry group has been particularly disappointing.

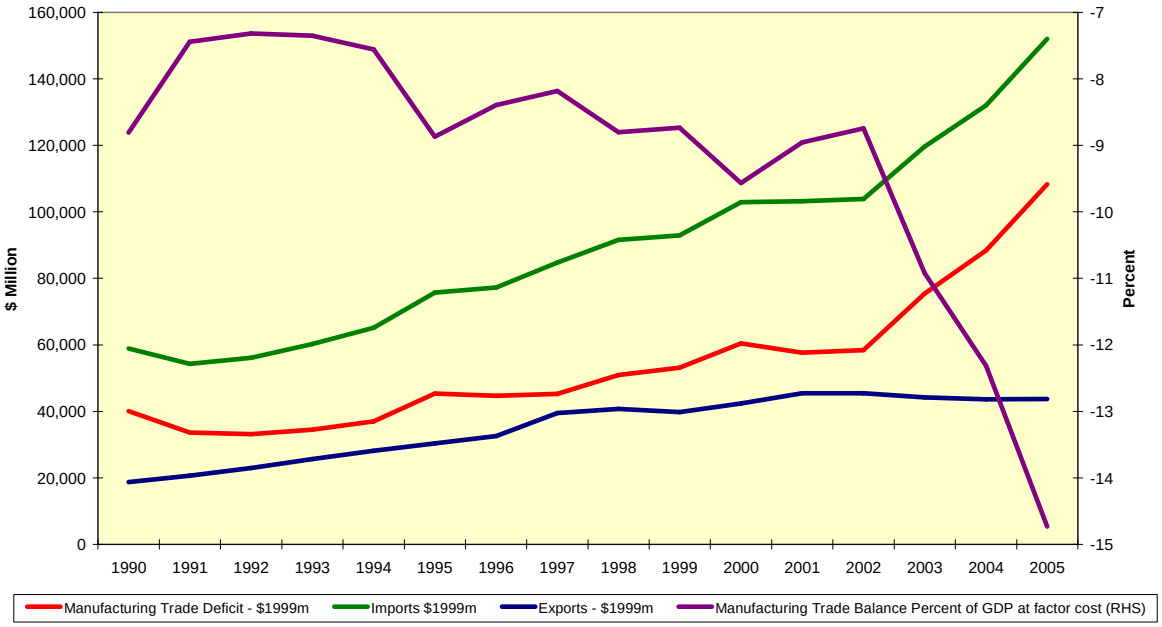
Table 3 Australian manufacturing industries output growth rates: 1990-2005				
	1990-1996	1996-2000	2000-2005	1990-2005
Meat and Meat Product Manufacturing	1.6	3.4	0.8	1.8
Dairy product Manufacturing	2.9	3.8	-4.8	0.5
Fruit and Vegetable Processing	3.9	4.1	5.0	4.3
Oil and Fat Manufacturing	-3.4	4.6	20.5	6.2
Flour Mill and Cereal Food Manufacturing	4.3	1.9	0.2	2.3
Bakery Product Manufacturing	-2.0	-0.1	-2.1	-1.6
Other Food Manufacturing	2.8	1.2	2.1	2.1
Beverage and Malt Manufacturing	1.2	7.4	6.5	4.6
Tobacco Product Manufacturing	-3.2	-2.6	4.2	-0.6
Textile Fibre, Yarn and Woven Fabric	0.5	-0.9	-16.0	-5.7
Textile Product Manufacturing	-3.4	4.1	5.1	1.4
Knitting Mills	-6.8	0.1	-12.1	-6.8
Clothing Manufacturing	-2.0	-5.3	-13.3	-6.8
Footwear Manufacturing	-4.9	-3.9	-15.0	-8.1
Leather and Leather Substitute Manufacturing	2.8	-4.1	-6.3	-2.1
Log Sawmilling and Timber Dressing	-2.2	2.6	9.4	2.8
Other Wood Product Manufacturing	-0.2	6.8	-3.9	0.4
Paper and Paper Product Manufacturing	1.2	3.5	8.4	4.2
Printing and Services to Printing	1.6	6.6	-2.1	1.6
Publishing and recorded media	-1.7	0.6	1.0	-0.2
Petroleum and Coal Products	-0.1	-3.2	-4.2	-2.3
Basic Chemical Manufacturing	0.1	0.7	3.2	1.3
Other Chemical Product Manufacturing	4.0	4.7	-0.7	2.6
Rubber Product Manufacturing	-0.6	-2.9	7.2	1.3
Plastic Product Manufacturing	1.5	1.3	-2.2	0.2
Glass and Glass Product Manufacturing	-1.1	0.8	13.9	4.2
Ceramic Product Manufacturing	-3.3	5.6	3.5	1.2
Cement, Lime, Plaster and Concrete	-1.4	5.5	6.3	3.0
Non-Metallic Mineral Products	-1.5	0.6	-2.8	-1.4
Iron and Steel Manufacturing	-0.1	0.7	-2.2	-0.6
Basic Non-Ferrous Metal Manufacturing	4.0	-1.3	7.3	3.7
Structural Metal Products Manufacturing	-1.7	6.6	-2.5	0.2
Sheet Metal Product Manufacturing	-1.8	0.7	-0.7	-0.8
Fabricated Metal Product Manufacturing	0.8	-0.2	7.4	2.6
Motor Vehicle and Part Manufacturing	-0.4	4.2	3.3	2.0
Other Transport Equipment Manufacturing	-2.0	1.6	-3.3	-1.5
Photo and Scientific Equipment Manufacturing	2.8	8.4	5.0	5.0
Electronic Equipment Manufacturing	13.1	3.1	2.0	6.6
Electrical Equipment and Appliance Manufacturing	2.1	-2.7	0.8	0.4
Industrial Machinery and Equipment Manufacturing	-0.2	-0.7	6.0	1.7
Prefabricated Building Manufacturing	-7.1	-2.0	5.3	-1.7
Furniture Manufacturing	-1.7	3.2	0.3	0.3
Other Manufacturing	-3.7	1.1	11.9	2.6
Total manufacturing	**0.6**	**2.0**	**1.7**	**1.4**

Trade

10. The malaise in the Australian manufacturing industry can be directly trained to a poor trade performance. Over the past 15 years each $1 million increase in real exports has been matched by an almost $4 million increase in real imports. The real manufacturing trade deficit is approaching 15 per cent of GDP.

11. Figure 4 indicates that the real (in 1999 $b) trade deficit has doubled since the late 1990s and now represents 14.7 per cent of GDP. This is because of declining export performance and increasing import penetration. Over the 1990s, 37 out of 43 ANZSIC 3-digit manufacturing industries had export growth rates in excess of 5 per cent per annum.

Figure 4 - Australian Manufacturing Trade Indicators 1990-2005



12. Over the 2000 to 2005 period the number of industries with an export growth rate of 5 per cent per annum had fallen to 13. A number of food, textile, clothing and footwear industries and non-metallic mineral industries had high negative growth rates. As a result, total manufacturing export growth fell from 8.5 per cent per annum over the 1990s to 0.6 per cent per annum over the 2000 to 2005 period (Table 4).

13. The number of Australian manufacturing industries with an export share of production over 20 per cent is now less than the number of industries with an import share in domestic demand of greater than 50 per cent.

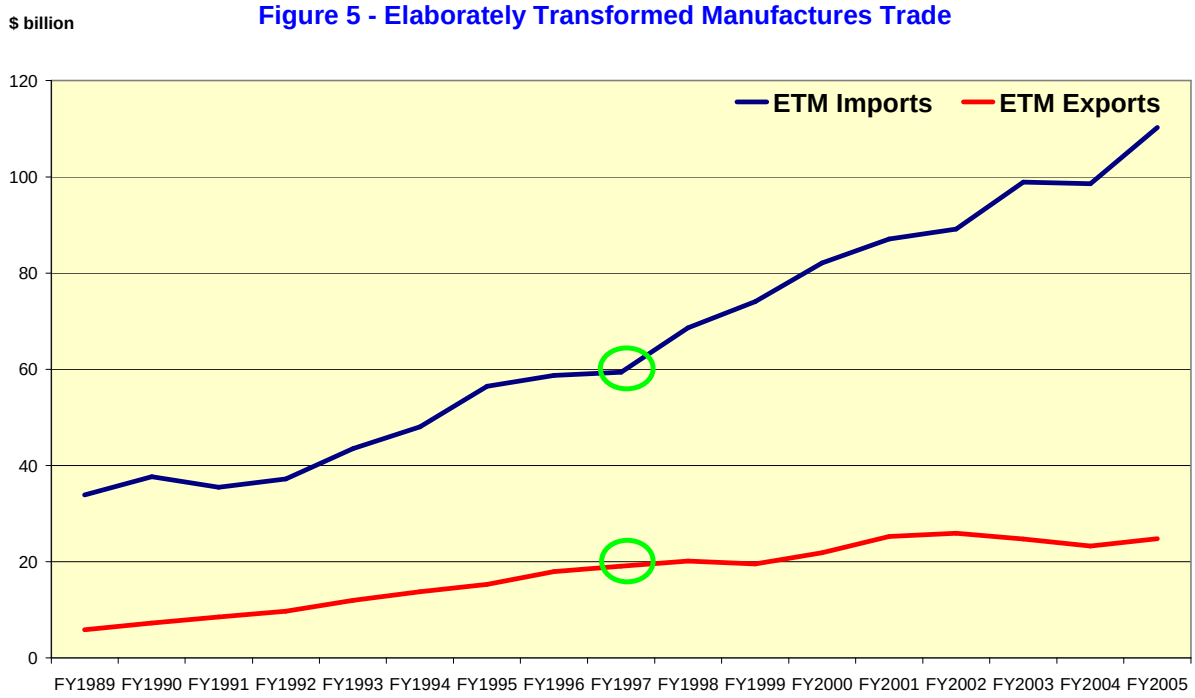
14. In Table 3 there are ten industries with an export share greater than 20 per cent. Half of the industries are agricultural processing industries and one is a mineral commodity processing industry. There are only four industries with a degree of manufacturing complexity that are export industries.

15. On the other hand, from Table 3, there are 14 industries with an import share in domestic production of greater than 50 per cent. These industries are concentrated in the textile, clothing and footwear industries, chemicals and equipment/appliance industries.

Table 4 Australian manufacturing trade indicators: 1990-2005						
	Real export average annual growth rates - per cent per annum		Export share of production (per cent)	Import share in domestic demand (per cent)		
	1990-2000	2000-2005	2005	1990	2000	2005
Meat and Meat Product Manufacturing	3.5	2.5	35.5	0.1	0.1	0.3
Dairy product Manufacturing	10.2	-7.6	29.7	5.5	9.0	9.9
Fruit and Vegetable Processing	9.6	-2.4	14.3	15.5	19.1	19.8
Oil and Fat Manufacturing	16.3	3.2	9.4	16.6	35.9	21.1
Flour Mill and Cereal Food Manufacturing	15.5	-8.3	13.3	6.5	10.3	14.4
Bakery Product Manufacturing	10.3	8.5	8.4	3.6	10.0	15.8
Other Food Manufacturing	0.1	-0.7	23.8	17.1	21.3	24.3
Beverage and Malt Manufacturing	15.3	11.5	14.3	7.2	8.5	9.6
Tobacco Product Manufacturing	13.6	12.1	16.2	18.3	37.8	38.4
Textile Fibre, Yarn and Woven Fabric	5.1	-4.3	74.6	36.2	50.4	83.6
Textile Product Manufacturing	10.6	7.6	13.3	30.6	41.0	43.9
Knitting Mills	17.0	-4.1	12.6	24.1	42.5	67.0
Clothing Manufacturing	15.0	-4.2	18.2	15.3	50.0	77.6
Footwear Manufacturing	12.0	-6.9	17.8	34.2	66.5	86.9
Leather and Leather Substitute Manufacturing	12.3	7.0	129.3	37.4	66.8	86.0
Log Sawmilling and Timber Dressing	50.1	4.9	18.1	23.5	24.0	18.5
Other Wood Product Manufacturing	24.3	14.6	9.6	10.8	13.6	20.6
Paper and Paper Product Manufacturing	13.0	8.2	7.7	26.7	33.0	27.2
Printing and Services to Printing	11.2	-8.3	1.4	11.9	12.2	16.9
Publishing and recorded media	9.2	7.3	4.7	13.3	18.0	20.3
Petroleum and Coal Products	2.8	-7.8	6.7	13.5	12.3	26.7
Basic Chemical Manufacturing	4.2	-0.2	15.2	32.5	54.2	52.7
Other Chemical Product Manufacturing	19.7	9.3	25.0	20.7	38.2	56.6
Rubber Product Manufacturing	14.7	-0.1	8.0	40.2	56.4	54.2
Plastic Product Manufacturing	13.3	6.2	7.7	18.3	27.9	36.5
Glass and Glass Product Manufacturing	9.8	-4.4	3.8	28.2	35.3	24.1
Ceramic Product Manufacturing	17.5	-1.9	4.3	30.8	34.4	32.6
Cement, Lime, Plaster and Concrete	27.2	-5.6	0.2	0.0	0.0	0.0
Non-Metallic Mineral Products	6.9	-10.2	4.2	19.8	27.8	34.8
Iron and Steel Manufacturing	7.8	-15.9	6.1	11.0	16.8	26.5
Basic Non-Ferrous Metal Manufacturing	10.5	-2.7	41.8	2.1	14.6	5.8
Structural Metal Products Manufacturing	2.2	-5.8	0.8	0.7	2.1	4.1
Sheet Metal Product Manufacturing	4.4	-7.6	4.9	4.0	8.0	11.5
Fabricated Metal Product Manufacturing	9.6	0.4	4.6	21.5	31.2	30.4
Motor Vehicle and Part Manufacturing	17.4	-0.3	15.0	34.9	51.7	57.7
Other Transport Equipment Manufacturing	12.7	-10.6	7.5	32.8	42.8	42.5
Photo and Scientific Equipment Manufacturing	16.8	7.8	60.5	74.5	83.7	87.1
Electronic Equipment Manufacturing	18.6	-1.3	18.1	80.3	81.3	84.9
Electrical Equipment and Appliance Manufacturing	11.7	-0.4	12.9	34.8	47.4	60.7
Industrial Machinery and Equipment Manufacturing	11.7	5.0	24.9	50.9	62.6	67.8
Prefabricated Building Manufacturing	8.2	4.5	3.9	0.6	1.0	0.7
Furniture Manufacturing	10.4	1.6	2.9	10.6	21.9	36.8
Other Manufacturing	2.2	12.3	91.7	76.4	95.8	96.1
Total manufacturing	**8.5**	**0.6**	**17.5**	**24.1**	**35.4**	**42.4**

16. The area where Australia's trade performance has been weakest is in elaborately transformed manufactures (ETM). Figure 5 details our performance in ETM trade since 1989. While imports were trending up from 1989 to 1997, this was more than matched by significant ETM export growth. **In the period 1989-1996, ETM exports grew at more than double ETM imports (average annual growth 17.5% vs. 8.4%), since then it has been the reverse with ETM imports growing at almost twice the speed of exports (average annual growth 7.4% vs. 3.9%). The reduction in industry policy after 1996 was indisputably a cause of this reverse.**

Figure 5 - Elaborately Transformed Manufactures Trade

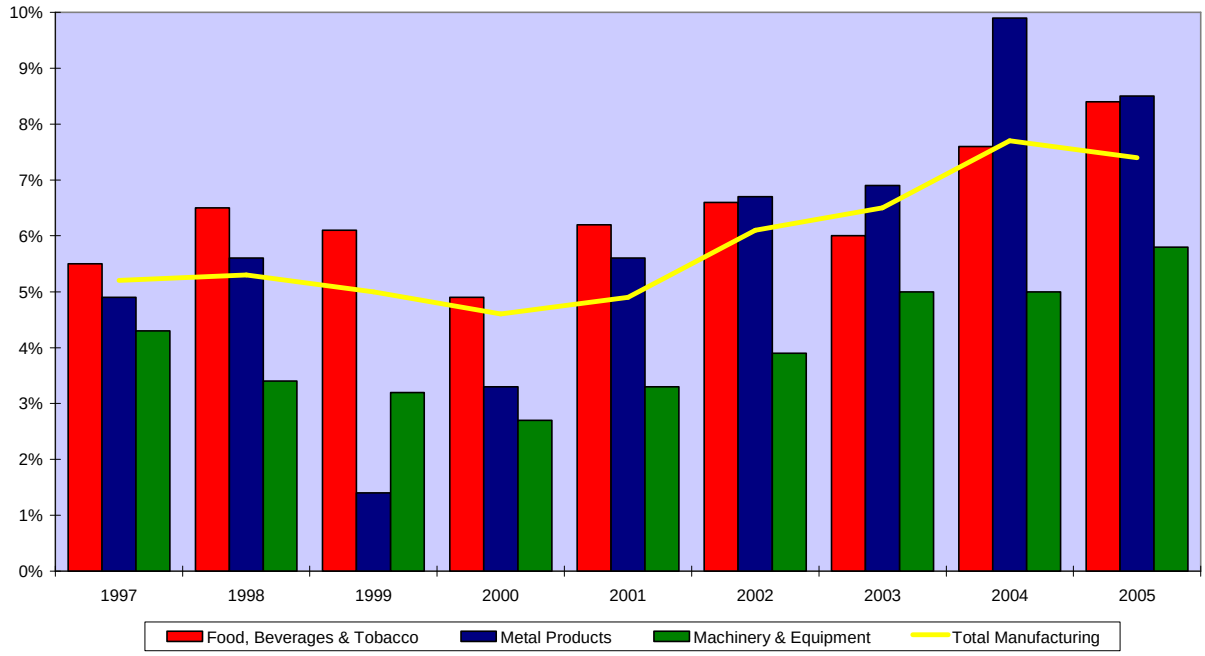


Source: DFAT, STARS database

Profits and Investment

17. However, despite the downward pressure on sales manufacturing firms have been pursuing a variety of strategies to cut costs and lift profit margins. As Figure 6 suggests there has been a reasonable recovery in profit margins since the mid 1990s. This restoration of profit margins has not been across the board. Some sectors such as auto components have experienced downward pressure on their margins.

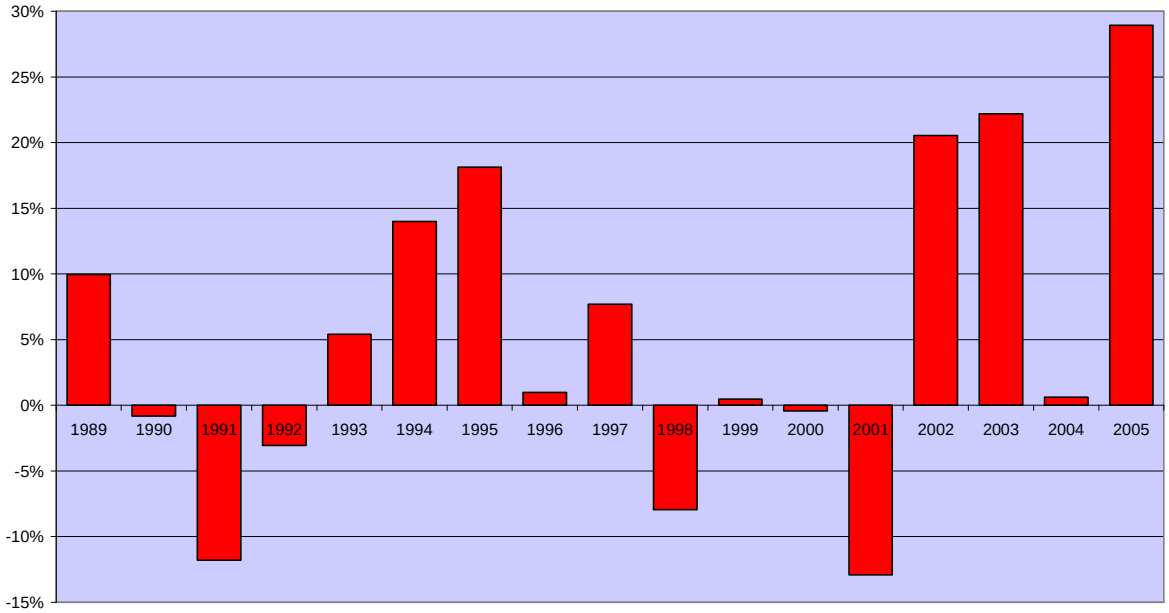
Figure 6 - Company Profit Margins: Pre-tax profit as percentage of sales



18. It has been the restoration of profits and intensified global competitive pressures rather than strengthening demand which has led to significant increases in new capital expenditure by manufacturers over the past three years. Furthermore for the first time in more than a decade manufacturers significantly increased their intake of apprentices.

19. Also, in the last two years have also seen significant increases in R&D which is critical to move more firms up the value chain with new products, processes and sustainable competitive advantages (see innovation section). This investment is critical for the industry's future.

Figure 7 - New Capital Investment in Manufacturing, Percentage Change



20. But a few good years can't make up for a decade of under-investment. It is the decade average levels of investment that really make the difference in re-positioning Australian manufacturing with more sustainable competitive advantages and we have fallen behind most of the developed world on this (see the innovation section).

21. While capital investment is essential to manufacturing prosperity, a major contributor to the stagnation in manufacturing has been our inability to attract foreign direct investment into greenfields manufacturing sites.

22. Between 1985 and 1995 Australia attracted 3.4 per cent of global foreign direct investment. However over the next six years (1996-2001) Australia's share of global FDI fell to 1.1 per cent.[1]

23. Unfortunately data on Australia's FDI inflows tells us little about how much was in value added manufacturing and how much of that was in greenfield sites. From various UNCTAD and OECD Reports we know that globally FDI in manufacturing has accounted for approximately 30 per cent of global FDI and 25 per cent of that in greenfield sites. The FDI invested in new greenfield sites is particularly important.

> *"Greenfield investments are of particular interest because they more clearly represent net additions to the economic base of communities where they are located. Greenfield investments also provide a superior indicator of the relative attractiveness of regions to foreign investors because it involves a more explicit*

[1] Invest Australia: Global Returns: The National Strategic Framework For Attracting Foreign Direct Investment pg 21.

choice of location than does the takeover of establishments that had been set up by another company."[2]

24. An Australian Business Foundation study argues that:

"The challenge for policymakers is, therefore, to develop policies which aim to identify relevant complementarities between firm and country-specific advantages and disadvantages. Rather than simply trying to attract foreign direct investment, policies should aim to be selective by discriminating in favour of those investors whose strategies and organisations complement national advantages."

25. New greenfield FDI is also vital to the regeneration of manufacturing in terms of the build-up of new productive capacity from new entrants, helping to offset the downsizing and exit/closure that occurs amongst existing manufacturing firms. For example OECD research suggests (in this case for Canadian manufacturing):

- around 8 per cent of all plants in manufacturing in any given year are new plants with most being greenfield sites;
- around 75 per cent of manufacturing new entrants survive the first year and 35 to 40 per cent are still there in five years time;
- after 20 years these new entrants account for some 36 per cent of manufacturing employment.[3]

26. New greenfield FDI is an important contributor to this development of new entrants and the contribution they make to manufacturing growth. Even during the decade to the mid 1990's where Australia's FDI inflows were nearly three times greater than its share of global GDP there was little success in utilising investment promotion policies to attract value added manufacturing. The only publicly available data on FDI outcomes from 1988-89 to 1996-97 that was assisted by investment promotion activities (either in terms of facilitation or really making a difference to the outcomes achieved) of Austrade and other agencies suggests of 375 projects accounting for nearly $8 billion in FDI less than 20 per cent of the dollar value of the investment went to elaborately transformed manufactures.[4]

27. It is interesting to note that where a coordinated and strategic approach to FDI promotion between the States, the Commonwealth and business leaders was adopted, as in the case of Regional Headquarters, Australia's FDI promotion was much more successful.

28. Had Australia followed the successful approach adopted in countries such as Ireland to attract FDI in ICT, Pharmaceuticals and other value added manufacturing activities the outcomes could have been very different. The approach adopted for regional headquarters and the outcomes achieved support this proposition. The benchmarking data suggests that Australia's competitiveness

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[2] D. Shannon. W Zeile and K. Johnson: Regional Patterns in the location of Foreign Owned U.S. Manufacturing Establishments: Survey of Current Business May 1999.

[3] J.R. Bladwin, D Beckstead and A. Geard: the Importance of entry to Canadian Manufacturing: OECD 2002.

[4] This data was obtained by a Former Austrade Director and Published in the Report: Rebuilding Australia: Policy For Industry Development and More Jobs September 1997 page 3.21

and locational advantages for such investment was much greater than the outcomes achieved.

29. Unfortunately Australia did not adopt a more proactive/strategic approach or commit the resources necessary to achieve better outcomes. In addition the supporting mechanisms that were highly successful in attracting additional FDI in industries such as pharmaceuticals (the Factor F Scheme) were restructured and the incentive diminished. The current investment incentive arrangements (in terms of the list of successful and unsuccessful projects as well as those withdrawn or still pending) suggests that with a few notable exceptions such as the Holden Engine Plant, the focus has been on mining related activities not manufacturing.

30. There has been considerable debate since the Blackburn inquiry, and the subsequent formation of the new Invest Australia, as to whether a more strategic and coordinated approach is being developed. As suggested in the list below there is some focus on key manufacturing activities.

Table 5 Invest Australia priorities[5]

Facilitation priorities	Extensive promotion and attraction priorities	Limited promotion	Other priorities
Mining	ICT	Renewable energy	Heavy engineering and infrastructure
Energy (including LNG)	Biotech/ Pharmaceuticals	Environment industry	Special information industries
	Nanotechnology	Light metals	Film
			Food
			Finance

31. Unfortunately more than a decade was lost even before Australia got to the point it is at today. Had the nations share of global FDI been held at 3.4 per cent and a high proportion of the additional FDI been in value added manufacturing, particularly greenfield sites, then it is not unreasonable to suggest that in the seven years to 2003 more than $1 billion per annum in additional manufacturing FDI could have been achieved.

Innovation

32. Innovation is the key to the long term survival and prosperity of Australian manufacturing. Without a steady stream of value added products coming onto the market we will not be able to compete against imports, nor increase our exports of elaborately transformed manufactures.

33. Unfortunately on the available measures Australia is among the worst performers in the OECD in terms of Business Expenditure on Research and Development (BERD). Figure 8 highlights our poor performance in BERD.

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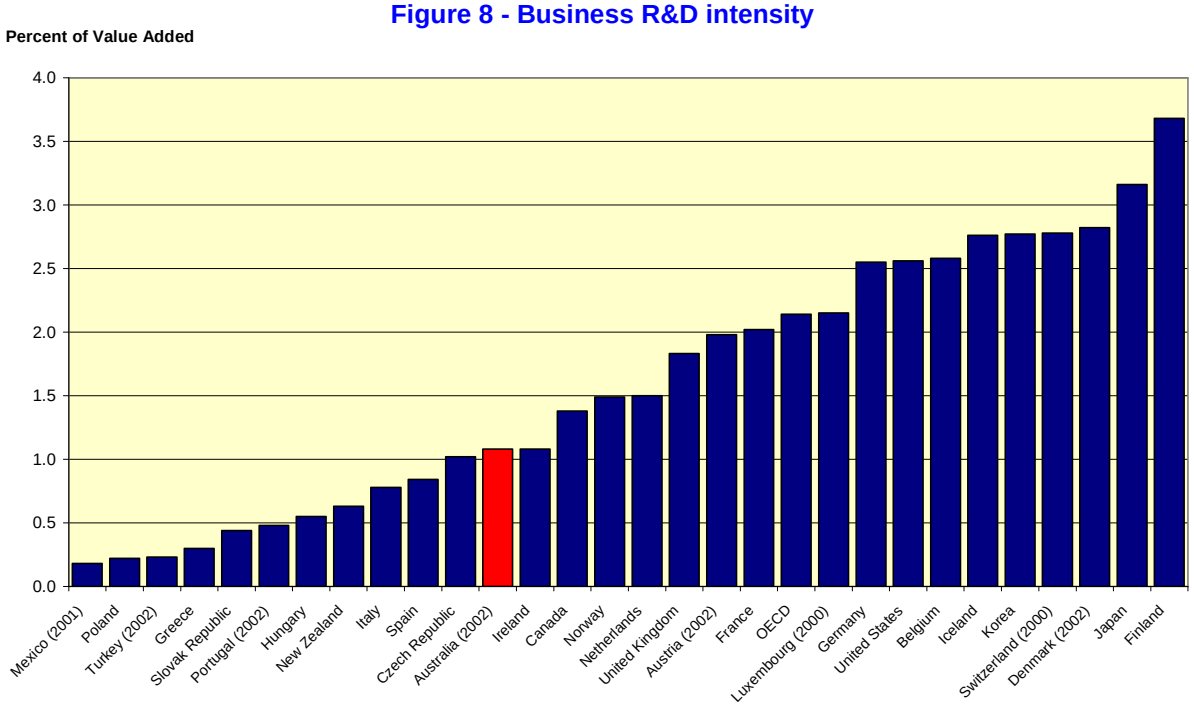
[5] Invest Australia: global returns op cit.

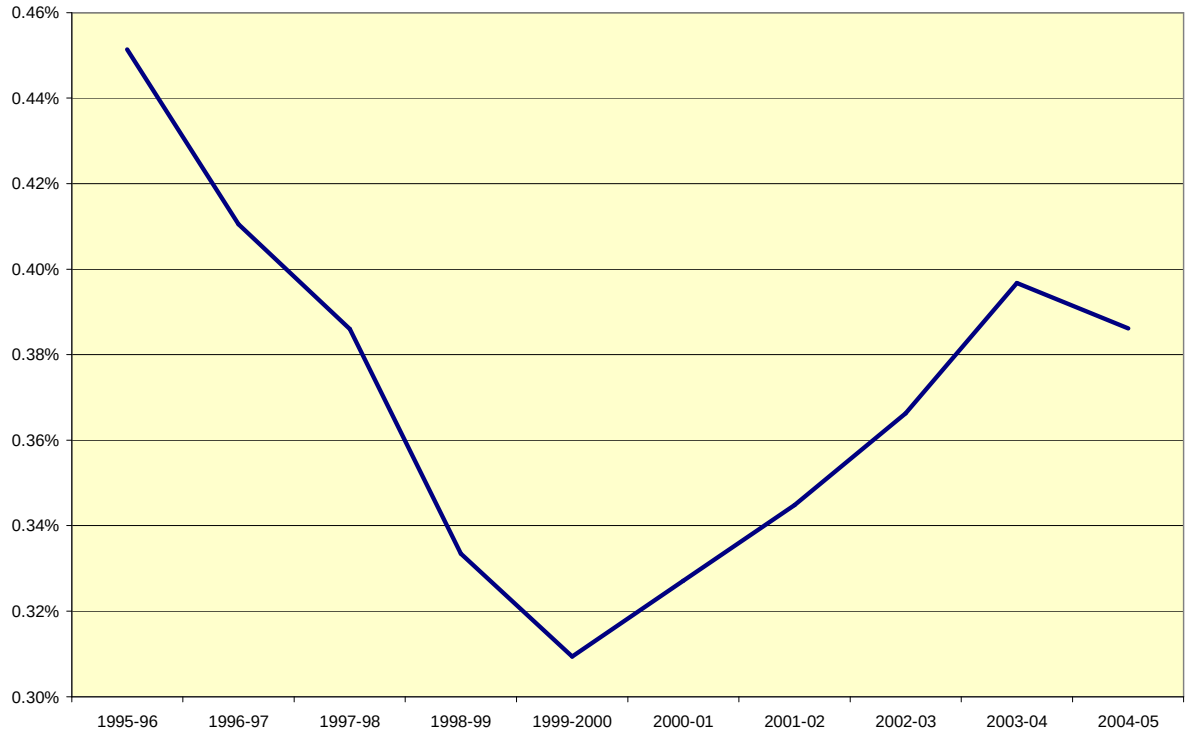
Figure 8 - Business R&D intensity



34. Business expenditure in research and development is not the only form of innovation. There are many forms of innovation that are equally valid and contribute to the long term competitiveness of Australian manufacturing, examples include incremental innovation, 'learning by doing' etc… However, there are few if any ways of developing meaningful international comparisons of these other forms of innovation. Accordingly we should regard BERD calculations as the best surrogate comparison of Australia's innovation performance compared to the rest of the world.

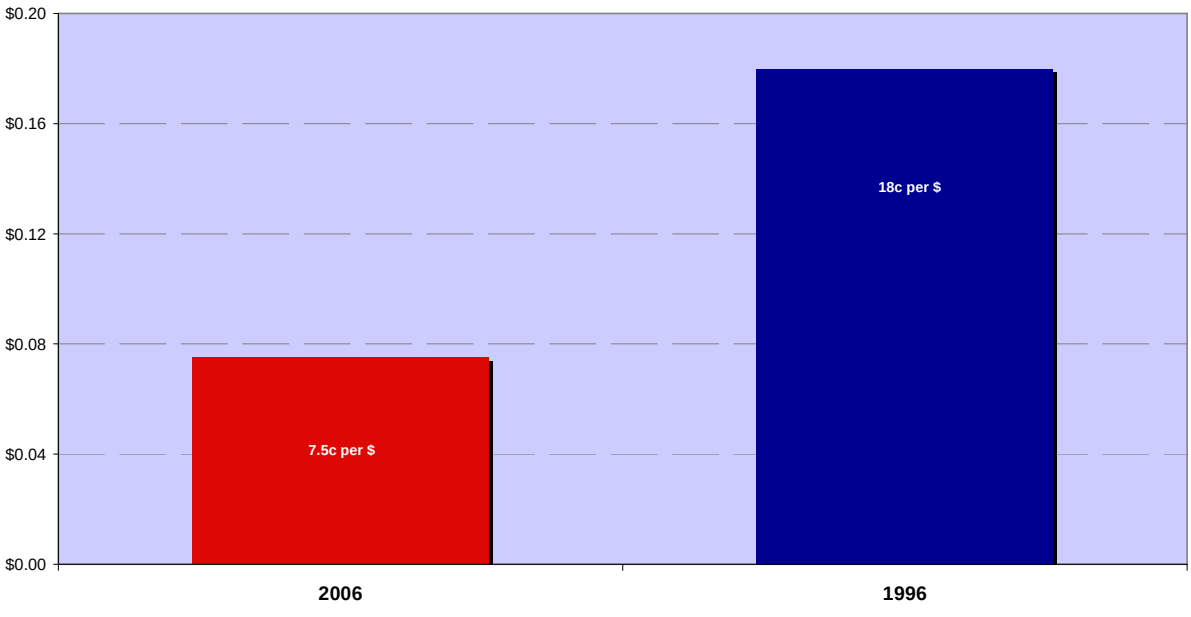
35. Manufacturing investment in research and development as a share of GDP has fallen over the last ten years. As Figure 9 demonstrates manufacturing R&D expenditure peaked at 0.47% of GDP in 1995-96, in the latest statistics (2004-05) it was 0.39%, a 0.1% reduction from the previous year. While the absolute expenditure has increased over this period it is more appropriate to examine the expenditure as a share of national output as it is R&D intensity that is key. We are falling behind our competitors and the challenge that manufacturers failed was to maintain, if not increase, R&D expenditure intensity over the last ten years.

Figure 9 - Manufacturing R&D as a share of GDP



36. The axing of the 150 per cent R&D tax concession in 1996 was a major factor in manufacturing R&D, going from 10 per cent per annum real growth in the decade to the mid 1990s, to negative growth over the 1995-96 to 2001-02 period. Even with the significant R&D increases in the last few years the annual growth rate since the mid 1990's has only been 2%. We need a policy agenda that helps deliver real annual double digit R&D growth for at least a decade. Figure 10 shows the reduction in the value of the R&D tax concession.

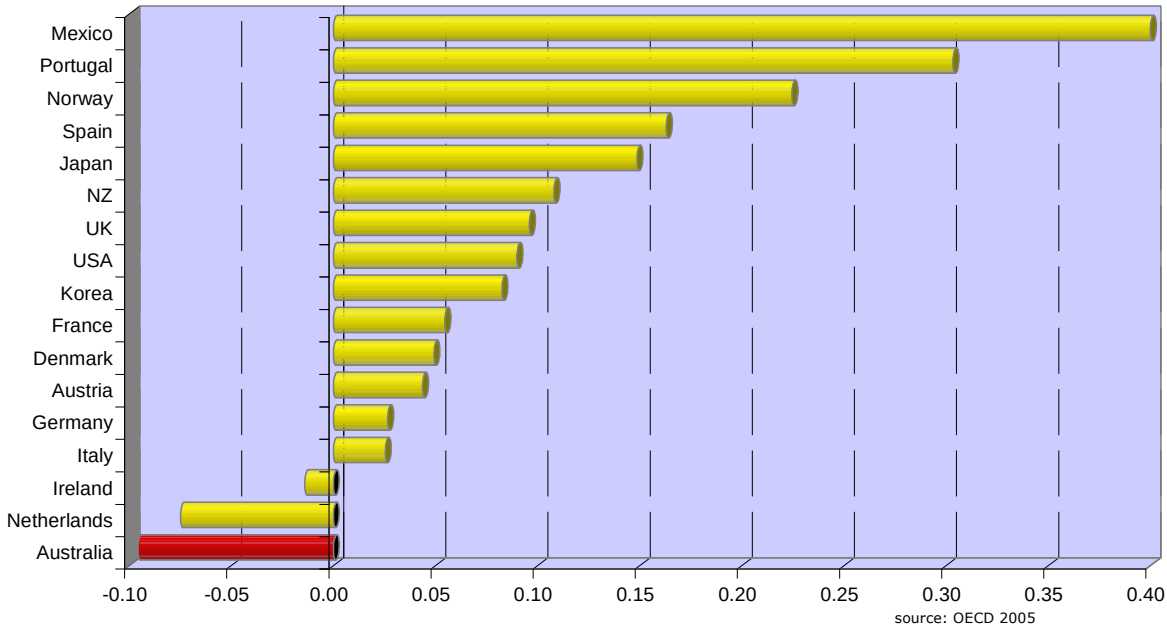
Figure 10 - Value of the R&D concession per dollar of tax liability, 1996 & 2006



source: DITR 2005

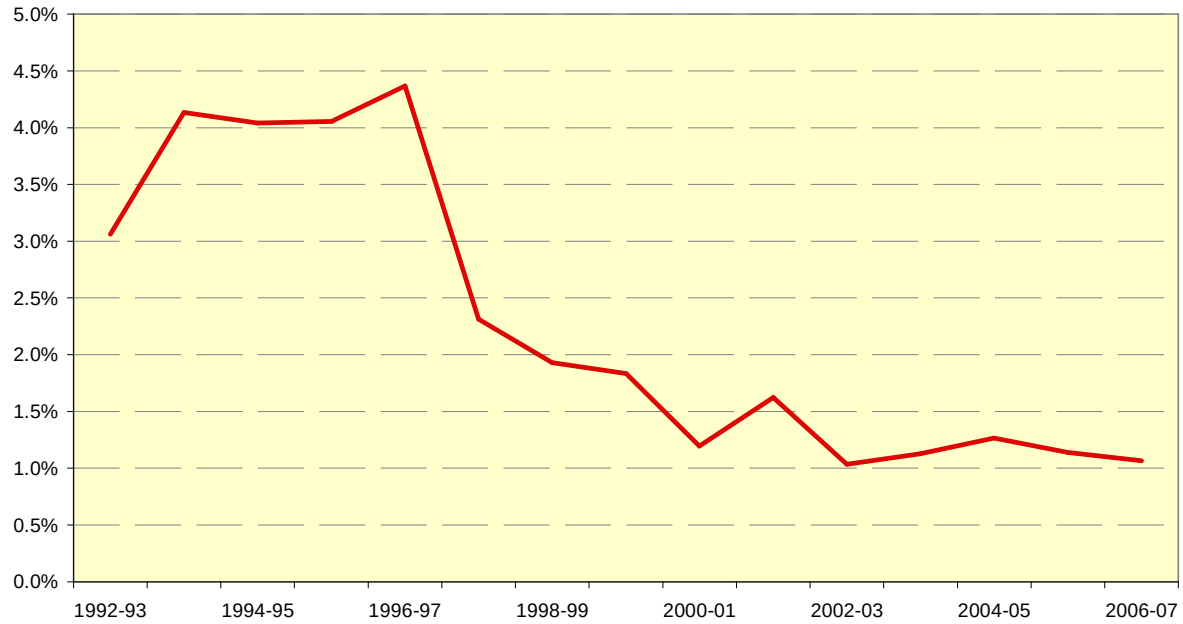
37. The OECD in its study into "The Sources of Economic Growth in OECD Countries" has estimated that a persistent 0.1% increase in business expenditure on R&D (BERD) as a percentage of GDP raises real output per capita by 1.2%. The graph below demonstrates that we are one of only three OECD economies to reduce the rate of R&D tax concession, and the reductions by Australia were by far the largest.

Figure 11 - Change in the rate of R&D tax concessions to large firms, 1995-2004 (US$'s)



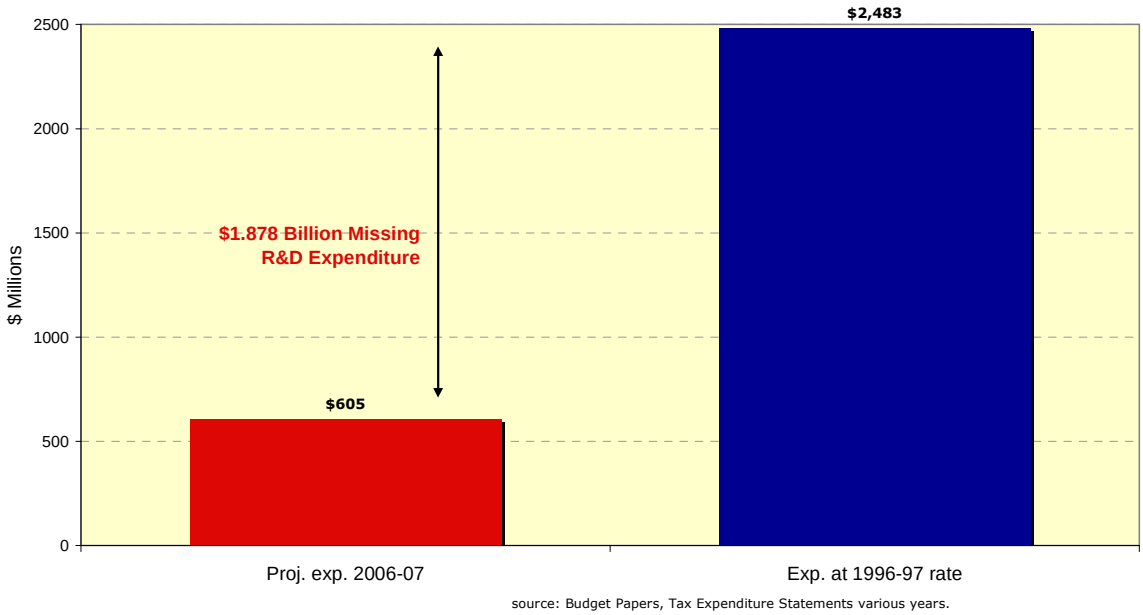
38. This has led to innovation assistance making up a smaller and smaller part of Commonwealth expenditure as a proportion of company income tax revenues (Figure 12). Company tax revenue has been making up a larger share of Australia's total tax revenue, but this is because the profit share of national income has been increasing significantly.

Figure 12 - R&D tax concession, % of company tax



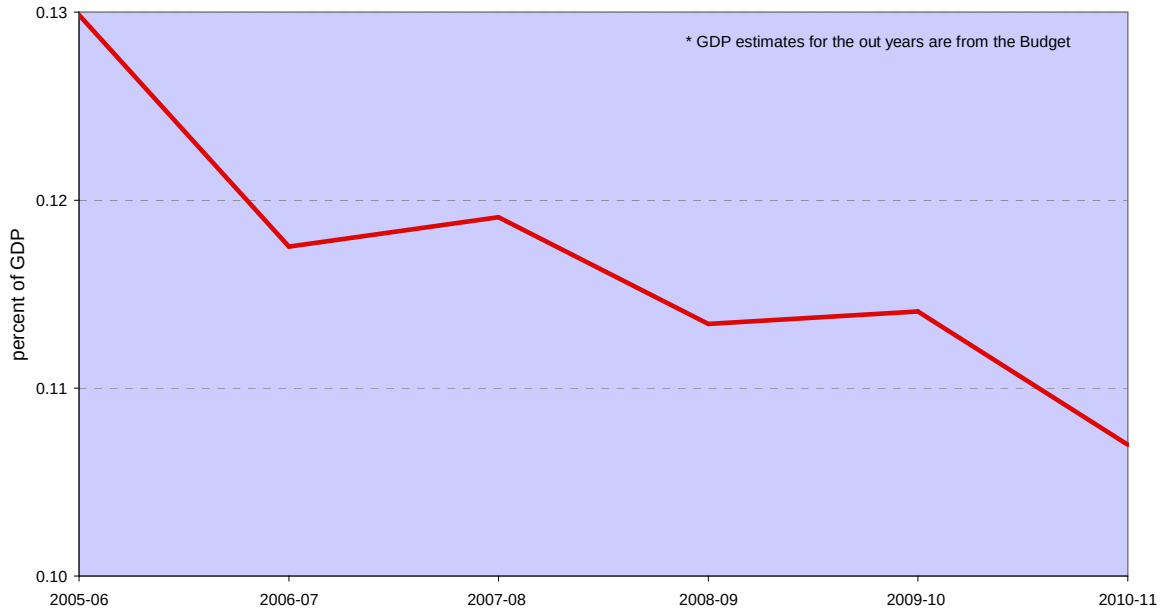
39. This has led to a massive underspend in terms of government support for innovation as the Figure 13 below highlights. If R&D tax concession expenditure as a proportion of company income tax receipts was maintained at 1996-97 levels, the Commonwealth would be spending an extra $1.878 billion in innovation support in 2006-07.

Figure 13 - R&D tax concession expenditure 2006-07 ($m's)



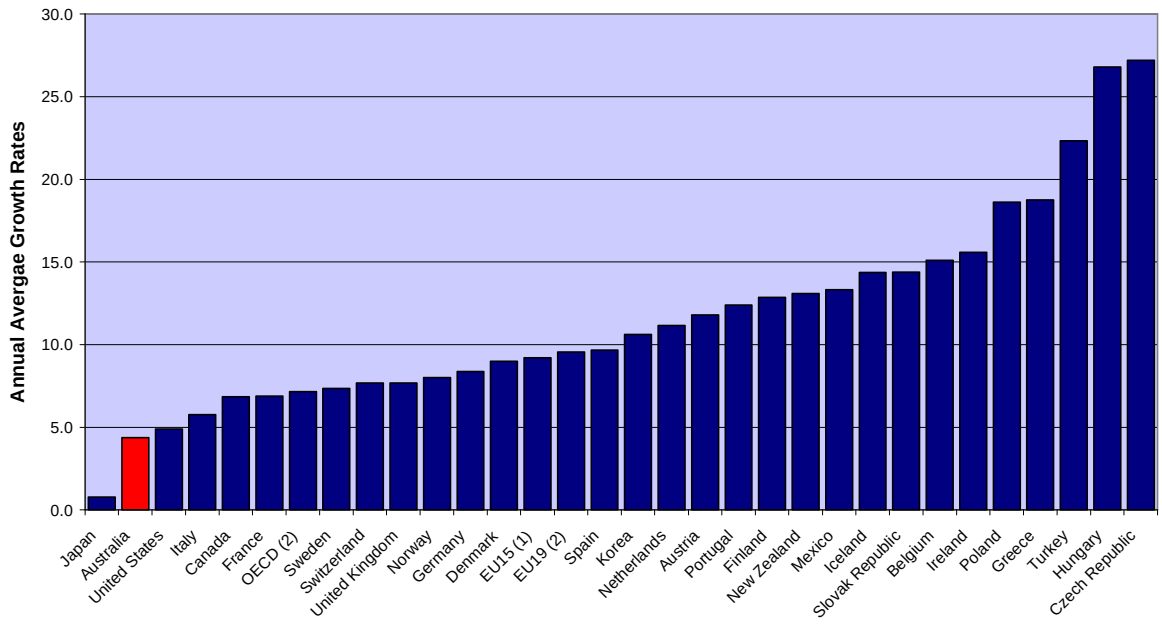
40. The contribution of discretionary grant schemes is also declining. If we look at the forward estimates of expenditure under the Backing Australia's Ability 2 program we see declining innovation support as a proportion of GDP (Figure 14).

Figure 14 - Commonwealth Discretionary Innovation Expenditure (BAA2) as a proportion of GDP*, 2005/06 - 2010/11



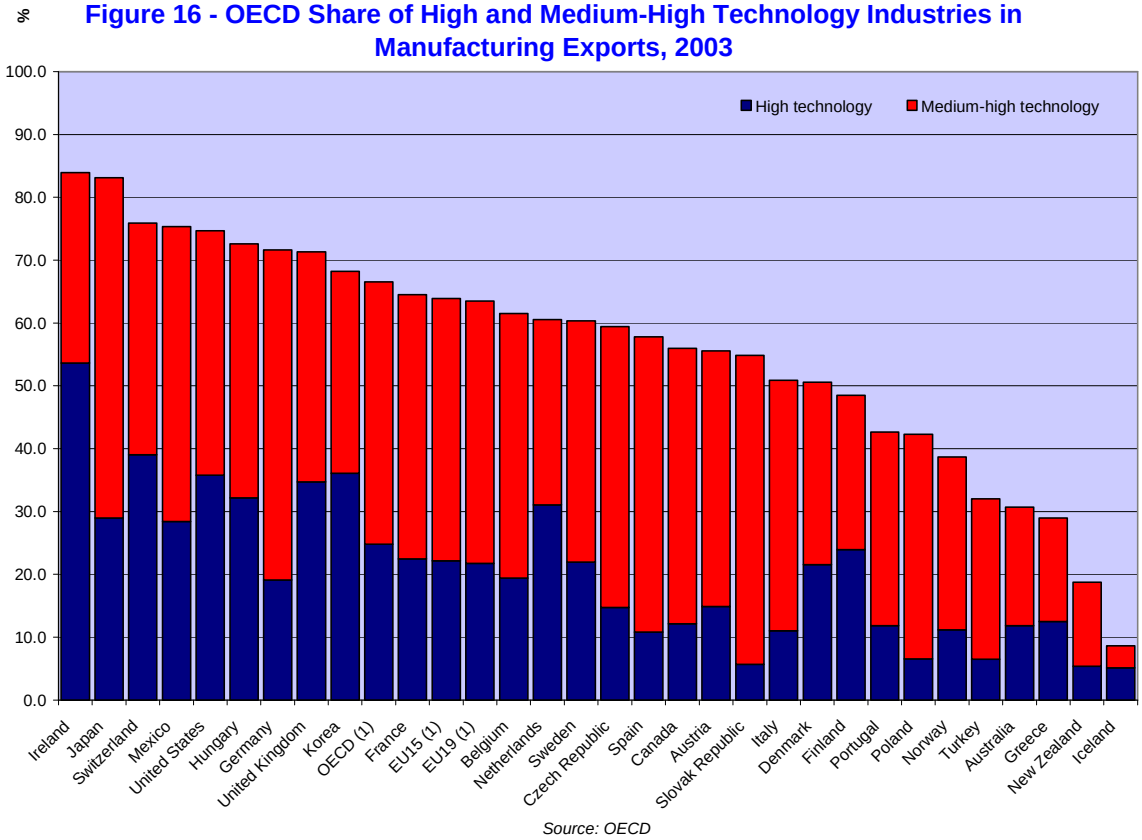
41. What has been the impact of this? Figure 15 shows that we have had the second lowest growth in high technology manufacturing exports in the OECD over the last decade.

Figure 15 - Growth of High Technology Manufacturing Exports, 1994-2003



42. We also have the fourth lowest share of high and medium high technology exports in the OECD (Figure 16). We were overtaken by Turkey in this measure in 2002.

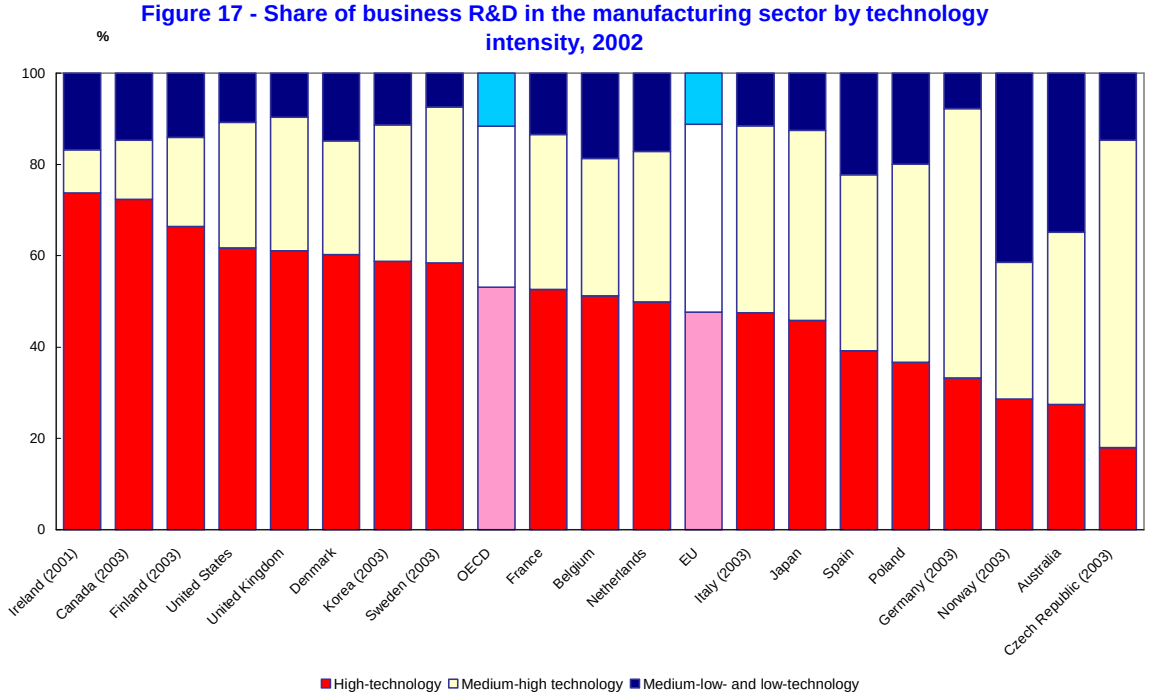
Figure 16 - OECD Share of High and Medium-High Technology Industries in Manufacturing Exports, 2003



Source: OECD

43. The make up of manufacturing R&D also reflects the dominance in Australian manufacturing of industries related to primary product processing. It is important to add value to our primary products, but this has led to a manufacturing sector that is overly concentrated in low and medium-low technology manufacturing. This is also reflected in the low technology intensity of our manufacturing research and development. Figure 17 highlights this phenomenon, with Australia having the second lowest share of high technology R&D amongst the OECD and the second highest concentration on low and medium low technology. This greatly hinders our ability to climb the value added chain as we face grave challenges from resource rich developing economies whose first attempt to industrialise will involve adding value to their primary products.

Figure 17 - Share of business R&D in the manufacturing sector by technology intensity, 2002



International Comparisons

44. The Australian manufacturing industry's performance is declining relative to OECD best practice. The productivity, size and export performance of the Australian manufacturing industry is relatively poor against OECD benchmarks.

45. From Table 6, Australia's value added labour productivity has fallen relative to OECD best practice considerably. This was not supposed to happen. The economic theory underpinning Australian manufacturing policy position is that if a country was significantly behind best practice, in terms of productivity (as Australia was in 1990), then market forces will accelerate productivity growth so that convergence would occur.

46. This was to be achieved by adopting the leading edge technologies of the best practice economy. The evidence from table 6 indicates that this mechanism failed both for Australia and a number of other OECD economies.

47. Other aspects of note from Table 6 for 2003 indicate that:
    - Australia has one of the smallest manufacturing sectors relative to the total economy in the OECD;
    - Australia has one of the lowest export shares in total production in the OECD;
    - Australia has a relatively poor R&D expenditure to value added ratio in the OECD; and
    - Australia has a relatively poor investment to value added ratio in the OECD.

Table 6 Australian manufacturing performance against OECD economies							
	Comparative labour productivity (value added per employed relative to OECD best practice)		Value added productivity growth rate	Export share in product-ion	Share of manuf-acturing in total product	R and D expend-iture as a per cent of value added	Invest-ment to value added ratio
	1990	2003	1990-2003	2003	2003	2000 or 2003	2003
Australia	72.1	53.0	2.6	20.1	12.7	3.74	0.12
Austria	72.5	61.0	3.8	66.6	20.7	-	0.17
Belgium	100.0	75.5	2.9	119.7	20.1	6.77	0.15
Canada	90.2	68.4	3.0	38.7	19.0	3.68	0.09
Czech Republic	43.0	29.4	2.2	35.2	29.6	2.04	0.23
Denmark	60.7	44.7	2.8	68.9	15.7	-	0.20
Finland	72.1	69.8	4.9	48.2	27.4	10.50	0.09
France	84.2	74.4	4.2	37.2	19.1	6.95	0.17
Germany	87.2	48.5	0.5	47.5	21.0	7.61	0.15
Greece	48.8	33.8	2.3	22.4	11.9	-	0.30
Hungary	32.1	34.0	5.7	31.5	29.4	-	0.10
Iceland	61.4	47.8	3.2	39.3	14.8	-	0.13
Italy	76.4	46.8	1.3	34.1	20.1	2.41	0.22
Japan	79.7	62.8	3.3	18.5	22.9	9.22	-
Korea	35.5	55.6	8.9	32.4	33.2	7.35	0.24
Luxembourg	84.9	68.8	3.5	-	11.4	-	-
Netherlands	82.6	56.3	2.1	90.4	16.0	5.70	0.14
New Zealand	70.7	50.0	2.4	40.9	16.6	-	0.14
Norway	73.3	43.2	1.0	42.5	10.9	5.78	0.17
Poland	31.9	31.8	5.2	16.3	27.0	0.95	0.17
Portugal	40.6	28.2	2.3	32.3	19.3	-	0.23
Spain	73.1	47.0	1.7	28.6	18.5	2.11	0.25
Slovak Republic	28.4	25.6	4.4	80.4	25.0	-	0.16
Sweden	65.5	76.6	6.5	28.7	27.2	14.37	0.12
United Kingdom	78.5	59.6	3.0	41.4	17.1	6.07	0.13
United States	99.7	100.0	5.2	15.6	17.4	8.40	0.10

Please note the comparative labour productivity figures inflate the labour productivity of Anglo-Saxon economies compared to those in continental Europe because it measures value added per employee, rather than value added per employee per hour worked, thereby skewing the figures towards economies where employees work longer hours. According to the OECD estimates of GDP per hour worked, nations such as Belgium, France, Ireland, Netherlands and Norway are more productive than the United States *(OECD, International Comparisons of Labour Productivity Levels – Estimates for 2003, February 2005)*.

Why is Manufacturing in Crisis?

48. It is clear that the principles that have driven Australian manufacturing development policies since the early 1970s have been wrong. The lower the level of manufacturing industry assistance, the poorer the performance.

49. Australia's policy approach to the manufacturing sector over the last two to three decades has been biased towards the view that the main reason for Australia's low productivity levels are issues associated with non-tangible efficiency productivity drivers. Non-tangible efficiency productivity drivers cover factors not directly associated with capital, labour or knowledge inputs. Examples are:
    - the strength of entrepreneurship;
    - the strength of the culture of innovation;
    - managerial competency and accountability;
    - market structure and conduct; and
    - the strength of competitiveness, etc.

50. In this policy regimen the main way to increase non-tangible efficiency drivers is held to be to increase the strength of competition by influencing market structure, in general, but in particular by reducing all barriers to competition including industry assistance in whatever form.

51. The core principle underlying manufacturing industry development policies has been that, in general, industry development policies reduce productivity by reducing the strength of non-tangible efficiency drivers of productivity growth. Hence, the way forward to a productive and growing manufacturing sector is held to be to dismantle industry assistance and let the full force of market forces unleash innovation, cultural change and productivity improvements.

52. The poor state of the Australian manufacturing sector, plus the fact that manufacturing industry assistance is at the lowest level since World War I, indicates that the core principle informing manufacturing policy formation is wrong.

53. This is of no surprise. An approach to manufacturing development policies centred on this core principle would simply produce a declining, low productive manufacturing sector, which would result in substantial macroeconomic cost to the economy.

54. An alternate view of the manufacturing world is one where:
    - The main cause of Australia's low manufacturing productivity is largely structural, that is mainly caused by, low scale and poor export performance;
    - The main driver of productivity growth is output growth and, therefore, the main route to accelerating productivity growth is via creating market conditions where the manufacturing industry is willing to expand;
    - A true level playing field approach to the economy realises that manufacturing must be singled out for industry development assistance because it is inherently more risky than other industries. Equalising risk between industries is the only appropriate way to generate efficient resource allocation based on level playing field principles;

- Manufacturing has high strategic value in its own right, which requires that manufacturing plays its part as a growth driver; and
- Industry development policies for manufacturing are particularly effective, not only because it can be efficiently designed to unlock productivity growth, but also because of the dynamics of cumulative causation, which means that initial advances in productivity (driven by industry development policies) create the predictions for flow-on endogenous productivity growth. That is, there is a strong productivity multiplier effect.

Each of these aspects will be discussed in turn.

55. Given its small scale and poor productivity performance, Australia's manufacturing productivity levels are about as good as can be expected. The OECD data can be used to test directly whether Australia's low productivity is due to poor (relative) non-tangible efficiency or structural constraints. This can be done by estimating a cross-section equation for 2003 across OECD economies for productivity levels where the driver variables are:
    - scale of manufacturing output; and
    - the share of exports in manufacturing output.

56. If the residual for Australia from this equation is significantly negative, that is Australia's productivity levels are well below the level that should prevail given OECD structural benchmarks, then it would suggest that the non-tangible efficiency factors may well be important as a driver of productivity. On the other hand, if the residual is positive, then it would suggest that the Australian productivity level is as good as or better than what would be expected given the manufacturing sector's structural features.

57. The result was that the residual for Australia was positive. That is, the non-tangible efficiency drivers of productivity are as strong or better in Australia than the average of other OECD economies. For example, if Australia had the same structural features as Canada (that is, in terms of manufacturing scale and share of exports in production) then Australia's manufacturing productivity would be some 18 per cent higher.

58. The solution to increasing the productivity of manufacturing lies in targeting selected manufacturing industries, or more appropriately in the modern globalised economies, clusters of manufacturing activity for demand expansion stimulus via export expansion and, where possible, import replacement. This of course is at the heart of current manufacturing industry development policies in Western Europe and North America.

59. In manufacturing and other industries where economies of scale and scope are important, output growth is the main driver of productivity growth. The modelling framework employed by Australian Government agencies in building the case to dismantle manufacturing industry assistance since the early 1970s has been to use the so-called computerised general equilibrium (CGE) type models. These models assume:
    - constant return to scale for industry and firm; and
    - technological change (that is, productivity growth) is available like "manna from heaven". That is, free goods that can be costlessly applied.

60. This leads to the predictions where productivity growth is associated with contraction in output, while output expansion can lead to falling productivity. Empirically, this has always been nonsense. The empirical Verdoorn's Law has long maintained that output growth drives productivity growth and has been constantly verified across countries, industries and time.[6]

61. The evidence also holds for the data base used in this report. Across the OECD economies, between 1990 and 2003, for manufacturing a 1 per cent increase in output growth leads to a 1 per cent increase in labour productivity growth. That is, increases in manufacturing output are largely translated into increases in productivity, rather than persons employed.

62. For the 'State of Australian Manufacturing', using total factor productivity (that is, taking into account not just labour input but also capital input, knowledge input and technological spillover effects), the rule found that over the 1990-2005 period a 1 per cent increase in manufacturing industry growth led to a 0.7 per cent increase in the rate of growth of factor productivity. The meaning is clear. Poor performing manufacturing sectors have low productivity growth and the main chance for improving productivity growth is via demand led expansion.

63. Australia's approach to the manufacturing industry has been built on an error, namely the fallacy of composition. Current industry policy in Australia is based on the most elementary error in economics: the fallacy of composition. It is of course understandable that at the individual firm level reductions in output can lead to productivity advances via rationalisation. That is, where reductions in output are less than the reductions in inputs in general, and labour input in particular. That is manufacturers can produce the same or slightly less goods with significantly fewer employees. However, industry development policy framework in Australia has committed the most elementary errors in economics, namely the fallacy of composition. This occurs when one attempts to generalise from a relationship that is true for an individual or firm, but is not necessarily true for a group, or in this case an industry.

64. What the empirical evidence indicates is that the productivity gains from rationalisation by one firm can be neutralised by the spill-over consequences for the industry, the cluster and or the supply chain. The mechanism explaining this is well known. Rationalisation by one firm will lead to a hollowing out of the industry supply chain which:
    - leads to increased unit costs of production in supplying industries from the loss of demand;
    - reduces the economies of scale and scope in R&D effort;
    - reduces the connectiveness of the supply chain with final consumers, which reduces the capacity to innovate;
    - reduces the capacity of the supply chain to attract/generate its unique skilled labour requirements; and
    - increases the risks and uncertainty of operating in the supply chain.

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[6] For the latest evidence see McCombie, M. Pugno, and B. Soro, "*Productivity Growth and Economic Performance: Essays on Verdoorn's Law*", Palgrave-Macmillan, London, 2002.

65. The long-term effects of the hollowing out the supply chain are ignored by the AIG report “Manufacturing Futures: Achieving Global Fitness”, April 2006. Efforts to keep the ‘cream’ of Australian manufacturing, that is the R&D and the prototyping stages, are doomed to failure. Once a supply chain looses critical mass, firms along the chain are at a severe disadvantage.

66. Nearly 45 cents in every dollar of domestic demand for manufactures goes to imports. Because this trend has been occurring for some time, increases at the margin for growth in domestic sales by manufacturing firms has been sluggish. The example below is one of many illustrating the hollowing out of manufacturing that has been occurring as a result of stagnant domestic sales and exports, as well as intense global competition.

The impact of hollowing out of the food manufacturing supply chain

“AUSTRALIAN manufacturers are losing the battle against imports, as cheaper packaged foods from overseas displace local growers and processors and threaten the country's industrial base, including BlueScope's tin plate mill.

A range of agricultural and industrial subsidies in Europe and other areas have made it possible for Coles and Woolworths to flood their shelves with imported canned foods as home brand products, replacing Australian-produced and packaged foods, BlueScope chief Kirby Adams said yesterday.

The trend towards consumption of fresh food, and the loss of market share by cans to other materials such as plastic, had also affected sales of Australian canned foods.

Mr Adams said the changes in food consumption had halved the tin plate market in Australia over the past two years and made BlueScope's tin plate operation unprofitable.

"First, we have seen importing of empty cans into Australia from subsidised producers, mainly in the Middle East," he said.

"Second, we have seen a number of Australian food companies which traditionally filled cans in Australia move those operations offshore.

"Third, the effect of the large retail grocers deciding to displace long-term Australian brands of canned food in their supermarkets with their own home brands of canned food."

Mr Adams said a survey had shown that 19 out of 20 tinned foods on supermarket shelves were either produced offshore, used offshore-produced cans or contained food farmed overseas.

As a result, BlueScope's tin plate sales have fallen from 200,000 tonnes a year in 2004 to a projected 100,000 tonnes next financial year.

The other pressure on the tin plate operation was the rising cost of hot-rolled coil steel, which has risen by $150 a tonne over the past two years.”

“Canning industry in a tight jam”, Ian Porter, The Age, 30/6/06

67. Australian manufacturing has failed to offset the negative effects of sustained structural change, that is increasing import penetration, by developing new demand expansion initiatives based on export growth. The impact of structural change in manufacturing can be assessed by using a model which compares the outcomes for 2005 based on the substitution of the 1996 industry structure (i.e. levels of import penetration into industries) of the economy, with all other factors, such as world GDP etc, remaining unchanged at 2005 levels.

68. The results of the analysis are shown in Table 7. The key result is that if the 1996 input-output structure of the economy had applied in 2005, the output of the manufacturing sector would have been 26 per cent higher and the manufacturing labour productivity would have been 15 per cent higher. Hours worked would have been 9.5 per cent higher.

69. The key rule of thumb that comes out of the results in Table 7 is that the rate of underlying structural change means that there is a natural loss in manufacturing output of 2 per cent per annum and 1.5 per cent per annum lower productivity growth rate.

70. A strong conclusion, therefore, is that Australia's manufacturing has to target the creation of new growth initiatives at a rate of at least 2 per cent growth in manufacturing output a year if manufacturing is to grow at a similar rate as the overall economy. In this context it is worth noting that the current goal of the Irish Development Agency is to target an increase in policy assisted employment by around 5 per cent a year which would be reduced to 2 to 3 per cent in net terms. The strategic error of policy has been not to implement policies designed to offset the negative impacts of globalisation. The fast growing Irish and Singaporean manufacturing sectors have been subject to similar negative forces.

Table 7 Impact of structural change on the Australian economy and the Australian manufacturing sector: 1996 versus 2005 – Manufacturing indicators (per cent change from what otherwise would have been the case in 2005)

	Unit	1996 structure
Output	$1999m	25.9
Exports	$1999m	0.8
Imports	$1999m	-18.5
Domestic demand	$1999m	10.2
Investment	$1999m	0.0
Output prices	$1999m	-4.1
Hours worked	Million Hours	9.5
Mining exports	$1999m	23.4

71. An analysis of Australian trade by country shows that Australian manufacturing has been adversely affected by the trend in trade flows, both in terms of losses in demand and productivity. Trade with Australia's top trading partners has inflicted most of the damage. Table 8 looks at the impact of exports not keeping up with imports by industry and country between 1990 and 2005.

72. The results in table 8 are for the top 24 of Australia's major trading partners. There are only three countries, namely New Zealand; Saudi Arabia; and Netherlands, where the changes in exports (across all tradable goods industries) relative to imports has results in a net favourable outcome for manufacturing.

73. In terms of the top six trading partners the increase in real imports relative to exports has resulted in a total loss in manufacturing output of 32 per cent and a loss of productivity of 20 per cent from what would otherwise have been the case in 2005. China alone accounts for half the loss. The issue of the macroeconomic costs will be taken up below. Before that the general issue of the economy wide costs of a poorly performing manufacturing sector should be considered.

Table 8 Impact on the Australian economy and Australian manufacturing of the change in exports and imports by industry 1990-2005 (per cent change from what otherwise would have been the case in 2005)

	Macro aggregates				Manufacturing		
	Net national income ($m)	Private and public consumption ($1999m)	Gross domestic product ($1999m)	Total hours (million)	Total output ($1999m)	Hours worked (million)	Productivity (ratio)
United States	-1.1	-0.7	-1.4	-0.9	-4.3	-1.1	-2.7
China	-2.4	-1.3	-3.1	-1.7	-15.1	-3.0	-10.2
Japan	0.1	0.1	-0.1	0.0	-4.0	-1.2	-2.3
Germany	-1.0	-0.7	-1.3	-0.9	-4.4	-1.3	-2.5
Singapore	-0.6	-0.4	-0.8	-0.5	-2.7	-0.4	-2.1
United Kingdom	-0.2	-0.1	-0.3	-0.2	-1.1	-0.4	-0.6
Malaysia	-1.1	-0.7	-1.3	-0.8	-3.3	-0.9	-2.0
New Zealand	0.3	0.2	0.4	0.2	0.8	0.2	0.5
Korea, Republic of	0.2	0.2	0.2	0.2	-1.7	-0.4	-1.1
Italy	-0.5	-0.4	-0.7	-0.5	-2.4	-0.6	-1.4
France	-0.6	-0.4	-0.7	-0.5	-2.4	-0.7	-1.4
Thailand	-0.5	-0.3	-0.7	-0.4	-2.8	-1.0	-1.4
Taiwan	0.1	0.1	0.1	0.1	-0.5	0.0	-0.4
Indonesia	-0.3	-0.2	-0.3	-0.2	-0.8	-0.2	-0.5
Vietnam	-0.7	-0.6	-0.9	-0.6	-1.2	-0.4	-0.7
Sweden	-0.5	-0.4	-0.6	-0.4	-1.6	-0.4	-1.0
Ireland	-0.3	-0.2	-0.4	-0.3	-1.4	-0.3	-0.9
Canada	0.0	0.0	0.0	0.0	-0.3	-0.2	-0.1
Papua New Guinea	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	-0.1
Switzerland	-0.4	-0.3	-0.5	-0.3	-0.9	-0.2	-0.6
Saudi Arabia	0.2	0.1	0.2	0.2	1.0	0.3	0.6
South Africa	-0.1	-0.1	-0.2	-0.1	-0.8	-0.3	-0.4
Spain	-0.1	-0.1	-0.2	-0.1	-0.7	-0.2	-0.4
Netherlands	0.2	0.1	0.2	0.1	0.1	0.0	0.1

What "Business As Usual" Would mean For Australian Manufacturing Over the Next Several Decades?

If Australian industry does not meet the challenges discussed above then the consequences of a "business as usual" future will look very much like that described below for Australia's chemicals and plastics industry. Simply put, a business as usual response to today's global challenge means more hollowing out, downsizing, stagnation and, over time, an accelerated process of de-industrialisation.

Under a "business as usual" (BAU) scenario we would expect to see the following to happen:

- *assuming the domestic market continued to increase, there would be an increasing reliance on imported chemicals and plastics products as the domestic industry's market share declines;*
- *producers become less and less able to satisfy the volumes required for the domestic market;*
- *ageing plants would become less and less competitive and come under increasing pressure from imports, particularly since more advanced technologies and decreased international transport costs would make imported products more attractive;*
- *more downstream products are imported. While some products have a natural competitive advantage, more products previously not imported such as car parts could now begin to compete with the domestic product;*
- *low take up rates for new technologies will reduce the export competitiveness of domestic products;*
- *a shrinking industry will concentrate on survival. Levels of innovation and R&D expenditure will fall even further and increasingly be taken offshore;*
- *a shrinking industry will require fewer employees and this will be reflected in a reduction in the tertiary and vocational training required; and*
- *reductions in quality and technology will impact down the supply chain putting pressure on industries reliant on inputs from the chemicals and plastics industry."*

(Source: The Chemical and Plastics Industry Steering Committee, Report to Government, March 2001, p.13)

Why Does it Matter that Manufacturing is Declining?

74. Manufacturing has a strategic role in the economy. Manufacturing matters because its contribution as a driver of economic development is either unique or can only be duplicated by few other industries. Manufacturing's (or more correctly selected manufacturing industries) unique role as a driver of economic development comes from its unique role as a conduit for technological change.

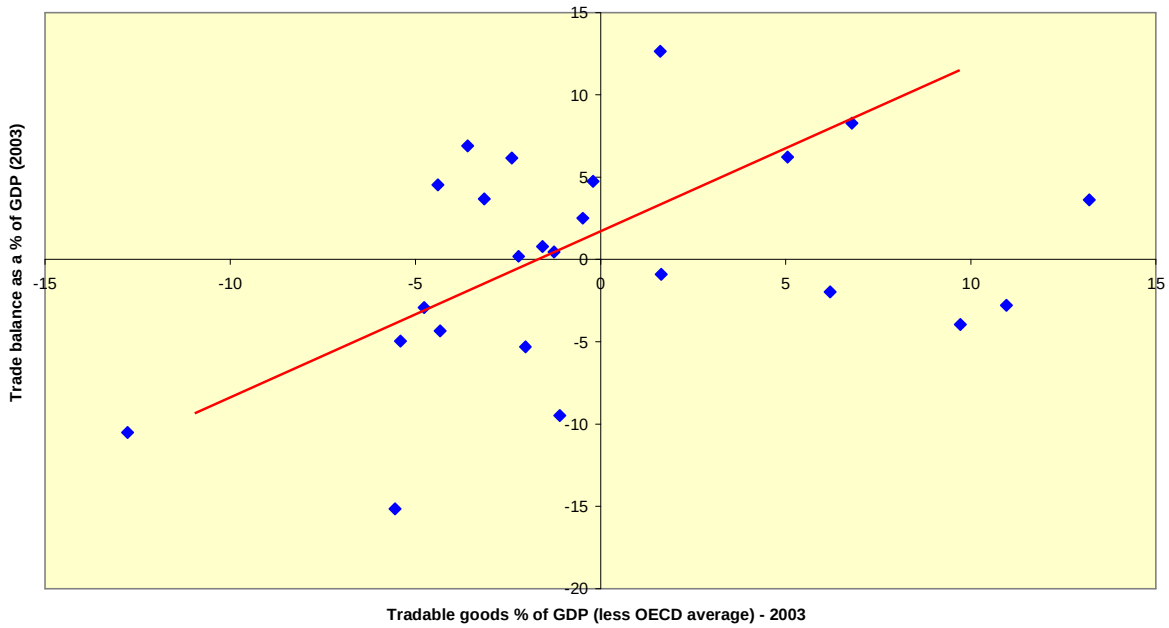
75. Leading edge industries like the motor vehicle industry and equipment producing industry play a key role in the economy by generally being the first industries to adopt new technologies into an economy. In general, these technologies are embedded in imported capital equipment. However, to employ the new technologies efficiently in many instances:
    - new skills have to be created;
    - changed firm operating cultures and institutional procedures have to be implemented; and
    - supply chains have to be reconstituted.

76. The leading edge industries are the conduit for the diffusion of technological change into the wider manufacturing sector and the general economy. They create the role model benchmarks; skills; and expertise, which then, via labour churn and knowledge diffusion, enable other industries to adopt leading edge technologies. The effect over the service industries is evident. How long will Australia be competitive in attracting foreign students if its technological base was seen to be in relative decline? How long would Australia be competitive in health innovation if Australia fails to develop and maintain a reasonably sophisticated and diverse biotechnology supply chain integrated into the health service sector?

77. Manufacturing can also help to maintain an overall balanced economic structure that allows long term sustainable growth in living standards. In Australia's case this suggests a manufacturing share in total product of around 15 to 16 per cent. To maintain a sustainable long run growth in living standards, an economy must maintain an appropriate size of its manufacturing sector. The appropriate size is one which:
    - allows the economy to maintain an acceptable current account balance; and
    - generates sufficient growth to enable an economy to provide sufficient employment opportunities for its citizens.

78. Australian tradable goods share in total product is 20 per cent, or 5 percentage points below the OECD average. In 2003, Australia's trade deficit was 3 per cent of GDP. Figure 18 charts the trade balance of OECD economies against the share of their economy held by tradable goods compared to the OECD average. The analysis (the red line) suggests that for a zero trade balance the share of Australian manufacturing in total product would have needed to be around 15 to 16 per cent, instead of the actual outcome of 12 per cent.

Figure 18 - Tradable goods share in GDP and trade balance

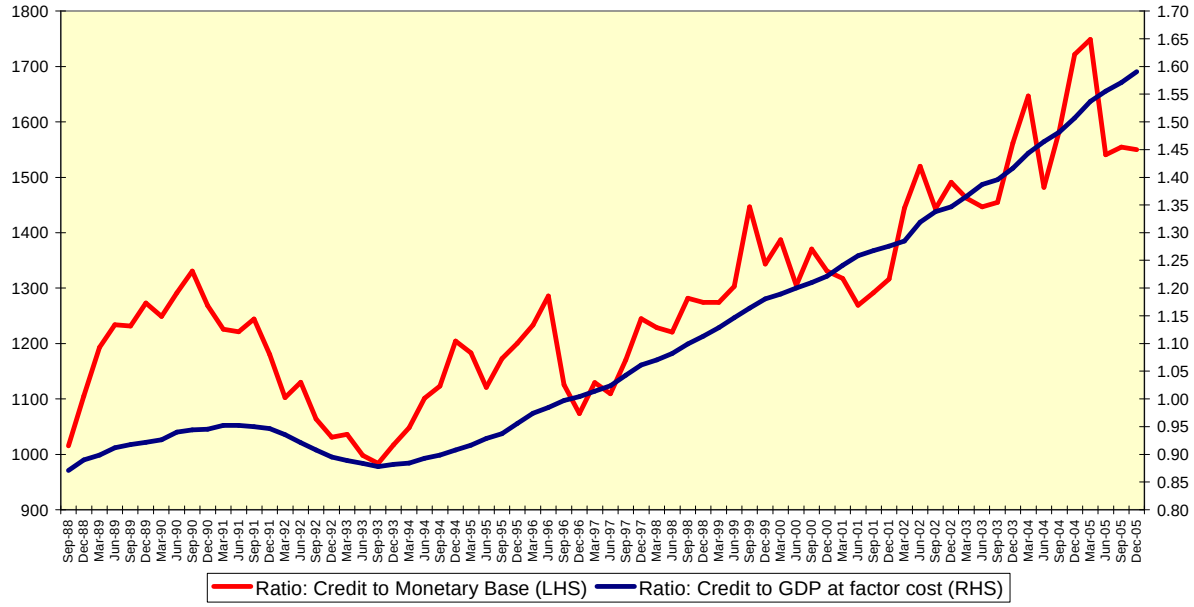


79. The macroeconomic costs of a poorly performing manufacturing sector can only be postponed by increasing the structural imbalances in the economy and the vulnerability of the economy to economic shocks. This has been the recent Australian experience. Table 8 demonstrated that the accumulative impact of the change in the structure of trade flows across the 24 major trading partners has resulted in a cumulative 13 per cent decline in gross product, compared to what would have been the case. This is an understatement because:
    - the investment impact is not taken into account; and
    - only about two thirds of the loss in net national income is translated into real consumption loss.

80. Over the last ten years, fiscal policy has been targeted on channelling all of the increase in net national income into consumption, either private or public. Australia would, therefore, have expected to have experienced a loss in GDP of at least 16 per cent. This is a loss in GDP growth of around 1 per cent per annum over the last 15 years. Part of the postponement (and reduction) of the macroeconomic costs has been associated with the terms of trade gain from increased real import penetration.

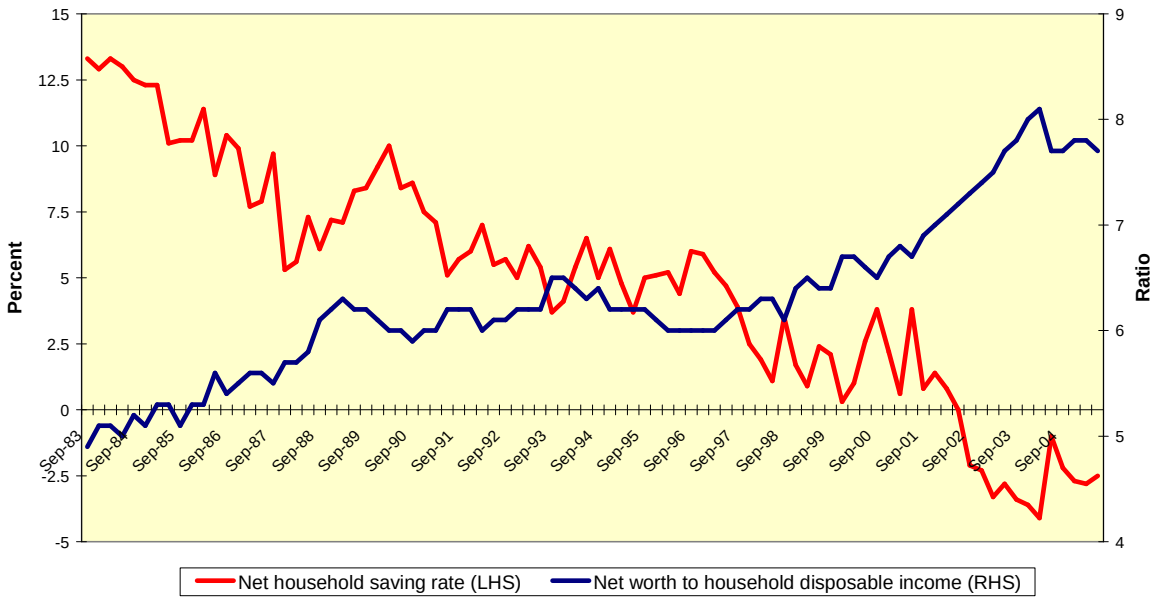
81. The reality is that Australia has postponed most of the macroeconomic costs of a poorly performing manufacturing sector, if not the direct costs on the manufacturing sector itself. Australia has been able to do this by aggressively using monetary policy to drive the economy.

Figure 19 - Credit growth is continuing to expand significantly faster than nominal GDP



82. By using interest rate targeting and not credit growth targeting, as is the case for the Euro zone, the Australian monetary authorities have simply let credit grow to meet whatever demand for credit the finance sector could achieve. The sustained expansion in credit since the mid 1990s, has resulted in annual growth growing at approximately twice the growth in nominal gross product (Figure 19), which has driven up house prices and, therefore, net household wealth, which has allowed households to borrow to continue driving down the household savings ratio (Figure 20). This stimulus to growth has now continued on for a decade.

Figure 20 - Credit driven household net wealth expansion has been a key driver of Australia's growth



83. The debt driven consumption growth mechanism cannot go on forever. Eventually growth will slow markedly because of debt saturation. The sustained reliance on debt to drive growth and postpone the macroeconomic costs if a poorly performing manufacturing sector has had the effect of:
    - sustained increases in household debt to income ratio; and
    - sustained increase in the household debt service costs.

84. By the end of 2005, the household debt to income ratio had reached 170 per cent of net household disposable income. For New South Wales the figure is just under 200 per cent and the evidence (Figure 21) is that the level of debt is now severely contracting the growth in the New South Wales economy (Figure 21). That is, the current underlying trend ratio of growth of the New South Wales economy appears to be around 1 per cent per annum, compared to 3 per cent for the national economy.

85. Figure 21 indicates that most of the other States on current trends will reach New South Wales debt to income levels by 2009 or 2010. Australian growth can be expected to slow significantly around this time.

86. Table 9 indicates that the national household debt service ratios (interest plus repayments) is 29 per cent in 2005 and 32 per cent in New South Wales. What is being created is a large class of households where the working life debt service ratio will be above 40 per cent. Indeed, 50 per cent if the current growth drivers continue for another decade. This would amount to a form of debt serfdom.

Figure 21 - Debt to household net disposable income

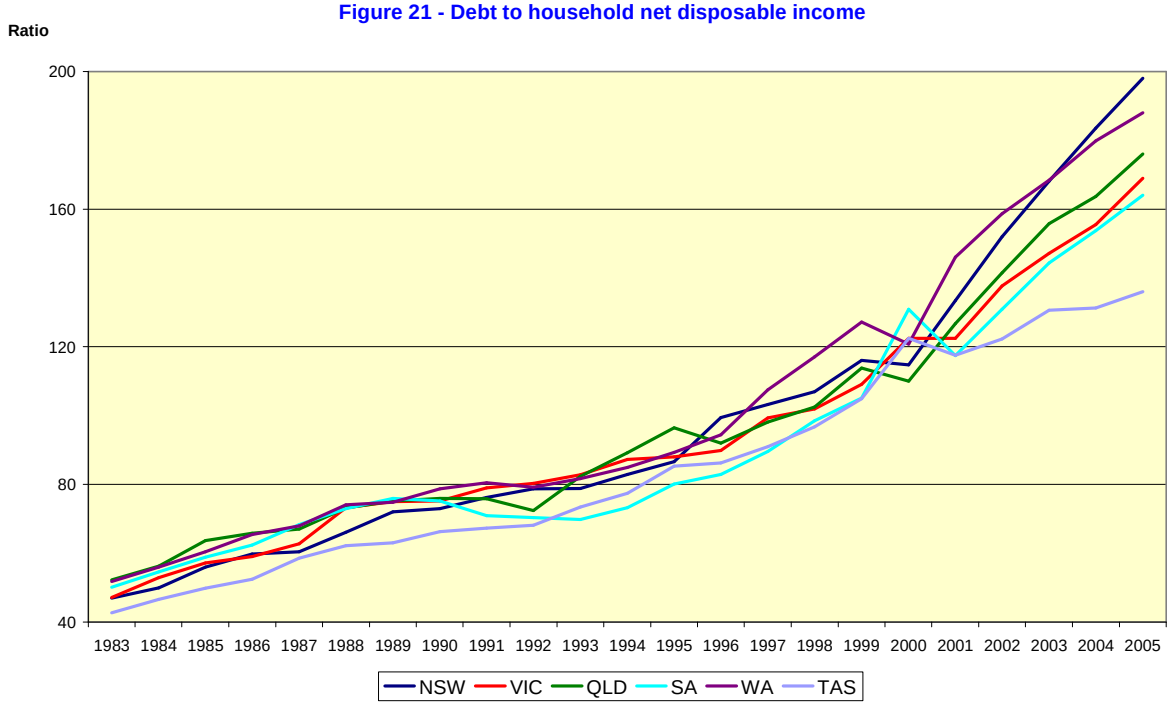
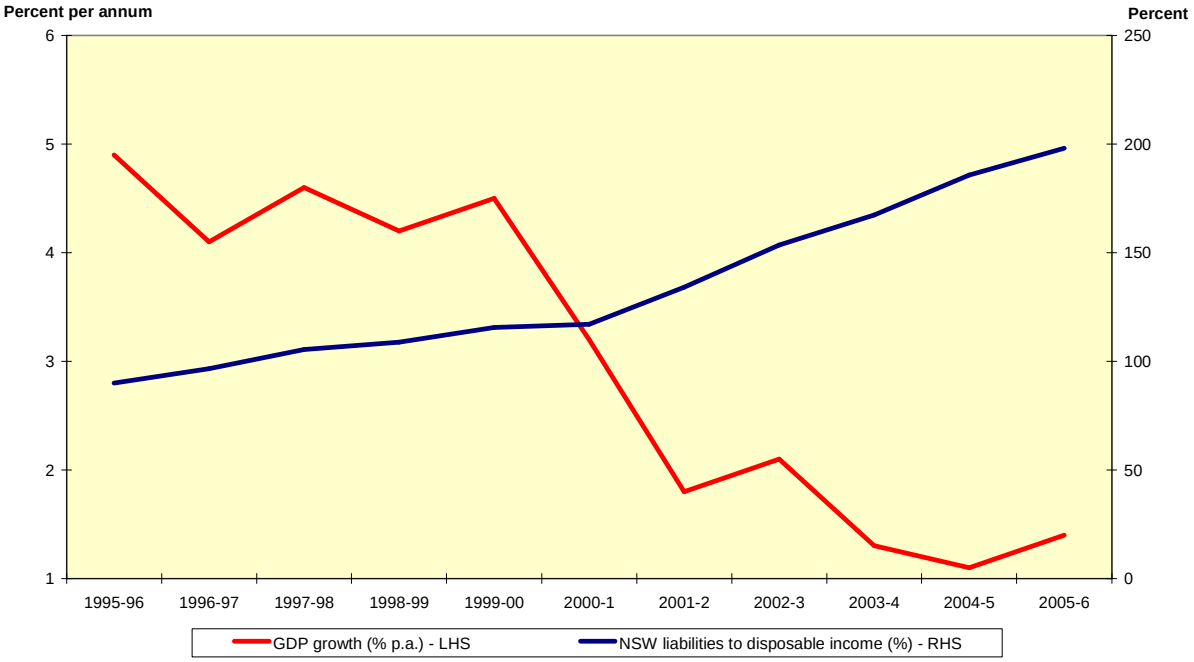


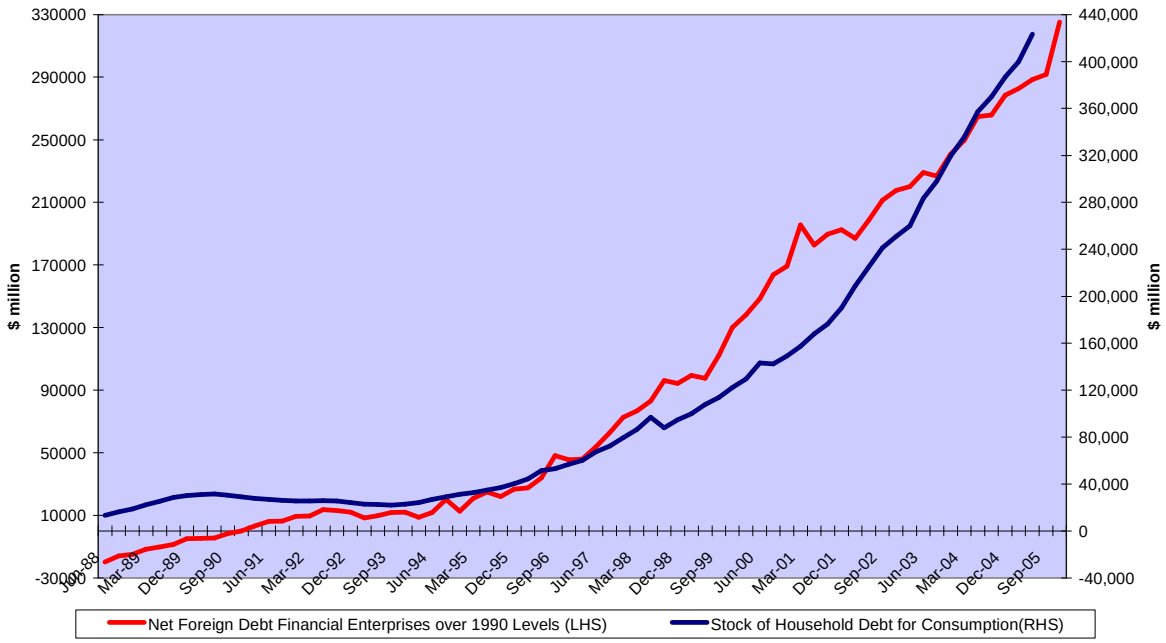
Table 9	Household debt service ratio – per cent of net household disposable income		
	1996	**2000**	**2005**
Australia	16	19	29
New South Wales	18	21	32

Figure 22 - GDP growth and NSW liabilities to disposable income



87. In addition, these households will not find relief in retirement from inheritances. Figure 23 shows that the increase in the finance sector's borrowings from overseas since the early 1990s has matched the build-up in household debt used to finance consumption. The longer this continues, the more that generation X and Y inheritances will be de facto sold off to foreigners. The long term cost of sustaining this current debt driven consumption growth and postponing the adjustment to reflect the fundamentals of the economy in general, and the position of manufacturing in particular, will be extremely high.

Figure 23 - Foreign debt funding of consumption



88. On historical benchmarks, Australia is likely to experience a currency crisis in the next few years because of its increasing vulnerability to economic shocks. In May

1998 and May 1999 the IMF in its “World Economic Outlook” examined the signposts to the severe currency, banking and financial crisis that had occurred to that point.

89. Since 1990 alone there have been a number of currency crisis involving both developed and emerging economies. For example:
    - The European Monetary System exchange rate crisis of 1992 and 1993;
    - The Mexican and Latin American tequila crisis of 1994 and 1995;
    - The Asian Meltdown of 1997 and 1997; and
    - The Argentina crisis of 1999 and 2000.

90. The IMF found that for developed economies exchange rate crisis cost between 7 and 10 per cent cumulative losses in output. If a banking or financial crisis follows, the loss in output is double the currency crisis outcome. The World Bank found that the signposts that prevailed prior to the crisis were:
    - sustained growth in debt relative to GDP;
    - sustained increase in credit relative to foreign resources (Reserve Bank assets);
    - current account deficit in excess of 5 per cent of GDP;
    - rising ratio of short term foreign debt relative to foreign reserves;
    - falling interest rates relative to benchmark New York or London interest rates; and
    - falling terms of trade.

91. Given rising world interest rates, Australia’s current structural current account deficit will rise to around 7 per cent of GDP, assuming only a modest terms of trade fall from current high levels. This, plus the results in earlier figures concerning debt levels and Figures 24 and 25, indicates that Australia is well placed for a currency crisis when the terms of trade start to decline at the time the current high growth in the world economy eases from either inflationary pressures and/or structural imbalances in the US economy. That is as the mining boom fades as our terms of trade fall from their historic high and the world economy slows, Australia will be in a very vulnerable position.

92. In line with net foreign liabilities approaching 60 per cent of GDP, the foreign ownership of non-financial corporate income is also approaching 60 per cent. The more this increases, the greater will be the reduction in Australian living standards to bring the current account deficit level to acceptable levels. That is, to increase exports to reduce the current account deficits, increasing amounts of company income derived from these exports will leak overseas. Coupled with that will be the need to slash domestic consumption to reduce import demand thereby reducing living standards.

Figure 24 - Australian economy increasingly vulnerable to international capital flow instability

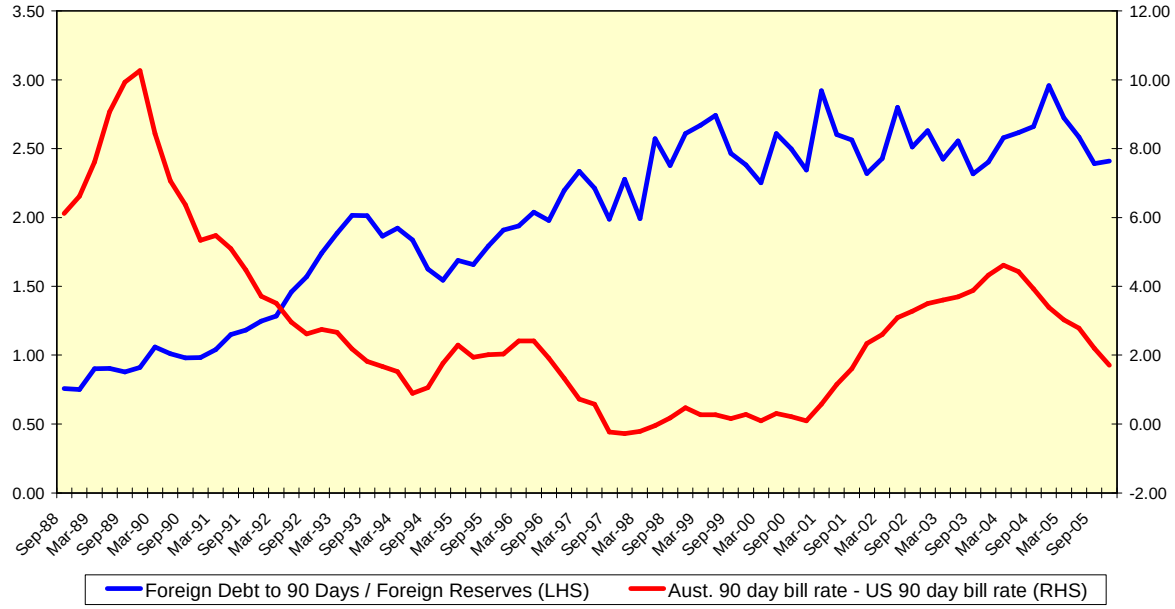


Figure 25(a) - Gross foreign debt and foreign obligations relative to GDP continue to grow

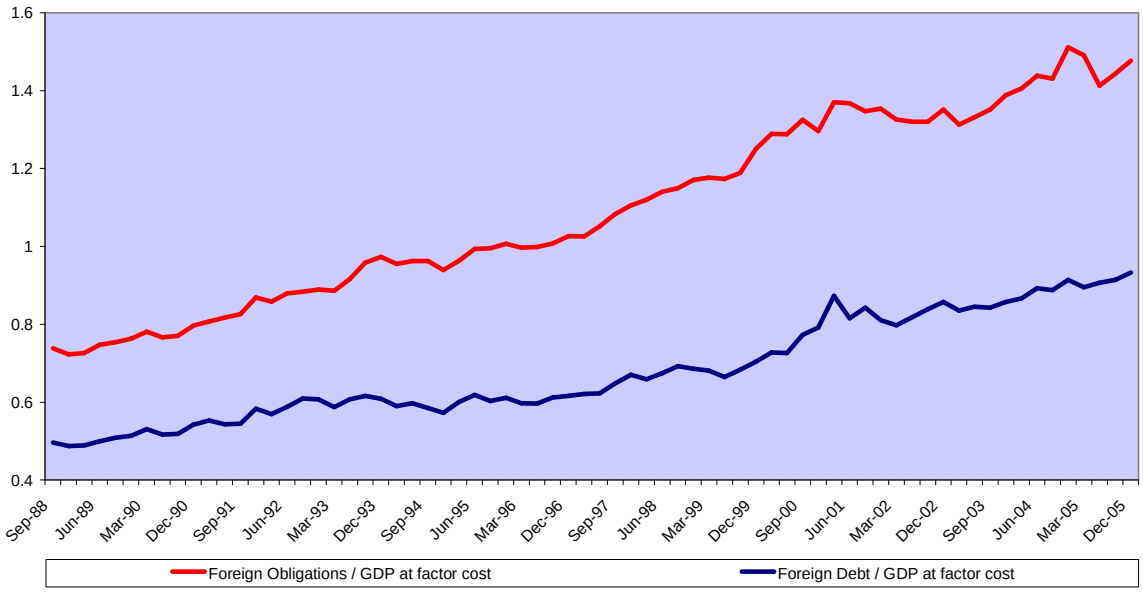
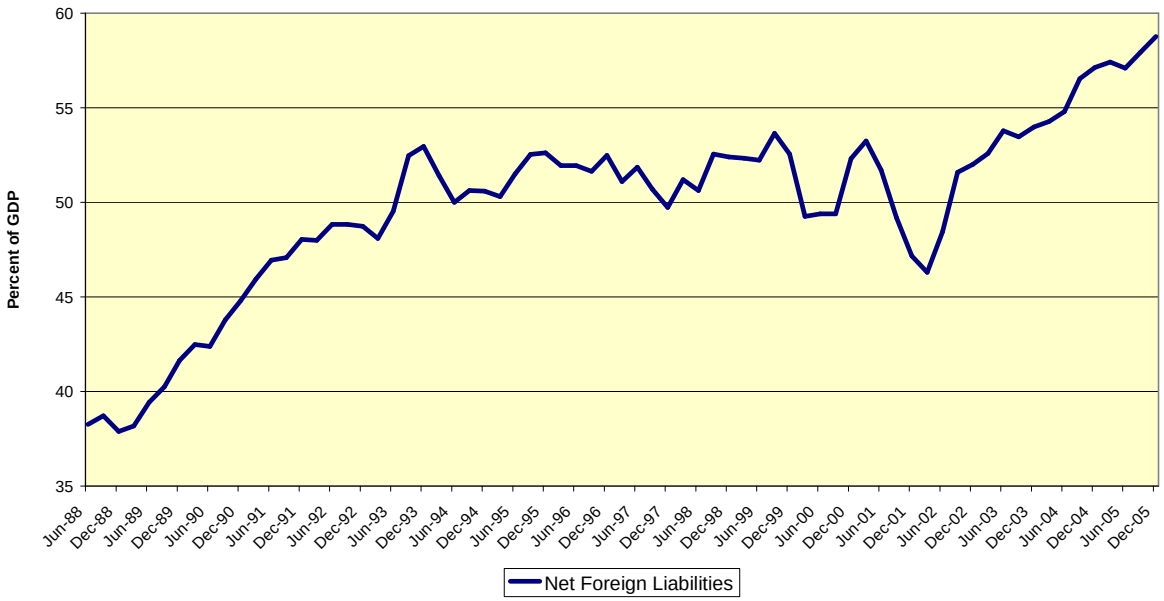


Figure 25(b) - Foreign ownership of private non-financial corporate income now approaching 60 per cent



93. This correction is likely to occur at the same time as New South Wales levels of debt saturation are reached in other States, which means that households will have limited capacity to neutralise the fall-out from a currency crisis by resorting to additional borrowing. The cumulative loss of output is likely to be relatively high at somewhere between 8 and 16 per cent. This, of course, would represent the postponed cost of the poor performance in the manufacturing sector since 1990.

94. The current saturation is reflected in a finance sector that has a high representation in GDP compared to international benchmarks (Table 10). This is especially so since Australia's finance sector has a poor export performance relative to the United States. An excessively high industry share means that it is over-producing its goods or services. In this case it is the over-production of debt. Australia will pay dearly for letting the finance sector increase to the level it has.

Table 10 Finance sector: part of GDP at factor cost		
	1990	**2005**
Australia	5.6	7.2
Austria	6.1	4.8
Canada	6.0	6.9
Germany	4.7	5.9
Sweden	3.6	4.5
United Kingdom	6.4	6.3
United States	6.7	8.1

Why the Mining Boom Will Not Ensure the Sustainability of the Australian Economy

95. To completely configure the economy to suit the needs of an industry that employs only 1.3% of the Australian workforce is incredibly shortsighted. We are sacrificing the long term sustainability of the Australian economy because the structure that most advantages the mining industry is to some extent incompatible with the most advantageous structure for manufacturing.

96. An evaluation of the relative benefits of a similar increase in mining activity vis-à-vis manufacturing activity reveals the greater contribution manufacturing expansion makes to the Australian economy. Selected results are given in Table 11. The manufacturing sector provides the largest impact because of:
    - lower foreign ownership and, therefore, less transfer of income overseas (terms of trade effect only);
    - greater linkages within the manufacturing sector and between the manufacturing sector and the rest of the economy compared to mining; and
    - less capital required per unit increase in output in manufacturing compared to mining, resulting in higher disposable income for Australia.

97. A billion dollar increase in manufacturing exports produces the following benefits over a billion dollar increase in mining exports:
    - An extra $86 million in gross domestic product at basic prices.
    - If saved national income is added to the gross domestic product result the superiority increases to $552 million. That is, further rounds of economic activity accruing to a manufacturing expansion that a similar mining expansion would not experience due to its lesser linkages to the rest of the economy.
    - $114 million additional wages.
    - 4.8 million additional hours of work, or 26,700 full time equivalent employment positions.

Table 11 Real mining expansion versus manufacturing expansion – $1 billion increase in exports					
		Mining expansion		Manufacturing expansion	
	Unit		Per cent of 2005 level		Per cent of 2005 level
Demand aggregates					
Household consumption	$1999m	574.75	0.14	797.03	0.19
Government consumption	$1999m	0.00	0.00	0.00	0.00
Equipment investment	$1999m	149.64	0.15	14.79	0.02
Construction investment	$1999m	139.31	0.15	13.76	0.02
Exports of goods and services	$1999m	1094.55	0.86	1021.14	0.81
Imports of goods and services	$1999m	376.91	0.18	390.72	0.19
Gross domestic product	$1999m	1339.72	0.20	1373.19	0.21
Income aggregates					
Gross domestic product at basic prices	$m	1150.63	0.15	1236.94	0.16
Net domestic product	$m	307.00	0.05	1126.56	0.17
Net national income	$m	393.06	0.06	1080.75	0.17
Income accruing overseas	$m	-86.07	-0.29	45.79	0.16
Real income for total consumption	$1999m	574.75	0.10	797.03	0.14
GDP at basic prices plus unspent national income	$m	968.94		1520.66	
Miscellaneous economic indicators					
Total hours	million	18.78	0.11	23.56	0.13
Total wages	$m	830.69	0.19	945.31	0.22
Earnings per hour	$	0.02	0.09	0.02	0.08
Implicit consumption deflator	index	0.00	-0.09	0.00	-0.09
Real earnings per hour	$1,999	0.03	0.15	0.03	0.14
Nominal trade balance	$m	918.97	3.63	668.93	2.64
Real trade balance	$1999m	1127.17	1.05	1014.56	0.95
Nominal trade surplus plus income payable overseas per cent of GDP	per cent	0.13	4.62	0.08	2.99
Terms of trade	index	0.00	0.07	0.00	-0.07

98. The nature of the drivers of expansion in the mining industry are inherently different from the drivers of expansion in the manufacturing sector. Manufacturing has higher risks.

99. Perhaps the main reason why Australian policy makers at the highest level have failed in their design of manufacturing policy is that they have failed to understand that the drivers of expansion in mining and agriculture are very different from the drivers of expansion in manufacturing.

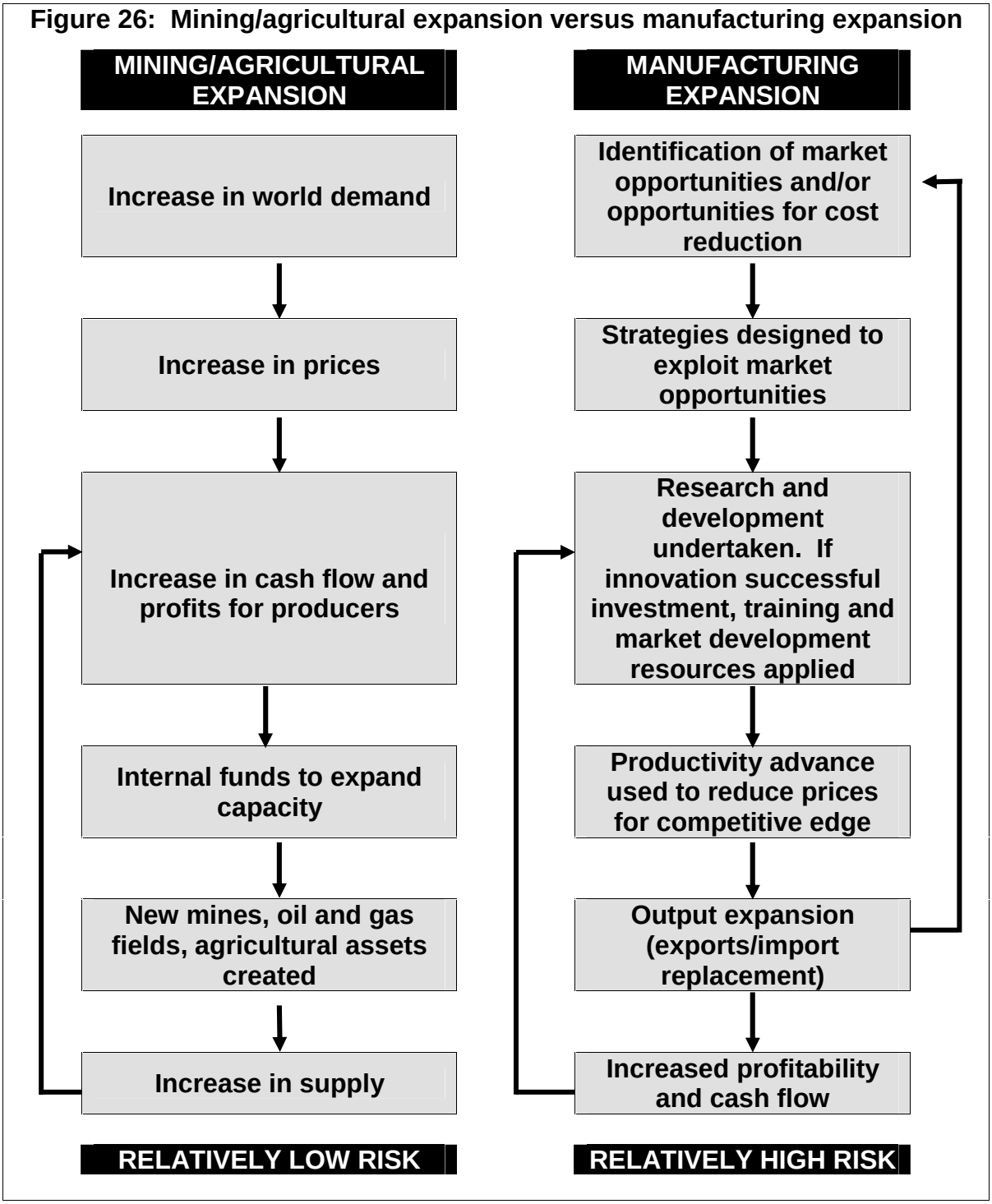
100. Figure 26 shows the expansion drivers of agriculture/mining and manufacturing. For agriculture/mining the market driver is expansion. An increase in demand forces up prices which provides the cash flow for expansion. Investment is undertaken and production will expand until the price is driven back to the cost of the next new mine, oil and gas, or wheat field. The key driver is a terms of trade gain. The same mechanism is true for manufacturing commodity processing industries.

101. However, for general manufacturing the location of market niches for expansion depend on the bootstrap efforts of the individual producers. The key driver here is product differentiation. That is differentiation of the product, in terms of design, functionality, and/or cost, so to gain a competitive edge. 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.

102. For this type of manufacturing, the individual producer creates the market, while for agriculture/mining the producer responds to the market. This is why differentiated product manufacturing are sometimes called hard industries. This is because they embody greater risk than most other industries, which can be seen, as an example, from the fact that differentiated product manufacturing have to create their own finance for expansion, whereas for agriculture and mining this is delivered by the market.

103. At the macro level the different drivers of mining versus manufacturing expansion can lead to an increased superiority of real manufacturing expansion over equivalent mining expansion. This is because the higher terms of trade effort associated with mining expansion crowds out manufacturing activity from exchange rate impacts. The negative impacts on mining from manufacturing expansion are much weaker because the terms of trade impact is weaker.

Figure 26: Mining/agricultural expansion versus manufacturing expansion



104. The evidence from the Australian data is, indeed, that manufacturing has higher risks. The failure to create a level playing field, in terms of equalising risks across industries, has led to the allocation of resources in low risk, non strategic sectors. A risk rating of Australian industries was undertaken by comparing how industries responded to demand expansion between 1990 and 2005 in terms of an investment response, given industries' rate of return on capital. The greater the response, compared to average industry benchmarks, the less the relative industry risk. The risk ratings are given in Table 12. The higher the positive number in Table 12, the higher the risk.

105. In general the results in Table 12 make sense. The more complex the manufacture (that is, the more important product differentiation in gaining competitive advantage), the greater the risk. Differentiated product manufacturing in general has higher risk than tertiary sectors and mining. Not unexpectedly, agriculture has high risk. This of course in part reflects environmental risk.

106. Appropriately, from Table 12, the rate of return on capital stock employed (excluding inventory stocks) is higher in manufacturing than the lower risk industries. Even so, the risk-reward appears to still favour relatively low risk industries. The share of the nation's capital stock in low risk, relatively low return mining and tertiary industries has increased from 89.5 per cent in 1990 to 91.2 per cent in 2005.

107. That is, the share of the nation's capital stock allocated to manufacturing and agriculture has fallen by 16 per cent, despite relative high returns. That is, the risks in manufacturing are perceived to be relatively high relative to reward. A level playing field, per se, encourages over investment in low risk industries and generates costs from inefficient resource allocation. A true level playing field and efficient resources allocation regime can only be created by a policy strategy which equalises risks between industries. If we are to generate a balanced economy we must examine policies that equalise risk between industries.

Table 12 Risk and return in Australian industry – 1990-2005				
	Risk index (the higher the index the higher the risk)	Net return on capital (per cent)	Share of capital resources	
			1990	2005
Agriculture	44.9	15.4	4.57	3.09
Mining	-21.2	13.2	6.01	6.90
Meat and Meat Product Manufacturing	3.9	22.1	0.15	0.15
Dairy product Manufacturing	-47.9	21.7	0.12	0.16
Fruit and Vegetable Processing	-15.2	38.9	0.05	0.06
Oil and Fat Manufacturing	8.1	24.4	0.02	0.03
Flour Mill and Cereal Food Manufacturing	35.2	31.5	0.07	0.06
Bakery Product Manufacturing	-88.8	23.1	0.06	0.09
Other Food Manufacturing	11.9	14.9	0.30	0.27
Beverage and Malt Manufacturing	-93.6	25.1	0.20	0.35
Tobacco Product Manufacturing	71.8	19.7	0.05	0.03
Textile Fibre, Yarn and Woven Fabric	57.4	9.2	0.10	0.05
Textile Product Manufacturing	51.7	28.7	0.05	0.04
Knitting Mills	73.0	26.5	0.02	0.01
Clothing Manufacturing	64.8	48.9	0.05	0.04
Footwear Manufacturing	79.6	16.5	0.02	0.01
Leather and Leather Substitute Manufacturing	18.3	24.3	0.01	0.01
Log Sawmilling and Timber Dressing	62.1	24.2	0.12	0.07
Other Wood Product Manufacturing	-150.1	20.2	0.07	0.13
Paper and Paper Product Manufacturing	33.0	10.1	0.28	0.22
Printing and Services to Printing	-149.0	36.8	0.09	0.18
Publishing and recorded media	35.2	37.8	0.21	0.17
Petroleum and Coal Products	-1.3	10.1	0.33	0.30
Basic Chemical Manufacturing	21.0	13.9	0.27	0.24
Other Chemical Product Manufacturing	33.8	26.5	0.27	0.25
Rubber Product Manufacturing	54.6	22.9	0.05	0.03
Plastic Product Manufacturing	-27.6	28.4	0.13	0.16
Glass and Glass Product Manufacturing	-16.5	7.3	0.07	0.07
Ceramic Product Manufacturing	71.3	15.4	0.09	0.05
Cement, Lime, Plaster and Concrete	-44.1	16.4	0.16	0.20
Non-Metallic Mineral Products	27.9	13.4	0.06	0.04
Iron and Steel Manufacturing	44.6	19.1	0.39	0.26
Basic Non-Ferrous Metal Manufacturing	-35.7	9.8	0.51	0.64
Structural Metal Products Manufacturing	49.4	54.2	0.09	0.07
Sheet Metal Product Manufacturing	24.3	17.8	0.10	0.07
Fabricated Metal Product Manufacturing	25.3	24.9	0.13	0.11
Motor Vehicle and Part Manufacturing	0.6	11.1	0.53	0.55
Other Transport Equipment Manufacturing	98.7	18.7	0.19	0.05
Photo and Scientific Equipment Mfg	27.9	14.2	0.08	0.07
Electronic Equipment Manufacturing	87.5	44.1	0.08	0.06
Electrical Equipment and Appliance Mfg	-34.6	29.4	0.09	0.12
Industrial Machinery and Equipment Mfg	42.5	28.6	0.17	0.14
Prefabricated Building Manufacturing	-266.8	45.7	0.01	0.02
Furniture Manufacturing	-56.9	50.1	0.05	0.08
Other Manufacturing	-140.0	16.3	0.03	0.06
Electricity Gas and Water	18.4	6.6	7.14	5.77
Construction	63.4	60.8	1.83	1.46
Wholesale Trade	18.7	17.1	2.50	2.24
Retail Trade	4.4	24.4	2.38	2.46
Accommodation	-12.0	7.4	2.03	2.17
Transport	19.6	-0.7	9.68	8.16
Communication	-33.6	16.6	2.51	3.50
Finance	15.6	16.4	4.44	4.02
Ownership of Dwellings	-13.3	7.6	33.15	35.92

Business Services	-36.1	22.9	4.97	6.49
Government	na	na	3.95	3.04
Education	3.5	-3.9	4.33	3.77
Health	-2.0	4.8	3.00	3.01
Recreation	-103.1	0.7	0.72	1.18
Personnel Services	-49.0	-1.1	0.85	1.07
Total	**0.0**	**11.3**	**100.00**	**100.00**

Why Policy Support is Needed and Why it Can Be Effective

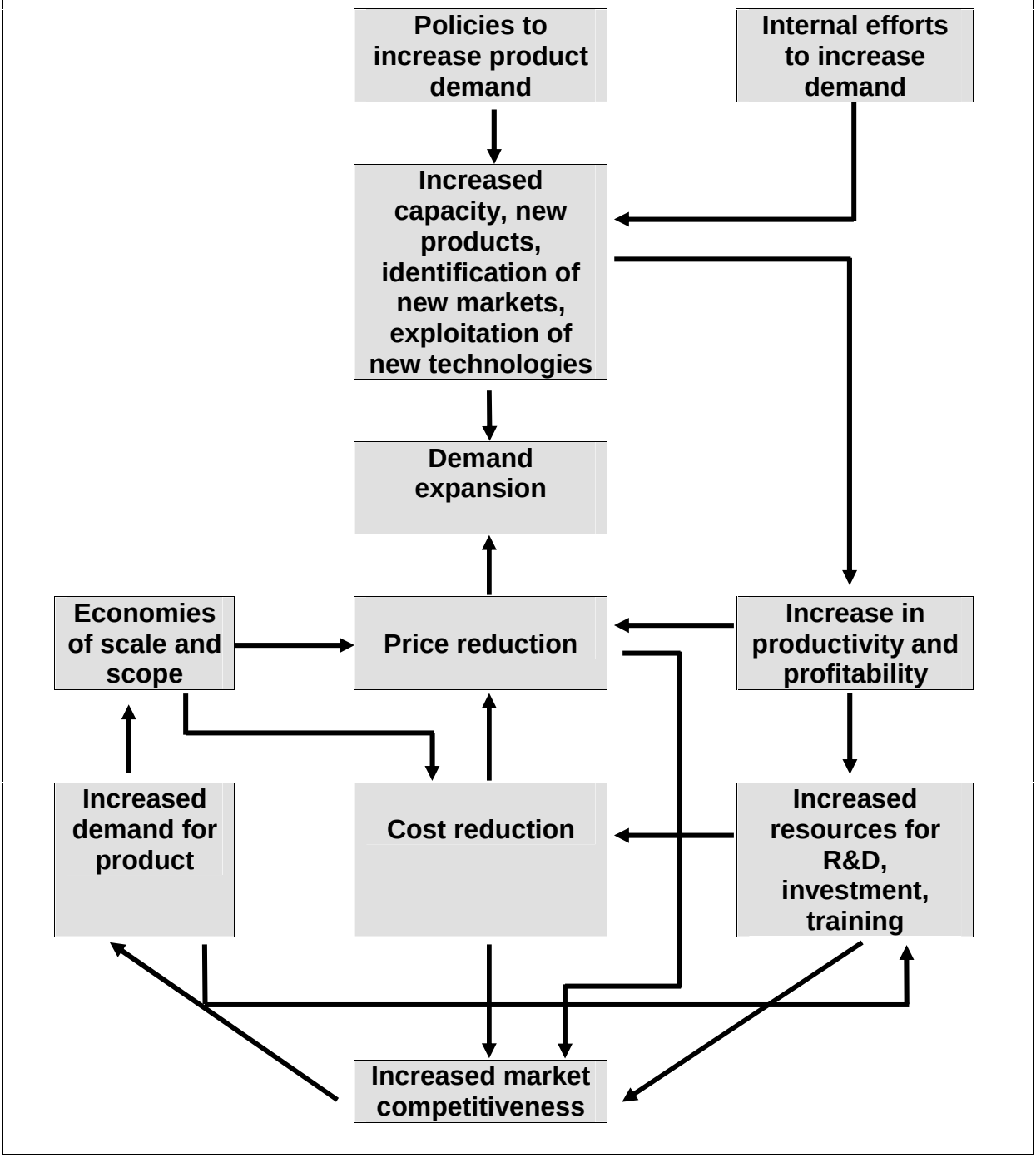
108. The kick-starting of manufacturing expansion at the individual producer level is generally difficult. But once initial success is achieved, a self-sustaining growth dynamic can be initiated. The dynamic is termed cumulative causation. This also explains why industry assistance measures for differentiated product manufacturers can generate large long term benefits.

109. Figure 27 outlines the process of cumulative causation. In the figure the initial demand expansion is triggered by either a producer's own efforts (securing bank finance, new equity finance, merger, etc.) or with industry development policy assistance. Market expansion is initiated and productivity will increase, both directly from the initial actions and, most importantly, from the expansion in market demand.

110. The increase in productivity provides the increase in cash flow to finance additional strategies (price reduction, investment, R&D, market development) to further expand markets. Economies of scale and scope are expanded, both for the producer and the spillover effects to the supply chain the producer operates in. This leads to further expansion in demand, which in turn leads to further productivity growth and so on creating a self-sustaining growth dynamic.

111. Unlike agriculture and mining, where a supply response will bring an episode of expansion to an end, in manufacturing there is no such constraint for an individual producer in an industry in a small country. As long as an individual producer is willing to plough resources generated from previous demand expansion back into driving the next demand expansion, the higher relative growth can be sustained indefinitely. This makes industry assistance in manufacturing much more effective than industry assistance for agricultural and mining industries which do not have access to circular and cumulative causation.

Figure 27: Manufacturing expansion: cumulative causation and sustained expansion



112. What is currently wrong with Australian manufacturing is the operation of a negative cumulative causation dynamic. Manufacturing is performing as well as can be expected, in terms of investment effort and return on capital. However, the cumulative effects of low growth and low productivity mean that manufacturing best efforts are producing poor outcomes.

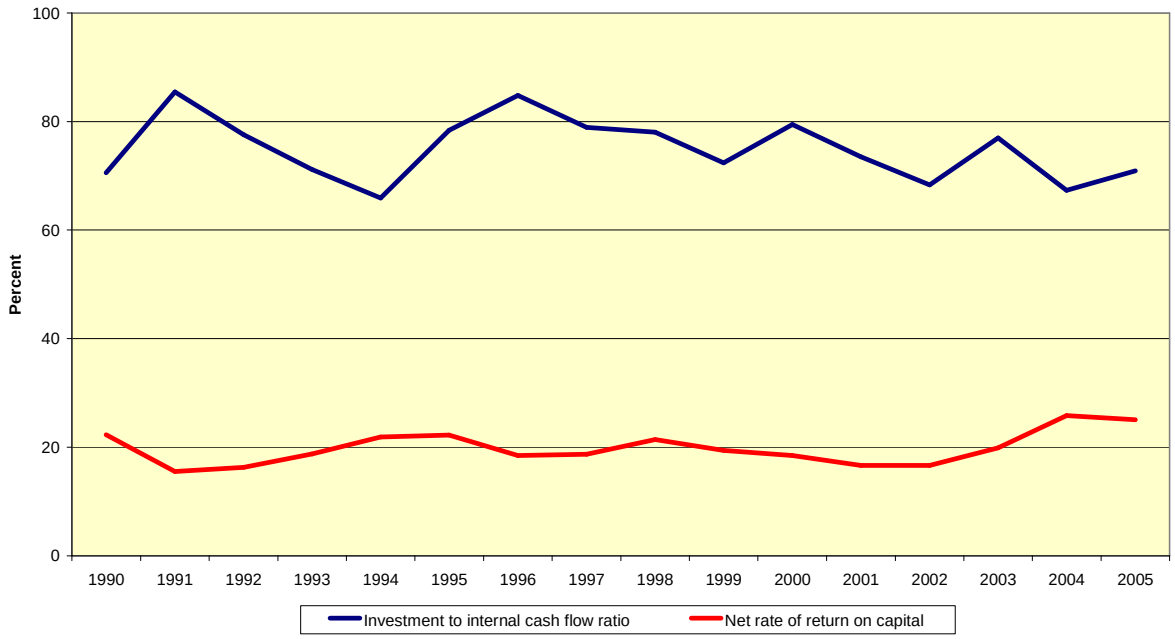
113. Figure 28 shows profiles of manufacturing net return on capital ratio and the investment to internal cash flow ratio before dividend allocation. In recent years the average net rate of return is, if anything, above the average of the 1990 to

2005 period. There is probably a downward trend in the investment to internal funds ratio; however, it is relatively slow.

114. The impression from Figure 28 is a manufacturing sector that is performing to its best efforts. That is, a sector that is spending as much as it can on investment (based on historical internal fund benchmarks) and once the target rate of return is achieved it is lowering prices to compete in export or domestic markets.

115. Unfortunately the data in Figure 28 is in terms of ratios with the overall effort obtained by applying the ratios to a base. The relative deterioration in the base has meant that the absolute effort, in terms of investment and price competition, is not sufficient for satisfactory growth in the sector. That is, even though the rate of return in manufacturing is quite healthy, because the base is declining, a healthy return to capital is not sufficient by itself to grow, or at a minimum, stabilise the sector.

Figure 28 - Australian Manucturing Investment and Rate of Return



116. The unsatisfactory base, in turn, is the cumulative effects of poor performance outcomes. That is, the operation of a vicious rather than virtuous cumulative causation mechanism. The appropriate general policy objective is clear. Namely to change the current vicious cumulative causation dynamic to a virtuous growth dynamic. Policy initiatives are necessary because the manufacturing sector is doing about as well as can be expected, given its risks, current activity levels, and obstacles to growth given its small size, distance from major innovation centres and export performance.

117. Given this analysis, the outlook for the Australian economy in general, and the Australian manufacturing sector in particular, is not optimistic without additional assistance. Table set 13 gives the macroeconomic outcomes if the current trends continue to 2020. The scenario is on the optimistic side. It assumes:
    - an upward trend in the terms of trade from current levels;
    - a sustained expansion of mining and processed metal capacity, albeit with a softening over the 2011 to 2014 period; and

- the continuation of low household savings ratio.

118. Even so, the outlook for manufacturing is poor. The average annual growth rate is 0.4 per cent per annum, while there is also a 30 per cent decline in total hours worked over the period between 2005 and 2020. Given a likely decline in average hours worked, this will be translated into a loss in employment of around 20 per cent. That is, between 200,000 and 300,000 employment positions will be lost depending upon the response of average hours worked.

119. The overall analysis is consistent with the survey responses in the AIG report "Manufacturing Futures: Achieving Global Fitness", April 2006. In that report, between 10 and 20 per cent of companies were very likely to outsource more offshore or use more imported materials. This rose to between 30 and 50 per cent for the inclusion of companies that were moderately likely to do so.

120. In the projection in the table, between one third and a half of total hours worked lost is due to accelerated use of imported materials and off-shoring of product, compared to the trends in the last 15 years. Table 12 shows the outcomes for selected individual manufacturing industries.

Table 13(a) Base scenario to 2020 – demand formation – average annual growth rate (AAGR)

		Growth spans			
	Unit	**2000-2005**	**2005-2012**	**2012-2020**	**2005-2020**
Household consumption	AAGR	4.0	3.2	2.6	2.9
Government consumption	AAGR	3.1	3.3	2.8	3.0
Equipment investment	AAGR	5.8	4.1	0.6	2.2
Construction investment	AAGR	4.3	3.9	0.4	2.0
Exports of goods and services	AAGR	2.2	3.6	3.0	3.3
Imports of goods and services	AAGR	7.2	3.8	2.3	3.0
Gross domestic product	AAGR	3.2	3.0	2.0	2.4

Table 13(b) Base scenario to 2020 – income formation – average annual growth rate (AAGR)

		Growth spans			
	Unit	**2000-2005**	**2005-2012**	**2012-2020**	**2005-2020**
Gross domestic product at basic prices	AAGR	6.6	5.9	5.8	5.9
Net domestic product	AAGR	6.8	5.9	5.7	5.8
Net national income	AAGR	6.5	6.0	5.5	5.7
Income accruing overseas	AAGR	15.8	5.1	8.0	6.6
Domestic saving ratio	AAGR	18.5	-4.7	13.2	4.5
Real income for total consumption	AAGR	3.8	3.3	2.6	2.9

Table 13(c) Base scenario to 2020 – miscellaneous indicators – average annual growth rate (AAGR)					
		Growth spans			
	Unit	2000-2005	2005-2012	2012-2020	2005-2020
Total hours	AAGR	1.5	0.9	1.0	0.9
Total employment – full time equivalent	AAGR	1.5	0.9	1.0	0.9
Total wages	AAGR	6.0	5.2	4.8	5.0
Earnings per hour	AAGR	4.4	4.5	3.7	4.1
Implicit consumption deflator	AAGR	2.4	2.8	3.2	3.0
Real earnings per hour	AAGR	1.9	1.5	0.5	1.0

Table 13(d) Base scenario to 2020 – trade indicators – average annual growth rate (AAGR)					
		2000	2005	2012	2020
Nominal trade balance	$billion	-14.0	-25.3	-35.9	-8.8
Real trade balance	$1999 billion	-19.2	-107.3	-145.3	-159.1
Nominal trade balance per cent of GDP	per cent	-2.2	-2.8	-2.7	-0.4
Terms of trade	ratio	1.0	1.3	1.4	1.5
Current account deficit – per cent of GDP	per cent	5.0	6.5	6.1	5.2

Table 13(e) Base scenario to 2020 – manufacturing and mining indicators – average annual growth rate (AAGR)					
		Growth spans			
	Unit	2000-2005	2005-2012	2012-2020	2005-2020
Output	AAGR	1.7	0.8	0.0	0.4
Exports	AAGR	0.6	1.6	1.7	1.6
Imports	AAGR	8.1	4.0	2.4	3.2
Domestic demand	AAGR	4.3	2.1	1.0	1.6
Investment	AAGR	5.5	-1.3	-2.2	-1.8
Output prices	AAGR	1.3	-0.2	-0.1	-0.1
Hours worked	AAGR	-1.0	-2.3	-2.1	-2.2
Capital stock installed	AAGR	2.4	0.8	-0.1	0.3
Factor input	AAGR	2.7	0.1	-0.3	-0.1
Factor productivity	AAGR	0.5	1.3	1.1	1.2
Mining exports	AAGR	6.5	6.4	4.3	5.3
Mining investment	AAGR	10.5	7.2	6.0	6.6
		2000	2005	2012	2020
Manufacturing employment – full time equivalent number (based on 1800 hour average year)	Thousands	1,291	1,228	1,045	881

Table 14 Base case projection: outcome for selected manufacturing indicators by industry				
	Output (average annual growth rate 2005-2020)	**Hours 2020 (2005 = 100)**	**Import share in domestic demand (2005)**	**Output (2020**
Meat and Meat Product Manufacturing	2.1	120.1	0.3	0.8
Dairy product Manufacturing	2.0	81.2	9.9	12.1
Fruit and Vegetable Processing	2.2	44.0	19.8	20.5
Oil and Fat Manufacturing	2.3	67.1	21.1	22.8
Flour Mill and Cereal Food Mfg	0.0	56.2	14.4	30.8
Bakery Product Manufacturing	2.5	112.7	15.8	26.1
Other Food Manufacturing	1.7	94.4	24.3	32.1
Beverage and Malt Manufacturing	2.0	25.1	9.6	12
Tobacco Product Manufacturing	2.4	65.0	38.4	39.1
Textile Fibre, Yarn and Woven Fabric	0.1	92.0	83.6	85.6
Textile Product Manufacturing	1.6	72.8	43.9	46.9
Knitting Mills	-0.5	72.0	67	75
Clothing Manufacturing	-1.2	89.0	77.6	79.6
Footwear Manufacturing	0.1	91.2	86.9	87.9
Leather and Leather Substitute Mfg	0.5	88.5	82.2	90.1
Log Sawmilling and Timber Dressing	0.6	43.7	18.5	18.7
Other Wood Product Manufacturing	0.1	99.2	20.6	39.2
Paper and Paper Product Mfg	1.7	51.8	27.2	33.5
Printing and Services to Printing	0.4	83.0	16.9	34.5
Publishing and recorded media	1.6	81.5	20.3	26.1
Petroleum and Coal Products	-4.1	32.5	26.7	77.3
Basic Chemical Manufacturing	-3.0	74.8	52.7	53.5
Other Chemical Product Manufacturing	-0.4	45.2	56.6	72.6
Rubber Product Manufacturing	1.5	73.4	54.2	54.8
Plastic Product Manufacturing	-2.0	69.1	36.5	62.8
Glass and Glass Product Mfg	1.3	48.6	24.1	25.5
Ceramic Product Manufacturing	0.6	62.2	32.6	37.1
Cement, Lime, Plaster and Concrete	1.1	87.2	5.1	6.3
Non-Metallic Mineral Products	-0.5	69.7	34.8	49.8
Iron and Steel Manufacturing	-1.2	55.2	26.5	69.1
Basic Non-Ferrous Metal Mfg	3.6	71.6	5.8	8.1
Structural Metal Products Mfg	0.0	73.5	4.1	16.8
Sheet Metal Product Manufacturing	0.8	86.8	11.6	20.8
Fabricated Metal Product Mfg	-0.7	63.6	30.4	49.3
Motor Vehicle and Part Manufacturing	-0.5	64.5	57.7	73.3
Other Transport Equipment Mfg	-0.9	73.1	42.5	63.8
Photo and Scientific Equipment Mfg	0.2	55.4	87.1	92.5
Electronic Equipment Manufacturing	0.7	50.9	84.9	87.1
Electrical Equipment and Appliance Manufacturing	0.2	64.4	60.7	71.9
Industrial Machinery and Equipment Manufacturing	1.1	74.0	67.8	73.3
Prefabricated Building Manufacturing	1.9	107.8	0.7	0.9
Furniture Manufacturing	-3.1	61.9	36.8	72.5
Other Manufacturing	4.1	121.1	96.1	93
Total manufacturing	**0.4**	**71.7**	**42.4**	**55.8**

121. The implications from the analysis are that a fiscal/financial manufacturing assistance package would be effective in lifting manufacturing performance. This is certainly the conclusion from the historical evidence. The one highlight for

manufacturing from Table 1 was the growth in exports over the early and mid 1990s. The reason for this was that a range of Commonwealth programs provided between $0.5 billion and $1 billion annually to drive manufacturing expansion in general and exports in particular. In today's dollars that is an average annual funding of $1 billion. For example, the partnership for development scheme granted access to government business, based on a company achieving set standards in research and development, investment and exports.

122. The general rule was that at the industry level, superior export growth performance was linked to assistance. NIEIR has evaluated a number of Australian manufacturing industry assistance schemes that have come (mainly over the second half of the 1980s) and gone or were scaled back (mainly over the late 1990s) over the last two decades. These schemes range across a broad spectrum, including:

- the Partnership for Development Scheme;
- the DIFF Scheme;
- export incentive schemes;
- Government purchasing offset schemes, etc; and
- research and development incentive schemes.

123. The conclusion from these evaluations is that the benefit to the economy (including flow-on impacts) is generally between 4 and 10 to 1. That is, the increase in economic activity (GDP) relative to the direct cost of the schemes to taxpayers or consumers.[7]

124. Alan Oxley, despite being a strong free trade (that is, non-interventionist) economist, broadly agrees with these conclusions[8]. Oxley notes that between 1990 and 1997 the share of Australian exports earned by manufacturers increased by 54 per cent, which meant that manufactured exports increased at twice the rate of total exports.

125. Oxley notes that an important driver of this outcome was due to the Hawke/Keating Governments on "average of between $500 million and $1 billion was spent each year on payments to businesses in these (manufacturing) sectors to finance restructuring. This was money for new machinery and new factories... If other payments and tax concessions for research and development were added the degree of help by the government to economic companies to 'restructure' was very large."[9]

126. In 1995 a paper by Peter Sheenan, *et. al.*, "*The Rebirth of Manufacturing*", Victorian University of Technology, showed that there was a strong correlation between those manufacturing industries which had the fastest growth in exports and the level of government assistance by industry.

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[7] The benefits of some of the schemes is summarised in NIEIR's "*An assessment of the direct impact of the Australian-United States Free Trade Agreement on Australian trade, economic activity and the costs of the loss of national sovereignty*", May 2004.

[8] Alan Oxley "Seize the Future: How Australians Can Prosper in the New Century", Allen and Unwin, 2000

[9] Oxley, op. cit., p.108.

127. Given this, it is not surprising that manufacturing exports have performed so poorly since 2000, after the Coalition Government's cuts to industry assistance policies in 1997. This is despite for a number of years after 1997 the exchange rate being more favourable than what was the case before 1997. Between June 2000 and June 2003 the weighted average Australian exchange rate was 51.5. This compared with an average of 55.7 between June 1990 and June 2000. The inescapable conclusion is that at the withdrawal of industry assistance resources in 1996 was the main reason for the malaise of manufacturing post 2000. Although exchange rates since 2003 have added to challenges faced by manufacturing.

128. The rule also holds from the international experience. That is, the higher the level of fiscal, financial and non-financial expenditure, the faster the growth of manufacturing. The pessimism concerning the prospects of manufacturing in a small developed country in an era of globalisation is unwarranted. There is nothing inevitable about the decline of manufacturing.

129. The most exhaustive study of industry assistance policies internationally is C. Sabillon's "*Manufacturing, Technology, and Economic Growth*", M.E. Sharpe, New York 2000. The focus of the period is the 1950s to the 1990s.

130. After surveying approaches to manufacturing industry assistance policies and their outcomes across a wide range of countries his conclusions can be summarised.

131. Firstly, the study offers strong quantitative and qualitative support for Kalder's so-called first law, namely that the rate of aggregate growth (GDP) and productivity is strongly correlated with the rate of growth of manufacturing output and productivity. Secondly, it supports Kalder's so-called second law, or Verdoorm's Law, that the rate of growth of manufacturing productivity is determined by the rate of growth of manufacturing output[10].

132. As noted earlier, Australia has been able to achieve high rates of GDP growth relative to manufacturing growth only by relying on debt accumulation, rather than economic fundamentals. This has led to structural disequilibrium in the economy which, if sustained, will in all probability lead to an exchange rate and financial crisis. This will restore long term trends in terms of total economic activity relative to manufacturing output after adjusting for changes in other tradable sectors, such as mining.

133. What determines the rate of growth in manufacturing output above minimal levels? The answer given by Sabillon is the level and sustainability of the manufacturing industry assistance effort. To quote, the "stronger the level of government support, the faster the rate of factory output. The rate of growth of this sector is the bottom line for determining the rate of economic growth"[11]. On the same page he also notes what is important for Australia, that what "matters is not

[10] See also A.P. Thirlwald "The Nature of Economic Growth: An Alternative Framework for Understanding the Performance of Nations", Edward Elgar, Cheltenham U.K., 2002.

[11] Sabillon, op. cit., p.350

the size of this (i.e. manufacturing) sector as a share of GDP, but the average annual rate of growth".

134. Why are industry assistance policies effective? The answer given by Sabillon is the high risk nature of manufacturing. Market forces will not produce the level of assistance required in manufacturing compatible with the desired overall level of economic growth. Governments can be very effective in driving manufacturing growth because they have the resources to offer incentives to neutralise the high risk nature of manufacturing. The more incentives offered, the greater the reduction in risk and the faster the rate of growth of manufacturing. In this context economic growth "is a phenomenon that can be easily manipulated by government policy".

135. Efficient industry assistance policies are fiscal, financial and other incentives (such as foreign investment attractiveness) that reduce risk and, at worst, are neutral in directly impacting on manufacturing productivity.

136. Finally, why is manufacturing so important for overall growth? The answer given by Sabillon is that it is unique in creating and reproducing technology which, of course, is a core element of the cumulative causation mechanism.

137. Overall Sabillon strongly rejects the hypothesis that manufacturing inevitably has to decline in especially small high income countries in the age of globalisation. This hypothesis is shown to be false by the success of Ireland and Singapore in driving their manufacturing sector and overall growth by sustained application of efficient industry assistance policies.

Case Study: The Irish Development Agency

138. A role model for the delivery of industry assistance to Australian industry is the Irish Development Agency (IDA).

139. Up until the end of the 1980s, Irish economic growth was poor, averaging around 2 per cent per annum. However, the increasing industry assistance that built up over the late 1970s and 1980s delivered the benefits in the 1990s. Over this period GDP growth averaged 6 per cent and manufacturing output growth averaged 8 per cent per annum.

140. To do this, taxes on manufacturing were the lowest in Western Europe, while industry subsidies as a share of GDP were the highest in Western Europe.

141. More importantly, Ireland over recent years has maintained good performance outcomes despite relative stagnation in some of the major Western European economies. Between the fourth quarter 2000 and the fourth quarter 2005, Irish GDP has maintained an average annual rate of growth in GDP of 5.3 per cent per annum. Over the same period Irish industrial production has averaged just under 6 per cent per annum.

142. The IDA has played a key role in driving growth. Its main instrument is the distribution of grants of up to 60 per cent of capital cost, on a case by case basis, after potential projects for new investment, R and D, etc. have been subject to a cost benefit analysis.

143. The IDA maintains annual performance indices of its clients. A client is a firm that has received assistance currently or in the past for a project where the benefits of the assisted project are still being generated.

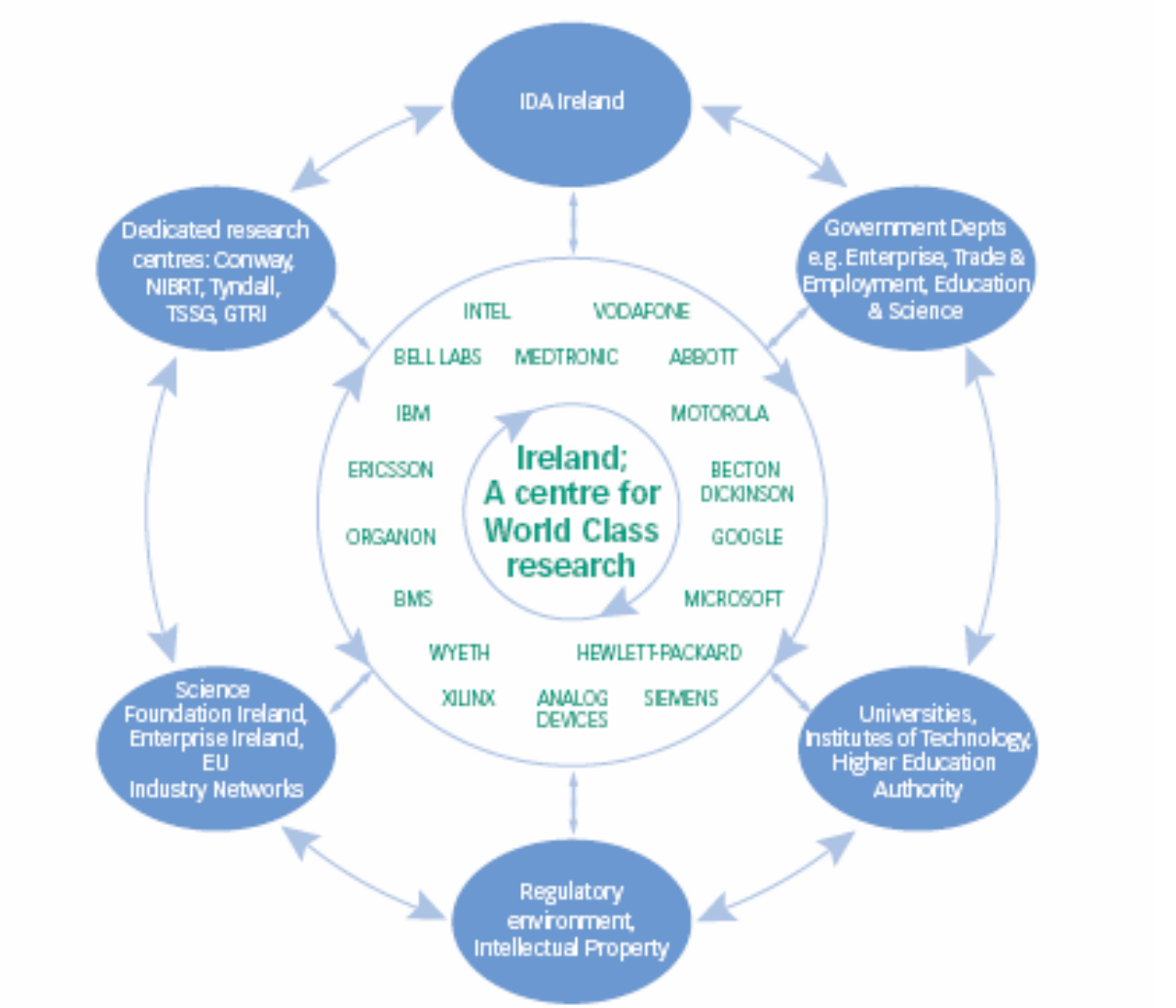
144. The latest performance outcomes from the 2005 annual report are as follows.

- Total employment by IDA supported companies is 132,728.
- Employment created by new supported investment projects in 2005 is 12,633.
- Net employment loss from scaling back or ending of previously supported projects is 9,211, giving a net supported employment gain of 3,412.
- Sales (predominantly exports) from IDA supported companies was A$868,000 per supported person, although net direct benefit to the Irish economy, in terms of wages, purchases for Irish industry and taxes reduced this to A$220,000 per supported employee.
- The cost per sustained employment in 2005 prices fell from A$32,000 over the first half of the 1990s to A$22,000 over the last six years. The direct benefit-cost ratio (excluding flow-ons) is around 8 to 1 on an annual basis.

145. The supported employment represents 60 per cent of total manufacturing employment. However, the employment supported also includes a substantial number in non-manufacturing industries, or rather supporting and complementary industries to manufacturing such as healthcare, ICT services and international and financial services.

146. In terms of the policy focus, the IDA does not view it as a case of choosing between manufacturing and other industries. Rather it's a recognition that manufacturing competitiveness depends on the maintenance of sustained innovation in the evolution towards increasingly higher skill intensive, higher value added manufacturing. This in turn requires linking Irish manufacturers with the presence in Ireland of the world's leading ICT service, marketing, finance, human service providers and research organisations that create wealth in their own right as well as create substantial spillover benefits for manufacturing.

147. This approach is summed up in the attached diagram from the 2005 annual report.



Case Study – Dell Computers

Dell Computers is one of Ireland's largest manufacturers in the ICT sector. The company was originally attracted to Ireland due to a variety of factors including a highly skilled workforce, highly capable SMEs, strong government assistance, low corporate tax rates and wage rates lower than other Western European economies.

Ireland is now facing intense competition from Central and Eastern European nations newly entering the European Union. These nations have low corporate tax rates, aggressive industry policy and have significantly lower wage rates. Michael Dell has been quoted anecdotally as saying that yes he could relocate production to an Eastern European nation and save around 25% on labour costs but it is not worth the risk. Dell enjoys great consistency from a motivated and skilled workforce and has strong links to the rest of Irish economy through a network of capable, innovate SMEs. The cost savings are not worth the risk of losing the benefits that accrue to Dell from its location in the Irish economy. In other words Dell is so deeply 'embedded' in the Irish economy that it cannot easily make a decision to leave.

Policy Solutions

148. As a core objective any policy strategy must focus on building a knowledge intensive manufacturing sector. Figures 29(a) and 29(b) show firstly a very strong relationship between patents issued (an indicator of knowledge intensity) and aggregate income productivity for the 62 Australian regions covered in the NIEIR/ALGA "*State of the Regions*" report. In turn patents per capita are strongly linked to a region's high technology manufacturing output per capita.

149. The message is clear. Knowledge intensive manufacturing production is not only sustainable, but has large spillover impacts on the productivity of the region. Of course, in the current environment the survival of almost all areas of manufacturing without national protection requires the application of increasing inputs of knowledge.

Figure 29a: GRP (minus mining) per person employed versus patents

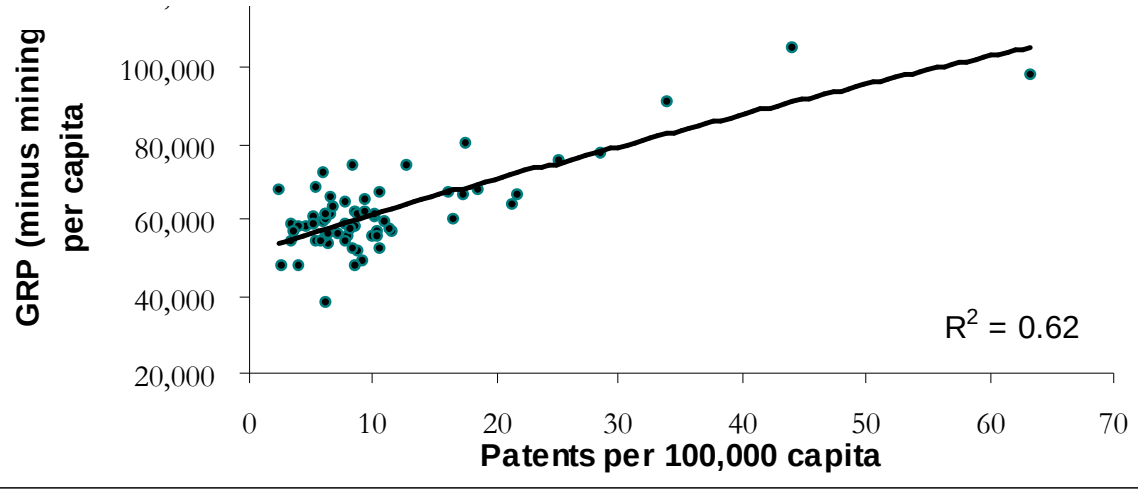
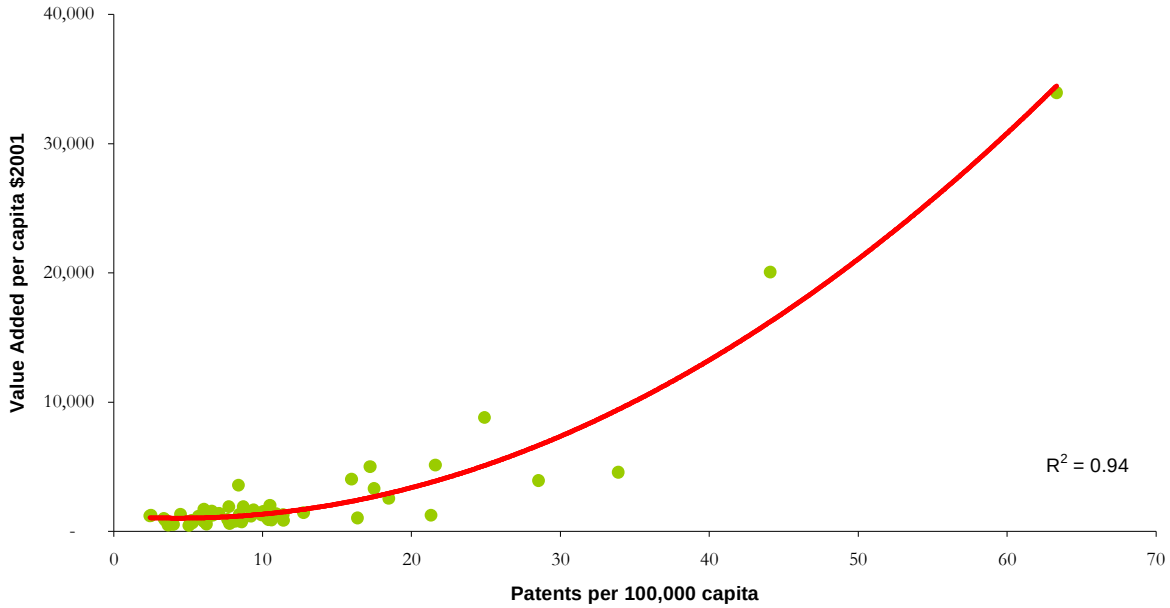


Figure 29b: High tech value added per capita versus patents



150. Knowledge is a necessary, but not the sole, condition for policy success. A single focus on increasing knowledge input will not, in general, be successful. The mechanism of cumulative causation shows that without strong supply chains, minimum industry cluster density (or critical mass) and connectiveness with international markets (that is, some export activity) the commercialisation of innovation is unlikely to be successful. Thus, any policy package to be successful must include a range of instruments that can be combined and targeted on a given supply chain, industry or individual firm, to create the full range of necessary conditions for sustained successful innovation.

151. Such a policy package has been developed in this report. A sustained $1 billion (in 2005 prices) policy package (that is additional to all current funding) focused on increasing, either directly or indirectly, the demand for Australian manufactured products can be designed around six segments. Each segment is designed to alleviate obstacles that prevent Australian manufacturers from reaching their full potential.

152. The components of a $1 billion annual sustained strategy in 2005 prices are:
    - $300 million investment allowance;
    - $300 million research and development assistance scheme;
    - $225 million increase in the export market development grant scheme;
    - $75 million technology diffusion program;
    - $50 million incentive program to attract foreign equity into small and medium sized manufacturing businesses; and
    - $50 million strategy to attract and train highly skilled labour for the application of advanced manufacturing technologies.

153. The strategy should be tightly targeted. There should be eligibility conditions set by industry and firms. It is intended that the eligible industries will be those in the complex manufacturing industries. That is, industries characterised by

differentiated products. Commodity based agriculture and mining manufacturing industries are generally well catered for by standard market mechanisms.

154. It is also intended that there will be eligibility criterion for individual firms in eligible industries. Firms would need a track record that satisfies criteria based on a history of:
    - sales growth;
    - innovation;
    - export potential; and
    - strategic value.

    Assistance to an individual firm would be capped at a ceiling percentage of sales. The rationale for the segments of the strategy is as follows.

155. **Investment Allowance** - The manufacturing industry is investing at its full potential, given its internal cash flow (including dividends). This means that there are opportunities for market expansion that cannot be exploited because of a lack of investment funding capacity. Investment assistance appropriately targeted is likely to be translated in to capacity driven demand expansion.

156. **Innovation Assistance** - Research and development is perhaps the most important component of the strategy. Competition in differentiated product industries depends on constant innovation to improve the functionality and cost effectiveness of products. The stronger the rate of innovation, the higher will be demand growth.

157. Research and development grants to firms with a proven track record that cannot innovate fast enough to grow the business because of the risks and financial constraints would have a strong impact.

158. **Export Market Assistance** - Export market development grants are a key instrument to connect firms focused on the domestic market, but with export potential, with international markets.

159. **Foreign Equity Attraction** - A complementary program would be an incentive scheme to attract foreign equity into Australian small to medium businesses. In the main foreign equity would be the conduit to access foreign markets or to develop products with the capability to access foreign markets.

160. **Technology Diffusion** - In the United States there is a large scale program linking State and Federal agencies to identify and facilitate firms adopting best practice technologies. The Queensland Government has a similar scheme with QMI solutions. If the schemes are effective in the United States, they could be more effective here given Australia's remoteness from major manufacturing best practice innovation centres.

161. A large part of the cost of this program would be finding the most appropriate foreign expertise to nominate and implement best practice technology given the particular environment of individual firms.

QMI Solutions

QMI Solutions is Australia's leading technology diffusion agency for manufacturing firms. Established in Queensland in 1993 QMI caters to around 100 SME manufacturers every 12 to 18 months. The process begins with a manufacturing diagnostic where the staff carry out an assessment of the firms organisational practices (inventory control, quality, process technologies etc) and the firms performance (profitability, operational outcomes such as scrap rates and set up times etc).

Improving the productive performance of Australia's manufacturing firms is the key to moving beyond "business as usual". In the UK, the Manufacturing Advisory Service (MAS) established in 2002 is playing an important role in enhancing the management systems and organisational capability of firms. MAS provides the following services:

- Direct help line support through the Regional Centres;
- A free one-day on site diagnostic visit by a MAS manufacturing specialist to review a company's entire manufacturing operation;
- Up to 10 days in-depth consultancy to, for example, introduce lean manufacturing techniques, product or process innovations, or design advice;
- Best practice activities, training and workshop activities for manufacturing across each region.

By establishing a network of productive performance centres such as QMI solutions the States and the Commonwealth will have the infrastructure to build a service similar to MAS in Australia.

162. **Advanced Skills Formation** - Complementary to this would be a program to initially attract and then train domestic residents in the skills required to effectively apply best practice technologies in the Australian market. Best practice technologies cannot be applied in Australia without the skills required to do so and, by definition, if Australia is not applying best practice skills in many areas, then the skills will not be available here to do so.

163. The $1 billion program would make a significant contribution to expanding the demand for Australian manufactured products. Table 14 shows the revised base case growth rates to 2020, with the implementation of the $1 billion program starting in 2007.

164. The strategies are incorporated into the model, in general, simply in the form of net additionality in expenditure. That is, the assumption is that the individual segments do not induce net additional matching private sector expenditures in the first instance. However, there is, over time, a "multiplier" effect due to the mechanism of cumulative causation outlined above. This is a very conservative assumption that means that the predictions below can be considered the minimum benefits accruing to the implementation of this strategy.

165. The results in Table 15 indicate that the scheme would be very effective in lifting manufacturing output and overall GDP growth. The manufacturing output growth rate would increase from 0.4 per cent from 2005 to 2020 under the base scenario to 1.5 per cent per annum as a result of the policy package. The additional hours worked in manufacturing by 2020 would be equivalent to 49,400 full time equilibrium employment positions. However, the main benefit would be in terms of lifting manufacturing labour productivity growth by 0.8 per cent per annum.

166. On the assumption that the Governments continue to use fiscal policy aggressively to speed the increase, (or at least part of the increase) in net national disposable income, then there will be a multiplier impact on total activity. For the scenario developed in the report, the increase in the GDP growth rate is from 2.4 per cent per annum to 2.8 per cent per annum. Total hours worked in the economy increases by 414 million per annum or 230,000 full time employment positions by 2020 over the base case outcome. Therefore, the minimum total direct and indirect jobs created by this policy package would be almost 280,000. The total increase in GDP is $54 billion in 2005 prices.

167. Since the total cost of the scheme will be $14 billion to 2020, the broad benefit cost ratio is 3.8. This is well down on the benefit cost ratios of the similar schemes of the 1980s and 1990. The actual multiplier effect of these types of programs in the past has ranged from 7-10 times the initial expenditure, again making the calculations contained here quite conservative, though realistic. The competitive process in Australian manufacturing is now considerably more severe and the loss of critical mass and the hollowing out of the supply chains will make it harder to lift performance.

Table 15(a) Alternative scenario to 2020 incorporating $1 billion manufacturing development strategy – Demand indicators average annual growth rate (AAGR)

	Unit		2005-2012	2012-2020	2005-2020
Household consumption	$1999m	AAGR	3.4%	2.8%	3.1%
Government consumption	$1999m	AAGR	3.3%	2.8%	3.0%
Equipment investment	$1999m	AAGR	4.4%	1.1%	2.6%
Construction investment	$1999m	AAGR	4.2%	0.9%	2.4%
Exports of goods and services	$1999m	AAGR	4.4%	3.6%	4.0%
Imports of goods and services	$1999m	AAGR	4.0%	2.5%	3.2%
Gross domestic product	$1999m	AAGR	3.3%	2.3%	2.8%

Table 15(b) Alternative scenario to 2020 incorporating $1 billion manufacturing development strategy – Aggregate income formation

	Unit		2005-2012	2012-2020	2005-2020
Gross domestic product at basic prices	$m	AAGR	6.1%	6.1%	6.1%
Net domestic product	$m	AAGR	6.2%	6.0%	6.1%
Net national income	$m	AAGR	6.2%	5.9%	6.0%
Income accruing overseas	$m	AAGR	5.4%	8.8%	7.2%
Domestic saving ratio	$m	AAGR	-20.1%	17.8%	0.5%
Real income for total consumption	$1999m	AAGR	3.4%	2.8%	3.1%

Table 15(c) Alternative scenario to 2020 incorporating $1 billion manufacturing development strategy – Miscellaneous indicators					
	Unit		**2005-2012**	**2012-2020**	**2005-2020**
Total hours	million	AAGR	0.8%	1.2%	1.0%
Total employment – full time equivalent	number	AAGR	0.8%	1.2%	1.0%
Total wages	$m	AAGR	5.5%	5.1%	5.3%
Earnings per hour	$	AAGR	4.7%	3.9%	4.3%
Implicit consumption deflator	index	AAGR	2.6%	3.1%	2.9%
Real earnings per hour	1999	AAGR	1.9%	0.6%	1.2%

Table 15(d) Alternative scenario to 2020 incorporating $1 billion manufacturing development strategy – Trade indicators					
				2012	**2020**
Nominal trade balance per cent of GDP	per cent			-2.0	0.7
Terms of trade	ratio			1.4	1.4

Table 15(e) Alternative scenario to 2020 incorporating $1 billion manufacturing development strategy – Manufacturing indicators					
	Unit		**2005-2012**	**2012-2020**	**2005-2020**
Output	$1999 million	AAGR	1.8%	1.3%	1.5%
Exports	$1999 million	AAGR	4.0%	3.9%	4.0%
Imports	$1999 million	AAGR	4.1%	2.5%	3.3%
Domestic demand	$1999 million	AAGR	2.5%	1.5%	2.0%
Investment	$1999 million	AAGR	-0.6%	2.2%	1.0%
Output prices	$1999 million	AAGR	0.0%	0.5%	0.3%
Hours worked	$1999 million	AAGR	-1.9%	-1.8%	-1.8%
Capital stock installed	$1999 million	AAGR	1.1%	1.7%	1.5%
Factor input	index	AAGR	1.2%	0.8%	1.0%
Factor productivity	index	AAGR	1.3%	1.2%	1.2%
Mining exports	$1999 million	AAGR	6.7%	4.3%	5.4%

168. While $1 billion policy package may seem excessive, both political parties have either implemented or promised to implement policy packages of this amount or greater. Backing Australia's Ability is in its 6th year, with expenditure in 2005-06 of $1,076.6 million ($8,331.8 million over 10 years). The Australian Labor Party took to the 1998 Federal Election an industry policy entitled "Creating Jobs: Building the Nation and A Better Plan For Trade". The funding for this package was $854.4 million per year for 7 years ($5,981 million), which in 2006 dollars is $1,065 million per year.

Additional Measures

169. Over the next decade more incentive will be required to boost the business sector's R&D expenditure and upgrade firms' management systems and organisational capabilities to innovate. Restoring the 150 per cent R&D tax concession and leaving it unchanged for at least a decade warrants serious consideration.

170. However, the more important issue is to do as the Irish Government has done and look to link the availability of the incentive to firms upgrading their R&D capability.

While this will involve additional administrative complexity, it needs to be done. Therefore, we should put in place a 175% concession for firms with an R&D expenditure of 2 per cent or more of their sales and a business plan with milestones for upgrading the firm's R&D capability. Demonstration of meeting the milestones every two or three years is the condition for the continuing availability of the incentive.

171. Implement a fundamental review of Invest Australia through a strategy-based consultancy, supported by both the States and the Commonwealth, to get better outcomes from that organisation.

172. Re focus investment incentives for major projects almost exclusively on new FDI in knowledge intensive manufacturing activities with the highest incentives for greenfield sites, as well as investments that strengthen supply chains in the manufacturing regions; and

173. Increase the emphasis in the investment promotion program on attracting large global companies to establish R&D/engineering/product development centres in Australia with the accompanying manufacturing prototype capability.

174. End cost recovery for the Industry Capability Network (ICN) and help purchasers find Australian suppliers with the capability to supply for both domestic and export markets.

175. The AUSFTA Procurement Agreement still allows Australia to give preference and use offsets for small and medium size enterprises. A concerted effort will be required to do this and plans to do this must be developed and implemented now. Government should also consider legislating the definition of SMEs, on an industry by industry basis, so that it is not challenged under Article 21.2.C of the Agreement.

176. A major overhaul of Austrade. It needs to be re-engineered as it was in 1990 with the McKinsey Review. A major outcome from this process must be to focus more on exports to East Asia and Australian firms becoming part of the new supply chains that are being forged in this region. New forms of engagement (social, economic, cultural, political) must be initiated to support Australia's ETM trading relationship with East Asia.

177. Increase investment in supporting physical, social, R&D and environmental infrastructure.

Australia's Manufacturing Sector

House of Representatives Economics, Finance and Public Administration Committee

August 29, 2006

Terms of Reference

1. Future directions
2. Dominance in commodities exports/impacts on the economy following the resources boom
3. State of the manufacturing sector
4. Opportunities and challenges from expansion in global trade in particular China
5. Policies for realising opportunities

Dominance in commodities/ impact following resources boom

- Mining employs only 1.3% of the Australian workforce
- Manufacturing provides a greater contribution to the Australian economy
- A billion-dollar increase in manufacturing exports produces over a similar increase in mining exports:
- An extra $86 million in GDP at basic prices
- If saved national income is added the superiority increases to $552 million
- $114 million additional wages
- 4.8 million additional hours of work or 26,700 full-time equivalent employment positions

Plasma TV Index

Even at the height of the resources boom, to import one plasma television, we need to export 6,500 tonnes of Iron Ore.

Commodities/Resources Boom

- Structural Imbalance
- Debt driven consumption (household debt to income ratio 170% of net household disposable income)
- New South Wales 200% -- 1% growth per annum compared to 3% for the national economy
- Other States on current trends will reach New South Wales in debt to income levels by 2009 or 2010
- Households will not find relief in retirement from inheritances. Finance sector borrowings from overseas since 1990s has matched the buildup in household debt used to finance consumption.
- Inheritances will be de facto sold off to foreigners

Commodities/Resources Boom

- Currency crisis in the next few years because of increasing vulnerability to economic shocks
- IMF found that for developed economies an exchange-rate crisis will cost between 7 and 10% loss in output
- World Bank– currency crisis signposts
- Sustained growth in debt relative to GDP
- Sustained increase in credit relative to foreign resources (Reserve Bank assets)
- Current account deficit in excess of 5% of GDP
- Rising ratio of short-term foreign debt relative to foreign reserves
- Falling interest rates relative to benchmark New York or London interest rates
- Falling terms of trade (only criteria not met)

State of Manufacturing Sector

- Manufacturing in long-term decline -- 0.3% decline per annum
- 1979 - 80 manufacturing value added in GDP, just under 20%. In 2004- 2005 the share is just above 12%
- Malaise extends to almost all manufacturing industries
- Poor trade performance – over the past 15 years each 1 million-dollar increase in real exports has been matched by an almost $4 million increase in real imports
- Manufacturing trade deficit is approaching 15% of GDP
- The number of manufacturing industries with an export share of production over 20% is less than the number of industries with an import share in domestic demand of greater than 50%

State of Manufacturing Sector

- Manufacturing performance is declining relative to OECD best practice
- Productivity, size and export performance of the Australian manufacturing industry is relatively poor against OECD benchmarks
- Australia is one of the smallest manufacturing sector's relative to the total economy in the OECD
- Australia has one of the lowest export shares in total production in OECD
- Australia has a relatively poor research and development expenditure to value added ratio in the OECD
- Australia has a relatively poor investment to value added ratio in the OECD

State of Manufacturing Sector

- The lower the level of manufacturing industry assistance, the poorer the performance
- Strategic value of the policies of 1984 to 1996 were never wholly understood or developed. Easy to end as unnecessary “business welfare”-Fallacy of composition
- Given small scale and poor productivity performance manufacturing productivity levels are about as good as can be expected
- Main chance for improving productivity growth is by way of demand led expansion
- Manufacturing failed to offset the negative effects of sustained structural change
- Manufacturing must target growth initiatives of at least 2% growth per year
- Strategic error of policy not to implement policies designed to offset the negative impact of globalisation. The Irish and Singaporean manufacturing sectors have been subject to similar negative forces

- The AMWU rejects the Treasury argument that we should ignore the danger of having the manufacturing sector hollowed out and unable to rebuild once the mining boom recedes.
- Treasury argues that government should leave it to the market to operate unimpeded.
- This ignores the lessons of our own history and of international experience.
- If the Treasury thesis had been followed in other countries, Ireland would still be producing potato chips rather than computer chips.
- And Singapore would still be concentrating on low cost textile production rather than being a world leader in knowledge intensive manufacturing.
- Government can and should make decisions involving the industrial structure of the economy.

Challenges of China

- Competitive advantage driven by exploitation
- Human rights and trade union rights ignored
- Environmental safeguards ignored for competitive advantage
- Undervalued currency
- Health and safety performance scandalous
- Low wage / high skill – high investment strategy
- Tariff barriers (average 9%)

Challenges of China

- Non--tariff barriers
- Breaches of intellectual property rights
- Transparency of legal and financial systems
- Import duties enforcement
- Interpretation of provincial laws
- Varying customs requirements
- Unique technical standards
- Foreign investment restrictions
- Quarantine controls
- Dumping

Challenges of Europe and USA

- Technology
- Skills
- Quality
- Economies of scale
- Government procurement
- Industry support
- Manufacturing culture

Future Directions/Policies for Realising Opportunities

- Achieve a self-sustaining growth dynamic (cumulative causation)
- Embed transnational corporations into local supply chains
- Recognise that hollowing out the supply chain while attempting to keep the “cream” of manufacturing- that is R&D and prototyping are doomed to failure due to:
- Increased unit costs of production due to loss of demand
- Reduced economies of scale and scope in the R&D effort
- Reductions in the competitiveness of the supply chain which reduces the capacity to innovate
- Reductions in the capacity of the supply chain to attract/generate its unique skilled labour requirements
- Increases the risk and uncertainty of operating in the supply chain

Future Directions/Policies for Realising Opportunities

- Sustained $1 billion policy package, additional to all current funding
- Focus on increasing directly or indirectly the demand for Australian manufactured products
- Each segment of the package designed to alleviate obstacles that prevent manufacturers from reaching their full potential

Future Directions/Policies for Realising Opportunities

- $300 million investment allowance
- $300 million research and development assistance scheme
- $225 million increase in the export market development Grants scheme
- $75 million technology diffusion scheme
- $50 million incentive program to attract foreign equity into small and medium-sized manufacturing businesses
- $50 million strategy to attract and train highly skilled labour for the application of advanced manufacturing technologies

Future Directions/Policies for Realising Opportunities

- If this one billion-dollar problem was maintained from 2007 to 2020 it would make a significant contribution to expanding the demand for Australian manufactured products including:
- Creating a minimum almost 280,000 direct and indirect jobs
- Increasing GDP by at least $54 billion in 2005 prices

Marginal Seats Polling
12 to 18 July 2006

- 92% agree that “Australia’s manufacturing industries are just as important as our farming and mining industries”
- 97% agree that “it is important to maintain manufacturing industries for Australia’s future economic independence”
- 96% agree “Manufacturing is important for providing jobs for our children in the future”

Marginal Seats Polling
12 to 18 July 2006

- 90% agree that “our manufacturing industries have unfair competition from countries where workers have no rights, low wages and poor conditions”
- 75% disagree that “Australian companies should be allowed to offshore their work to overseas companies as it reduces their wage costs”

Marginal Seats Polling
12 to 18 July 2006

- 93% agree “it is essential to maintain our manufacturing industries in Australia, even if they need some government support”
- 64% disagree that “the government would be wasting its money by supporting Australian industries which can compete with cheap imports”

Marginal Seats Polling
12 to 18 July 2006

- 85% believe “the government has the ability to take action now to stop the flow of jobs and industries over seas”
- Only 12% think “there is nothing the Federal government can do to stop loss of jobs and industries over seas – that is part of the natural process of globalisation”
- Only 26% agree that “the Howard government has done enough to support our industries and keep jobs in Australia” – 68% disagree

Marginal Seats Polling
12 to 18 July 2006

- Given a choice between using the budget surplus for more personal tax cuts and investing in Australian industry, 65% support investing in Australian industry and 26% want tax cuts

Marginal Seats Polling
12 to 18 July 2006

- Expansion of the export incentive scheme – 86% support
- Program would government pays 20% of cost of advanced technology – 85% support
- Half the cost of research and development by targeting companies – 70% support
- Assistance for small and medium manufacturing companies seeking overseas investment – 78% support
- Government funded national body to assist international bank benchmarking – 85% support
- New TAFE program to develop training programs and advanced technology – 96% support
- Tax concessions for additional research and development work to relocate to Australia – 80% support
- Extra tax concessions for companies who commit a percentage of their budget to Australian research and development – 89%