JOURNAL OF INTERNATIONAL AND AREA STUDIES
Volume 4, Number 1, 1997

AUSTRALIAN MANUFACTURING INDUSTRIAL POLICY AND PERFORMANCE SINCE THE 1980s

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Since the 1980s, there has been undergoing a quiet revolution in the Australian manufacturing policy to shift its focus from a defensive orientation to a forward looking and more selective approach designed to foster the development of innovative, export-oriented industries. The change achieved encouraging performances of the sector: the strong growth in exports; arrest of the long-term decline of manufacturing's contribution to national products; and increase in R&D investment. There are still some impediments to improved performance to be overcome, however.

1. INTRODUCTION

Protective statism has been the dominant mode of Australian political economy for most of its history since federation. The development of Australia's manufacturing sector has depended heavily on protection for its growth. Since the earliest days of white settlement Australia's export earnings have been based mainly on the primary products, and imports on the manufactured. This specialisation pattern completely complied with the Ricardian propositions, but was never quite acceptable to Australians. They have always had a strong desire to develop a domestic manufacturing industry, and protection was regarded inevitable for the purpose in a country with a clear-cut comparative disadvantages in the industry.

Protection became something of an ideology in Australia. A wide range of benefits are supposed to flow from protection for the manufacturing sector. First, protection was to generate a substantial manufacturing industry so as to provide a more balanced and sophisticated economy. Secondly, a protectionist policy was to create jobs which would attract high levels of immigration from Europe. This was closely connected to the notion of "Yellow peril" and "populate or perish." Thirdly, tariff policies have had a positive effect on income distribution in Australia, although this was not always overtly stated. Further, it was asserted that tariffs were needed to

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*The author is grateful for useful suggestions and comments from the referees. The earlier version of this article was presented at the Inaugural Conference on Korea-Australia Partnership in Culture, Polities & Economy, on April 7-8, 1997, Chung-Ang University, Seoul, Korea. I would like to thank to Dr. Edward F. Crangle and other participants for very helpful comments. The author is also grateful to the Ministry of Education for the financial assistances to the research on which this article is based, as a part of 1996 Overseas Regional Study Assistant Programme.

protect Australian standards of living against "unfair" competition from its Asian neighbours with cheap labours.

The protectionist statism has been challenged since the late 1960s.[1] It had become clear that protection of the manufacturing sector always involved costs to other sectors of the economy. Tariff raised the costs of Australia's efficient farm sector, directly through the effects on the price of farm inputs, and more importantly, through the general equilibrium effects on the level of costs in Australia. Initially, this criticism sparked an argument for tariff-compensating assistance to farmers and other exporters. However, the Australian economics profession became increasingly outspoken against protection and was advocating trade liberalisation. Much of the credit for this is due to the Tariff Board in the earlier period, and its successors, the Industrial Assistance Commission (IAC) and the Industry Commission (IC), all of which have been responsible for making recommendations to government on the level of protection and other assistances accorded to industries. At the same time, a number of officially commissioned reports noted that Australian trade policy contributed significantly to reducing the efficiency of resources use and to holding back income growth unnecessarily. For example, Australia's real per capita GDP grew at less then the OECD average despite the huge windfall in terms at the minerals and energe export boom. Its position in rank of per capita income in the world has fallen from the third highest one to the nineteenth over the period between 1960 and 1993 at the current prices converted at official exchange rate, Accordingly, the reports put strong pressures for reducing tariffs and structural changes.[2]

The year 1973 marked a major break with the historical trends in Australian protection. In that year there was an across-the-board tariff cut of 25 percent by the Whitlam Labour government (1972-75). But the combination of the tariff cut, the oil shock in the end of 1973 and the subsequent world recession, and a wage explosion in the first half of 1974 rocked the Australian economy to its foundations: unemployment rose sharply, and confidence and business investment was weakened. The impact of the shocks was felt severely on manufacturing industries, particularly on the labour-intensive industries such as textiles, clothing and footwear.

Hence, the policy stance was basically set for status quo in the subsequent Fraser government (1975-1982). Some further reductions in tariff were accomplished in the late 1970s, but these were offset by very substantial increase in protection to the two "problem" industries, textiles, clothing, and footwear (TCF), and motor vehicles and

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[1]See Anderson and Garnaut (1987) for detailed studies on why the level of protection in Australia was so high and on explanation of reasons for the reversal in the upward trend in protection. They laid emphasis on three sets of changes: changing perceptions as to whether protection was in the public interest; changes in the behaviour of private interest groups; and changes in the general economic environment.

[2]A series of officially commissioned reports, the first (Vernon Report) of which appeared in 1965, to be followed by Jackson Report (1975) and Crawford Report (1979), incorporated liberal economic ideas for structural change in the Australian economy in general as well as the manufacturing sector, in particular.

parts (MVP). Imports quotas were introduced for these industries. In addition some so-called "positive" measures were also introduced, such as incentives for exports, research and development activities, and investment. Accordingly, the average rate of effective assistances for all manufacturing sector fell sharply from 35 percent in 1972/73 to 27 percent in 1974/75, but declined slightly to 24 percent over the remainder of the 1970s with rapid rise in the problem industries.

The Hawke Labour government came to power in March 1983 and presided over the historic shift in industry assistance and development away from its past reliance on tariff protection. Under the new government a variety of industrial policies were employed to create a more efficient and internationally competitive industrial base. The policies included reductions in protection and the so-called "positive" measures (as distinct from defensive assistance in the form of trade barriers). The Hawke government implemented two unilateral reductions in protection to transform Australia from a country with the highest levels of industry protection among the major industrial countries to one with the lowest. At the same time, the government has complemented the reduction in protection with a number of positive adjustment measures designed to stimulate investment, research and development (R&D), and exports.

The main purpose of this paper is to examine how industrial policy has developed in Australia since 1983 and to assess industrial performance over the last decade or so.

2. INDUSTRIAL POLICY OVER THE LAST DECADE[3]

The Hawke government came to power with a platform included an activist industrial policy for "national reconstruction."[4] The skeleton of new policy was lifted

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[3]One of the most important references on the historic change in Australian industry policy over the Hawke government is Capling and Galligan (1992). Chapter 4 describes the historic change in Labour's strategy for industry assistance and development and examines the most important industry plans and programmes implemented during the 1980s.

[4]During the campaign, Hawke promised that Labour government would bring about a period of "national reconciliation, national recovery, and national reconstruction". The vehicle for reconciliation was the highly orchestrated National Economic Summit (NES) Conference which he convened six weeks after the election. The primary purpose was to bring together the leaders of government, business and labour to secure consensus on the government's economic policy and to strike a bargain between unions and employers. But the NES failed to produce a tripartite working agreement, largely due to internal dissension and fragmentation in the business sector. Thus, a bilateral agreement between the ruling party and the ACTU (Australian Council of Trade Unions), the Prices and Incomes Accord, was agreed. This Accord continued to be the centrepiece of Australian economic policy since 1983, although its contents have been varied and adjusted over the period to meet changing circumstances. Much of the Labour's achievement in industrial reconstruction is largely based on stable industrial relations underpinned by this Accord.

from the Crawford Report (1979) of "Study Group on Structural Adjustment", of which Hawke himself was a member. The report recommended an intensive development in light of the Australian endowment of production factors, paying particular attention to the two areas of the manufacturing. First, the presence of efficient mining and agricultural industries gives to Australia a latent comparative advantage in the processing of minerals and food. Secondly, Australia also has the industrial infrastructures, skills, raw materials and technology to specialise in capital and technology-intensive manufactures for the dynamic and large markets of Asia. But, this potential has hardly been exploited, largely due to the inward-looking characteristics of the Australian manufacturing activities.[5]

The ultimate goal of the industry policy was to create an efficient, competitive, outward-looking manufacturing sector, that is, one whose viability was not dependent on trade barriers and other forms of government assistances. The strategy to achieve the goal was as the followings: the provision of government support for the development of technologically advanced sunrise industries, that is, ones with highest potential for growth and technological innovation; the facilitation of manufacturing exports; improved corporate access to finance for equity and borrowing by extending the role of the Australian Industry Development Bank (AIDB) and the Commonwealth Development Bank (CDB); development of an employment and education policy designed to raise the skill level of the workforce; and the reduction of protective tariffs when employment eased.[6] From the point of view of industrial policy, a variety of measures can be categorized into the three sets: industry plans, reduction in border protection, and "positive" measures.

By way of background, there needs to mention the Australian economic circumstances when the Labour came to power. A wage break-out in an euphoric resource boom of 1981-82 was followed by collapse of the boom and a severe recession in 1982-83. The indicators of that year told a grim story: unemployment averaged 9 percent, the annual inflation rate 11.5 percent, and the gross domestic products experienced a negative growth rate of 2 percent in real terms. Australian foreign debt started a steep rise in the early 1980s, as the current account went into substantial deficit. Manufacturing industry, in particular, suffered badly from the recession. Its share of GDP and total employment fell steeply.

Under these circumstances, it was quite natural that the new government's industry policy should initially adopt defensive measures, helping to move industry out of recession and to arrest the increase in unemployment. Later on, all aspects of industrial policy were directed towards the objective of creating a more efficient and

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[5]In the time when the report was published, there is a number of publications on restructuring of the Australia's manufacturing sector, and nearly all of them fully recognized that many of the manufacturing industries with growth prospects are those based on the processing of Australian raw materials, and on the intensive use of capital and technology. To list few, Parry (ed. 1982), Kasper & Parry (ed. 1978), BIE (1978).

[6]It should be noted that the Fraser government also had adopted a similar long-term strategy but failed to carry it through.

internationally competitive industrial base, as the economy recovered from the recession.

The initial objective led to the *industry plans* in the first phase.[7] The plans were based on a carrot-and-stick approach to restructuring. The carrots included bounties, industry modernisation schemes, support for labour and management training and skills upgrading, special research and development grants, export market development programmes, and labour adjustment assistances designed to compensate and retain those who lost their jobs through the restructuring process. The sticks included the reduction of barrier protection through the abolition of import quotas and substantial tariff cuts, and in some cases, penalties for non-compliance. The major industries affected were declining industries which required special treatment for political, regional, and social reasons: TCF, MVP, steel, and heavy engineering.[8] Especially, for the TCF and MVP industries, the plans were designed to correct the structural deficiencies in Australian manufacturing caused, in great part, by years of high protection and to wean from their dependence on protection. Hence, the characteristic was defensive in essence. In addition, the government also designed specific packages to improve the competitiveness of relatively healthy sector such as chemicals and plastics, fertilizers, processed food, non-ferrous metals, and pulp, paper and printing.

Perhaps, the greatest achievement in industry policy is the major *reductions in protection*. By 1988 it became evident that Australia's fundamental weakness in its international trade position would be best addressed by increased competition, rather than continuing protection and that the substantial currency depreciations of 1985 and 1986 had strengthened markedly the international price competitiveness of Australian industry. Despite the slow and often disappointing pace of restructuring in the manufacturing sector, there was a broad consensus on the need to phase out the protective tariff. In the most extreme, "the complete phasing out of tariffs by the year 2000" was embodied in a report commissioned by the prime minister.[9] With the wide consensus, in 1987 the government decided a general reduction in tariff of a "top-down" approach over an across-the-board approach. The top-down approach is supposed to have the effect of narrowing the divergence in assistance between different import-competing activities by reducing high rates of protection to a benchmark level and leaving rates under this benchmark unchanged. Hence, the top-

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[7]On the detailed discussion for individual industries, see Capling and Galligan (1992), Ch. 4 and Sheehan, et al. (1994).

[8]The steel industry plan was terminated in 1988 with investment and productivity ahead of the targets and less government assistance being required than had been allowed for. The plan was seen as being corporatist in the way that it traded off benefits in terms of government support for pledges to invest a certain amount on the part of the industry, and wage restraint and productivity improvements on the parts of unions.

[9]Garnaut (1989) assessed the implications for Australia of economic changes in Northeast Asia and recommended the complete removal of protection on the belief that it would cause Australian producers to see themselves as operating in a world market, like those in the small, high-wage economies of Europe.

down approach was chosen to reduce distortions to the allocation of factors of production between different activities.

In May 1988, the government announced that over the next four years all tariff rates above 15 percent would be phased down to 15 percent, while duties between 10 and 15 percent would be reduced to 10 percent. The only industries excluded from these changes were the TCF and MVP industries subject to specific industry plans. It was calculated that the net effect of this tariff cut reduced average effective protection by around 30 percent and the standard deviation of effective rates calculated in 4-digit ASIC industries nearly halved from 42 in 1982/83 to 22 percentage points in 1989/90 (IC, 1993).

Further tariff cuts were announced as a part of the industrial policy statement in March 1991, to be effective after 1992.[10] Tariffs applying to goods other than the TCF and MVP products would be phased down from 15 to 10 percent in 1992 to a single rate of 5 percent in 1996. In addition, for the TCF industries import quotas was abolished in 1993 and tariffs will be phased down to a maximum of 25 percent, and for the MVP products, tariffs will be reduced to 15 percent by the year 2000. As a result of these reductions, the average effective rate of assistance to the manufacturing sector was reduced from 25 percent in June 1982 (just before the Hawke government took office), to 10 per cent in 1993/94, and will be further lowered to 5 percent by the year 2000 (Figure 1). Given the relatively minor government subsidies to manufactures in Australia, low assistance to agricultural industries, and negative assistance to mining sector, this substantial reduction in tariffs will result in Australia having one of the lowest levels of industry assistance in the OECD by the end of the century. This is a remarkable turnaround and represents by far the most important achievement in industry policy in the last decade.

Most importantly, there has been little opposition to the removal of all this assistance. This fact is even more extraordinary in a nation in which rent-seeking appeared to have become an ingrained feature of business life, since the subsidy through a number of "positive" initiatives is far less than the loss equivalent of the protection removed. At the same time, it should be also recognised that these very substantial reductions in protection have occurred unilaterally, and in a period when most countries tended to raise protection (Stanford, 1992). Notably, with the exception of the two (TCF and MVP) problem industries, the political debate on protecting manufacturing industries has almost disappeared in Australia (Bora and Pomfret, 1995).[11]

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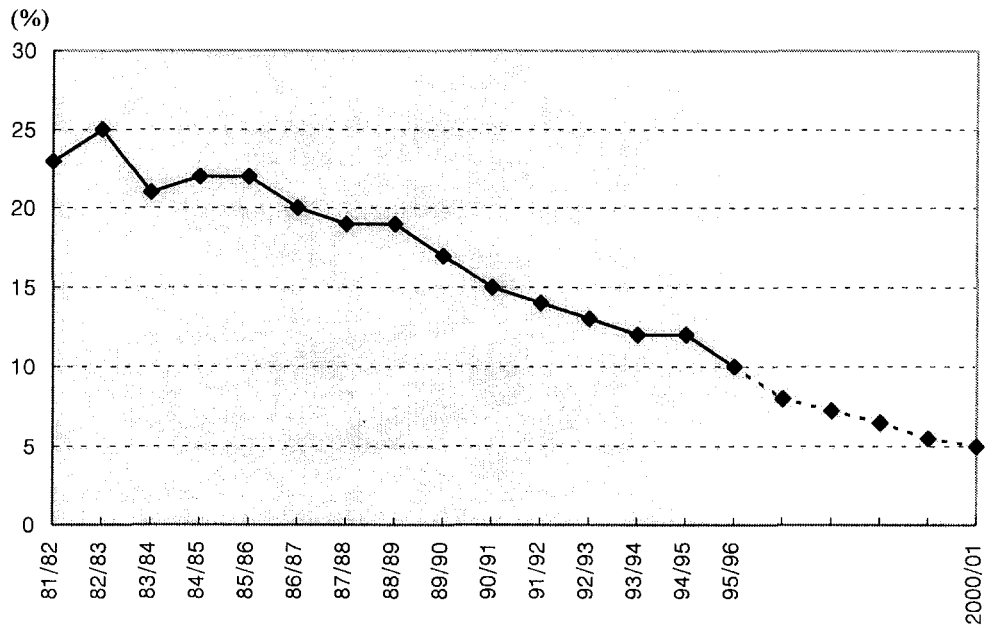
[10]Ministerial Statements, *Building a competitive Australia,* AGPS, Canberra, 1991.

[11]With coming of the Howard's Liberal-National Coalition to the government in March 1996, the Liberal-ruled State governments of South Australia and Victoria started earnest urge to freeze tariff reductions on car industry tariffs from 2000 to 2010. They argue that while the car industry had improved its efficiency and had developed a reputation for export quality, tariff reductions from 2000 would threaten thousands of jobs in the two states.

Figure 1. Average effective rates of assistances for manufacturing industry, 1981/82 to 2000/01



Source: Industry Commission, Annual Report 1992/93.

The government has complemented the reductions in protection with a number of *"positive" adjustment measures* designed to stimulate R&D activities, exports, and skill training, and improve access to investment and venture capital.[12]These measures were developed to rectify other problems attributed to the legacy of protection: the lack of an export culture, the high penetration of transnational companies, and the lack of private sector funding for research and development. In other words, the government had moved to strategic trade policies or intervening in imperfectly competitive industries.

In the government's view, an increase in industrial R&D activities was essential for improving the efficiency, innovativeness, and competitiveness of manufacturing sector. To increase the activities, the two main policy instruments have been adopted: tax concession for R&D expenditure; and the Grants for Industrial Research and Development scheme. More recently, a programme for cooperative research centres was introduced in 1990 to improve the links between basic researchers and industry. In addition, in 1984 the government introduced the Management and Investment Companies (MIC) under which an immediate tax deduction of 100

[12]For the detailed discussion on the positive assistance measures and its effects, see Stanford (1992).

percent was available for investors in MICs which would invest in new, innovative, export-oriented and potentially high growth ventures.

As well as supporting innovation, the government has been most concerned to promote the exports of manufactures. The main instrument was the Export Market Development Scheme, which provides funds for companies seeking to develop overseas markets. This is based on the contention that it is both costly and risky for small, potential exporters to seek out new markets and that they also lack the necessary information. In addition, the National Industry Extention Service as a joint Federal and State government scheme was introduced in 1986 to help the application of modern management techniques and technologies for small and medium firms to produce traded goods and services. Further, the establishment of AUSTRADE is a clear example of the government's emphasis on export promotion, although its performance is controversal (Capling and Galligan, 1992).

At the same time, the government as a major purchaser of goods and services, adopted purchasing policy as one of the positive measures to encourage new product development, local manufacturing and exports.[13] The industries included in the government purchasing schemes are aerospace, telecommunication, computer, and pharmaceutical industries, which are innovative and highly technology-intensive. Until recently, the major instrument of the purchasing policy has been the offsets programme, under which overseas suppliers of equipment to the governments or their enterprises have been required to allow offsets of at least 30 percent of the value of the imported content. However, it became clear that the offset policy had hardly contributed to creating local firms and products. Therefore, this offset policy was replaced by the partnerships for development programme in the information industries. Under this new programme, partnership agreements are negotiated between the Australian and state governments on one hand and transnational corporations on the other.

In 1990s, it became to realise that a major impediment to the development of internationally competitive industries has been inefficiencies in supporting activities such as transport, the ports, public utilities and communications. Recently, these issues were the subject of a wide-ranging policy of microeconomic reform directed towards introducing more competition into these areas, reducing or eliminating restrictive practices, and reassessing public ownership.[14]

Australia has undergone a quiet revolution in manufacturing industry policy over the period with Labour in government. The government shifted the focus of Australian industry policy from a defensive orientation to a more selective policy to

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[13]For example, Porter (1990) sees government purchasing policy as one of the few interventionist approaches which can have a benign effect on industry development by forcing local producers to improve the specification, quality and price of the goods they produce. For the detailed discussion on and evaluation of the Australian schemes for individual industries, see Sheehan, et al. (1994).

[14]On the debate on Australian microeconomic policy, see King and Lloyd (eds, 1993) and Forsyth (1992).

foster the development of innovative, export-oriented industries. This has been an enormous task, achieved by gradually reducing assistance to the least efficient industries in order to force their withdrawal from uncompetitive activities; by promoting industry expansion into areas where Australia has a comparative advantage; and by introducing positive measures to encourage innovation and exports.

On the other hand, the Labour government also implemented deregulation and liberalisation policy. This made a remarkable contrast with an interventionist policy, since deregulation policy reflected the belief that economic activity is most efficiently organised in free competitive markets, which is the essence of free-market liberalism. The policy included financial and exchange rate deregulation immediate after coming to power in 1983, and subsequently, reductions in protectionism, microeconomic reforms and privatisation in the later period.

In this context, the Labour government's industry policy has been a good deal of continuing compromise between the two sets of economic philosophy: interventionism where the state plays an active and far-reaching role in promoting industrial development; and economic liberalism which emphasizes greater reliance on market forces. Notably, the government's overall policy stance drew its inspiration from each of the schools, creating a good deal of continuing tension between the two. This is fundamental to understanding the structure of policy over the 1983-1993 period.

3. AUSTRALIAN MANUFACTURING PERFORMANCE

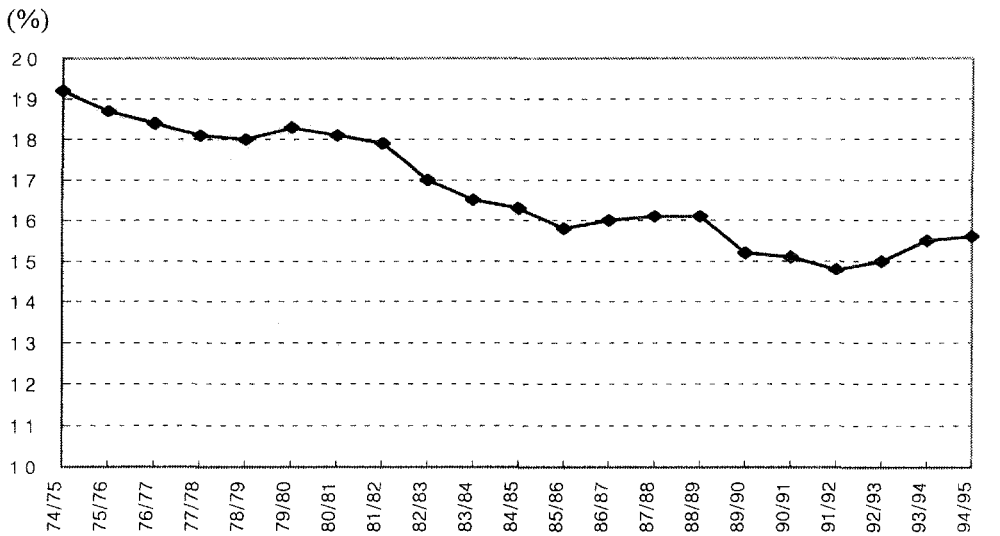
One of the major objectives of Australia's economic policy over the past decade has been to improve the performance of manufacturing industry. This involves the transformation of what was a highly protected and inward-looking sector into one which can be internationally competitive and export-oriented without significant assistance. Some aspects of manufacturing performance have been already encouraging, although the full effect of the industrial policy illustrated previously has yet to be recorded.

Manufacturing has grown at a remarkably high rate of 3.0 percent annually in real term over the period 1983/84 and 1994/95, compared with the annual growth rate of 0.6 percent in the previous decade. The high growth of manufacturing sector has made a major contribution to the very high growth of Australian economy, but it has outstripped by significant growth in other sectors, particularly finance, property and business services, and community services (which covers education, health and welfare services). Hence, manufacturing has slightly declined as a proportion of national output (Figure 2). Indeed, the decline has been a long-term trend from a peak of around 28 percent in the mid-1960s. The proportion had fallen sharply in the decade prior to the year 1983, but the decline was more or less arrested after 1983. Much of this is attributable to industrial policy undertaken in the past decade or so.

The composition of manufacturing has changed little over the past decade, although this needs to be viewed in the light of the level of aggregation adopted. Figure 3 shows the contribution of the various subdivisions to total manufacturing

value-added, comparing 1981/82 to 1989/90 (the latest year with data available). It highlights Australia's strength as a resource-based economy: two natural resource-processing industries, that is, food, beverage and tobacco, and basic metal industries have the greatest importance and have further increased their importance. Some industries are not bound to particular geographic locations by backward linkages to natural resources or forward linkages to markets, with both inputs and outputs being easily transportable. Industries such as textiles, clothing and footwear, and machinery, equipments, and apparatus, at least their parts, have these characteristics. The share of these industries has declined significantly in line with major falls in broader protection and the opportunity for cheaper manufacturing offshore.

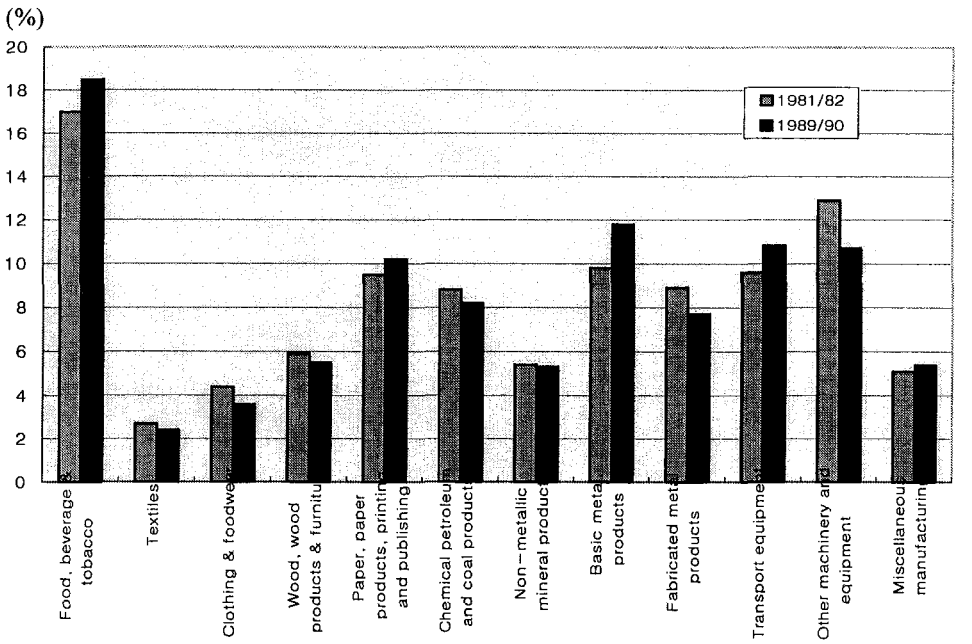
Figure 2. Manufacturing as a proportion of gross domestic output, 1981/82 to 1994/95



Source: Australian Bureau of Statistics (1996).

Trade orientation of the Australian manufacturing sector has been remarkable since the year 1983. As indicators of trade orientation the share of the domestic market held by imports (import penetration rate) and the share of local production which is exported (export rate) were estimated. There has been a significant growth in the trade orientation of Australian manufacturing as a whole over the period 1981/82 to 1992/93, increased from 13 to 24 percent in export rate and from 26 to 34 percent in import penetration rate (Figure 4).

Figure 3. Share of manufacturing value added by subdivision, 1981/82 and 1989/90



Source: Industry Commission (1995).

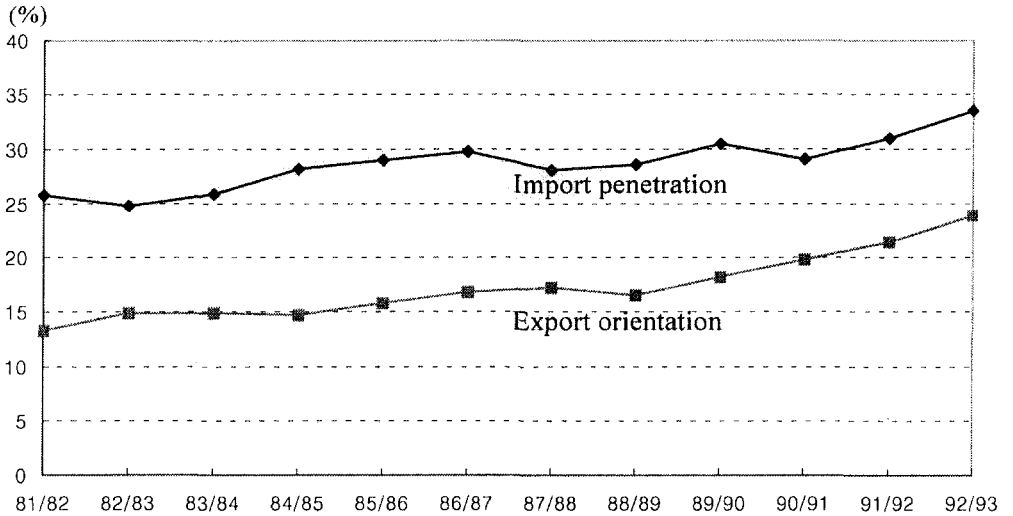
While the importance of exports has grown for all subdivisions, the importance varies markedly among subdivisions, seen in Figure 5. Basic metal product stands out as an industry in which the importance of exports is not only high, but has been increased notably to account for over half of total sales. Export orientation has sharply increased in textiles and other machinery and equipment. For many industries, such as fabricated metal products, transport equipment, clothing and footwear, and miscellaneous manufactures, growth in exports has been significant, though developing from a small base. At the same time, the importance of exports has increased as a source of growth for manufacturing as a whole, contributing about two thirds of growth in manufacturers' production.[15] McKinsey (1993) suggests that many exports have developed new markets and intend to supply them even when domestic demand picks up and that exporting has stabilised manufacturers' sales and more so in the more recent times.

The growth of domestic manufacturing activity is determined not only by its ability to compete for sales in export markets, but also by its ability to secure sales in the domestic market against import competition. Imports now supply 34 percent of

[15]IC (1993) estimated the export contribution as a proportion of export growth in manufacturing sales growth weighted according to its relative size in total sales.

the domestic market for manufactures. While the importance of imports varies markedly between manufacturing industries, that importance has grown in all cases except paper and paper products over the period (Figure 6). Textiles, clothing and footwear, metal products, transport equipment, other machinery and equipment, and miscellaneous manufacturing have shown strong growth in imports.

Figure 4. Manufacturing export orientation and import penetration[a], 1981/82 to 1992/93



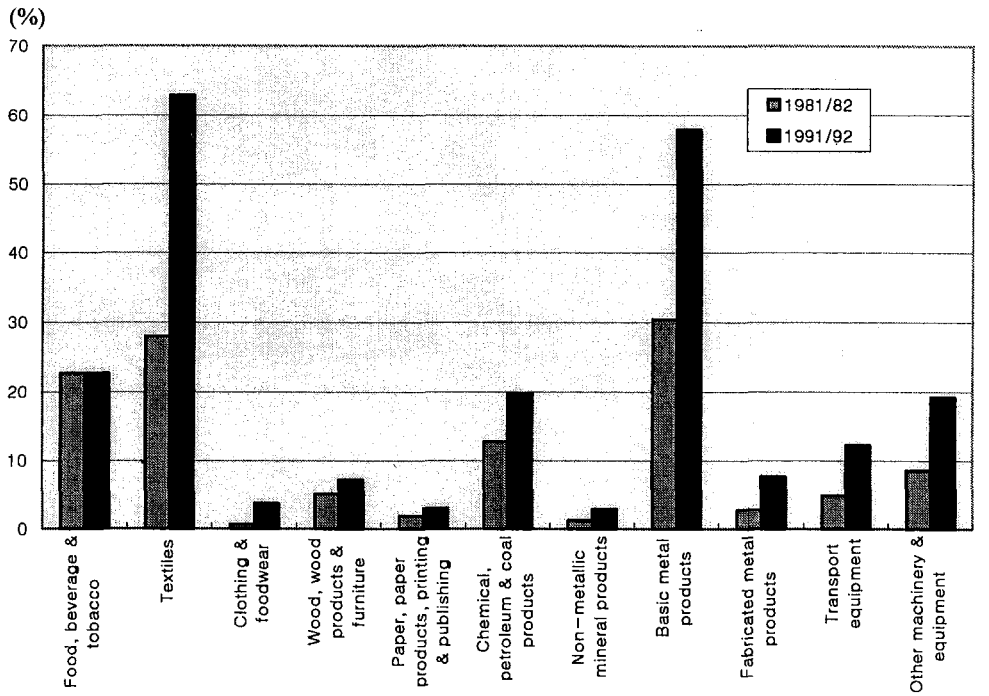
Note: Export orientation is the share of exports in total sales of domestic manufacturers and import penetration is the share of imports in total domestic sales.
Source: Industry Commission (1995).

The growth in importance of imports in supplying domestic markets has resulted in two main changes: foreign suppliers now have a large share of the domestic market and an expanded base from which to compete with domestic producers. In this environment, domestic costs and supply conditions are more likely to be influenced by the international environment than was the case in the beginning of 1980s. Increases in domestic demand for manufactures would, when weighted by the average import penetration, generate a larger volume of imports than was the case two decades ago.

Most notably, for many manufactures the sharp increase in export rate has been accompanied by a significant increase in the import penetration rate. For example, the export share of other machinery and equipment has increased significantly from 8 to 19 percent, and the share of imports in the domestic markets has also risen from 51 in 1981/82 to 61 percent in 1991/92. In the case of transport equipment and textiles, the export share has risen from 5 and 28 to 12 and 63 percent, and import

share also from 40 and 46 to 45 and 64 percent, respectively. The implications for the simultaneous increase are discussed with regard to intra-industry trade.

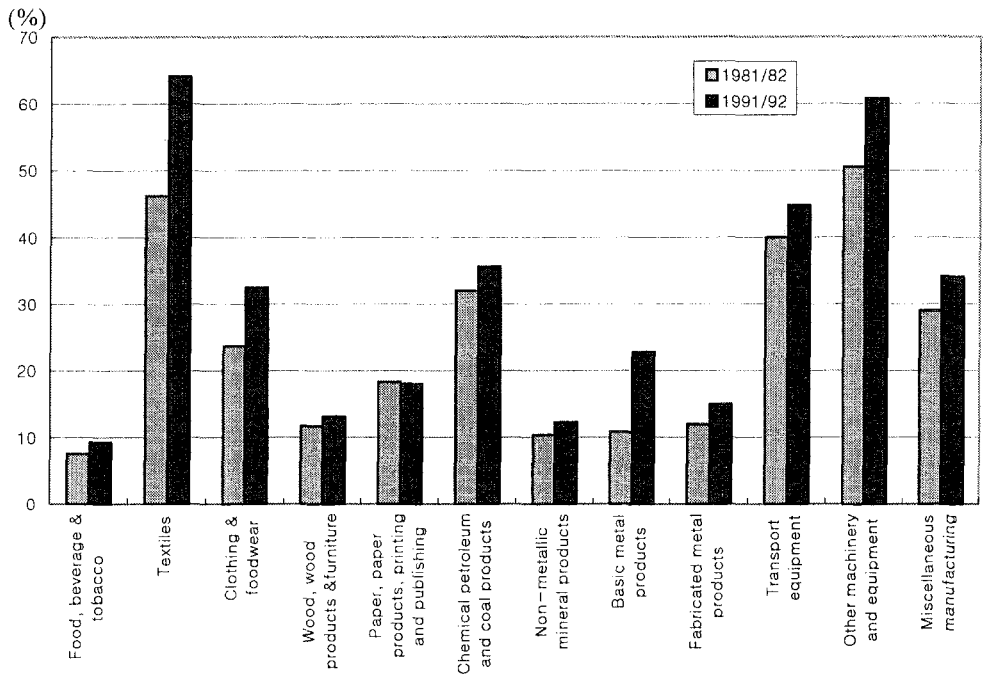
Figure 5. Share of exports in value of sales, by manufacturing subdivision, 1981/82 and 1991/92



Source: Industry Commission (1995)

Table 1 highlights two important aspects of Australian trade: the structural pattern of Australian trade and the changing behaviour of manufacturing trade. In 1984/85 manufactured products provided only 19 percent of Australian exports but 80 percent of its imports. For elaborately transformed manufactures (ETMs) alone, in which world trade grew rapidly to account for 66 percent of world imports in 1992 by comparison with only 47 percent in 1980, and competition is based on non-price factors such as technology, quality, design and style, the position is more striking. In 1984/85 ETMs provided 11 percent of Australian exports and 73 percent of imports. These facts are inevitably reflected in the net trade balance with huge deficit in ETMs trade and huge surplus in non-manufacturing trade.

Figure 6. Shares of imports in value of domestic sales, by manufacturing subdivision, 1981/82 and 1991/92



Source: Industry Commission (1995).

The change in exporting behaviour in manufacturing is evident in the comparison of the growth of manufactured exports with that of non-manufactured exports. Exports of manufactures grew annually at a rate of 15 percent, compared with 7 percent for the non-manufactured. Within the manufacturing sector, exports in ETMs grew at the annual rate of 17 percent in comparison with 11 percent for STMs. Accordingly, the share of manufactures in Australian exports rose from 19 to 33 percent during the last decade, mainly by contribution of rise in share of ETMs from 11 to 24 percent. Hence, the argument between manufactures and non-manufactures is certainly replicated between ETMs and STMs within the manufacturing sector. This implies that the dramatic change in export behaviour is clearly located within the ETMs.[16]

Sheehan, et al. (1994) raised the following main four findings as to reasons for the good export performance in the Australian ETMs: movements in costs and price competitiveness were vital in facilitating the take-off in ETMs exports; many of the industry specific policies designed to boost the export orientation of various sectors

[16]On the intensive analysis of the nature and significance of, and reasons for recent changes in Australian trade in ETMs and its prospect, see Sheehan, et al. (1994).

have played an important part in the improved ETM trading performance; changes in Australian business culture and attitudes - to international competitiveness, to exporting, to best practice efficiency and to an economic future linked to world markets and in particular to Asia - have been important factors in the improved ETM trading outcomes; and internationally, the acceleration in the growth of world ETM imports, particular in Asia, has also been a key factor.

Table 1. Australian manufacturing trade performance (A$billion, %)

	Exports			Imports			Trade balance		Export/ Import ratio	
	1984 /85	1995 /96	Annual Growth rate	1984 /85	1995 /96	Annual growth rate	1984 /85	1995 /96	1984 /85	1995 /96
Manufactures	5.6 (18.7)	25.3 (33.2)	14.7	23.3 (80.0)	67.4 (86.7)	10.2	-17.7	-42.1	0.24	0.37
ETM	3.4 (11.2)	18.1 (23.7)	16.6	21.1 (72.6)	60.8 (78.2)	10.1	-17.7	-42.8	.16	0.30
STM	2.2 (7.5)	7.2 (9.5)	11.3	2.2 (7.4)	6.6 (8.5)	10.7	0.0	0.7	1.03	1.09
Non-Manufactures	24.1 (81.3)	50.8 (74.7)	7.0	5.8 (20.0)	10.4 (13.3)	5.4	18.3	40.4	4.15	4.90
Total	29.7	76.1	8.9	29.1	77.8	9.4	0.6	-1.7	1.02	0.98

Note: 1. Manufactures are divided into two categories: elaborately transformed manufactures (ETM) and simply transformed manufactures (STM). The former includes SITC 54, 55, 57 and 58, SITC 6 except SITC 66, 68, SITC 7 and 8, and the latter SITC 5, 6, 7, 8 except ETM, according to Sheehan, et al. (1994).

2. Numbers in parentheses are shares in total.

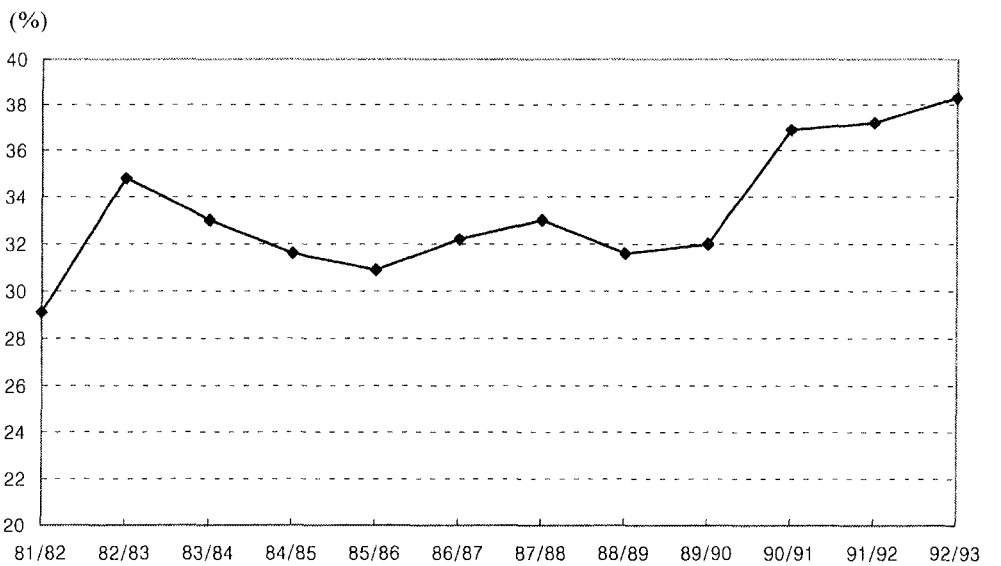
Source: ABS, International Merchandise Trade, 1996.

The rapid growth of Australian exports in ETMs, in which product differentiation is well developed, led to a substantial rise in intra-industry index in Australian manufacturing trade. Often, it is noted that a weakness of competitiveness in Australian manufactures is reflected in the low level of intra-industry trade (IIT). Intra-industry trade has been regarded as an important factor in the growth of manufacturing sector in the other industrial countries as it promotes specialisation,

reduces costs, and facilitates market access.[17] Indeed, Australia's pattern of trade is significantly different from the pattern of trade in other industrial nations which has been characterised by a significant growth IIT of highly differentiated consumer goods, and highly specialised parts and intermediate goods.

Australia's IIT in manufactures has grown since 1981/82 from 29 to 38 in 1992/93, measured at the 3-digit ASIC level (Figure 7). Most notable increase came with the onset of the 1990s. Despite the overall increase, however, Australia's IIT is still low when compared with levels recorded for most European and North American developed economies with over 60 percent since the 1960s.[18]

Figure 7. Intra-industry trade (IIT) as a proportion of trade in manufactures[a], 1981/82 to 1992/93



Note: Calculated at 3 digit ASIC according to the fomula, IIT=[(X+M)-(X-M)]/X+M, where X=exports and M=imports.
Source: Industry Commission (1995).

[17]Intra-industry trade (IIT) refers to the simultaneous exports and imports of goods produced within the same industry classification. A significant proportion of this trade, particularly in manufactures, may not be explained by traditional theories of comparative advantage based on factor endowments, but may be due to a variety of factors associated with industrialisation, such as product differentiation, consumer taste for variety, the global integration of production, and government intervention designed to promote exports. In the context of trade liberalisation, the growth of IIT in the manufacturing sector has potential policy implications as adjustment costs and restructuring problems may be reduced if trade expansion takes the form of IIT rather than inter-industry trade.

[18]The low IIT in Australian trade primarily reflects the historical pattern of Australian trade which specialised exports in primary commodities, and imports in manufactured goods.

4. CONCLUDING REMARKS

The development of Australian manufacturing sector has depended heavily on protection for its growth. A primary aim of Australian trade policies after federation has been to nurture and protect its manufacturing industry to diversify the national economy. But, the development strategy has dramatically changed over the past quarter century. The Australian economics profession became increasingly outspoken against protection by the early 1970s. A similar change occured in public opinion and bureaucracy.

With this changing atmosphere in trade policy discussions, a unilateral across-the-board tariff cut in 1973 marked a major break in the historical trend in Australian protection. Between 1973 and 1978, the effective rate of protection to most Australian manufacturing industries, except TCF and MVP industries, was halved, although still high in the standard of industrial countries. But the severe economic recession reversed the policy stance of trade liberalisation.

Since 1980s, Australia has been undergoing a quiet revolution in manufacturing industry policy. Defensive border protection was switched to collective and positive policies to generate a more efficient, competitive, and outward-looking industrial base. Industrial plans were implemented to facilitate industrial restructuring for declining industries. Tariff protection was significantly phased out to transform Australia from a country with the highest level of industrial protection to one with the lowest. Australia has complemented the reductions in the protection with a number of positive adjustment measures designed to stimulate investment, research and development, and exports. Surprisingly, there has been little opposition to the policy shift.

The effect of the policy change has been already encouraging, although the full effect has yet to be recorded. Over the last decade, manufacturing output in real term grew at an annual rate of 3.0 percent, having made a great contribution to the high growth of Australian economy. Trade orientation of the Australian manufacturing sector have been even more striking. Exports of manufactures grew annually at a rate of 15 percent, well above 7 percent for the nonmanufactured. This can be compared with the growth rate of 8% for manufactured and 10% for nonmanufactured over the previous decade. Resultingly, the proportion of manufactures in Australian total exports went up from 19 to 33 percent over the last decade. At the same time, both shares of exports in production and of imports in domestic market rose rapidly from 13 to 24 percent in the former and from 26 to 34 percent in the latter. All these indicate that Australian manufacturing has been increasingly exposed to the challenges of international markets, and the environment in which it operates has been made much more competitive and efficient.

Despite these encouraging signs, there are still some significant impediments to be eliminated, reduced, and overcome for Australian manufacturing to improve its performance in international markets. Some of these impediments, such as geographic isolation, small market size, and commodity driven exchange rate, are not susceptible to amelioration via policy action. Others are those such as the poor workplace culture, a

lack of flexibility in wage determination, a shortage of skills, high interest rates and a lack of venture funds, inefficiencies in infrastructural services, and taxation system. Most of these may be reduced by means of government initiatives, and are best addressed by macroeconomics policy and microeconomic reform rather than by industry policy.

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