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The Relative Decline of Manufacturing Employment in South Australia

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Director's Note

Welcome to the twelfth issue of *Economic Issues,* a series published by the South Australian Centre for Economic Studies as part of its Corporate Membership Program. The scope of *Economic Issues* is intended to be broad, limited only to topical, applied economic issues of relevance to South Australia and Australia. Within this scope, the intention is to focus on key economic issues — public policy issues, economic trends, economic events — and present an authoritative, expert analysis which contributes to both public understanding and public debate. Papers will be published on a continuing basis, as topics present themselves and as resources allow.

The authors of this paper are Anthony Kosturjak, Research Economist, and Joshua Wilson-Smith, Research Assistant, SA Centre for Economic Studies.

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Michael O'Neil
Director
SA Centre for Economic Studies
July 2004

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Overview

This Issues Paper investigates employment outcomes for the South Australian manufacturing sector since 1986. The topic of this paper was inspired by data presented in a previous Issues Paper – *The South Australian Labour Market Through the 1990s* – which showed that manufacturing employment in South Australia fell substantially relative to nation-wide manufacturing employment between 1990 and 2000. Calculations suggest that South Australia may have accounted for 41.4 per cent of the 38,000 jobs lost in the manufacturing sector at the national level over this period. The purpose of this paper is to more closely assess the performance of the South Australian manufacturing sector in terms of employment outcomes.

An analysis of trends in manufacturing employment, particularly over a longer time period, reveals that the data from the previous Issues Paper exaggerates the relative decline of employment in South Australia's manufacturing sector. There are two reasons for this. Firstly, the time period used in the previous Issues Paper excludes important changes in manufacturing employment on the fringes of the period. These include a significant fall in manufacturing employment in other States just prior to 1990, particularly in Victoria and New South Wales, and a rebound in employment in South Australia since 2000. The earlier fall in employment for other States reflects that they were further along their economic cycles and that the causes of the national recession emerged first in these States. The recovery in manufacturing employment for South Australia more recently is to a large extent due to a surge in exports, particularly of motor vehicles and parts and wine.

The second reason for the exaggerated relative decline in South Australian manufacturing employment was the use of Australian data for comparison. Large rises in manufacturing employment in Western Australia and Queensland obscured large falls in the traditional manufacturing States (i.e., Victoria, New South Wales and Tasmania). South Australia was responsible for only 4.9 per cent of the 93,000 manufacturing jobs lost in the four traditional manufacturing States between 1986 and 2003.

Although the fall in manufacturing employment in South Australia was not unusual compared to the decline in employment in other traditional manufacturing States, employment in the sector nevertheless fell sharply in the 1990s, particularly following the recession. While the recession clearly had a significant negative impact on manufacturing, other longer-term factors are believed to have been more significant in driving the fall in employment. These factors include a shift in consumer preferences towards services associated with rising incomes, labour displacing technological change, and reductions in protection and subsidies combined with greater competition from imports. Such factors have steadily

increased competitive pressures over time with the recession acting as a trigger that led to the scaling down and collapse of uncompetitive firms.

It is important to realise that the decline of manufacturing in terms of its contribution to total employment is not a short-term event but part of an ongoing longer-term structural phenomenon. The relative importance of manufacturing has declined in almost all developed countries and even in those States in Australia which have seen solid growth in their manufacturing employment i.e., Western Australia and Queensland. This outcome reflects the concentration of jobs growth in the services sector in most developed economies.

The long-term relative decline of manufacturing employment points to several important policy implications. Firstly, it suggests that policies designed to artificially support the manufacturing sector will ultimately fail, serving only to prolong the adjustment process, and thus delay the eventual benefits derived from an economy geared more heavily towards areas of natural comparative advantage. Secondly, there is the significant challenge of leveraging workers from the manufacturing sector who have become unemployed to other sectors of the economy given the lack of job opportunities in manufacturing.

Finally, while the decline in manufacturing employment has had negative consequences, particularly for those persons who have become unemployed, the decline reflects a positive underlying shift, namely the reorientation of the State economy away from fragile inward-looking activities with little potential for growth, towards more outward-looking and competitive activities. Importantly, this shift has also occurred within manufacturing, with uncompetitive activities and firms receding, while competitive activities and firms, such as those in motor vehicle and parts manufacturing, electronics, food and beverage processing, have grown strongly, making positive contributions to employment, exports and investment. Importantly, growth in these sectors has been driven by structural factors, such as an emphasis on developing overseas markets and growing exports, investing in research and development to improve productivity and product quality, and improving competitiveness to compete on an international basis. It follows from this that policies that seek to facilitate and promote such factors are the key to growing manufacturing activities and other sectors of the economy.

1. Introduction

1.1 Purpose of the Paper

The South Australian Centre for Economic Studies released an Issues Paper in February 2003 titled '*The South Australian Labour Market Through the 1990s.*'[1] The paper examined the major trends in the South Australian labour market following the 1990 recession and subsequent collapse of the State Bank in 1992. The dominant characteristics of the SA labour market during the 1990s were a poor record of generating new jobs and a persistently higher rate of unemployment relative to job generation and unemployment rates at the national level. Factors that contributed to this outcome included the recession coupled with the collapse of the State Bank, the impact of ongoing structural change within the economy, poor trade and investment linkages with the international economy, and economies of scale effects.

Another important feature of the State's labour market during the 1990s was that manufacturing experienced the largest decline in employment of any industrial sector. Table 1.1 shows that between 1990 and 2000, the level of employment in manufacturing fell by 13.7 per cent or 15,600 people. An even bleaker picture emerges when considered against the corresponding national figures. Australia over the same period lost 37,700 jobs in manufacturing, which means South Australia accounted for 41.4 per cent of the drop in national manufacturing employment despite only accounting for 9.6 per cent of national manufacturing employment in 1990. South Australia therefore appears to have borne a disproportionately large share of the fall in national manufacturing employment. Following the decline in manufacturing employment, South Australia's share of persons employed in the manufacturing sector was 8.6 per cent by 2000. This background forms the basis of this Issues Paper. In this paper we seek to examine in greater detail the performance of the South Australian manufacturing sector in order to better understand the extent and dimensions of recent changes in manufacturing employment, including the causes of these changes.

Table 1.1
Employment by Industry
South Australia and Australia – 1990 to 2000, Annual Average

	Persons Employed ('000)		Change: 1990 to 2000	
	1990	2000	Number ('000)	Per Cent
South Australia	113.8	98.2	-15.6	-13.7
Australia	1,180.7	1,142.9	-37.7	-3.2

Source: ABS, AusStats, Labour Force (Cat. No 6291.0), Part reproduced from Table 4 in 'The SA Labour Market Through the 1990s'.

The Issues Paper is structured as follows. The following section provides an overview of the findings from '*The South Australian Labour Market Through the 1990s*' Issues Paper to give the readers an understanding of the major trends present in the labour market during the 1990s. Section

1.3 provides a brief historical overview of the changing policy climate in which the Australian and South Australian manufacturing industries have developed. Section 2 analyses trends in State and national aggregate employment levels, while Section 3 examines changes in manufacturing employment including changes in the structure of the manufacturing industry. Section 4 looks at other elements of the performance of the South Australian manufacturing sector. Section 5 presents concluding comments.

1.2 Overview of *The SA Labour Market Through the 1990s*

The main findings to emerge from the Labour Market Issues Paper were that South Australia had poorer employment outcomes for the decade relative to all other mainland States and Australia as a whole. Total employment for South Australia rose by only 3.2 per cent between 1990 and 2000, which compared with a rise of 15.1 per cent for Australia, while South Australia had an average unemployment rate of 9.3 per cent for the decade versus 8.3 per cent for Australia.

South Australia's disappointing employment outcomes reflected the poor performance of the State economy over this period. The State economy – as measured by growth in Gross State Product – grew more slowly than any other State or Territory with the exception of Tasmania between 1990-91 and 1999-00.[2] Factors identified as contributing to the poorer performance of the State economy included, *inter alia*:

- The collapse of the State Bank which compounded the initial impact of the recession by requiring a government bailout that led to a contraction in public sector spending, both of which had the further impact of reducing confidence in the State economy;
- The detrimental effects of structural change impacted on South Australia relatively more heavily since the State had a higher dependence on those sectors which had suffered decline, particularly manufacturing;
- At the beginning of the decade the State had weak trade and investment linkages with the international economy, and although trade linkages improved remarkably late in the decade with a large surge in merchandise exports, investment linkages remained poor; and
- Economies of scale effects, whereby the relatively smaller size of the South Australian economy encouraged businesses to relocate to interstate markets or avoid locating in South Australia.

While the inability to substantially grow the aggregate economy was ultimately responsible for the State's poor ability to generate jobs, demographic factors, especially a slower rate of population growth, were found to exaggerate the extent of South Australia's inferior aggregate economic and employment performance.

Slower population growth for South Australia was explained by several factors, including the older age structure of the State population, which resulted in a slower rate of natural increase; a poor performance in attracting overseas migrants, which deteriorated in the 1990s; and an increase in interstate emigration flows during the 1990s.

The significant rise in interstate emigration flows and less than exemplary record of attracting overseas migrants during the 1990s could be attributed to the relatively weak performance of the South Australian economy. Poor job prospects and a gloomy economic outlook intensified interstate emigration flows and discouraged migrants from settling in South Australia. This was the era in which the term "rust-belt states" was coined as a label for the States of Victoria and South Australia, a term which reflected their under-performance, particularly in the manufacturing sector, and led to population outflows.

South Australia's pattern of employment growth during the 1990s was found to be "characterised by absolute and relative growth in part-time employment with declines in male full-time employment". Factors identified as contributing to the rise in part-time employment included, *inter alia*:

- A desire from employers for a more productive and flexible work force;
- Privatisation, which led to a shift of some public sector activities to the private sector which employs part-time and casual employment more intensively;
- A decline in the relative demand for full-time employees by employers due to the non-wage costs and costs of unfair dismissal associated with full-time employment; and
- An increase in the supply of part-time and casual labour, due mainly to the increased participation of females in the workforce.

However, perhaps the most significant factor contributing to the employment patterns observed above was structural change of the economy, with employment shifting away from traditional industries, particularly manufacturing, which have high levels of full-time and/or male employment, towards services industries, which are composed of greater levels of casual and/or part-time employment, and female employment. The large fall in manufacturing employment was attributed "to a number of factors, including a reduction in protectionist measures designed to improve the competitiveness and efficiency of the sector, competition from overseas manufacturers, the introduction of labour productivity enhancing new processes and new production systems and the advent and use of new technologies".[3]

Other interesting features of the SA labour market during the 1990s identified in the Issues Paper included:

- Total male employment in male dominated industries contracted over the decade reflecting the impact of structural change;
- Both female part-time and full-time employment rose over the decade to 2000, with the rise in part-time employment being much stronger than the rise in full-time employment;
- South Australian males experienced a much larger rise in unemployment than females during the recession, and the male unemployment rate remained consistently higher for the remainder of the decade;
- A decline in the overall participation rate was concentrated solely among males, which is explained by the negative impacts of structural change that affected males more heavily;
- The aggregate and relative number of long-term unemployed rose during the decade following the recession, with a corresponding increase in the average duration of unemployment; and
- There was an increase in the aggregate number of unemployed in middle age groups which is explained by the impact of structural change with workers being displaced from traditional industry sectors.

1.3 Historical Overview: A Changing Policy Environment

National protection of manufacturing commenced with the introduction of the *customs tariff* in 1901. The development of the manufacturing sector through protection was seen as crucial to providing jobs for large influxes of immigrants who were needed to build the nation. A second central pillar of national development policy to emerge early on was the maintenance of a reasonable standard of living for workers through the setting of a guaranteed minimum wage. Since tariffs would raise costs and therefore erode real wages in the domestic economy, protection and centralised wage setting were intrinsically linked. These two elements characterised national development policy up until the late 20th Century.[4]

Protection up until the late 1960s evolved gradually, with protection applied on a "made to measure" basis, meaning that "tariffs and subsidies were determined for individual, narrowly-specified products at rates which would account for any problems encountered by local industry".[5] The end result was a highly complex system of tariffs and subsidies.

States, in some cases provided an additional layer of assistance to manufacturing. In South Australia, the Butler and Playford administrations implemented a strategy of providing direct assistance to manufacturing activities from the late 1930s onwards. The aim was to diversify the economy, making it less dependent on agricultural activities. This strategy comprised assistance to local firms to discourage them from

relocating to the larger eastern States, and financial assistance to encourage overseas firms to locate in South Australia.[6]

By the 1970s, major problems with the nation's protectionist policy had emerged. The cumulative effect of these problems was that living standards in Australia were falling relative to those in leading developed economies. The decline in the nation's economic standing was attributed to a number of structural weaknesses in the economy, which included, *inter alia*:

- A prevalence of small-scale production across a wide range of activities which forfeited benefits that would be derived from greater specialisation and/or economies of scale;
- An inward oriented manufacturing industry that focused on production for the domestic market rather than international markets. This had the effect of narrowing the export base, leaving it dependent on agriculture and mining, making the economy susceptible to changes in terms of trade within these industries;
- Associated with the above two points, resources were not being directed to more competitive and productive higher value added activities, which reduced production and export capability;
- Prevalence of bad management practices, including poor labour-employer relations; and
- Sustained use of out-dated technology accompanied by an attitude that was resistant to change and reluctant to improve performance. [7]

These structural weaknesses resulted not only from protection of local industry, but government intervention in other areas of the economy which resulted in an inefficient use of resources. Such intervention included government provision of infrastructure (roads, transport, communications, energy), excessive regulations in capital markets, and a highly regulated labour market.

Protection of the manufacturing industry continued across Australia until June 1973 when the recently elected Whitlam Labor Government initiated a 25 per cent across the board tariff cut. This cut was designed to restrain price increases within the economy by reducing import prices. Despite this tentative step towards reform, a recession in 1974-75 and the emergence of high inflation and unemployment diminished the political will to continue with reform, with further reductions in protection proceeding more slowly. While protection did fall across most manufacturing sectors between the early 1970s and mid 1980s, it rose in textiles, clothing and footwear, and motor vehicles and parts through increases in tariffs and imposition of quotas.

A more significant and comprehensive attempt to reduce protection was initiated by the Hawke Labor Government which came to office in March 1983. By this stage concerns about Australia's economic performance

had grown to the point where there was sufficient political will to implement a major program of microeconomic reform to address structural weaknesses that had evolved under protectionism and other forms of government intervention. Reforms implemented from 1983 onwards included, *inter alia*: deregulation of financial markets, floating of the currency, commercialisation of government business enterprises, including privatisation of some public sector activities, reductions in barriers to foreign direct investment and international trade.[8]

In terms of protectionist policy, major reform commenced in 1988 when the government announced a four-year program of across the board reductions in tariffs with those above 15 per cent cut to 15 per cent, and those between 15 and 10 per cent reduced to 10 per cent. However, tariffs applying to motor vehicles, textiles, clothing and footwear were excluded from the reductions. Another round of cuts were announced in 1991, with general tariffs ratcheting down to 5 per cent between 1992 and 1996.

Major reform of the motor vehicle industry commenced in 1984 with the Button Car Plan. The main thrust of the plan was to improve the competitiveness of the industry by gradually placing it under higher levels of international competition through a reduction in effective assistance. Under the plan, import quotas were replaced with tariffs that were to be phased out by 1992. Tariff reductions ended up proceeding more intensely than planned following favourable exchange rate movements under the recently floated currency. Import quotas were abolished in 1988 while tariffs were reduced to 45 per cent, phasing down to 35 per cent by 1992. Another schedule of cuts began in 1993 with tariffs being phased down to their current level of 15 per cent in 2000.[9]

While the Button Car Plan initiated a significant reduction in protection for the car manufacturing industry, it did introduce other forms of assistance, some of which were designed to cushion the impacts of adjustment. These measures included:

- A broadening of the export facilitation scheme;
- Labour Adjustment Training Arrangements;
- A Component Development Grants Scheme; and
- Initially, an expansion of tariff quotas to other segments of the industry (i.e., light commercial vehicles and 4WDs).[10]

The textiles, clothing and footwear industry (TCF) had become the most heavily protected sector of the manufacturing industry by the early 1980s, with support provided by a range of quotas, tariffs and bounties. Like motor vehicles, it was subjected to an industry plan designed to wean the sector off assistance to make it more competitive. Recommendations from the Button Industry Plan to phase out quotas and bounties, and gradually reduce tariffs were first implemented in 1989. Successive

amendments to original policy saw the elimination of quotas by March 1993, bounties by July 1995, and sharp reductions in tariffs. The result was a sharp fall in assistance to the textile, clothing, footwear and leather sector over the last two decades with the average effective rate of assistance for the sector falling from 157 per cent in 1984-85 to 23 per cent in 2000-01.[11]

The objectives of reducing protection and other microeconomic reforms was to increase the competitiveness and productivity of the economy by improving the allocation of resources, which together would lead to a greater pace of economic growth, and thus faster growth in employment and wages (i.e., higher standards of living). These factors in turn would also hopefully make the economy more resilient to external shocks.

One consequence of improving resource allocation was that it entailed structural change, which is the contraction of particular economic activities and transfer of resources to other uses or transitional or permanent unemployment. Thus some industries or activities would decline while unemployment would rise during the transitional phase. Factors other than microeconomic reform initiatives, such as globalisation, an increasing pace of technological change, and internationalisation of capital flows also intensified the pace of structural change during the 1990s as they increased competitive pressures within the economy. Such pressures had a substantial impact on the South Australian manufacturing sector as it had largely developed under a protectionist umbrella.

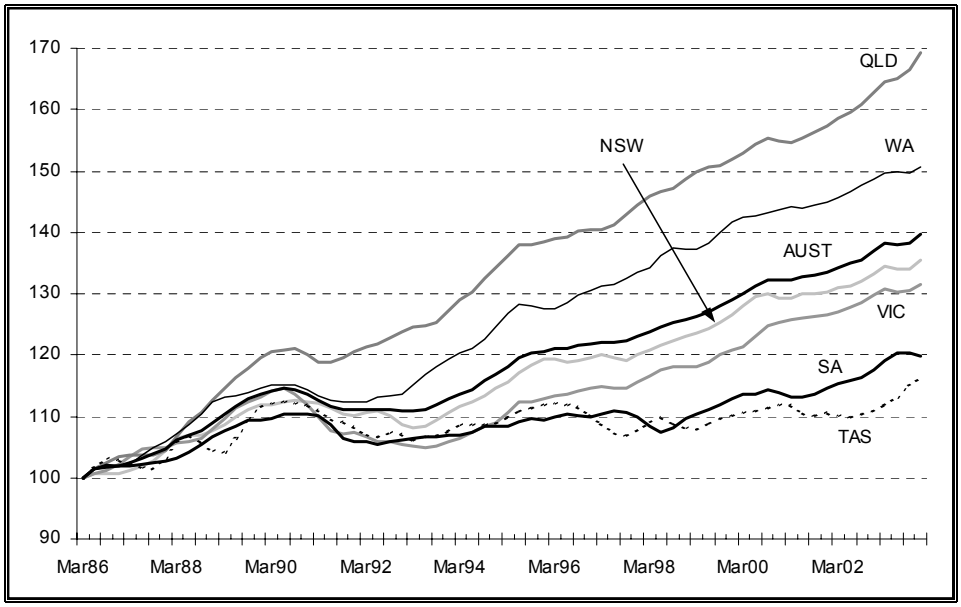
2. Overview of the South Australian and Australian Labour Market

This section provides an analysis of trends in total employment for South Australia, other States and the nation as a whole so that the performance of the South Australian and other manufacturing sectors can be understood within the context of the overall performance of each region's labour market, and relative to each other.

Figure 2.1 shows an index of total employment levels for all States and Australia from 1986 to 2003. Employment grew strongly in all States during the late 1980s, but then fell sharply with the 1990 recession. The recession was triggered by a collapse of financial and asset price bubbles following a period of tight monetary policy (i.e., high interest rates) designed to reel in a large current account deficit and high level of foreign debt. Both bubbles had their origins in the deregulation of financial markets undertaken in the mid 1980s with the subsequent boom–bust reflecting a poor sequencing of major economic reforms and the inappropriate use of monetary policy.[12]

Following the fall in employment induced by the recession, employment levels recovered relatively quickly in Queensland and to a lesser degree in Western Australia, while employment levels in all other States took at least several years to recover to their pre-recession levels.

Figure 2.1
Index of Employment by State, Australia
Australia, Selected States – 1986 to 2003, Trend Series, Quarter Average
(Base: March Quarter 1986 = 100)



Source: ABS, AusStats, Labour Force, Australia (Cat. No. 6202.0)

South Australia entered the recession later relative to the nation as a whole with employment peaking in the September quarter 1990 before falling, whereas national employment peaked in the June quarter 1990. This outcome reflects that South Australia is a small regional economy that is strongly influenced by the direction of the national economy, while the State's reliance on an inward oriented manufacturing industry made this dependence more severe (this reliance has decreased over time – see Section 3.2).

Interestingly, the recession induced fall in employment bottomed out sooner in South Australia. Total employment in the State reached a low in the June quarter 1992 whereas national employment reached its low in the March quarter 1993; this was despite some weak growth at the national level during the early and late parts of 1992. However, the fall for South Australia was more severe, with employment falling by 4.6 per cent compared to 3.3 per cent for the nation between the peak and trough periods for each region (see Table 2.1). Only Victoria (8.5 per cent) and Tasmania (5.5 per cent) experienced larger falls in employment than South Australia.

A delayed but sharper fall in employment for South Australia may reflect a combination of factors: employment in the State peaked at a later stage as the local economy was pulled along by the national boom, and the deterioration in demand and confidence spread quickly to South Australia given its dependence on interstate markets. More importantly though, it probably reflects structural weaknesses in the South Australian economy (see discussion below) that were only exposed by the recession – the severe decline in economic conditions generated large job losses in uncompetitive firms and sectors of the economy.

Table 2.1
Changes in Employment Between Peak and Trough periods, and Post Recession
Australia and States – Selected Quarter Averages

	Employment: pre-recession peak		Employment: post recession trough		Change	Employment: December quarter '03	Change between trough and Dec Qtr '03
	Quarter	('000)	Quarter	('000)	Per Cent	('000)	Per Cent
NSW	Sept 90	2,649	Mar 93	2,543	-4.0	3,187	25.3
VIC	Jun 90	2,107	Jun 93	1,928	-8.5	2,418	25.4
QLD	Sep 90	1,323	Jun 91	1,300	-1.8	1,850	42.4
SA	Sep 90	659	Jun 92	628	-4.6	714	13.6
WA	Jun 90	751	Sep 91	732	-2.5	982	34.2
TAS	Jun 90	202	Mar 93	191	-5.5	209	9.5
AUST	Jun 90	7,904	Mar 93	7,644	-3.3	9,628	25.9

Source: ABS, AusStats, Labour Force, 6202.0

Following the recession, employment growth for South Australia remained poor for most of the 1990s. This is clearly illustrated by Figure 2.1, which shows that total employment for South Australia grew slowly relative to all other States with the exception of Tasmania from the early to late 1990s. Only from the late 1990s onwards did overall employment growth begin to match that of other States.

There is evidence of longer-term fundamental problems with the South Australian economy, as employment growth was slower relative to the nation for the entire period from 1986 to 2003. This is illustrated by data presented in Table 2.2, which shows that relative to Australia, total employment in the State grew more slowly during the late 1980s, in the early 1990s after the recession, and even in the late 1990s when employment growth picked up. This poorer performance reflected structural problems in the economy which were a product of the historical nature of the State's economic development. Such problems included an economy narrowly based on inward oriented manufacturing industries, a reliance on agricultural industries, particularly for exports, underdeveloped international trade and investment linkages across the economy more broadly, and a services sector with little orientation to export markets. Structural problems were exacerbated by State economic development strategies that focused on attracting large one-off projects

and firms by providing inappropriate incentives. Quite a few of these projects and firms served to narrow the base of the economy still further.

Two other features of the pattern of employment growth illustrated in Figure 2.1 suggest that South Australia's labour market performance may have been related to structural problems within the economy.

Firstly, South Australia and Victoria had similar patterns of employment growth in the early 1990s, with both States experiencing large falls in employment relative to other States following the recession, although Victoria experienced a larger fall and in fact tended to drive the national recession. The more severe decline for Victoria was the result of a relatively larger commercial asset price bubble in Victoria, with the subsequent fall exacerbated by a collapse of the State Bank of Victoria. Nevertheless, the similar experiences may reflect not only the common incidents of State Bank collapses, but also a common dependence on the manufacturing sector as a result of their history of development, whereby manufacturing flourished behind trade barriers and other forms of government assistance. However, the similarity ends in late 1993 when solid employment growth in Victoria took hold and continued for the remainder of the decade.

Secondly, much of the growth in national employment during the 1990s was due to rapid growth in Queensland and Western Australia. This is interesting as both have industrial structures which are only loosely based on the old protectionist model, and instead place greater emphasis on industries of natural comparative advantage – tourism in the case of Queensland and mineral resources in Western Australia. This suggests that those economies with relatively larger manufacturing sectors such as Victoria, South Australia and New South Wales had to endure a greater degree of restructuring and job shedding as their economies adjusted to greater competitive pressures.

Table 2.2
Total Employment
Selected States and Australia – 1986 to 2001, Annual Average

	Total Employment ('000)				Change (Per Cent)			AAGR*
	1986	1991	1996	2001	'86 to '91	'91 to '96	'96 to '01	'86 to '01
NSW	2,357	2,611	2,794	3,040	10.8	7.0	8.8	1.7
VIC	1,846	1,983	2,095	2,314	7.4	5.6	10.5	1.5
QLD	1,108	1,300	1,524	1,698	17.3	17.2	11.4	2.9
SA	604	642	653	677	6.2	1.8	3.7	0.8
WA	658	735	841	940	11.7	14.4	11.7	2.4
TAS	183	196	201	199	7.4	2.2	-0.7	0.6
AUST	6,956	7,688	8,346	9,130	10.5	8.5	9.4	1.8

Note: * Annual Average Growth rate.
Source: ABS, AusStats, Labour Force (Cat. No. 6291.0).

3. Employment in the Manufacturing Sector

3.1 Trends in Overall Manufacturing Employment

In the introduction we observed that data presented in the Centre's Labour Market Issues Paper (No. 5) suggested that South Australia accounted for a disproportionately large share (41.4 per cent) of the fall in national manufacturing employment between 1990 and 2000. We now turn to an investigation of the trend in manufacturing employment to better understand the performance of the South Australian manufacturing sector.

Table 3.1 presents estimates of the change in manufacturing employment between 1990 and 2000 for South Australia, other mainland States, and the nation as a whole. The data shows that South Australia accounted for about 15,600 of the 37,700 jobs lost at the national level over this period. However, looking more closely reveals that the South Australian manufacturing sector has not performed as badly relative to the other manufacturing States. New South Wales suffered a much larger aggregate fall in manufacturing employment over this period (down 41,000 jobs), while Victoria (9,600 jobs) and Tasmania (6,600 jobs) also experienced significant falls. The result is that South Australia was responsible for 21.6 per cent of the 72,200 jobs lost in the four traditional manufacturing States (i.e., New South Wales, Victoria, South Australia and Tasmania) between 1990 and 2000. This is well below the State's share of the fall in national manufacturing employment over this period (41.4 per cent).

Table 3.1
Changes in Manufacturing Employment
Australia & States – 1990 and 2000, Annual Average (to November Quarter)

	Employment ('000)		Change: 1990 to 2000	
	1990	2000	Number ('000)	Per Cent
New South Wales	403	362	-40.5	-10.1
Victoria	378	368	-9.6	-2.5
Queensland	157	183	25.9	16.5
South Australia	114	98	-15.6	-13.7
Western Australia	89	95	6.7	7.6
Tasmania	31	24	-6.6	-21.4
Australia	1,181	1,143	-37.7	-3.2
Four traditional manufacturing states	925	853	-72.2	-7.8

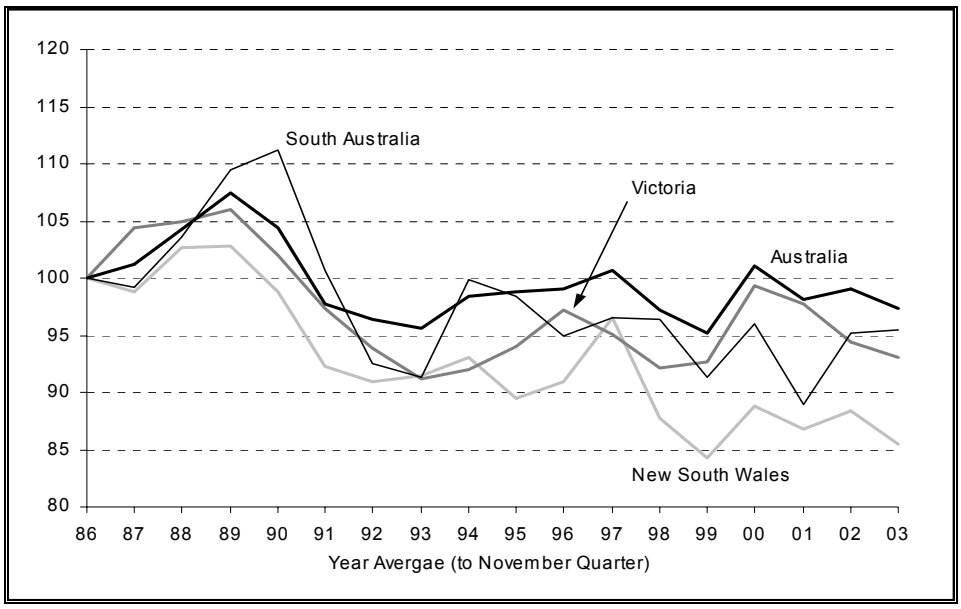
Source: ABS, AusStats, Labour Force (Cat. No. 6291.0).

Hence, the relative decline in South Australian manufacturing employment is exaggerated when Australia is used as a comparative point. This is because strong growth in manufacturing employment in Queensland (up 25,900 jobs) and to a lesser degree Western Australia (6,700 jobs) obscures significant falls in employment in the traditional manufacturing States. Nevertheless, South Australia's share of the fall in employment for the traditional manufacturing States (21.6 per cent) was still well above the State's share of the group's total manufacturing

employment in 1990 (12.3 per cent), indicating that the South Australian manufacturing sector did endure a relatively larger fall in employment during the 1990s.

However, the estimated fall in manufacturing employment is also very sensitive to the time period chosen for the analysis, and looking over a longer time period reveals that South Australia has not performed as badly relative to other States and Australia as it did during the 1990s. This is demonstrated by Figure 3.1 and data in Table 3.2 which shows that between 1986 and 2003 manufacturing employment fell by a relatively similar magnitude in South Australia (4.5 per cent) as in other States and Australia (2.7 per cent). South Australia was responsible for 15.0 per cent of the 30,800 jobs lost in the manufacturing sector at the national level over this period. This is significantly lower than the State's contribution to national manufacturing job losses between 1990 and 2000 (41.4 per cent).

Figure 3.1
Index of Manufacturing Employment
Australia and Selected States – Original Series
(Base: 1986 = 100)



Source: ABS, AusStats, Labour Force (Cat. No. 6291.0).

Strong rises in manufacturing employment in Queensland (up 39,700 persons) and Western Australia (21,700 persons) over the longer period again exaggerate the deterioration in South Australian manufacturing employment. Restricting the analysis to the four traditional manufacturing States reveals that employment in manufacturing in these States fell by 93,400 persons between 1986 and 2003, with South Australia responsible for only 4,600 of the jobs lost. This represents 4.9 per cent of manufacturing jobs lost by the group, which is significantly lower than South Australia's share of the group's total manufacturing employment (11.3 per cent in 1986). Thus, on this longer-term basis, the

decline of manufacturing employment in South Australian does not seem to have been disproportionately more severe.

Table 3.2
Manufacturing Employment
Australia & States – Selected Years, Annual Average (to November Quarter)

	NSW	VIC	QLD	SA	WA	TAS	AUST	4 Manufac-turing States*
Employment ('000 persons)								
1986	407.9	370.3	139.3	102.3	76.4	25.9	1,130.6	906.4
1990	402.8	377.6	157.3	113.8	88.5	30.6	1,180.7	924.7
2001	354.1	361.8	178.5	91.0	92.4	22.0	1,109.7	828.9
2003	348.7	344.6	179.0	97.7	98.1	22.0	1,099.9	813.0
Change from previous period: number ('000 persons)								
1986	-	-	-	-	-	-	-	-
1990	-5.1	7.3	18.1	11.5	12.1	4.7	50.0	18.4
2001	-48.7	-15.8	21.2	-22.8	3.8	-8.6	-71.0	-95.9
2003	-5.4	-17.2	0.5	6.7	5.7	0.0	-9.8	-15.9
Change from previous period: per cent								
1986	-	-	-	-	-	-	-	-
1990	-1.2	2.0	13.0	11.2	15.8	18.1	4.4	2.0
2001	-12.1	-4.2	13.4	-20.0	4.3	-28.2	-6.0	-10.4
2003	-1.5	-4.7	0.3	7.4	6.2	0.0	-0.9	-1.9
Change between 1986 and 2003								
Number	-59.2	-25.7	39.7	-4.6	21.7	-4.0	-30.8	-93.4
Per Cent	-14.5	-6.9	28.5	-4.5	28.3	-15.3	-2.7	-10.3

Note: * The four traditional manufacturing States of New South Wales, Victoria, South Australia and Tasmania.
Source: ABS, AusStats, Labour Force (Cat. No. 6291.0).

The use of a longer time period reveals a relatively better picture for the South Australian manufacturing sector because it captures several important trends in employment. The first important trend is that manufacturing employment began to fall a year earlier in the other major manufacturing States. Figure 3.1 shows that manufacturing employment fell sharply in New South Wales (by 4.0 per cent) and Victoria (3.8 per cent) in 1991, whereas it rose slightly in South Australia (1.5 per cent). The earlier fall for the eastern States reflects that they were further along their business cycles, and that the eventual downturns in these States – which were severe due to large commercial asset price bubbles – were transferred to South Australia with a delayed but significant impact.

The earlier fall in employment for the eastern States follows a period in which growth in manufacturing employment during the late 1980s was stronger for South Australia, with employment for the State peaking later (1990) relative to the other States and Australia (1989). This is consistent with the trend in total employment, which peaked later in South Australia, but is dissimilar in the sense that total employment for the State grew more slowly during the late 1980s. The relatively stronger rise in manufacturing employment was probably due to the inward oriented nature of the sector in South Australia, with local production

being reliant on demand from the eastern States. The boom-bust cycle in economic activity in the eastern States during the late 1980s and early 1990s was an important factor behind the rise and fall in South Australian manufacturing employment during this period.

The second significant trend not captured by the 1990-2000 time period is a significant rebound in South Australian manufacturing employment since 2000 which has not taken place in other traditional manufacturing States. South Australian manufacturing employment grew by 7.4 per cent between 2001 and 2003, whereas nationally employment fell by 0.9 per cent due to falls in Victoria and New South Wales. In fact, growth for South Australia was stronger than for any other State between 2001 and 2003. Whether or not this recovery proves to be transitory remains to be seen, but a positive aspect is that it seems to partly reflect structural factors. For instance, some manufacturing sectors and firms have made strategic investments to cultivate and target overseas markets, and/or invest in research and development (R&D) to improve product quality and productivity, and thus international competitiveness. For example, the wine making sector has invested heavily in R&D and been successful in growing overseas exports, while the motor vehicle industry – in particular Holden – has also grown overseas exports by targeting new markets such as the Middle East.

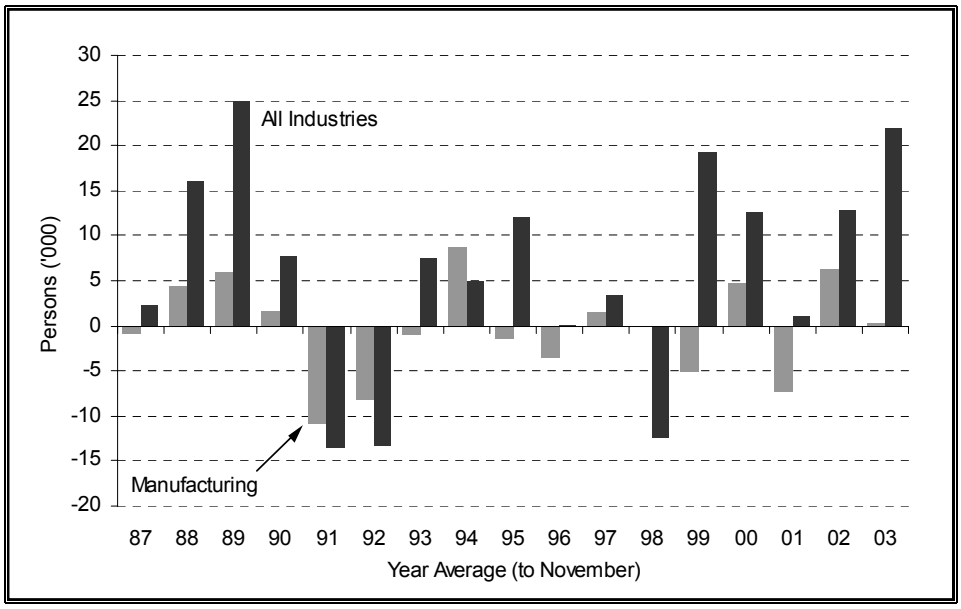
While the above analysis suggests the South Australian manufacturing sector has not necessarily deteriorated as badly as those in other traditional manufacturing States, one needs to be cautious about making too definitive a conclusion given that changes in the base year can have a significant impact on the estimated change in employment. This is highlighted by Figure 3.2, which shows that manufacturing employment in South Australia has fluctuated significantly from year to year such that moving a base year forward or backward a year has a significant impact on the estimated change in employment. For instance, if one calculates the change in manufacturing employment to 2000 using 1990 rather than 1991 data, a much larger fall in employment is derived using the earlier year (15,600 versus 4,800 persons).

Compounding the problem of changing base years is that some of the change in employment may be artificial, reflecting natural variability associated with the sample survey (i.e., Labour Force Survey) used to collect the data. However, one can be confident with the general pattern to emerge from the data of there being a significant downward trend in manufacturing employment in South Australia during the 1990s.

It is important to note that much of the absolute fall in South Australian manufacturing employment over the 1990s was concentrated in the recession years early in the decade. This is evident in Figure 3.2, which shows that manufacturing accounted for a majority of total employment losses in South Australia in 1991 and 1992. This illustrates the major negative impact that the recession had on the manufacturing sector.

Finally, while the performance of the South Australian manufacturing sector is not so bad compared to the other traditional manufacturing States, it remains that those States which were not as dependent on protected manufacturing industries for their development – i.e., Queensland and Western Australia – were successful in growing their manufacturing sectors. From this perspective the performance of the South Australian manufacturing sector has been disappointing.

Figure 3.2
Change in Employment from Previous Year
South Australia – Original Series



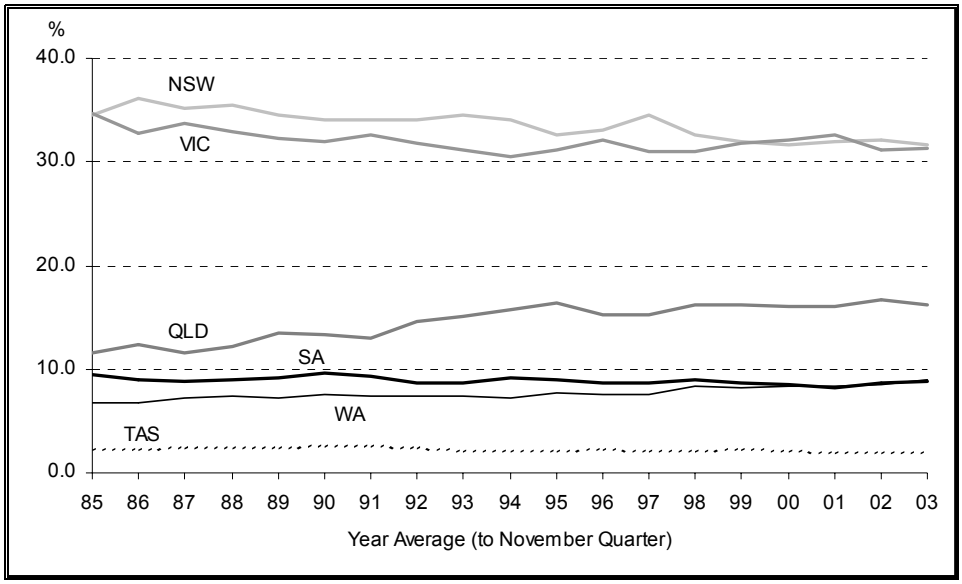
Source: ABS, AusStats, Labour Force (Cat. No. 6291.0)

3.2 Relative Size of the Manufacturing Industry

Despite the general fall in manufacturing employment, South Australia's share of total national manufacturing employment has fallen only slightly since 1986 (see Figure 3.3). The State's share of national manufacturing employment fell by 0.2 per cent from 9.1 per cent in 1986 to 8.9 per cent in 2003. Historical data indicates that the State's share of national manufacturing employment has not changed significantly since Federation – it was around 9 per cent in 1907, and fluctuated from 7 to 10 per cent during the course of the 20th century.[13]

Turning to other States, there were larger falls in the share of national manufacturing employment for New South Wales (down 4.4 per cent to 31.7 per cent) and Victoria (down 1.4 per cent to 31.3 per cent); however these were from high levels to begin with such that both States still accounted for a majority (63 per cent) of total national manufacturing employment in 2003. The increasing importance of manufacturing employment in Queensland and Western Australia has come at the expense of the decline in employment for traditional manufacturing States. In fact, Western Australia now has a similar share of national manufacturing employment to South Australia.

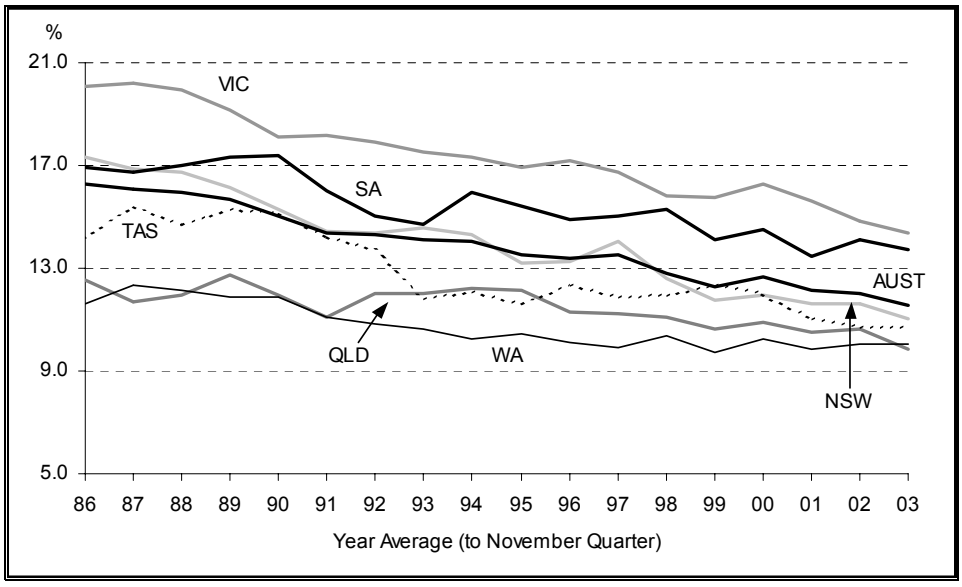
Figure 3.3
State's Share of National Manufacturing Employment
States – 1986 to 2003, Annual Average



Source: ABS, AusStats, Labour Force, Cat. No. 6291.0.

While Queensland and Western Australia have grown their share of national manufacturing employment, it is perhaps surprising to learn that manufacturing employment as a share of total employment fell steadily in both States between 1986 and 2003 (see Figure 3.4). This mirrors a steady decline in all other States. That even States which have managed to grow their manufacturing sectors have experienced a decline in this sector's share of total employment tends to confirm the view that the decline in the relative importance of manufacturing is an ongoing long-term structural phenomenon.

Figure 3.4
Manufacturing Share of Total State/National Employment
Australia & States – 1986 to 2003, Annual Average



Source: ABS, AusStats, Labour Force, Cat. No. 6291.0.

The relative decline of manufacturing reflects an ongoing shift in the base of the economy from manufacturing to the services sector, with economic growth being disproportionately concentrated in services. For instance, all of the increase in total employment for South Australia between 1986 and 2003 can be attributed to job formation in the services sector: employment in service industries rose by 114,000 persons between 1986 and 2003 while employment in all other sectors combined fell by almost 6,000 persons, producing a rise in total employment of 109,000 persons.[14]

The concentration of growth in the services sector is a common feature of most developed economies. The proportion of the civilian workforce in OECD countries working in activities related to services rose from about 55 per cent in 1980 to 64 per cent in 1997 with more jobs being created in services over this period than were created in total.[15] Stronger growth in the services sector appears to be largely explained by shifting consumer preferences associated with rising incomes. This issue is examined in more detail in Section 4.1.

Although the relative size of the manufacturing sector in South Australia has declined in terms of its share of employment (from 17 per cent in 1986 to 14 per cent in 2003), it continues to be an important employer, accounting for a higher share of total employment in the State than in Australia (12 per cent in 2003). Only Victoria has a relatively larger manufacturing sector.

The relatively larger size of the manufacturing industry in South Australia and Victoria does sound a warning. Given the trend towards economic growth being concentrated in the services sector, these two States may be exposed to a slower rate of economic growth should there remain significant areas of weakness within their manufacturing sectors. In particular, a negative economic event such as a recession may expose further areas of weakness and produce job losses in the manufacturing sector, as in the early 1990s. However, both economies, including their manufacturing sectors, are much more flexible and efficient than they were a decade ago such that they would be able to absorb a similar shock more easily.

3.3 Changing Structure of the Manufacturing Industry

This section examines changes in employment within the manufacturing sector to identify any structural changes that have occurred in the sector and shed light on those factors that drove the decline in manufacturing employment.

Several different sources of data can be used to identify changes in employment within the manufacturing sector: the Census of Population and Housing (i.e., the Census), the Labour Force Survey, and Manufacturing Census. We first use data from the Labour Force Survey to scope out sectoral changes in employment, and then supplement this

analysis with data from the Manufacturing Census to better understand structural changes within the sector. The Census of Population and Housing is not used because of concerns over the quality of data for earlier years.[16]

Table 3.3 presents data on employment levels at the subdivision level for the South Australian manufacturing industry for select years between 1986 and 2003. The years are chosen so as to shed light on the major shifts in total manufacturing employment during this period. These include a solid rise in the late 1980s when employment grew by 11,500 persons between 1986 and 1990; a major decline between 1990 and 2001 when employment fell by almost 23,000 persons; and a recovery in recent years with employment rising by about 7,000 persons between 2001 and 2003. We first examine the sub-sectoral changes in manufacturing employment during these intervals and then proceed to an analysis of the total change in employment between 1986 and 2003 to better understand the long-term changes within the sector.

Table 3.3
Manufacturing Employment by Subdivision:
Labour Force Survey
South Australia – 1986 to 2003, Annual Average

	Employment ('000)				Change: Number ('000)		
	1986	1990	2001	2003	86 to 90	90 to 01	01 to 03
Food, Beverage & Tobacco	15.1	16.1	15.6	17.7	1.0	-0.5	2.1
Textile, Clothing, Footwear & Leather	8.0	6.9	4.2	3.8	-1.1	-2.7	-0.4
Wood & Paper Product	6.7	6.7	6.9	5.9	0.0	0.2	-1.0
Printing, Publishing & Recorded Media	8.0	7.9	7.0	8.3	0.0	-0.9	1.3
Petroleum, Coal, Chem etc	7.6	8.1	8.3	6.6	0.5	0.2	-1.6
Non-Metallic Mineral Product	4.7	4.7	3.4	4.2	-0.1	-1.2	0.7
Metal Product	15.2	18.1	11.5	12.3	2.9	-6.6	0.9
Machinery & Equipment	30.9	36.8	28.4	33.2	5.9	-8.4	4.8
Other Manufacturing	6.3	8.6	5.7	5.7	2.3	-2.9	-0.1
Manufacturing	102.3	113.8	91.0	97.7	11.5	-22.8	6.7

Source: ABS, AusStats, Data Cubes, Labour Force, Cat. No. 6291.0.

1986 to 1990: Employment Growth

The robust rise in manufacturing employment in the late 1980s was driven by a large rise in the "machinery and equipment" manufacturing subdivision (up almost 6,000 persons), with strong rises also in "metal product" (2,900 persons) and "other manufacturing" (2,300 persons). Growth in these sectors would appear to largely reflect robust growth in domestic demand (interstate and in South Australia). The "machinery and equipment" and "other manufacturing" sectors both comprise activities that are sensitive to domestic economic conditions, such as "motor vehicles and parts" in the case of the former, and "furniture manufacturing" for the latter.

While employment in the "metal product" manufacturing sector also benefited from solid growth in domestic demand during the late 1980s, it may also have received a boost from exports. Metal product manufacturing exports rose by $204 million (76 per cent) between 1988 and 1990.

Reflecting that domestic demand was an important driver of employment in manufacturing, employment levels rose between 1986 and 1990 in all other subdivisions with the exception of the "textile, clothing, footwear and leather", and "non-metallic mineral product" subdivisions.

1990 to 2001: Sustained Decline

The recession had a significant negative impact on the manufacturing sector with Labour Force Survey data indicating that employment fell in most subdivisions in 1991 and 1992. Only the "food, beverage and tobacco" sector fared well, with employment in the sector rising by 4.6 per cent in 1991 and 4.1 per cent in 1992 (year average basis).

Recovery in employment levels for most manufacturing sub-sectors did not take place until 1993 or 1994. However, employment growth for most sectors was rather weak through the remainder of the 1990s. As data presented in Table 3.3 shows, the largest falls over this period occurred in the "machinery and equipment", "metal product", "other manufacturing" and "textile, clothing, footwear and leather" sectors. Only the "petroleum, coal, chemical and associated product" and "wood and paper product" sectors had higher – though only marginally – levels of employment in 2001 relative to in 1991.

The Manufacturing Census gives insight into changes in employment within manufacturing over the 1990s at a finer level of detail with a greater degree of confidence. Table 3.4 shows those manufacturing sectors for South Australia that experienced the largest rises and falls in employment between 1988-90 and 1999-00. Aggregate changes in employment in groups experiencing growth over the period were strongly outweighed by groups suffering falls in employment. The largest rise in employment occurred in "beverage and malt manufacturing", which includes wine making. There were also rises in other agricultural linked sectors including "other food" and "fruit and vegetable processing", which reflects the relatively greater importance of agriculture to the South Australian economy.

Strong rises in employment occurred in "other transport equipment" and "electronic equipment". Rises in these sectors may reflect activities associated with the Australian Submarine Corporation and aircraft manufacturing in the case of the former, and the growing importance of the electronics sector in the case of the latter. This suggests that manufacturing activity may be growing in areas that involve production of more elaborately transformed goods, and/or more highly skilled labour.

Table 3.4
Largest Increases and Falls in Manufacturing Employment by Group
South Australia – 1989-90 to 1999-00

Groups with largest increases	Persons	Groups with largest falls	Persons
Beverage & malt	653	Iron & steel	-2,928
Other wood product	577	Motor vehicle & part	-2,732
Other transport equipment	575	Clothing	-1,882
Electronic equipment	424	Meat & meat product	-1,540
Other food	367	Electrical equipment & appliance	-1,214
Other chemical product	350	Textile fibre, yarn & woven fabric	-1,049
Paper & paper product	288	Industrial machinery & equipment	-1,018
Glass & glass product	146	Cement, lime, plaster & concrete product	-926
Fruit & vegetable processing	137	Bakery product	-912
Non-ferrous basic metal product	99	Sheet metal product	-792

Source: ABS, AusStats, Data Cubes, Manufacturing and energy – general, Cat. No. 8221.0.

Of the manufacturing groups experiencing large falls in employment, several were from the "machinery and equipment" subdivision – i.e., "motor vehicle and part", "electrical equipment and appliance", and "industrial machinery and equipment" – indicating the large fall of employment in this sector was broadly based. The decline of the textiles, clothing and footwear sector is also evident in Table 3.4 with significant job losses for "clothing" and "textile fibre, yarn and woven fabric". The greatest decline in employment occurred in "iron and steel" manufacturing, which may partly be due to a reduction in BHP's steelwork activities in Whyalla.

Concentrated Growth: 2001 to 2003

The recovery in manufacturing employment between 2001 and 2003 was the result of strong growth in several key sectors: "machinery and equipment" (up 5,000 persons) and "food, beverage and tobacco" (2,000 persons), together accounting for the increase in employment of about 7,000 persons between 2001 and 2003. The rise for the "machinery and equipment" subdivision was largely accounted for by increased employment in the "motor vehicle and part manufacturing" group, while there was also a significant but smaller rise in the "industrial machinery and equipment" group. Employment growth in the "food, beverage and tobacco" sector was chiefly accounted for by employment formation in the "beverage and malt manufacturing" group.

The sectoral pattern of growth in manufacturing employment between 2001 and 2003 indicates that the recovery over this period was in significant part due to an improved export performance. This is because the rise in employment over this period was almost solely accounted for by growth in the "motor vehicle and part manufacturing" and "beverage and malt manufacturing" groups, both of which have experienced a massive increase in exports over recent years. LFS data indicates that employment in these two sectors rose by 6,700 persons between 2001 and 2003, which is equivalent to the total rise in manufacturing employment between these years (6,700 persons). (Manufacturing exports are

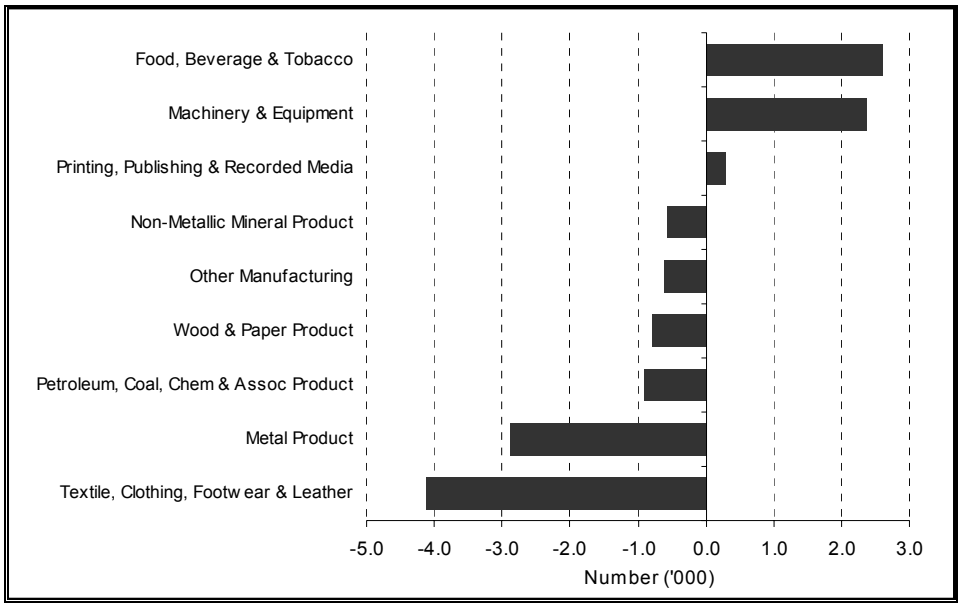
examined in closer detail in Section 4.3.1.) Employment growth in "motor vehicle and part" manufacturing would also reflect stronger domestic sales over recent years.

Looking at employment growth in other subdivisions within the manufacturing sector between 2001 and 2003, there were increases in the "printing, publishing and recorded media" (up 1,300 persons), "metal product" (900 persons) and "non-metallic mineral product" (700 persons) manufacturing sectors. These were offset by falls in the remaining manufacturing subdivisions.

1986 to 2003: Longer Term Structural Change in the Manufacturing Sector

Despite growth in manufacturing employment during the late 1980s and in recent years, employment in most manufacturing subdivisions fell between 1986 and 2003. This is illustrated by Figure 3.5, which shows the change in the number of persons employed by manufacturing subdivision between 1986 and 2003. Only the "food, beverage and tobacco" manufacturing, "machinery and equipment" manufacturing and "printing, publishing and recorded media" subdivisions experienced increases in employment over this period. Growth for the first two subdivisions largely reflects growth experienced over recent years in response to a significant increase in overseas exports as mentioned above, and to a lesser degree, stronger domestic sales.

Figure 3.5
Change in Persons Employed in Manufacturing Subdivisions
South Australia – 1986 to 2003, Year Average



Source: ABS, AusStats, Data Cubes, Labour Force, Cat. No. 6291.0.

The "textile, clothing, footwear and leather manufacturing" (TCF) subdivision experienced the largest aggregate fall in employment of any sector between 1986 and 2003, with employment falling by a little over 4,000 persons over this period. In fact, as data in Table 3.3 reveals, TCF was the only subdivision to experience a fall in employment in all three periods examined between 1986 and 2003. The decline of this sector is an ongoing phenomenon reflecting structural factors, especially substantial reductions in trade barriers for this once heavily protected industry, which has exposed it to competition from international producers.

There was also a large fall in employment in the "metal product manufacturing" subdivision between 1986 and 2003 (down almost 3,000 persons), while there were smaller falls in the "petroleum, coal, chemical and associated product", "wood and paper product", "other manufacturing" and "non-metallic mineral product" manufacturing subdivisions.

With employment growth being concentrated in "beverage and malt" and "motor vehicle and part" manufacturing, the South Australian manufacturing sector has become more narrowly based. These two groups' share of total manufacturing employment has increased from 17 per cent in 1986 to 25 per cent in 2003. This indicates that changes affecting these sectors will have a relatively greater impact on the manufacturing sector in South Australia (e.g., job losses at Mitsubishi). However, any negative impacts are likely to be more significant for workers seeking manufacturing jobs rather than the broader State economy itself. This is because the State economy has become more diversified and less dependent on manufacturing with economic and employment growth being concentrated in various service industries (see Section 4.1 and the Labour Market Issues Paper). In other words, the economy is now more able to absorb negative shocks within the manufacturing sector than it was in the 1980s and early 1990s. The bigger challenge for policy makers is how to effectively leverage manufacturing workers who become unemployed to other sectors of the economy given the limited job opportunities available within manufacturing.

4. Other Aspects of the South Australian Manufacturing Industry

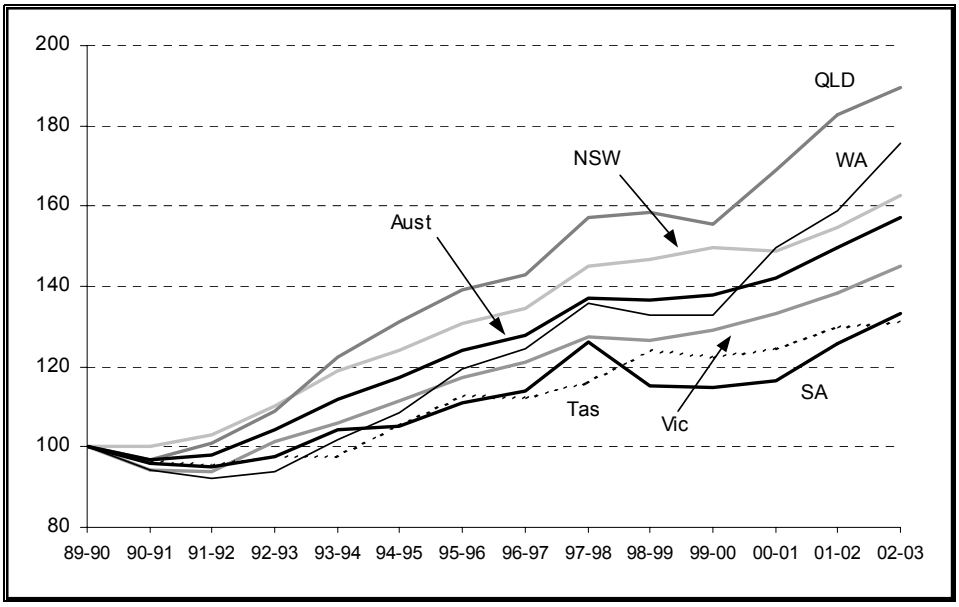
This section examines particular aspects of the performance of the South Australian manufacturing sector in order to place the absolute and relative decline in manufacturing employment within a broader context and explore potential factors behind the shifts in employment.

4.1 Value Added and the Changing Structure of the Economy

ABS publishes estimates of total factor income (TFI) by industry as part of its National Accounts series. TFI represents the value added created by the use of labour and capital in the production process. It falls short of measuring total value added – i.e., the value of aggregate production – since it excludes taxes less subsidies on production and imports, data which is not available at the State level on an industry basis. Nevertheless, since this component forms only a small part of total value added (less than 5 per cent at the national level), estimates of TFI should provide a good indication of the trend in total value added for the manufacturing industry and its contribution to the State economy.

Figure 4.1 shows an index of TFI in nominal terms for the manufacturing sector for selected States and Australia from 1989-90 to 2002-03. The recession had a detrimental impact on manufacturing with TFI falling in most States. Over the longer term, manufacturing value added has grown quite strongly in Queensland, Western Australia and New South Wales. However, value added has grown more slowly in South Australia, Victoria and Tasmania.

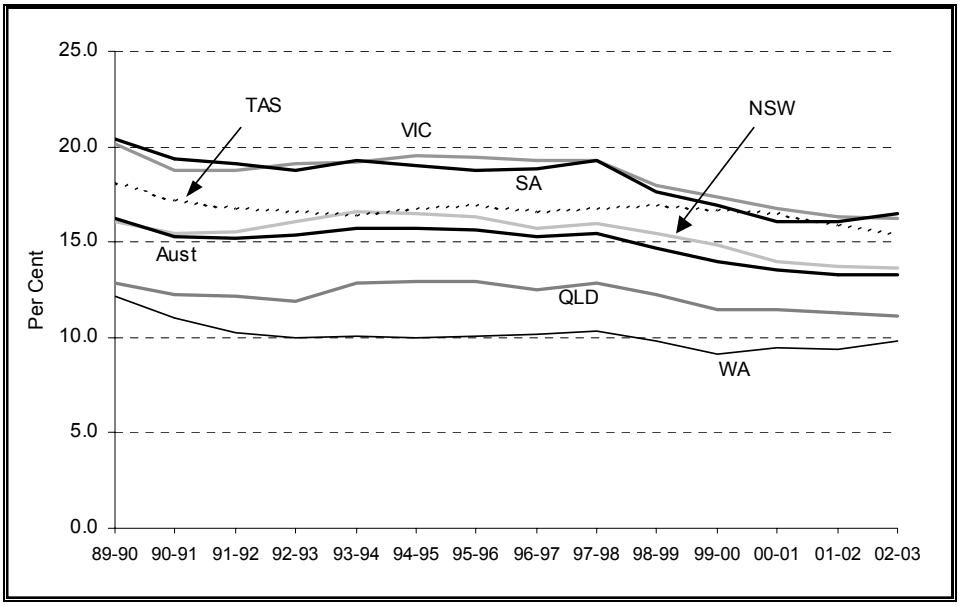
Figure 4.1
Index of Manufacturing Industry Total Factor Income
Selected States and Australia – Current Prices



Source: ABS, AusStats, National Accounts.

The relative importance of manufacturing to the aggregate economy has fallen in all States, including Queensland and Western Australia despite their experience of substantial growth in manufacturing on the back of strong population growth. This is illustrated by Figure 4.2, which shows that manufacturing's share of TFI for the whole economy fell in all States and Australia between 1989-90 and 2002-03. The manufacturing sector's share of TFI for the South Australian economy fell from 20 per cent in 1989-90 to 17 per cent in 2002-03, while the share at the national level fell from 16 per cent to 13 per cent over this period.

Figure 4.2
Manufacturing Factor Income as Proportion of Total State/National Factor Income
Selected States and Australia – Current Prices



Source: ABS, AusStats, National Accounts.

The decline in the relative importance of manufacturing, which is also evident in the decline in manufacturing's share of total employment, reflects that growth has been concentrated in other sectors of the economy, in particular services. As Figure 4.3 shows, the majority of growth in TFI for South Australia between 1989-90 and 2002-03 was accounted for by the services sector rather than the goods producing sectors of the economy. The services sector accounted for 47 percentage points of the 64 percentage point rise in TFI for the South Australian economy between 1989-90 and 2002-03, whereas manufacturing accounted for 6.7 percentage points.

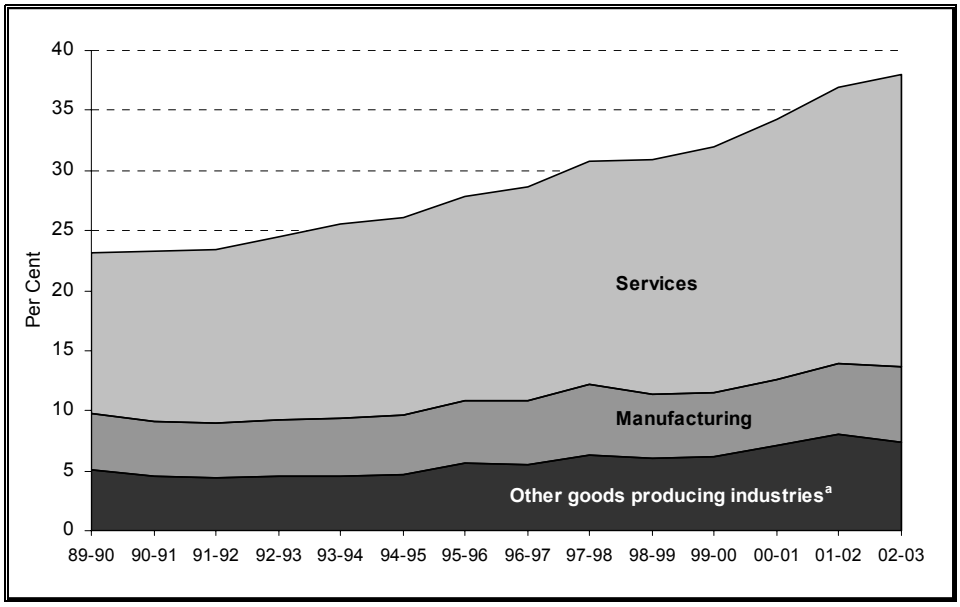
The concentration of growth in services appears to be largely explained by shifting consumer preferences associated with rising incomes. There is evidence that with rising incomes, consumers devote a larger proportion of their income to the consumption of services. For instance, the proportion of national household final consumption expenditure devoted to consumption of services rose from 62 per cent in 1989-90 to 65 per cent in 2002-03.[17] Looking over a longer time period, the

Productivity Commission estimates that 50 per cent of household income was devoted to consumption of services in 1959-60 compared to 65 per cent by 2002-03.

In its report on *Trends in Australian Manufacturing*, the Productivity Commission concluded that rising incomes and changing consumer preferences were the most important determinants of the *relative* decline of manufacturing over the long term. The Commission also examined other potential contributing factors, including:

- statistical transfer resulting from outsourcing of activities; and
- shifting trade patterns.

Figure 4.3
Total Factor Income by Major Sector
South Australia – Current Prices



Note: [a] Composed of agriculture, forestry and fishing, mining, electricity, gas and water supply, and construction.
Source: ABS, AusStats, National Accounts.

Statistical transfer refers to part of the measured decline in the manufacturing sector being artificial rather than real due to manufacturing firms outsourcing service activities to service sector firms. While the Commission found that the role of outsourcing was potentially significant in Australia, the impact was still estimated to be relatively small.

Another potential factor contributing to the relative decline of manufacturing is an increase in imports of manufactures from low wage developing countries potentially displacing local manufacturing of these goods, reducing employment of unskilled labour. While the impact from such imports is almost certainly to reduce employment in competing sectors, the extent of the impact is uncertain, although the Commission found that the international evidence was "largely not in favour" of imports from developing countries being a significant factor explaining

the fall in demand for unskilled labour in developed countries.[18] The Commission instead pointed to skill based technological change being more significant, with evidence that technological change has been the main driver of demand for skilled labour at the expense of unskilled labour.[19]

The relative decline in manufacturing as an employer also reflects sustained improvements in productivity that have contributed to falling employment in the sector. ABS data indicates that labour productivity in the national manufacturing sector grew at an annual average rate of 3.1 per cent between 1985-86 and 2002-03.[20]

While the factors listed above explain the relative decline of the manufacturing sector over the long run in terms of its share of total employment and value added, one thing they fail to explain is why were employment losses concentrated in the recession years of the early 1990s (see Figure 3.2)? One possible explanation is that these factors worked over time to make firms more vulnerable, with the recession acting as the fatal blow which led to the closure and scaling down of firms. This issues was also noted by the Productivity Commission:

> *"... one conjecture is that the recessions were triggers for releasing the pent up pressures of these longer term factors on manufacturing. Employment 'stickiness' stemming from the costs of scaling down operations and employment, and in the extreme, firm closure, suggests that many manufacturing firms may have held off adjustment, making them vulnerable to demand shocks when they occurred."*[21]

4.2 Investment

The trend in new capital expenditure is an important indicator of underlying confidence and activity levels. Capital investment is also important in terms of enhancing production capability and improving competitiveness.

Table 4.1 presents estimates of new private capital expenditure in constant price terms for the manufacturing industry in selected States and Australia from 1989-90 to 2002-03. The 1990 recession does not appear to have had a significant immediate impact on capital expenditure in the South Australia manufacturing industry with spending only falling sharply a couple years after the recession. The impact of the recession seems to have been much more pronounced in Victoria and Queensland which both suffered large falls in capital expenditure.

The general trend in capital investment between 1989-90 and 2002-03 in most States was rising capital expenditures although the year-to-year movements were quite erratic. Only in NSW did capital expenditure not rise significantly. In contrast, capital investment in South Australia rose quite strongly, with spending in 2002-03 being 66 per cent higher than in 1989-90. This compares with a rise in investment at the national level of 39 per cent over this period.

Table 4.1
Manufacturing Sector Private New Capital Expenditure
Selected States and Australia – Select Years

	NSW	VIC	QLD	SA	WA	Australia
$ million – constant prices[a]						
89-90	2,960	2,801	1,077	743	548	8,492
91-92	2,721	2,007	645	773	645	7,118
93-94	2,745	2,656	962	605	485	7,730
95-96	3,125	3,338	1,350	711	985	9,850
97-98	3,623	3,376	1,751	814	1,041	10,915
99-00	2,827	3,627	1,583	923	1,215	10,408
01-02	2,476	3,280	1,518	927	760	9,181
02-03	3,086	3,578	2,582	1,230	1,022	11,769
Share of total state/national private new capital expenditure (per cent)[b]						
89-90	25.7	34.3	25.4	39.9	12.1	27.0
91-92	31.3	37.9	17.5	48.9	15.7	29.1
93-94	30.8	38.9	23.5	41.8	9.0	27.8
95-96	26.3	34.4	24.5	40.3	13.2	25.8
97-98	25.0	30.8	23.9	25.7	12.0	23.8
99-00	17.8	30.7	20.2	34.8	21.5	22.8
01-02	18.3	28.9	20.4	29.8	12.7	20.7
02-03	20.5	26.7	27.3	29.4	13.7	22.1

Note: [a] Calculated by SACES using on an implicit price deflator derived from Australian data on current price and chain volume measure estimates of capital expenditure by industry.
[b] Based on current price estimates of capital expenditure.
Source: ABS, AusStats, Finance, (Cat. No. 5625.0).

The trend for the manufacturing industry in South Australia and Australia of increasing capital expenditure and falling employment indicates a move towards increasing capital intensity in the manufacturing sector. National Accounts data reveals the capital-labour ratio for the Australian manufacturing sector rose by 39 per cent between 1989-90 and 2002-03 (data is not available at the State level).[22] Such growth in capital intensity is probably a significant factor explaining the strong productivity growth observed for the national manufacturing sector in the 1990s, which has contributed to job losses in the sector.

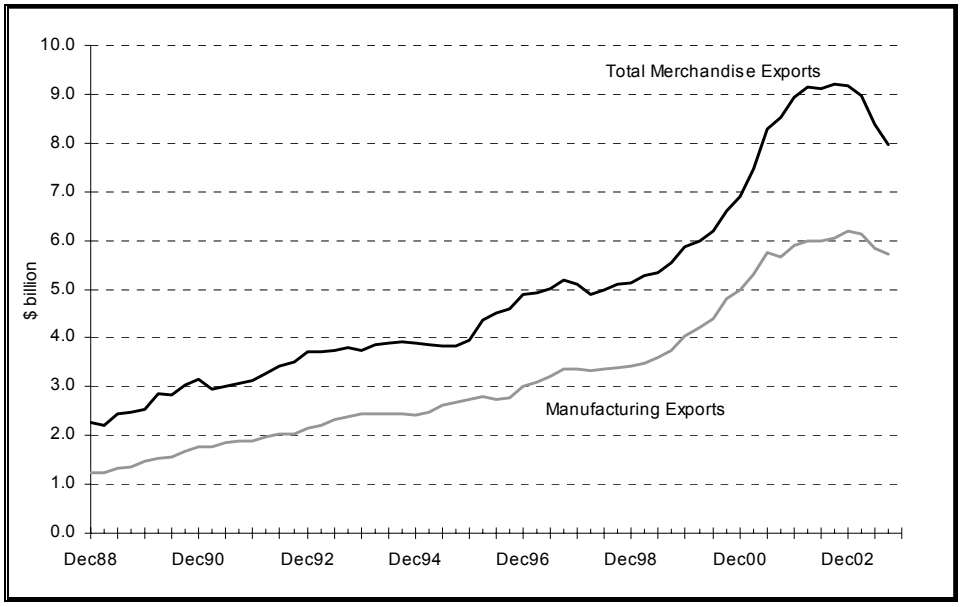
Although aggregate capital expenditure in the manufacturing sector has risen, in relative terms the manufacturing sector has continued to decline. For instance, the manufacturing sector's share of total private capital expenditure in South Australia has fallen from about 40 per cent in 1989-90 to 29 per cent in 2002-03. This trend is also evident at the national level and in other States (see Table 4.1). As stated previously, this trend reflects that economic growth has been stronger in other sectors of the economy, particularly in services.

4.3 Trade

4.3.1 Exports of Manufactured Goods

Exports of manufactured goods rose steadily throughout the 1990s. This is illustrated by Figure 4.4, which shows South Australian overseas exports of manufactured goods between 1988 and 2003. In fact, over this period, South Australian exports of manufactured goods grew more strongly than national manufactured exports. South Australian exports of manufactures grew by an average rate of 12 per cent per annum between 1988 and 2002, while national exports of manufactured goods grew by an average of 7.8 per cent per annum.

Figure 4.4
Total Merchandise Exports and Exports of Manufactured Goods
South Australia – Moving Annual Totals



Source: ABS, Unpublished Data

South Australian exports of manufactures grew steadily during and after the 1990 recession, showing little signs of any downturn. This indicates that exports were not a factor in the decline in manufacturing employment during this period. Other factors, particularly the recession-driven fall in domestic demand were more significant. However, the impact of the recession was largely cyclical. The longer-term decline reflects other structural factors, such as a shift in demand towards services, greater overseas import penetration due to a decline in trade barriers, and employment losses associated with productivity growth driven by technological change etc.

The fall in exports of manufactures in 2003 reflected a combination of weak international demand due to soft economic conditions in major overseas markets, and an appreciation of the Australian dollar which made Australian produced goods relatively more expensive in foreign currency terms.

An important point to pick up from Figure 4.4 is how significant manufacturing is to South Australian exports, and how this importance has increased over time. The share of manufactured goods in South Australia's total overseas goods exports increased from 55 per cent in 1988 to 68 per cent in 2002. In comparison, manufactured export goods share of total goods exports for Australia rose from 57 per cent in 1988 to a peak of 66 per cent in 1995, and then fell steadily to 58 per cent in 1998. The stronger rise in the share of total manufactured exports for South Australia reflects stronger growth in exports of manufactured goods – exports of all other goods in total grew as strongly for South Australia as for Australia as a whole over the period examined.

Interestingly, the rise in total exports of manufactures between 1988 and 2002 reflected greater exports across all manufacturing subdivisions (refer Table 4.2).[23] The largest rises over this period occurred for the "machinery and equipment" ($2.0 billion) and "food, beverage and tobacco" ($1.8 billion) sectors, while there were also significant rises in the "metal product" ($0.7 billion) and "petroleum, coal, chemical and associated product" ($0.3 billion) sectors.

Table 4.2
South Australian Exports of Manufactured Goods by Subdivision

	1988	1992	1996	2000	2002	Change: 88 to 03	
						$m	AAGR*
Food, Beverage & Tobacco	519	758	969	1,729	2,332	1,812	11.3
Textile, Clothing, Footwear & Leather	61	156	148	150	125	64	5.2
Wood & Paper Product	4	2	26	39	51	47	18.9
Printing, Publishing & Recorded Media	3	11	14	29	25	22	17.0
Petroleum, Coal, Chem & Assoc Product	156	191	273	462	482	326	8.4
Non-Metallic Mineral Product	5	11	23	22	20	16	11.4
Metal Product	267	526	611	959	952	685	9.5
Machinery & Equipment	219	502	927	1,591	2,183	1,964	17.8
Other Manufacturing	18	10	18	16	22	4	1.5
Total Manufacturing	1,253	2,167	3,006	4,997	6,193	4,940	12.1

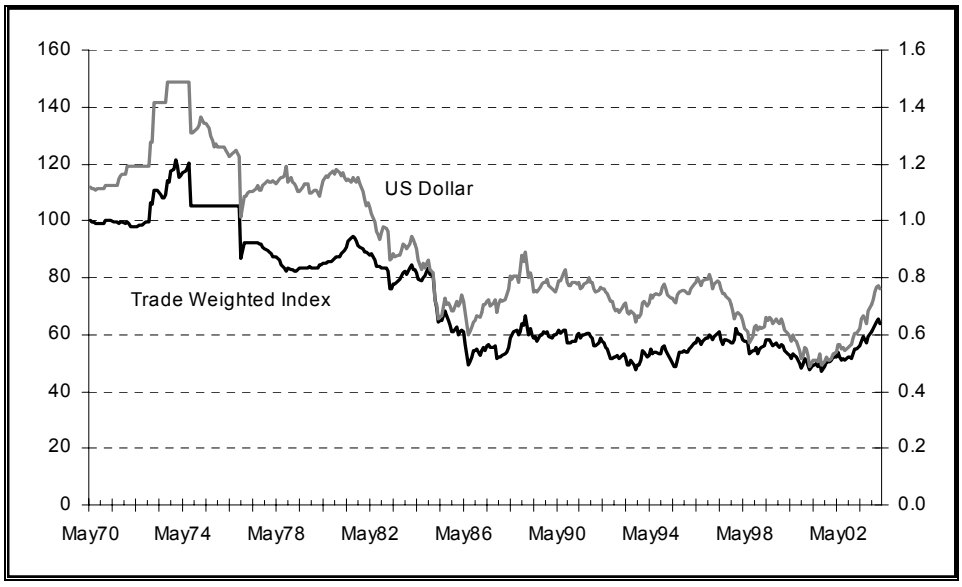
Note: * Annual Average Growth Rate (Per Cent).
Source: ABS, Unpublished data.

There was also relatively strong growth in exports between 1988 and 2002 for the "wood and paper product" (19 per cent per annum), "printing, publishing and recorded media" (17 per cent), and "non-metallic mineral product" (11 per cent) sectors. However, growth in these sectors took place from very low levels to begin with such that exports for these sectors formed only a minor share of total South Australian exports of manufactured goods in 2002.

That overseas exports grew across all manufacturing subdivisions despite falls in employment in most subdivisions suggests that some common factors drove the rise in exports. One factor is a depreciation of the Australian dollar over the last few decades which has made Australian produced goods cheaper in foreign currency terms and thus more

internationally competitive. As Figure 4.5 shows, the Australian dollar fell to a low level against the trade weighted index and US dollar in the 1990s. The floating of the Australia dollar in December 1983 contributed to the fall in the exchange rate as the Australian dollar was exposed to market forces and no longer kept artificially high.

Figure 4.5
Australian Dollar in Trade Weighted Index and US Dollar Terms

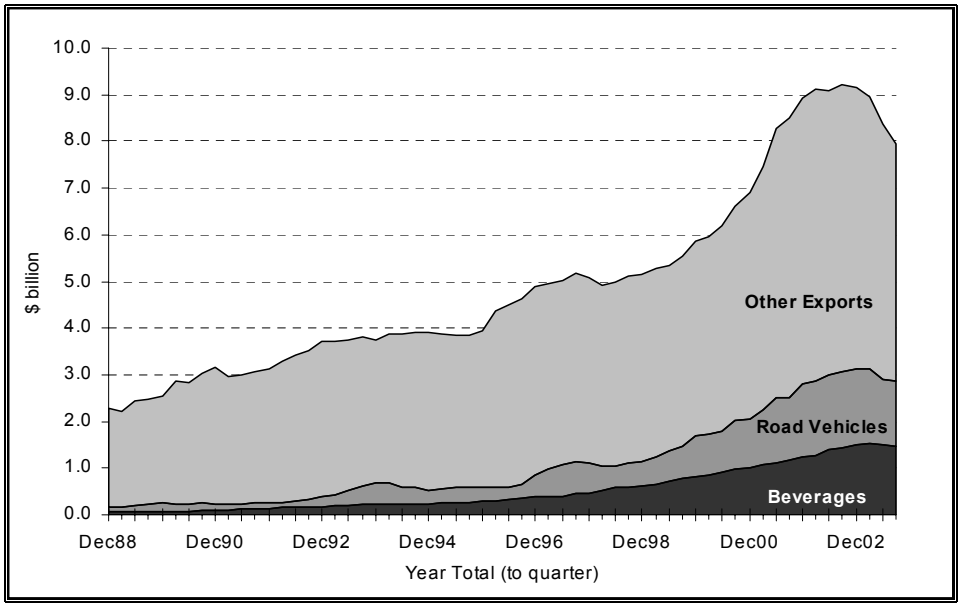


Source: Reserve Bank of Australia, Bulletin Statistical Tables.

However, exchange rate effects alone are not sufficient to explain the impressive performance of South Australian exports of manufactures. The pattern of growth in exports indicates that structural factors have been particularly important. Overseas exports have been driven by growth in sectors which have made concerted efforts to grow their export base. For example, the significant rise in exports for the "machinery and equipment" and "food, beverage and tobacco" sectors have been driven by increases in exports of road vehicles and beverages respectively (see Figure 4.6). The latter are composed mainly of wine. Both of these sectors have made significant investments and implemented strategies to improve their export performance.

The boom in wine exports has been market driven and reflects strategic efforts to grow exports by investing in research and development to improve productivity and the quality of wine, and by developing overseas markets by building company, regional and varietal brand images.[24] Promotional methods include generic branding activities run by the Australian Wine Export Council, which conducts overseas marketing activities in cooperation with wine exporters to promote the awareness and image of Australian wine, while individual companies have also undertaken their own overseas marketing efforts.

Figure 4.6
Road Vehicle, Beverage and Other Exports
South Australia – December Quarter 1988 to September Quarter 2003



Source: ABS, Unpublished data.

The growth in motor vehicle exports reflects efforts, particularly by Holden, to develop new overseas markets such as the Middle East, where consumer preferences align more closely with the type of vehicles produced in Australia (i.e., large and relatively powerful). This has been accompanied by investment in local manufacturing plants to improve productive capability and efficiency. So far these efforts have proved successful, with Holden's exports of motor vehicles rising from only 2,600 units in 1997 to 36,069 units in 2003.

4.3.2 Export Propensity and Import Penetration

Efforts to improve export performance have not only been concentrated in the motor vehicles and beverages sectors. As Table 4.3 shows, the proportion of goods produced in South Australia that are exported (i.e., export propensity) increased between 1992-93 and 1999-00 in a number of subdivisions in addition to those containing wine and motor vehicle exports (i.e., food, beverages and tobacco and machinery and equipment respectively). Export propensity also rose in textile, clothing, footwear and leather, petroleum, coal, chemical and associated product, and printing publishing and recorded media manufacturing. Export propensity did not increase in metal product manufacturing, or in wood and paper product and other manufacturing, the last two of which are the most domestically oriented.

Table 4.3
Exports as a Proportion of Sales and Transfers Out of Goods Produced
South Australia – Selected Years

	92-93	94-95	95-96	96-97	97-98	98-99	99-00
Food, Beverage & Tobacco	17.0	14.4	18.1	19.8	20.4	20.2	20.8
Textile, Clothing, Footwear & Leather	33.5	34.6	37.8	33.2	40.8	38.5	46.4
Wood & Paper Product	0.5	1.7	1.2	0.9	0.7	0.9	2.5
Printing, Publishing & Recorded Media	2.4	1.1	4.1	5.2	4.5	5.4	4.1
Petroleum, Coal, Chem & Assoc Product	3.7	5.9	7.2	9.5	8.4	7.9	10.0
Non-Metallic Mineral Product	2.3	3.2	4.7	2.8	4.6	2.9	3.5
Metal Product	31.1	19.3	32.4	28.4	26.8	27.3	24.9
Machinery & Equipment	6.9	10.0	10.3	11.2	12.0	14.9	19.2
Other Manufacturing	0.5	3.6	2.3	1.8	1.2	1.8	2.2
Total Manufacturing	13.2	12.0	15.4	15.1	15.4	16.2	18.0

Source: ABS, Manufacturing Industry, South Australia, Cat No. 8221.4, Various Issues.

The rise in export propensity among manufacturing sub-sectors during the 1990s is also evident at the national level (see Table 4.4 – note that these estimates are not directly comparable with those presented for South Australia in Table 4.3). Exports as a proportion of total national manufacturing production rose from 16 per cent in 1989-90 to 24 per cent in 1999-00. This rise has occurred despite an increase in import penetration. Imports' share of national domestic sales rose from 25 per cent in 1989-90 to 36 per cent in 1999-00. The rise in import penetration occurred across all subdivisions to varying degrees.

The trend towards rising export propensity indicates that some competitive firms have grown by increasing sales to overseas markets. Greater exposure to international competition has forced some local firms in the tradeables sector to improve competitiveness in order to compete with overseas producers.

However, the adjustment to greater exposure to international competition has not been painless. Some uncompetitive manufacturing firms have closed down while particular sectors have struggled. The rise in import penetration reflects that some firms and sectors of the economy are not internationally competitive. For instance, the sustained decline in employment within the TCF sector reflects the impact of competition from lower cost imports. Imports as a proportion of domestic sales for the TCF sector rose from 30 per cent in 1989-90 to 49 per cent in 1999-00. However, it is not really possible to draw firm conclusions on the international competitiveness of the broad sectors listed in Table 4.4 since they are composed of a broad range of activities which all have a different set of circumstances in terms of competitiveness and exposure to imports. Even in the TCF there are niche areas where locals firms are internationally competitive and have been successful.

Table 4.4
Import Penetration and Export Propensity[a]
Australia – Select Years

	Import Intensity			Export Propensity		
	1989-90	1994-95	1999-00	1989-90	1994-95	1999-00
Food, Beverage & Tobacco	7.4	8.9	10.4	22.1	25.6	25.8
Textile, Clothing, Footwear & Leather	29.7	41.1	49.3	13.5	26.2	26.6
Wood & Paper Product	19.5	20.7	22.4	6.1	8.4	10.1
Printing, Publishing & Recorded Media	9.2	10.9	10.4	1.8	2.3	2.4
Petroleum, Coal, Chem & Assoc Product	25.0	29.7	35.9	9.1	13.8	18.2
Non-Metallic Mineral Product	10.3	10.8	12.0	1.5	3.3	2.8
Metal Product	12.3	19.1	25.8	31.8	40.3	44.8
Machinery & Equipment	45.0	54.1	61.6	9.1	18.6	24.5
Other Manufacturing	21.6	24.7	32.5	9.9	10.3	9.8
Total Manufacturing	24.6	30.5	35.9	15.5	20.9	23.5

Note: [a] Please note that estimates of export intensity presented for Australia in this table are not directly comparable with South Australian estimates in Table 4.3 due to differences in the methodology used to calculate export propensity.
Source: Productivity Commission (2003), p 123.

5. Conclusion

The large fall in manufacturing employment evident in *The SA Labour Market Through the 1990s* Issues Paper, which indicates that South Australia accounted for 41.4 per cent of the 37,700 manufacturing jobs lost at the national level between 1990 and 2000, exaggerates the *relative* decline of employment in manufacturing in South Australia. This is because the time period chosen for analysis did not capture significant changes in manufacturing employment on the fringes of the period, namely sharp falls in employment in other major manufacturing States (i.e., New South Wales and Victoria) just prior to 1990, and a resumption of growth in employment for South Australia since 2000. The decline for other manufacturing States prior to 1990 reflects that they were further along their economic cycles, with deteriorating economic conditions in these States spreading to the fragile South Australian economy. The rebound in employment for South Australia since 2000 is in large part explained by substantial growth in manufacturing exports, particularly of motor vehicles and parts and wine, which has been driven by structural improvements such as investment in research and development, and targeting and development of overseas markets.

The *relative* decline in manufacturing employment for South Australia is also exaggerated when Australia is used as a comparative point since strong growth in manufacturing employment in Western Australian and Queensland conceal large falls in the traditional manufacturing States – i.e., NSW, Victoria and Tasmania. Compared to these States, South Australia has not performed badly, accounting for only 4.9 per cent of the 93,000 manufacturing jobs lost in the four traditional manufacturing States between 1986 and 2003.

Nevertheless, employment in South Australia's manufacturing sector did fall sharply in the 1990s. The decline was brought on by the recession which was accentuated by the State Bank collapse. However, it also reflects longer term pressures such as labour-saving technological change, reductions in subsidies and protection coupled with greater competition from imports, and shifts in consumer preferences, particularly towards services. It is likely that these pressures have been steadily building up over time with the recession acting as a trigger that led to the downsizing and collapse of uncompetitive firms.

Perhaps more importantly, the relative decline of manufacturing reflects an ongoing long-term trend whereby economic growth has been increasingly concentrated in the services sector. This relative decline is evident in almost all developed economies and at the domestic level even in those States which have been successful growing the aggregate size of their manufacturing sector, i.e., Western Australia and Queensland. The decline ultimately stems from those longer-term pressures mentioned above with the shift in consumer preferences towards services appearing to be the most dominant factor.

The long-term relative decline of manufacturing as an employer points to several important policy implications. Firstly, it suggests that policies designed to artificially support the manufacturing sector will ultimately fail, serving only to prolong the adjustment process, and thus delay the eventual benefits derived from an economy geared more heavily towards areas of natural comparative advantage. Secondly, there is the significant challenge of leveraging workers from the manufacturing sector who become unemployed to other sectors of the economy given the lack of job opportunities in manufacturing.

Finally, while the decline in manufacturing employment has had negative consequences, particularly for those persons who have become unemployed, the decline reflects a positive underlying shift, namely the reorientation of the State economy away from fragile inward-looking activities with little potential for growth, towards more outward-looking and competitive activities. Importantly, this shift has also occurred within manufacturing, with uncompetitive activities and firms receding, while competitive activities and firms, such as those in motor vehicle and parts manufacturing, electronics, food and beverage processing, have grown strongly, making positive contributions to employment, exports and investment. Importantly, growth in these sectors has been driven by structural factors, such as an emphasis on developing overseas markets and growing exports, investing in research and development to improve productivity and product quality, and improving competitiveness to compete on an international basis. It follows from this that policies that seek to facilitate and promote such factors are the key to growing manufacturing activities and other sectors of the economy.

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End Notes

1 Economic Issues No. 5, '*The South Australian Labour Market Through the 1990s*', SA Centre for Economic Studies.

2 For instance, South Australia had an annual average growth rate in Gross State Product between 1990-91 and 1999-00 of 2.0 per cent, which compares with 3.4 per cent for Australian Gross Domestic Product – the corresponding national aggregate.

3 SACES (2003), p. 16.

4 McLean (1989).

5 Productivity Commission (1999, p. 135).

6 McLean (1989) provides a brief overview of the role of the Butler and Playford administrations in developing local manufacturing.

7 A list of structural problems is presented in Productivity Commission (1999, p. XVI).

8 Parham, D. (2002).

9 Productivity Commission, (1999b, p. 50-53).

10 Industry Commission (1998, p. 40-46).

11 Productivity Commission (2003, p. 148).

12 For more information see Rogers, C. (1993).

13 McLean, I. (1989).

14 The Services sector here is defined as being composed of the following Australian and New Zealand Standard Industrial Classification industries: wholesale and retail trade, accommodation, cafes and restaurants, transport and storage, communication services, finance and insurance, property and business services, government administration and defence, education, health and community services, cultural and recreational services, personal and other services.

15 OECD, (2000), p19.

16 Data from the Census of Population and Housing paints a very different picture for the manufacturing sector compared to data from the Labour Force Survey and Manufacturing Census. The Census indicates that total employment in the manufacturing sector fell between 1986 and 1991, but then rose in each of the following Census years. However, it appears that much of this rise may be accounted for by improved recording of persons' industry of employment. Because the Census is a self-enumeration survey, some people do not give adequate information to enable them to be classified to an industry sector. In earlier Census years the proportion of persons who could not be allocated to a industry sector has been quite high (9 per cent of total employed persons in 1991). However, improved questionnaire design and data processing has significantly reduced the number of people who are not classified to an industry sector, suggesting that most if not all of the rise in manufacturing employment could be due to improved recording of a person's industry of employment.

17 ABS, AusStats, Nationals Accounts (Cat. No. 5204). Household final consumption expenditure reported is in real terms. Goods have been defined in line with the definition used by the Productivity Commission (2003): food, alcoholic beverages and tobacco, clothing and footwear, furnishings and household equipment, purchase of vehicles, goods for recreation and culture, books, papers, stationery and artists' goods, and personal effects.

18 Productivity Commission, (2003, p. 36).

19 Productivity Commission, (2003, p. 36).

20 Based on real gross product per hour worked. Source: ABS, AusStats, National Accounts, Cat. No. 5204.0.

21 Productivity Commission, (2003, p.44).

22 Calculated by SACES using chain volume measure estimates of end year net capital stock (source: ABS, AusStats, National Accounts, Cat. No. 5204.0) and year average employment (source: ABS, AusStats, Labour Force, Cat. No. 6291.0).

23 We compare changes in exports only up to 2002 as we did not have the full set of data for 2003.

24 Anderson, K. (2000).