

Australia's Policy Change from Protection to Correction and Its Impact on Manufactured Exports

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1. The Growth in Australia's Protection of Manufacturing before the First Half of the 1980s

(1) The Traditional Australian Manufacturing Industry Policy

Successive Australian governments after World War II have strived for two fundamental objectives in economic policy, a rise in the fundamental standard of living and the maintenance of full employment. The policy instrument for these objectives has been the nurturing of the manufacturing industry. Import substitution was seen as providing a stable market for the domestic manufacturing industry and, thus, manufacturing was expected to contribute to increased employment opportunities and to lightening the difficulties of foreign currency. Exports have not been a significant part of Australian industrial policy for a long time.

It must be noted, however, that Australian industrial policy had always been protectionist. Protectionism increased in the 1940s and 1950s with the adoption of quantitative restrictions on imports. After the import quotas were dismantled in the early 1960s, they were replaced by equally protective tariffs. In the 1950s and 1960s, many other industrial countries were lowering their manufacturing tariffs substantially, but Australia did not implement any major decreases in protection.¹⁾ Thus by 1980 Australian manufacturing was more heavily protected against import competition than manufacturing in any other industrial country, except perhaps New Zealand.

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1) There were only two exceptions: the 1957 Trade Agreement between Australia and Japan, and the 25% across-the-board tariff cut in July 1973. The former marked the liberalization of Australian-Japanese trade, the latter Australia's first major tariff reform.

(2) Economic Performance under Protection

With manufacturing seen as vital for national development, pre-war protective tariffs were retained, along with import licensing restrictions and controls, until 1960. As a result, by the beginning of the 1960s the manufacturing sector's share of GDP and employment had reached historic heights.²⁾

The manufacturing sector's share of GDP reached its highest level, around 29%, in 1958-59. But under increasing protectionism, manufacturing has experienced relative decreases in production among all industries, and its share of GDP has been going down since then. As indicated in Table 1.1, its share declined from 26.4% in 1961-62 to 19.5% in 1981-82, a decline of 6.9 points in 20 years.

Table 1.1 Contributions to GDP by Industry

Industry	1961-62	1971-72	1981-82	1991-92	1998-99	Average annual rate of growth, 1990-91 to 1998-99
Agriculture, forestry, and fishing	11.9	9.5	8.4	3.0	3.1	3.0
Mining	1.8	3.5	4.6	4.2	3.9	3.9
Manufacturing	26.4	24.1	19.5	14.1	12.5	1.6
Services and others	59.9	62.9	67.5	78.7	80.5	4.2
Total	100.0	100.0	100.0	100.0	100.0	3.8

Sources: ABS, various issues of *Australian National Account*, *Year Book Australia*, and *Manufacturing*.

The manufacturing sector's share of employment reached its highest level, around 29%, in 1948-49. But in spite of the government's exertions to increase manufacturing employment as an instrument to achieve full national employment, this share has been declining since then. As indicated in Table 1.2, this share decreased from 26.4% in 1961-62 to 19.8% in 1981-82, a decrease of 6.6 points in 20 years.

Table 1.2 Contributions to Total Employment by Industry

Industry	1961-62	1971-72	1981-82	1991-92	1998-99	Average annual rate of growth, 1990-91 to 1998-99
Agriculture, forestry, and fishing	11.9	7.4	6.7	5.4	5.0	-0.7
Mining	1.8	1.4	1.4	1.2	0.9	-1.1
Manufacturing	26.4	23.2	19.8	14.1	12.2	-1.4
Services and others	59.9	68.1	72.1	79.3	81.9	1.9
Total	100.0	100.0	100.0	100.0	100.0	1.3

Sources: ABS, various issues of *Census* and *Year Book Australia*.

2) *Year Book Australia 2001*, p.712.

In terms of GDP per capita, Australia was by far the highest of all developed countries at the beginning of the period of modern growth. However, by 1950, the average income level in America and Canada exceeded that in Australia. Since then, Australia's ranking has dropped dramatically: 5th in 1960, 7th in 1970, 14th in 1980, 16th in 1990, and 17th in 1997 (Table 1.3).

Table 1.3 Ranking of Industrial Countries by GDP per capita¹⁾ (1913 to 1997)

Before 1913	1950	1960	1970	1980	1990	1997	\$ US
1 AUSTRALIA	1 United States	1 United States	1 United States	1 Switzerland	1 Switzerland	1 Luxembourg	37,785
	2 Canada	2 Canada	2 Sweden	2 Germany, FR	2 Norway	2 Switzerland	35,170
	3 AUSTRALIA	3 Sweden	3 Canada	3 Sweden	3 Luxembourg	3 Norway	34,890
		4 Switzerland	4 Switzerland	4 Denmark	4 Finland	4 Japan	33,265
		5 AUSTRALIA	5 Denmark	5 Norway	5 Sweden	5 Denmark	30,718
			6 Germany, FR	6 Belgium/Luxembourg	6 Denmark	6 United States	29,789
			7 AUSTRALIA	7 France	7 Iceland	7 Singapore	28,107
				8 Netherlands	8 Germany, FR	8 Iceland	27,181
				9 United States	9 Japan	9 Hong Kong	26,567
				10 Iceland	10 United States	10 Sweden	25,718
				11 Austria	11 France	11 Germany	25,468
				12 Canada	12 Austria	12 Austria	25,465
				13 Japan	13 Canada	13 Belgium	23,948
				14 AUSTRALIA	14 Belgium	14 France	23,843
					15 Netherlands	15 Finland	23,309
					16 AUSTRALIA	16 Norway	23,270
						17 AUSTRALIA	21,971

Note: 1) At current prices converted to US dollars at official exchange rates. The 1980 list refers to GNP rather than GDP.

Sources: Kym Anderson and Ross Garnaut, *Australian Protection*, Sydney, Allen & Unwin, 1987, pp.16 - 17 and UN, *Statistical Yearbook 1997*.

This sharp drop in Australia's ranking occurred together with the development of manufacturing industries in advanced countries, so Australia's decline can be attributed to the poor growth performance of its manufacturing industry. Much of this poor performance can be attributed to the increase in protection for manufacturing in Australia. Increased awareness of this relatively poor growth performance aroused Australian's suspicions about maintaining a high level of protection for manufacturing.

2. A Change in Protection Policies and Its Effect on the Manufacturing Industry

(1) From Protection to Correction

The main factor which led to the 25% across-the-board tariff cut in 1973 was a gradual change in the belief that a high level of protection for manufacturing would contribute to national interests. In other words, an awareness of protection costs rose as

the economy became more highly dependent on trade. Criticism of protectionism became more clamorous because it had not succeeded in nurturing and developing the manufacturing industry, and had produced price increases in parts, intermediate products, and manufactured goods, resulting only in an increased burden for industries and consumers. There was also a lot of bad feeling toward a uniform protection of overseas capital. Critics said that the application of the tariff policy led to an excessive inflow of overseas capital into the manufacturing industry, and that excessively high tariffs led to unduly high profits on overseas capital.

Some economists, bureaucrats, and leaders of private enterprises and Parliament advocated free trade in the 1960s, and support for trade liberalization increased in the 1970s, due to Australia's relatively poor growth performance. In May 1965, *The Report of the Committee of Economic Enquiry* (The Vernon Report) was published, the first such investigative report in Australia. In the 1970s, several reports were published: *Policies for Development of Manufacturing Industry* (The Jackson Report) in October 1975, and *White Paper on Manufacturing Industry* in May 1977, the first such white paper on industrial policy. All of these accepted the need for tariff reform, structural reform of the manufacturing industry, and an investment policy for export-oriented manufacturing. But all insisted that tariff reductions would affect employment, and all of them ended, after all, in emphasizing the need for industrial protection to avoid unemployment, and economic and social confusion for the time being. In the 1980s, however, an increased awareness of the costs of protectionism led to stronger arguments for dismantling it. It became an urgent task to change the policy, to foster the development of competitive and export-oriented manufacturing, even though some attendant suffering would be inevitable.

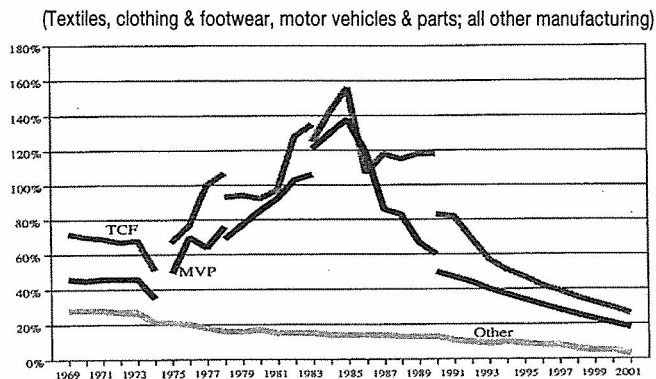
Changes came about in the first half of the 1980s. The election of the Hawke Labour government in March 1983 brought to a boil the long-simmering debate between free-traders and protectionists.³⁾ The principal architect in correcting industrial policy was Senator John Button, the minister of the Department of Industry, Technology and Commerce beginning in 1983. Button's greatest achievement has been to shift the focus of Australian industrial policy from a defensive orientation to a forward-looking approach based on fostering the development of innovative, export-oriented industries.⁴⁾ Button's industrial plans have included the reduction of protection barriers through the

3) Ann Capling and Brian Galligan, *Beyond the Protective State: The Political Economy of Australia's Manufacturing Industry Policy*, Melbourne, Cambridge University Press, 1992, p.117.

4) *Ibid.*, p.127.

abolition of import quotas and substantial tariff cuts, and, in some cases, penalties for non-compliance. The most important of these plans were the steel plan, the car plan and the textiles, clothing and footwear plan. Important changes began to be made from about the middle of the 1980s, and Australia has been changing from an unduly and unaccountably protective state to a dramatically liberalized country (See Chart 2.1).

Chart 2.1 Effective Rates of Assistance ¹⁾ (1969 to 2001)



Note: 1) Breaks in the series reflect the changing production weights used in preparing the estimates.

These changes do not have a discernible impact on the series for other manufacturing.

Source: P.J. Sheehan *et al.*, *The Rebirth of Australian Industry*, Melbourne, Victoria University, 1994, p.83.

(2) Changes in the Performance of the Manufacturing Industry with the Reduction in Protectionism

Table 2.1 shows production volume in 2000-01, growth rates for 2000-01 and average growth rates over the preceding 10 years. During 2000-01 the manufacturing industry experienced the lowest growth in production (up 0.3%) and grew at a rate which was below the overall industrial growth rate of 1.9%. Over the 10 year period 1990-91 to 2000-01, the manufacturing industry experienced an average growth rate of 2.0% per annum, which was the lowest of all industries except for the construction industry. The manufacturing industry's average growth rate was a little over half of the growth rate of all industries in total, and less than one-fifth of the rate of the fastest growing industry (communication services). As a result of this low growth rate, manufacturing's share of GDP continued to decrease under reduced protection after the mid 1980s. It was 14.4% in 2000-01, well below the 19.5% in 1981-82, and about the same as the 14.1% in 1991-92 (See Table 1.1).

Table 2.1 Production Volume ¹⁾

	2000-01	Change from last year	Average annual change over last 10 years
	(\$m)	(%)	(%)
Agriculture, forestry and fishing	18,402	-4.2	2.2
Mining and services to mining	29,766	5.8	4.3
Manufacturing	74,226	0.3	2.0
Electricity, gas and water supply	15,991	3.1	2.1
Construction	29,792	-17.6	1.5
Wholesale trade	32,365	-0.9	4.5
Retail trade	32,968	0.8	3.6
Accommodation, cafes and restaurants	14,726	1.7	3.8
Transport and storage	31,485	0.9	3.6
Communication services	20,374	10.3	10.2
Finance and insurance	40,436	4.6	3.5
Property and business services	74,063	9.3	6.0
Government administration and defence	24,830	3.2	4.0
Education	27,544	1.6	2.3
Health and community services	35,259	2.7	3.2
Cultural and recreational services	12,132	11.2	3.6
Personal and other services	15,450	7.2	4.5
All industries	529,809	1.9	3.6

Note: 1) Production as measured by industry gross value added at 1999-2000 prices.

Source: ABS, *Manufacturing*, 2001, p.15.

In the 1980s, manufacturing had come to account not only for a lowering proportion of employment but for a decrease in employment in the industry. The manufacturing sector employed over 1,300,000 persons in the early 1970s, at its peak, but the number fell to 1,257,000 in the early 1980s, 1,221,000 in the early 1990s, and 1,113,000 in 2000-01 (Table 2.2). Manufacturing's share of employment was 20.2% in May 1980, but fell to 15.6% in 1989-90, 12.2% in 1998-99, and 13.0% in 2000-01. It is clear that manufacturing's share of employment declined more rapidly than its share of GDP. Manufacturing's decrease in employment in terms of absolute numbers means that its production per capita increased to some degree, but it means, at the same time, that it has not been able to expand its production volume enough to employ an increased workforce.

Table 2.2 Total Employment and Manufacturing Employment

Year	Total employment ('000)	Manufacturing employment ('000)	Contribution to total employment(%)
May 1980	6,237.8	1,257.4	20.2
May 1985	6,599.4	1,125.6	17.1
1989-90 ¹⁾	7,830.9	1,220.8	15.6
1994-95 ¹⁾	8,057.3	1,113.8	13.8
1999-2000 ¹⁾	8,886.5	1,113.1	12.5

Note: 1) Annual average.

Source: Various issues of *Year Book Australia*.

However, an epoch-making change in manufacturing can be found in its export performance. Table 2.3 shows Australia's total exports and manufactured exports in the past 20 years. Manufactured exports increased more slowly than total exports in the first half of the 1980s under heavy protection, but more rapidly after that under reduced protection. After 1986-87, the annual growth rate of manufactured exports exceeded that of total exports, except for the three fiscal years from 1996-97 to 1998-99. Manufactured exports increased at the rate of 19.7% per annum in the second half of the 1980s and at 12.4% in the first half of the 1990s, almost double the speed of total exports during the same periods. However, the growth rate per annum of manufacturing exports came to only 7.6% in the second half of the 1990s, almost equal to that of total exports, due to the global recession.

Table 2.3 Total Merchandise Exports and Manufactured Exports (1980-81 to 1999-2000)

Year	Total exports		Manufactured exports		
	Value (\$m)	Average annual growth rate, each period(%)	Value (\$m)	Average annual growth rate, each period(%)	Contribution to total exports(%)
1980-81	18,941		3,695		19.5
1981-82	19,294		3,816		19.8
1982-83	21,455	12.0	4,359	11.1	20.3
1983-84	24,013		4,968		20.7
1984-85	29,708		5,568		18.7
1985-86	32,785		6,143		18.7
1986-87	35,783		7,964		22.3
1987-88	40,721	10.6	9,628	19.7	23.6
1988-89	44,007		10,967		24.9
1989-90	49,078		12,539		25.5
1990-91	52,399		13,889		26.5
1991-92	55,027		15,145		27.5
1992-93	60,702	6.5	17,829	12.4	29.4
1993-94	64,548		20,124		31.2
1994-95	67,052		22,469		33.5
1995-96	76,005		25,699		33.8
1996-97	78,935		26,270		33.3
1997-98	87,771	7.7	28,638	7.6	32.6
1998-99	85,992		27,957		32.5
1999-2000	97,275		32,409		33.3

Sources: Department of Foreign Affairs and Trade, *Exports of Primary and Manufactured Products:*

Australia 1999-2000, Commonwealth of Australia, 2001, pp.14-15 and *ABS data on DFAT, STARS database*.

As a result, the share of manufactured exports among total exports increased steadily. It was only below 20% in the first half of the 1980s. However, it increased rapidly, to a high of 33.8% in 1995-96. In the six years from 1994-95 to 1999-2000, manufactured exports accounted for around one-third of total exports. In the 20 years from 1980-81 to 1999-2000, the share increased substantially, from 19.5% to 33.3%.

By reducing protectionist measures, the government aimed at a radical reform of manufacturing, to make it competitive and export-oriented. As a result, the manufacturing industry became increasingly export-oriented throughout the second half of the 1980s and the 1990s. In 1984-85 some 16% of the sales of manufacturing firms were to overseas markets, and by 1997-98 this figure had risen to 26%.⁵⁾ It is clear that the mid 1980s marked an important watershed in the performance of manufactured exports. Professor Sheehan has referred to this as "the improvement in Australian ETM

5) *Year Book Australia 2001*, p.714.

trade apparent since 1985," or "the take-off in ETM exports in the mid 1980s." ⁶⁾ Details will be discussed in the next section.

3. Manufactured Exports and World Markets

In this section, the improved performance of the manufacturing industry will be examined from three perspectives: export-oriented manufacturing, the composition of manufactured exports, and markets for manufactured exports.

(1) Increased Export Orientation of the Manufacturing Industry

With reductions in protection, the manufacturing industry became more and more export-oriented in the second half of the 1980s and the 1990s, as Table 3.1 outlines. It is clear that there was more rapid growth in exports than in production after the second half of the 1970s. And after the second half of the 1980s, the average annual growth rate of exports every five years substantially exceeded that of production: by five times in the second half of the 1980s, by almost three times in the first half of the 1990s, and by almost twice, even under the global depression, in the second half of the 1990s. Consequently, exports' share of total production rose rapidly after the mid 1980s. It was only at the 10% level before the first half of the 1980s, but had reached the 40% level by the second half of the 1990s. Weak manufacturing under heavy protection has now become robust and export-oriented.

Table 3.1 Manufacturing Production and Exports (1976-77 to 2000-01)

Year	Value added (\$m)	Average annual growth rate, each period (%)	Exports (\$m)	Average annual growth rate, each period (%)	Exports' share of value added(%)
1976-77	19,234.3	} 10.4	2,368.4	} 11.8	12.3
1980-81	28,594.1		3,695.2		12.9
1985-86	41,958.2	} 8.0	6,143.1	} 10.7	14.6
1990-91	49,792		13,888.6		27.9
1995-96	63,731	} 3.5	25,698.9	} 17.7	40.3
2000-01	78,266		37,647.7		48.1

Sources: Various issues of *Year Book Australia*, and *ABS data on DFAT, STARS database*.

6) P.J Sheehan, Nick Pappas and Enjiang Cheng, *The Rebirth of Australian Industry: Australian Trade in Elaborately Transformed Manufactures 1979-93*, Melbourne, Centre for Strategic Economic Studies, Victoria University, 1994, pp.viii and 21.

A publication of the Australian Treasury says of this epoch - making change: "The strong growth in manufactured export has been a notable feature of Australia's trade performance in recent years. The strength and duration of the growth in manufactured export suggests that it is not a product of temporary or cyclical factors but represents a structural change in Australia's pattern of trade."⁷⁾ The Industry Commission also said, "In recent years, Australia's exports of manufactured goods have risen significantly and this has been cited as evidence of a lasting restructuring of Australian manufacturing and a significant change in management culture."⁸⁾ It goes on, "Over the past 25 years, there has been a significant change in the trade orientation of manufacturing – the share of production exported has more than doubled from 9 per cent to over 20 per cent, while the import share of the domestic market has increased from around 17 per cent to over 30 per cent."⁹⁾

It is true that the Australian manufacturing industry became 'much more export-oriented' after the mid 1980s. However, it must be noted that manufactured imports continued to grow more rapidly than manufactured exports. This continuing growth in import penetration will be analyzed in the next section.

(2) Composition of Manufactured Exports

To distinguish between the lower and higher value added sectors, the Department of Foreign Affairs and Trade has developed the Trade Exports Classification (TREC) system, which divides Australian manufactures trade into two major categories – simply transformed and elaborately transformed manufactures (STMs and ETMs). In Professor Sheehan's book, ETMs are classified further into policy ETMs and other ETMs. Policy ETMs include the following two-digit commodities in SITC (3):

- Pharmaceuticals (SITC 54)
- Computing equipment (SITC 75)
- Telecommunications equipment (SITC 76)
- Road vehicles (SITC 78)
- Other transport equipment (SITC 79)
- Clothing (SITC 84)¹⁰⁾

7) The Treasury, *Economic Round-Up: Winter 1991*, Canberra, Australian Government Publishing Service, p.21.

8) Industry Commission, *Australian Manufacturing Industry and International Trade Data 1968-69 to 1992-93*, 1995, p.5.

9) *Ibid.* p.1.

10) Sheehan, *op.cit.*, pp.10 and 218.

As is evident in Table 3.2, Australian manufactured exports increased after the mid 1980s, by an average annual rate of 17.7% in the second half of the 1980s and of 13.1% in the first half of the 1990s. This increase can be attributed to the rapid growth in ETM exports, particularly policy group exports. ETM exports surged at an average annual growth rate of 20.3% in the second half of the 1980s and of 15.2% in the first half of the 1990s. The ratio of ETM exports to STM exports was 60 to 40 in 1980-81, but stood at 63 to 37 in 1990-91, at 69 to 31 in 1995-96, and at 68 to 32 in 2000-01.

Table 3.2 Composition of Manufactured Exports (1980-81 to 2000-01)

Year	Manufactured exports		STMs			ETMs			Policy ETMs		
	Value (\$m)	Average annual growth rate, each period (%)	Value (\$m)	Average annual growth rate, each period (%)	STMs share of total manufactured exports(%)	Value (\$m)	Average annual growth rate, each period (%)	ETMs share of total manufactured exports(%)	Value (\$m)	Average annual growth rate, each period (%)	Policy ETMs share of total manufactured exports(%)
1980-81	3,695.2	} 10.7	1,476.3	} 12.4	40.0	2,218.9	} 9.5	60.0	501.6	} 13.0	13.6
1985-86	6,143.1	} 17.7	2,649.7	} 13.9	43.1	3,493.4	} 20.3	56.9	924.3	} 26.5	15.0
1990-91	13,888.6	} 13.1	5,089.7	} 9.1	36.6	8,798.9	} 15.2	63.4	2,993.2	} 16.2	21.6
1995-96	25,698.9	} 7.9	7,863.8	} 9.1	30.6	17,835.1	} 7.4	69.4	6,329.8	} 11.0	24.6
2000-01	37,647.7		12,137.7		32.2	25,510.0		67.8	10,643.1		28.3

Source: ABS data on DFAT, STARS database.

Among ETM exports, the policy ETM group has surged at an average annual growth rate of more than 10% over the past 20 years. After 1980-81, the policy ETM export growth rate, measured every five years, exceeded not only that of STM exports, but other ETM exports. Policy ETM exports accounted for 13.6% of total manufactured exports and for 22.6% of ETM exports in 1980-81, but for 28.3% and 41.7% respectively in 2000-01. This indicates a remarkable change in Australian export performance in manufactures and in ETMs. The sustained growth of Australia's ETM exports, particularly policy group exports, reveals their increased competitiveness in world markets.

Policy ETM exports increased by more than 20 times in the 20 years from 1980-81 to 2000-01, and the growth in value of road vehicles and pharmaceuticals is remarkable. Along with reductions in protection, exports of pharmaceuticals and clothing both increased by 15.1 times, road vehicles by 14.7 times, computing equipment by 7.1 times in the last 15 years from 1985-86 to 2000-01 (Table 3.3).

Table 3.3 Exports of Policy ETMs (1980-81 to 2000-01)

Year	Pharmaceuticals		Computing equipment		Telecommunications equipment		Road vehicles		Other transport		Clothing		Total	
	Value (\$'000)	Average annual growth rate, each period (%)	Value (\$'000)	Average annual growth rate, each period (%)	Value (\$'000)	Average annual growth rate, each period (%)	Value (\$'000)	Average annual growth rate, each period (%)	Value (\$'000)	Average annual growth rate, each period (%)	Value (\$'000)	Average annual growth rate, each period (%)	Value (\$'000)	Average annual growth rate, each period (%)
1980-81	81,728	12.5	50,705	32.7	38,815	11.4	183,776	7.3	129,027	9.8	17,598	5.8	501,649	13.0
1985-86	147,478	16.8	219,639	26.8	66,435	36.9	261,557	26.5	205,951	26.1	23,277	40.9	924,337	26.5
1990-91	320,620	22.8	719,529	21.5	319,801	17.6	847,160	7.2	656,835	14.5	129,207	19.8	2,993,152	16.2
1995-96	894,319	20.1	1,902,979	△4.0	719,367	15.2	1,199,054	26.2	1,295,023	△1.5	319,013	1.9	6,329,755	11.0
2000-01	2,233,667		1,563,393		1,456,131		3,839,526		1,199,812		350,588		10,643,117	

Note: △ means decreasing.

Source: ABS data on DFAT, STARS database.

Table 3.4 shows the value of the 10 largest manufactured exports in 2000-01 compared with 1990-91. The figures for aluminium and aluminium alloys (STM) are by far the largest, passenger motor cars (ETM) second, and medicinal and pharmaceutical products (ETM) third. In 1990-91, aluminium was also by far the top, copper (ETM) second, and passenger motor cars third. In the past ten years, medicinal and pharmaceutical products have increased at an average annual rate of 21.4%, the highest of all items, passenger motor cars, at 18.3%, nickel (STM), at 18.2%, and telecommunications equipment and parts (ETM), at 17.0%.

Table 3.4 Top 10 Manufactured Exports (2000-01 and 1990-91)

Rank	Item (SITC)	Classification	Value (\$'000)		Average annual growth rate in 1990-91 to 2000-01(%)
			2000-01	1990-91 (Rank)	
1	Aluminium & aluminium alloys (685)	STM	4,736,111	2,127,663 (1)	8.3
2	Passenger motor cars (781)	ETM	2,736,397	510,994 (3)	18.3
3	Medicinal & pharmaceutical products (541)	ETM	2,233,667	320,620 (11)	21.4
4	Copper (682)	ETM	1,641,773	651,056 (2)	9.7
5	Nickel (683)	STM	1,467,299	275,365 (14)	18.2
6	Telecommunications equipment & parts (764)	ETM	1,417,254	295,796 (12)	17.0
7	Parts & accessories for office machine (759)	ETM	1,198,173	479,712 (4)	9.6
8	Lead & lead alloys (685)	STM	908,872	367,252 (13)	9.5
9	Parts & accessories for road motor vehicles (784)	ETM	881,896	274,035 (15)	12.4
10	Measuring, checking, instruments & parts (874)	ETM	761,970	184,449 (21)	15.3

Note: The top 10 manufactured exports in 1990-91 were (1)Aluminium & aluminium alloys, (2)Copper, (3)Passenger motor cars, (4)Parts and accessories for office machines, (5)Aircraft, (6)Iron or steel universal plates and sheets, (7)Internal combustion piston engines, (8)Iron or steel ingots & other primary forms, (9)Zinc & zinc alloys, (10)Pearls and stones.

Source: ABS data on DFAT, STARS database.

Australian manufacturing has become increasingly export-oriented in the past 15 years, and its manufactured exports are consistent with world trends, in which trade in manufacturing, particularly in high technology manufacturing among advanced countries, has increased substantially. This is a bright aspect of the Australian economy and Australian manufacturing.

(3) Direction of Manufactured Exports

Tables 3.5, 3.6, and 3.7 outline total export figures for manufactured products, STMs and ETMs, by principal markets. As Table 3.5 shows, New Zealand was the largest market for total manufactured products in 1999-2000, the United States second, and Japan third. In 1989-90 and 1990-91, Japan was the largest market, but then, given its long depression, manufactured exports to Japan increased at the trend growth of only 2.6% for the 10 years from 1989-90 to 1999-2000, the lowest among Australia's top 20 markets. Hong Kong's 14.1% and Malaysia's 12.0% are the two highest on the Table. Saudi Arabia's 32.2%, South Africa's 21.1%, and China's 17.3% are much higher, as their high growth rates have been from small bases, but they are not on the Table. Total export trend growth in the same period was 10.0%. Australia's manufactured exports depend mainly on nearby markets, especially in developing countries in East Asia and Southeast Asia, except for the United States and the United Kingdom.

Table 3.5 Total Exports of Manufactured Products by Principal Markets (1999-2000)

Rank (1999- 2000)	Country	1999-2000		1989-90		1989-90 to 1999-2000 (past 10 years)	
		Value (\$m)	Contribution to total exports (%)	Value (\$m)	Contribution to total exports (%)	Trend growth (%)	Percentage share
1	New Zealand	4,888	15.1	1,960	15.6	10.8	0.7
2	United States	4,091	12.6	1,407	11.2	10.7	0.6
3	Japan	2,611	8.1	2,057	16.4	2.6	-6.7
4	Korea Rep.	1,772	5.5	633	5.1	9.0	-0.9
5	Hong Kong ¹⁾	1,700	5.2	477	3.8	14.1	3.7
6	Taiwan	1,473	4.5	519	4.1	8.7	-1.2
7	United Kingdom	1,214	3.7	770	6.1	4.3	-5.2
8	Singapore	1,054	3.3	552	4.4	8.3	-1.5
9	Indonesia	982	3.0	371	3.0	8.2	-1.6
10	Malaysia	868	2.7	293	2.3	12.0	1.8
Total exports		32,409	100.0	12,539	100.0	10.0	

Note: 1) Special Administrative Region of China.

Source: Department of Foreign Affairs and Trade, *Exports of Primary and Manufactured Products, Australia 1999-2000*, Commonwealth of Australia, 2001, pp.70-71.

Table 3.6 Total Exports of STMs by Principal Markets (1999-2000)

Rank (1999-2000)	Country	1999-2000		1989-90		1989-90 to 1999-2000	
		Value (\$m)	Contribution to total STMs (%)	Value (\$m)	Contribution to total STMs (%)	Trend growth (%)	Percentage share
1	Japan	1,799	17.1	1,709	32.3	1.4	-5.1
2	Taiwan	1,072	10.2	352	6.6	8.5	1.6
3	Korea Rep.	966	9.2	480	9.1	5.5	-1.2
4	United States	890	8.5	258	4.9	12.6	5.5
5	Hong Kong ¹⁾	564	5.4	137	2.6	14.5	7.2
6	New Zealand	492	4.7	185	3.5	10.9	3.8
7	Malaysia	406	3.9	108	2.0	14.1	6.9
8	Thailand	393	3.7	247	4.7	4.3	-2.3
9	Indonesia	364	3.5	145	2.7	8.2	1.4
10	United Kingdom	324	3.1	328	6.2	-1.8	-8.0
Total exports		10,521	100.0	5,296	100.0	6.8	

Note: 1) Special Administrative Region of China.

Source: DFAT, *Exports of Primary and Manufactured Products*, 2001, pp.62-63.

Table 3.7 Total Exports of ETMs by Principal Markets (1999-2000)

Rank (1999-2000)	Country	1999-2000		1989-90		1989-90 to 1999-2000	
		Value (\$m)	Contribution to total ETMs (%)	Value (\$m)	Contribution to total ETMs (%)	Trend growth (%)	Percentage share
1	New Zealand	4,396	20.1	1,775	24.5	10.8	-0.8
2	United States	3,200	14.6	1,149	15.9	10.2	-1.4
3	Hong Kong ¹⁾	1,136	5.2	340	4.7	13.9	1.9
4	Singapore	940	4.3	424	5.9	10.0	-1.5
5	United Kingdom	890	4.1	442	6.1	7.1	-4.1
6	Japan	812	3.7	348	4.8	6.3	-4.9
7	Korea Rep.	806	3.7	153	2.1	15.1	3.0
8	Saudi Arabia	777	3.6	21	0.3	37.1	22.7
9	Indonesia	618	2.8	226	3.1	8.1	-3.2
10	China	541	2.5	60	0.8	21.4	8.7
Total exports		21,888	100.0	7,242	100.0	11.7	

Note: 1) Special Administrative Region of China.

Source: DFAT, *Exports of Primary and Manufactured Products*, 2001, pp.66-67.

For STM exports in 1999-2000, Japan, by far the largest, Taiwan, Korea Rep., the United States, and Hong Kong were the main markets. This shows Australia's status as a supplier of raw and processed materials to manufacturers in advanced and newly industrialized countries. The trend growth from 1989-90 to 1999-2000 of total STM exports was 6.8% , much lower than that of total exports of manufactured products in the

same period. Hong Kong, Malaysia, and the United States were the three highest growth markets in the same period, except for South Africa's 27.1%, Italy's 18.9%, Netherlands's 15.3% and China's 13.2%, which are not on the Table.

For ETM exports in 1999-2000, New Zealand and the United States were the two largest markets. Total ETM export trend growth from 1989-90 to 1999-2000 was 11.7% per annum, much higher than that of STMs, and higher than that of total manufactured products. In the case of individual countries, Saudi Arabia's 37.1% and China's 21.4% mark particularly high growth. Spain's 32.8%, South Africa's 20.2%, and the Philippine's 17.6% show high growth trends, though they are not on the Table. World markets for Australia's ETMs include not only non-industrial countries such as New Zealand and Saudi Arabia, but industrial and industrializing countries such as the United States and Hong Kong.

After the reductions in protection, Australia's manufacturing industry increased its exports, with ETMs as the leader. Stephen Bell says, "A litmus test of restructuring the Australian economy is the development of high value-added industries and exports, particularly in areas such as elaborately transformed manufactures (ETMs). On this score, the improvement in manufactured exports during the late 1980s and early 1990s was a source for some optimism,..."¹¹⁾ But there is a serious problem which needs urgent countermeasures.

(4) Deteriorating Trade Balance in Manufactures

While manufactured exports have expanded, manufactured imports have increased even more. The growth of manufactured imports has swamped any improvement in manufactured exports.¹²⁾ Manufactured export growth has not been large enough to offset manufactured imports substantially, and, as a result, the manufacturing trade deficit has expanded, bringing about a progressive tightening of current account constraints. Moreover, the ETM trade deficit has increased more rapidly than that of manufacturing trade as a whole.

Tables 3.8 and 3.9 show manufacturing and ETM trade deficits and export/import ratios for the past 20 years. In spite of the growth in manufactured exports, manufacturing trade deficits have increased rapidly, for the growth in manufactured imports has been larger in absolute volume than that of manufactured exports. These manufacturing trade deficits can be attributed mostly to ETM trade deficits. ETM trade deficits have increased at a higher average rate every five years than manufacturing trade deficits since 1980-81.

11) Stephen Bell, *Ungoverning the Economy: The Political Economy of Australian Economic Policy*, Melbourne, Oxford University Press, 1997, p.241.

12) *Ibid.*

Table 3.8 Manufacturing Trade Deficit and Export / Import Ratio(1980-81 to 2000-01)

Year	Manufacturing trade deficit		Export/Import ratio	
	Value (\$m)	Average annual growth rate, each period (%)	(%)	Average over five years
1980-81	10,405.2		26.2	
1981-82	13,372.8		22.2	
1982-83	11,703.3	14.1	27.1	25.3
1983-84	13,601.7		26.8	
1984-85	17,666.5		24.0	
1985-86	22,287.8		21.6	
1986-87	22,301.1	12.1	26.3	26.6
1987-88	23,728.4		28.9	
1988-89	28,984.6		27.5	
1989-90	31,224.1		28.7	
1990-91	27,215.2	6.2	33.8	35.1
1991-92	28,004.7		35.1	
1992-93	32,337.2		35.5	
1993-94	34,997.0		36.5	
1994-95	42,092.8		34.8	
1995-96	41,536.6	7.5	38.2	36.4
1996-97	41,462.9		38.8	
1997-98	49,391.5		36.7	
1998-99	56,082.8		33.3	
1999-2000	60,472.4		34.9	
2000-01	60,646.9	0.3	38.3	

Source: ABS data on DFAT, STARS database.

Table 3.9 ETM Trade Deficit and Export / Import Ratio(1980-81 to 2000-01)

Year	ETM trade deficit		Export/Import ratio	
	Value (\$m)	Average annual growth rate, each period (%)	(%)	Average over five years
1980-81	9,735.0		18.6	
1981-82	12,426.3		15.9	
1982-83	11,247.7	14.7	18.9	17.5
1983-84	12,920.5		18.6	
1984-85	16,858.1		15.6	
1985-86	21,232.6		14.1	
1986-87	21,084.9	12.4	18.7	17.9
1987-88	22,647.0		19.6	
1988-89	28,116.0		17.4	
1989-90	30,251.1		19.9	
1990-91	26,759.5	6.4	24.7	26.9
1991-92	27,366.4		26.5	
1992-93	31,540.6		27.7	
1993-94	34,326.3		28.7	
1994-95	41,264.0		26.9	
1995-96	40,927.8	7.8	30.4	28.7
1996-97	40,479.6		31.7	
1997-98	48,833.4		28.6	
1998-99	54,767.4		26.1	
1999-2000	60,156.9		26.8	
2000-01	61,544.3	2.3	29.3	

Source: ABS data on DFAT, STARS database.

In this deterioration of Australia's manufacturing trade, one hopeful sign has been an improvement in the ratio of exports to imports of both manufactures as a whole and of ETMs. The export/import ratio in total manufacturing trade rose from 25.3% in the first half of the 1980s to 36.4% in the second half of the 1990s. In the case of ETM trade, the ratio also rose from 17.5% to 28.7% in the same period, though this was always smaller than the ratio for total manufacturing.

Professor Sheehan noted the growth of 14.5% per annum in real ETM exports between 1985 and 1993 and the doubling of the export/import ratio for four high-tech ETM groups, viz. pharmaceuticals, computing equipment, telecommunications equipment and other transport equipment, from 13.5% in 1985 to 32.4% in 1993, and said hopefully that an order of 50% in 2001 could be achieved if broad trends over the past five years or so were continued for the next eight years.¹³⁾ But Table 3.9 shows this was, unfortunately, too high an expectation. The export/import ratio for four high-tech ETM groups in 2000-01 was only 26.3%. And the total ETM export/import ratio was 15.6% in 1984-85, 27.7% in 1992-93, and 29.3% in 2000-01 (See Table 3.9). The vulnerability of Australia's manufacturing sector, in particular ETMs, to import must be dealt with urgently. Let us consider this problem in conclusion.

4. Manufactured Exports to Japan

(1) Japan as a Market for the Australian Manufactured Products

Japan has continued to be Australia's largest single market for merchandise exports since 1966-67, accounting for 34.0% of the total at its peak in 1976-77, and one-fourth to one-fifth of the total in the 1990s. Australia's merchandise exports to Japan have been composed mainly of primary products such as agricultural and pastoral products, and minerals. But how about the penetration of Australia's industrial production into the Japanese market?

Table 4.1 outlines the growth in Australia's manufactured exports to Japan. There are two points to examine it in detail. One is this growth compared with that of total merchandise exports to Japan, and the other is this growth compared with that of Australia's total manufactured exports.

13) Sheehan, *op.cit.*, pp.27-32.

Table 4.1 Australia's Manufactured Exports to Japan(1980-81 to 2000-01)

Year	Value (\$m)	Average annual growth rate, each period (%)	Contribution to total merchandise exports to Japan (%)	Contribution to total manufactured exports (%)
1980-81	170.5		3.3	4.6
1981-82	197.2		3.7	5.2
1982-83	215.5	43.0	3.6	4.9
1983-84	488.2		7.5	9.8
1984-85	712.6		8.9	12.8
1985-86	822.2		8.8	13.4
1986-87	979.2		10.8	12.3
1987-88	1,720.4	23.6	16.1	17.9
1988-89	2,170.4		18.1	19.8
1989-90	2,056.8		16.1	16.4
1990-91	1,977.4		13.8	14.2
1991-92	1,923.6		13.2	12.7
1992-93	1,772.4	1.8	11.7	9.9
1993-94	1,971.0		12.4	9.8
1994-95	2,244.8		13.8	10.0
1995-96	2,307.3		14.0	9.0
1996-97	1,918.0		12.5	7.3
1997-98	2,597.0	3.1	14.8	9.7
1998-99	2,178.1		13.1	7.8
1999-2000	2,611.6		13.9	8.1
2000-01	3,366.6	28.9	14.3	8.9

Source: ABS data on DFAT, STARS database.

As shown in Table 4.1, manufactured exports accounted for only 3% or so of Australia's merchandise exports to Japan in the first three years of the 1980s, but they increased rapidly in the mid 1980s to account for from 16% to 18% in the last three years of the 1980s, and stayed above 10% even under the severe depression in Japan in the 1990s.

Australia's manufactured exports to Japan grew substantially, more rapidly than exports elsewhere, in the 1980s. In the first five years of that decade, exports to Japan increased at a rate of 43.0% per annum, a surprisingly high rate compared to that of 10.7% of exports elsewhere (Table 3.1). In the second five years, the rate of increase was 23.6% per year, higher than that of 17.7% for exports elsewhere. But in the 1990s, the rate fell sharply to 1.8% in the first half and 3.1% in the second half, due to the long and very severe depression in Japan. Nevertheless, the Japanese market continues to comprise almost 10% of the total exports of Australian manufacturing.

Japan was the largest market for Australian manufactured products for several years around 1990, as shown in Table 3.5. However, given its long depression, Japan fell to the third largest market in the second half of the 1990s. The trend growth for the 10 years from 1989-90 to 1990-2000 was only 2.6%, the lowest among the top 20 export markets.

(2) Composition of Australia's Manufactured Exports to Japan

As Table 4.2 shows, among Australia's manufactured exports to Japan, STMs are much more significant than ETMs, double in volume in almost all the years since 1980-81. STMs accounted for around 80% of total manufactured exports in the boom during the second half of the 1980s, and for some 65% during the depression of the 1990s. The share of Australia's STM exports to Japan among its total exports reached 33.4% on average in the last three years of the 1980s, and stood at 19.3% on average even with the depression of the 1990s.

Table 4.2 Australia's Exports of STMs and ETMs to Japan (1980-81 to 2000-01)

Year	Exports of STMs to Japan			Exports of ETMs to Japan		
	Value (\$m)	Average annual growth rate, each period (%)	Contribution to total exports (%)	Value (\$m)	Average annual growth rate, each period (%)	Contribution to total exports (%)
1980-81	109.2		7.4	61.3		2.8
1981-82	110.2		7.5	87.0		3.7
1982-83	134.6	52.7	7.8	80.9	18.0	3.1
1983-84	373.0		18.4	115.2		3.9
1984-85	593.8		24.3	118.8		3.8
1985-86	651.9		24.6	170.3		4.9
1986-87	748.1		24.1	231.1		4.8
1987-88	1,378.1	21.4	33.4	342.4	32.9	6.2
1988-89	1,782.5		35.4	387.9		6.5
1989-90	1,563.6		31.2	493.2		6.5
1990-91	1,294.3		25.4	683.1		7.8
1991-92	1,230.5		23.4	693.1		7.0
1992-93	1,035.1	9.7	18.0	737.3	12.3	6.1
1993-94	1,164.3		18.5	806.7		5.8
1994-95	1,363.2		18.7	881.6		5.8
1995-96	1,433.9		18.2	873.4		4.9
1996-97	1,219.4		16.4	698.6		3.7
1997-98	1,782.2	5.8	20.2	814.7	9.8	4.1
1998-99	1,457.9		16.9	720.2		3.7
1999-2000	1,804.5		17.3	807.1		3.7
2000-01	2,413.0	33.7	20.0	953.5	18.1	3.7

Source: ABS data on DFAT, STARS database.

ETMs account for one-third of Australia's total manufactured exports to Japan, but for only under 10% of its total ETM elsewhere. The average growth rate of ETMs, measured every five years, is higher than that of STM exports after the second half of the 1980s.

Table 4.3 outlines the top 10 items among Australia's manufactured exports to Japan. Aluminium and aluminium alloys have been the largest item since 1983-84, when they increased suddenly from only \$40 thousand in 1982-83 to \$247,790 thousand, accounting for 50.8% of total manufactured exports to Japan. They became by far the

largest item after the second half of the 1980s. In 2000-01, aluminium exports amounted to \$1,902 million, 15.6 times the \$128 million for internal combustion piston engines, the second largest item. They accounted for 78.9% of total STM exports to Japan, and 56.5% of total manufactured exports to Japan.

In 1990-91, ten years before, they were also by far the largest, 5.1 times the value of copper, the second largest. They accounted for 69.4% of total STM exports to Japan, and 45.4% of total manufactured exports to Japan. The high cost of electricity in Japan, compared to Australia, and Australia's policy of exporting aluminium with value added by processing, rather than in the form of bauxite or aluminium ore, contributed to this very rapid growth in exports to Japan, while many Japanese aluminium companies went under.

Table 4.3 Principal Export Items to Japan : Top 10 Items (2001-01 and 1990-91)

Rank	SITC	Item	Classi- fication	Value (\$'000)			Average annual growth rate (%)		
				2000-01	1990-91 (Rank)	1980-81	Over last 10 years (1990- 91 to 2000-01)	1980-81 to 1990-91	Over last 20 years (1980-81 to 2000-01)
1	684	Aluminium & aluminium alloys	STM	1,902,818	897,718 (1)	33	7.8	177.6	73.0
2	713	Internal combustion piston engines & parts	ETM	128,229	47,720 (7)	131	10.4	80.3	41.1
3	522	Inorganic chemical elements, oxides & halogen salts	STM	99,664	18,824 (15)	303	18.1	51.1	33.6
4	667	Pearls, precious & semi-precious stones	STM	73,606	136,513 (3)	24,773	△6.0	18.6	5.6
5	874	Measuring, checking, etc. instruments & parts	ETM	71,439	9,773 (24)	889	22.0	27.1	24.5
6	682	Copper	ETM	56,124	176,659 (2)	28,132	△10.9	20.2	3.5
7	592	Starches, inulin, wheat gluten, glues, etc.	STM	55,465	18,743 (17)	8,121	11.5	8.7	10.1
8	764	Telecom equipment & parts	ETM	52,357	42,807 (8)	618	2.0	52.8	24.9
9	681	Silver, platinum & platinum group metals	STM	49,255	15,139 (18)	35,314	12.5	△8.1	1.7
10	533	Pigments, paints, varnishes	ETM	48,496	18,801 (16)	275	9.9	52.6	29.5

Note: △ means decreasing.

Source: ABS data on DFAT, STARS database.

(3) Some Problems with Expanding Manufactured Exports to Japan

Australian manufactured exports to Japan grew substantially with the reductions in protection, but there are some problems.

First, there has been a serious deterioration in the trade balance of manufactures. In its manufacturing trade with Japan, Australia has increased its exports, but its imports from Japan have increased more rapidly in absolute value, and the trade deficit has continued to rise, reflecting the size of this gap between imports and exports. The same gap exists in Australia's trade worldwide, and it is a major factor limiting economic growth and employment opportunities. Manufacturing trade deficits with Japan increased at an average annual rate of 14.3% in the first half of the 1980s, and accounted for more than 30% of total deficits in Australia's manufacturing trade in the same period. The rate of increase slowed down to 1.7% in the second half of the 1990s, but still

accounted for about 20% of total deficits in the same period (See Table 4.4). The slowing down of the ratio of trade deficits with Japan, compared to those worldwide, has been due to the rapid increase in Australia's ETM imports from Asian countries, with their increased competitiveness thanks to improved production technology and lower labour costs.

Table 4.4 Australia's Manufactured Imports from Japan and Manufacturing Trade Deficit with Japan (1980-81 to 2000-01)

Year	Manufactured Imports from Japan			Manufacturing Trade Balance (Δ : minus)		
	Value (\$m)	Average annual growth rate, each period (%)	Contribution to total imports (%)	Value (\$m)	Average annual growth rate, each period (%)	Contribution to total manufacturing trade deficits (%)
1980-81	3,501.5		24.8	Δ 3,331.0		32.0
1981-82	4,382.8		25.5	Δ 4,185.6		31.3
1982-83	4,267.9	16.3	26.6	Δ 4,052.4	14.3	34.6
1983-84	5,171.6		27.9	Δ 4,683.4		34.4
1984-85	6,406.1		27.6	Δ 5,693.5		32.2
1985-86	8,017.0		28.2	Δ 7,194.8		32.3
1986-87	7,424.6		24.5	Δ 6,445.4		28.9
1987-88	7,521.9	8.4	22.6	Δ 5,801.5	5.7	24.4
1988-89	9,472.9		23.7	Δ 7,302.5		25.2
1989-90	9,585.7		21.9	Δ 7,528.9		24.1
1990-91	8,560.1		20.8	Δ 6,582.7		24.2
1991-92	8,993.4		20.8	Δ 7,069.8		25.2
1992-93	10,839.2	5.3	21.6	Δ 9,066.8	6.2	28.0
1993-94	11,418.1		20.7	Δ 9,447.1		27.0
1994-95	12,435.6		19.3	Δ 10,190.8		24.2
1995-96	10,481.2		15.6	Δ 8,173.9		19.7
1996-97	9,978.5		14.7	Δ 8,060.5		19.4
1997-98	12,395.1	1.9	15.9	Δ 9,798.1	1.7	19.8
1998-99	13,241.6		15.8	Δ 11,063.5		19.7
1999-2000	13,679.7		14.7	Δ 11,068.1		18.3
2000-01	14,810.1	8.2	18.9	Δ 11,443.5	3.4	18.9

Source: ABS data on DFAT, STARS database.

Second, Australia's manufactured exports to Japan are accounted for mostly by only one item, aluminium and its alloys. This causes instability, because Australia's exports to Japan are too much effected by Japanese business conditions. In reality, Australia's exports elsewhere have continued to increase in the past twenty years, but exports to Japan have decreased several times: in the first three years of the 1990s, 1996-97, and 1998-99, making the average annual growth rate in the 1990s very much lower than that of total exports.

5. Lessons and Policy Proposals

(1) Some Lessons

Australia's experience with protection of its manufacturing industry and with the reduction in this protectionism after the mid 1980s offers two important lessons.

One is that the role of the government should never be to protect an industry. The danger of this is that the protected industry can make a profit without making necessary efforts for self-help. Protection, once provided to an industry, makes for "vested interests," and this is extremely difficult to stop. Once an industry enjoys significant protection, it has more incentive to lobby to ensure it. Protection is like a "drug" for the industry. The main lesson, then, is a negative one: Protection fails to bring about the expected results. Greater protection is not the answer to the problem of revitalizing the manufacturing industry.

The other lesson is that the real role of the government is to make arrangements for infrastructure to reinforce the competitiveness of an industry. Concrete measures include tax reform to reduce the capital costs of enterprises, educational reform to contribute to technological innovation and enhanced entrepreneurship, basic research promotion using public funds, protection of intellectual property rights, and increased competition through deregulation and privatization. Australia, which needs a large amount of foreign capital, also requires drastic measures or revised laws for more favourable treatment for foreign investments. Globalization has brought about an age of "mega competition," pitting country against country, just as in competition among enterprises.

(2) Some Policy Proposals

To improve Australia's manufacturing trade, the following five policy proposals should be useful:

First, it is necessary to develop a critical mass of strategic exporting firms, which Australia now lacks, to expand manufactured exports enough to maintain the industry's share of GDP and employment. According to *Year Book Australia 2001*, from 1980 to 1997 the contribution of manufacturing to Australia's GDP fell from 17% to 13%. This contrasted markedly with manufacturing's virtually unchanged share (19%) of the United States GDP, and the slight increase in Japan —from 25% to 27%— over the same period. In fact, the contribution of manufacturing to the GDP of all industrialized countries fell by only 2%, from 24% in 1980 to 22% in 1997.¹⁴⁾

To expand the manufacturing industry's production, Australia should depend on

14) *Year Book Australia 2001*, pp.713-14.

increased exports, because its domestic market is narrow and not reliable. To expand manufactured exports, the government must foster strategic exporting firms through positive policies such as a favourable tax system with incentive subsidies, as well as incentives for increased expenditures on R&D, enhanced entrepreneurship, and increased investments to this kind of firms. Candidates are such industries as pharmaceuticals, road vehicles, and some kinds of high technology, including telecommunications and precision machinery.

The Republic of Korea is one successful example; the government there has developed strategic exporting industries in textiles, clothing and footwear, iron and steel manufactures, shipbuilding, electric appliances, and passenger motor cars in chronological order. Exports by these industries have dealt a severe blow to Japanese exports in the same categories and have contributed to an improvement in the Republic of Korea's balance of payments. In recent years, China is growing rapidly to be a new potentially successful example. Australia must learn important lessons from such examples to foster strategic exporting firms.

Second, increased ETM exports have been accompanied by increased ETM imports, and this means that Australia lacks a mass of capital goods, intermediate goods, and machine parts and accessories for the production of increased ETM exports. If the capital goods industry, intermediate goods industry and machine parts and accessory industry are fostered and developed, they could contribute to a decrease in ETM imports. To deal successfully with Australia's vulnerability on the import front, it is necessary to create and positively develop these industries instead of relying on imports. To this end, incentives for productive investment must be actively and consciously managed, not left to the vagaries of the market, but directed to these industries.

Australia can learn a useful lesson from Japan's new rivals in Asia about capital goods industries. Japan has long been a powerhouse in capital goods, but its status has been jeopardized recently by new rivals in Asia. For example, Hitachi-seiki, a distinguished firm in the machine tool world, went bankrupt in August 2002. The technical level of production in China and Southeast Asia has become higher and their labour costs are much lower than in Japan. So Japanese manufacturers, not only their subsidiaries in Asia, but also their domestic bases have been ordering machine tools from their Asian rivals, not from domestic makers. For Australia, the key should be a high level of technology. For this, increased R&D expenditures are important.

Third, the most important factor in international competitiveness is productivity. To raise productivity, Australia's relatively low level of business sector R&D must be improved. Australia's business expenditures on R&D as a percentage of production were only 0.5% in 1993, the lowest among 13 OECD countries, where the average rate was

1.9%.¹⁵⁾ The Howard Coalition government has apparently recognized this need and announced in January 2001 it would substantially increase public expenditures for R&D to achieve a higher level of international competitiveness. The Labour Party also announced officially in July 2001 a 'Knowledge Nation Plan' for increasing R&D expenditures.

In relation to this, it is very important to direct R&D expenditures wisely and efficiently. They should be concentrated in technological innovations related to ETM production to increase ETM exports. This is a lesson from the United Kingdom's hard experience. As Keith Hartley said in 1977, "In the area of total expenditure on R&D and government expenditure on R&D, the UK's record compares favourably with other countries. For example, in 1971 total UK expenditure on R&D was 2.3 percent of GNP compared with 2.1 percent for Germany and 1.5 percent for Japan. Similarly, in 1969 government expenditure on R&D as a proportion of GNP was 1.2 percent in the UK, 0.7 percent in Germany and 0.2 percent in Japan. And yet, the UK's growth record remains poor by international standards. This suggests that if there is a relationship between growth and R&D, Britain and its governments have been relatively poor at project selection or relatively inefficient in the use of scientific resources."¹⁶⁾ The supersonic Concorde is a prime example of large-scale waste in R&D expenditures.

Fourth, Australia's exports to Japan have been dominated by the resource-based, low value added downstream industries, such as aluminium and its alloys. Australia's exports are rich in diversity, from primary products to manufactured ones, and this is both Australian export's strong point and weak point. The Japanese economy is increasingly concentrating on knowledge-intensive and service industries. So Australia must open up new avenues for the use for aluminium, reduce the costs for aluminium and, at the same time, make efforts to increase ETM exports. Road motor vehicles made of aluminium instead of steel, pharmaceuticals, and some kinds of precision instruments and machines all seem to be viable areas for development.

Fifth, Australia must get rid of its image as susceptible to strikes. It was reported in August 2001 that GM, Ford Motor and Mitsubishi factories were forced to stop production due to a strike by the only handle parts maker in Australia, located in Sydney. Industrial relations must continue to improve. Industrial disputes averaged over 1,000 per year before the early 1990s, but decreased to 698 in 2000. Continuing to improve industrial relations is an important way for Australia to enhance its image to attract foreign investments.

15) Bell, *op.cit.*, p.245.

16) Keith Hartley, *Problems of Economic Policy*, London, George Allen & Unwin, 1977, p.112.