



MANUFACTURING

AUSTRALIA

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- For further information about these and related statistics, contact the National Information Service on 1300 135 070 or John Ridley on Sydney 02 9268 4541.

NOTES

PURPOSE OF THIS PUBLICATION

This publication presents a contemporary picture of Australian manufacturing with emphasis on most recent data and comparisons with the recent past. The main focus is on economic performance by Australian manufacturing as a whole and by the major industries within Australian manufacturing. Information is also provided on related aspects of manufacturing such as composition of the workforce, expenditure on research and development, international trade and energy use. Material has been gathered from a range of ABS and non-ABS sources.

In addition, it provides information on the classifications used and the variables presented. Comments on the content and usefulness of this publication, and suggestions for improvements are welcome.

CHANGES IN THIS ISSUE

This issue includes a new article which presents a range of economic statistics for Australia, New Zealand and for the Closer Economic Relations Free Trade Area established by the Governments of Australia and New Zealand. Included are data covering the size and growth in Manufacturing industries as well as trade in manufactured goods.

FURTHER DETAILS MAY BE AVAILABLE FROM THE ABS

The data in this publication mostly relate to broad industries such as Food, beverage and tobacco manufacturing. Data for finer level industries (e.g. Wine manufacturing) may be available from the ABS on request, especially for much of the data in Chapters 1 and 2. A full list of manufacturing industries appears in the Appendix.

Similarly, while most of the data in this publication relate to Australia as a whole, a range of data about manufacturing in individual States is also available in either published or unpublished form. For further information see the 'Unpublished data' section of the Explanatory Notes.

Much of the data in Chapter 3 is based on quarterly surveys. A list of relevant publications appears in the list of references at the back of this publication. In general, sample sizes in these surveys are not large enough to allow reliable estimates for levels of industry finer than those shown in this publication.

INQUIRIES

For information about other ABS statistics and services, please refer to the back of this publication.

Barbara Dunlop
Acting Australian Statistician

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LIST OF ABBREVIATIONS AND OTHER USAGES

ABBREVIATIONS	ABARE	Australian Bureau of Agricultural and Resource Economics
	ABS	Australian Bureau of Statistics
	ANZSIC	Australian and New Zealand Standard Industrial Classification
	ASIC	Australian Standard Industry Classification
	DFAT	Department of Foreign Affairs and Trade
	FTA	Free Trade Area
	GDP	Gross domestic product
	GOS	Gross operating surplus
	IGP	Industry gross product
	IGVA	Industry gross value added
	IVA	Industry value added
	OECD	Organisation for Economic Co-operation and Development
	R&D	Research and development

SYMBOLS AND OTHER USAGES Standard notations are used throughout this publication, with meanings as follows:

'000	thousands
b	billion (i.e. one thousand millions)
kWh	kilowatt hour
mfg	manufacturing
m ²	square metres
m ³	cubic metres
n.a.	not available
n.e.c.	not elsewhere classified
n.e.s.	not elsewhere specified
no.	number
n.p.	not available for publication but included in totals where applicable
PJ	petajoule
r	revised
TJ	terajoule
t	tonne
\$b	billions of dollars
\$m	millions of dollars
*	data subject to sampling variability of between 25% and 50%
..	not applicable
—	nil or rounded to zero

REFERENCING Where ABS time series data have been presented in tables or graphs, only the most recent edition of the product or publication used as a source is listed. Earlier editions are available from ABS libraries and selected other libraries.

REFERENCE PERIODS Yearly periods shown, for example 2000, refer to the year ended 31 December 2000. Those shown, for example 1999–2000, refer to the year ended 30 June 2000. In some cases where space is a consideration, 1999–2000 has been abbreviated to 1999–00.

ROUNDING Where figures have been rounded, discrepancies may occur between sums of the component items and totals shown.

CHAPTER 1

A PROFILE OF THE AUSTRALIAN MANUFACTURING INDUSTRY

WHAT IS THE MANUFACTURING INDUSTRY?

The range of activities Manufacturing is defined as the physical or chemical transformation of materials or components into new products, whether the work is performed by machinery or by hand (Australian and New Zealand Standard Industrial Classification, 1993, p.47) along with related service activities such as delivery, installation and repair and servicing of goods produced. In addition, a number of other services are classified to manufacturing, for example, galvanising, annealing and plating of metals, elevator installation, spectacle lens grinding and tyre retreading.

Degree of transformation The manufacturing industry embraces production of thousands of different types of goods. These range from ships to sugar to sheep shearing equipment, and from micro circuits to motor vehicles to medicines. One view of manufacturing activity focuses on the extent of transformation involved from raw material to finished product. Some products are simple primary product manufactures such as flour, cheese, tanned hides and skins and pig iron. Some are simply transformed manufactures such as basic metal shapes (billets, coils, ingots), Portland cement, basic organic and inorganic chemicals (such as caustic soda). Others are moderately transformed manufactures such as wire rods, metal pipes and tubes, basic glass, soap and detergents, textile fabrics and tissue paper, while others are elaborately transformed manufactures such as prefabricated metal buildings, wire products, glassware, ceramic products, paints, medicines and perfumes.

Capital intensity Another view of the breadth of manufacturing activity concerns the degree of mechanisation involved in production. Manufacturing in Australia covers a wide range of situations from highly mechanised production lines using robotics to simple mechanical activities such as soft drink bottling or concrete mixing through to production of fine jewellery by hand.

In short, manufacturing covers a myriad of inputs, processes and products.

Industry Classification:
The ANZSIC Perhaps the most common way of viewing manufacturing statistics is through an industry classification. This publication extensively uses the Australian and New Zealand Standard Industrial Classification (ANZSIC) as the key framework for categorising and presenting information about the manufacturing industry.

The manufacturing industry is made up of those business units which earn the majority of their income from activities classified to Division C of the ANZSIC.

Industry Classification:
The ANZSIC *continued*

The ANZSIC distinguishes four levels of industry classification to accommodate both broad analysis and fine dissection of statistical data about the Australian economy. The four levels constitute a hierarchy, with Division the broadest classification level, followed by Subdivision, Group and Class as increasingly finer dissections. A manufacturing example of the hierarchy is:

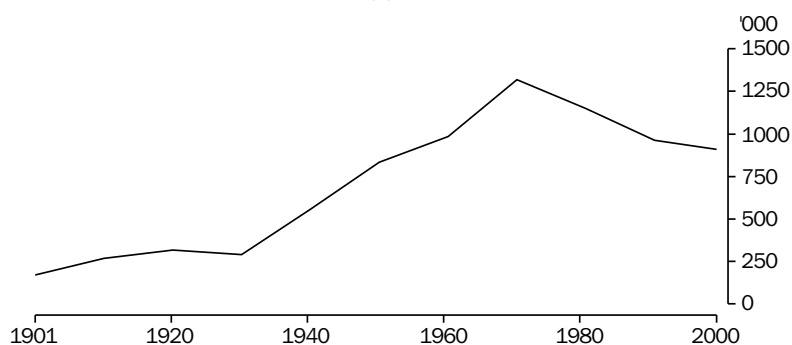
Division	Manufacturing
Subdivision	Metal product manufacturing
Group	Iron and steel manufacturing
Class	Steel pipe and tube manufacturing

Details of the structure of the ANZSIC and in particular the way in which it defines manufacturing industries are included in the 'Background to this publication'. A list of all manufacturing subdivisions, groups and classes is contained in an Appendix to this publication.

AUSTRALIAN MANUFACTURING SINCE FEDERATION

Note: Prior to 1968, statistics on the manufacturing industry were compiled quite differently to how they have been compiled since. To facilitate broad comparisons across the whole period since federation, estimates in graph 1.1 have been adjusted to bring all estimates to approximately the same basis.

1.1 MANUFACTURING EMPLOYMENT(a)



(a) Adjusted to bring series to approximately common basis.

Source: *Year Book Australia* (Cat. no. 1301.0) — Various issues.

Federation and the dismantling of the tariffs which had applied to trade between the colonies allowed the manufacturing industry to trade and prosper across the nation. Total employment in the industry rose from 190,000 in 1903 to 328,000 in 1913. Nevertheless, the industry remained relatively small, contributing only 13% of Australian GDP in 1911. International tariffs allowed the sector to grow more strongly as did the requirements of World War I. National population policies after the war depended on steady growth of the manufacturing sector, under the protection of tariffs. The sector facilitated high rates of post-war immigration at a time when Australian rural export industries were shedding labour. The Newcastle Steelworks were opened during the war and hastened the growth and diversification of metal-working industries.

By 1929, 440,000 people were employed in Australian manufacturing. The previously dominant clothing and textiles industry had experienced a relative decline in employment, while the metals and machinery industry emerged as a major contributor to both employment and production. In particular, the new motor vehicle industry of the 1920s strengthened this sector. With Holden already well established, Ford soon followed with a large motor body assembly plant in Geelong, in response to the growing demand for motor cars.

While employment had increased rapidly in the early years following federation, the great depression had a devastating effect on national employment. The 440,000 persons employed in 1929 had plummeted to 339,000 by 1931. Longer term trends were also affected. While all Australian industries were affected by the depression, the effect was particularly marked in the manufacturing industry, its share of total employment falling from 22% in 1921 to 18% in 1931. However, manufacturing also led the recovery out of depression, in particular when demand for the industry's output was boosted by the requirements of World War II. By 1940–41, manufacturing accounted for 25% of total employment, the largest of any industry, having overtaken even the agriculture industry's share.

The 1940s surge in the relative importance of manufacturing coincided with periods of significant structural change in the sector. Traditional areas such as food processing, wood working and clothing gave way to the more industrially advanced areas of metals and engineering, and chemicals. World War II provided fertile ground for the development and expansion of key industries for the production of munitions, ships, aircraft, machinery and chemicals. Indeed World War II could well be thought of as marking the industrialisation of Australia. Although mass production of food, textiles clothing and footwear had already been established, the war gave great impetus to heavy industry, chemicals and specialised engineering. In particular, the outbreak of war with Japan and Australian responsibility for supplies in the south-west Pacific aided greatly the development of the sector, and it outstripped all previous levels.

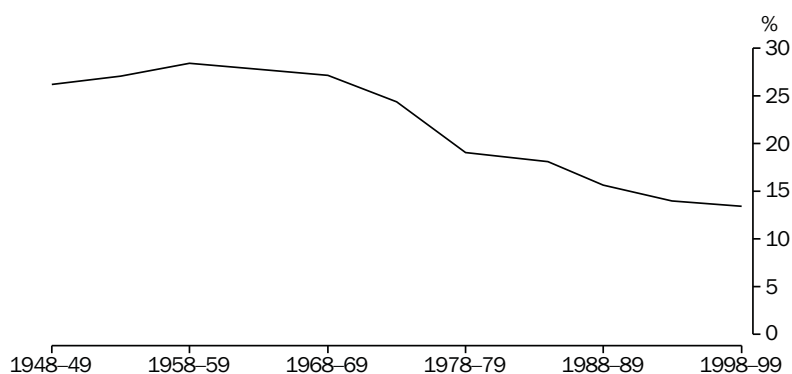
Federation to World War II
continued

Although World War II saw a peak in female participation in the manufacturing sector, there was surprisingly little change in the relative participation rates of women in manufacturing over the 20th century. In 1901 female workers constituted 22% of the entire sector. While this proportion peaked during World War II at 30%, women had already gained a share of 28% during World War I and the depression. Today women make up 27% of the manufacturing work force and still predominate in the textiles, clothing and footwear industry. World War II did, however, contribute to a sharp fall in unemployment numbers, in developing the manufacturing sector and, of course, in the enlistment of men and women from the labour force into armed service. As well, the resultant skills acquisition and strategic development of industry, together with the rapid diversification of scientific and technical knowledge, established a sound basis for the expansion and growth in the post-war era.

After World War II

The Australian national accounts show that the manufacturing industry's share of national GDP rose slowly from 26% in 1948–49 to a peak of 29% around 1960, fell very slowly through the 1960s and then began the more rapid decline to its present levels around 13% (graph 1.2). However, the decline in industry's share of GDP does not mean that the industry has been shrinking, simply that it has been growing less rapidly than the economy as a whole and in particular the service industries.

1.2 MANUFACTURING SHARE OF GDP



Source: Australian System of National Accounts (Cat. no. 5204.0).

The 1950s and 1960s proved to be highly productive decades for the manufacturing industry. Growth rates in manufacturing output per person employed had varied from 1.0% to 1.3% per annum over the period from Federation to World War II (excluding the decline years of the great depression). During the 1950s and 60s, however, growth rose dramatically to an average of 4.3% per annum. Over this period the expansion of manufacturing productivity per annum was 11% higher than in the agricultural sector and almost double that of the economy as a whole. The entire economy was expanding, fueled by large scale immigration and technical and scientific innovation, as well as the increasing availability of raw materials after protracted wartime shortages. With manufacturing seen as vital for national development, the pre-war protective tariff remained, and import licensing restrictions and controls were retained until 1960. As a result, by the beginning of the 1960s manufacturing's share of GDP and employment had reached historic heights.

Increased national income and population drove the demand for consumer goods. The white goods industry mushroomed after World War II, and by 1950 the first large scale production of Australian motor vehicles had begun. The development of the motor vehicle industry created further demands for steel, gas, plastics and rubber. In 1960 one person in 16 of the entire Australian workforce was employed in the manufacture, distribution or servicing of this industry. Traditional industries such as food, clothing, saw-milling and wood products continued to decline, in both production and employment. In contrast, the more capital intensive industries such as electrical goods, chemicals and industrial metals steadily increased in size. For example, employment in the metals and engineering industry, as a proportion of total manufacturing employment, had increased to 48% by 1968, reflecting its centrality to the Australian industrialisation process. This increase was matched by a steady decline in the relative importance of food processing (from 21% in 1871 to 11% in 1968), woodworking (13% to 7%) and textiles and clothing (23% to 14%). As well, demand for other consumer and producer goods in the 1960s provided a challenge for the development of Australian electronic industries.

During this period the structural changes to the sector were significant, but not so great as to fully ensure Australia's relative competitiveness, particularly during the 1960s. By this time the rapid growth afforded by the domestic market in the 1950s had ended and, although manufacturing exports increased, the rate of growth was small and compared poorly with that in other developed countries.

By the 1970s the world economic environment had changed dramatically. The 'stagflation' of the Australian economy reflected the greater world recession, triggered by oil price rises in 1973–74. In Australia, both the manufacturing and rural sectors experienced substantial decline in employment levels between 1973 and 1980, by 80,000 and 15,000 respectively. Manufacturing fared worst of all sectors, its share of employment falling from 25% in 1970 to 18% in 1985. As well its proportion of total GDP fell from a high of 29% in 1960 to 18% in 1985. Throughout this period Australia's international competitiveness was affected by both external and domestic issues. Increasing competition from newly industrialised Asian nations and fluctuating exchange rates, together with domestic workforce developments, led to dramatic change in the Australian workforce and production across all sectors, and manufacturing in particular.

In 1947 Australia had 2.2 million people in paid work. By 1980 this figure had risen to 6.6 million. While the country's population had doubled, its workforce had trebled, even though young people were remaining in education longer, and workers were retiring earlier. Women and migrant workers fueled the employment explosion. The campaign for equal pay and sharp rises in all real wage costs caused a squeeze from rapidly escalating costs and intensified import competition. Tariff cuts in particular compounded the problem and, accordingly, import quotas were imposed on those goods most affected by competitive external producers. The clothing industry, for example, was in sharp decline after its peak in 1971, and this industry, along with the textiles, footwear and white-goods industries, was the subject of quantitative import restrictions.

Despite significant rationalisation, manufacturing responded to economic recovery in the 1980s more slowly than other sectors. In 1982 a difficult period for heavy industry was signaled by Australian Iron and Steel's announcement of the impending loss of 2,500 jobs in the Port Kembla steelworks. Meanwhile, at Whyalla in South Australia, BHP had closed its shipbuilding works in 1978, forced out of business, it was argued, by foreign competition. By the 1980s most manufacturing industries were adopting various forms of automation, especially for 'pick and place' tasks such as the loading and unloading of die-cast machines, spot welding, molten metal pouring and forging. For example, by 1980 production in the clay brick industry was 80% automated. 'Numerical control', involving the use of computer technology for improving the capability of machine tools, which had been used in the 1960s for the production of complex parts, was being applied by 1980 to more simple machinery tasks. Such automation was welcomed by manufacturers pressed by rising labour costs and vigorous import competition. However, in the 1980s Australia was already a 'post-industrial' society, in which manufacturing had come to account for a declining proportion of employment, and in which most net growth in employment occurred in service industries.

After World War II *continued*

Through the 1980s and 1990s, there were some gradual shifts in the relative sizes of industries within manufacturing. For example, in the mid 1980s, Machinery and equipment manufacturing was the largest manufacturing industry being responsible for around 21% of production, followed by Metal product manufacturing and Food, beverage and tobacco manufacturing (each with around 18%). By 1999–2000, the greatest contribution to manufacturing production was by the food, beverages and tobacco industry (21%) followed by the Machinery and equipment manufacturing industry (19%) and Metal product manufacturing (15%). The most notable changes in share were by the Petroleum, coal, chemical and associated product manufacturing industry (9% in 1984–85 to 14% in 1999–2000) and Textile, clothing, footwear and leather manufacturing (7% in 1984–85 to 4% in 1999–2000).

International perspectives

From 1980 to 1997 manufacturing's contribution to Australia's GDP fell from 17% to 13%. This contrasted markedly with manufacturing's virtually unchanged share (19%) of the United States GDP, and the slight increase in Japan — from 25% to 27% — over a similar period. In fact, the contribution of manufacturing to the GDP of all industrialised countries fell by only 2%, from 24% in 1980 to 22% in 1997.

Consistent with world trends, Australian manufacturing became increasingly export oriented throughout the 1980s and 1990s. In 1984–85 some 16% of the sales of manufacturing firms were to overseas markets. By 1999–2000 this figure had risen to 27%. Import penetration of Australian markets increased more slowly over the same period, from 26% in 1984–85 to 40% by 1999–2000.

Some key Australian products feature prominently in international markets. For example, one notable export performance has been produced by the Australian wine industry, with especially good performance in the last decade of the 20th century. In the six years from 1992 to 1998, the Australian wine industry increased the volume of production by about 60% with practically all of the increase going into exports which increased by 150% over that period. As a result, Australia has risen from 11th largest exporter of wine in the world to 8th largest and has increased its share of world wine exports from 1.7% to 3.0%.

In the late 1990s, Australia ranked fifth for share of world value of non-ferrous metals, contributing 4% of world supply. This share had remained relatively constant since 1985. In the supply of metal products, Australia fell in world ranking from 10th to 12th in the same period, though its share of world supply remained unchanged. In food products, Australia's world ranking has remained at 12th, its share also remaining constant at 1.6%. In wearing apparel Australia's competitiveness has declined; in 1985 Australia ranked 14th, contributing 1.3% of production. However since 1995 Australia has not featured in the top 15 producers of wearing apparel.

MANUFACTURING'S CONTRIBUTION TO TOTAL AUSTRALIAN PRODUCTION

This article presents information on the contribution to the Australian economy by the manufacturing industry. The measure used to represent production is the national accounting variable 'Gross factor incomes'.

Manufacturing contributed more to Australian production in 1999–2000 than any other industry. However, the combined contribution of manufacturing and the other goods producing industries was substantially less than the combined contribution of the services industries — see table 1.3 below.

Over the five year period to 1999–2000, Manufacturing's share of national production fell marginally from 13.9% to 13.1%. However, this does not mean that production fell in absolute terms (see the article on Production levels which follows this article). Rather, the fall in share simply means that manufacturing production did not grow as quickly as production for some other industries, in particular some service industries. Industries which most notably increased their share of national production over the period were Construction (which increased its contribution from 5.7% to 6.4%) and Property and business services (from 10.6% to 12.6%) and Finance and insurance (from 5.9% to 6.5%).

1.3 INDUSTRY SHARES OF TOTAL PRODUCTION—1999–2000

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
<i>Industry</i>	%	%	%	%	%	%	%	%	%
Agriculture, forestry and fishing	2.2	3.0	4.6	5.4	3.7	4.9	3.1	0.1	3.2
Mining and services to mining	1.8	2.1	5.7	2.4	20.1	2.2	17.7	0.0	4.7
Manufacturing	13.4	16.4	10.8	15.9	9.2	15.7	4.1	1.9	13.1
Electricity, gas and water supply	1.8	1.8	2.5	3.0	2.0	5.6	1.9	2.0	2.1
Construction	6.6	5.5	7.0	6.0	7.5	5.1	5.6	6.8	6.4
Wholesale trade	5.7	6.2	5.8	4.6	4.4	3.9	2.9	2.2	5.5
Retail trade	5.1	5.4	6.9	5.5	5.0	6.5	5.1	4.4	5.5
Accommodation, cafes and restaurants	2.4	1.7	3.0	2.2	1.6	2.5	2.9	2.0	2.2
Transport and storage	5.2	5.1	6.4	5.1	5.8	5.5	5.8	3.1	5.4
Communication services	3.2	3.7	3.2	2.7	2.8	2.8	3.4	2.9	3.2
Finance and insurance	8.4	7.2	4.3	5.4	3.7	4.9	2.8	4.2	6.5
Property and business services	14.5	13.9	10.0	9.9	10.3	5.5	8.9	14.3	12.6
Government administration and defence	3.0	2.5	4.0	3.1	2.5	5.3	9.4	25.9	3.6
Education	4.2	4.9	4.7	5.1	3.5	5.2	5.4	5.7	4.5
Health and community services	5.3	6.0	5.8	6.9	5.6	8.5	6.4	5.6	5.8
Cultural and recreational services	1.8	1.9	1.5	1.7	1.4	1.5	2.7	2.8	1.8
Personal and other services	2.3	2.5	2.7	3.1	2.4	2.5	3.0	3.4	2.5
Ownership of dwellings	11.1	8.6	8.4	8.7	6.7	8.9	5.7	7.9	9.2
General government	1.9	1.7	2.6	2.2	1.8	3.0	3.3	4.8	2.1

Source: Australian National Accounts: State Accounts, 1999–2000 (Cat. no. 5222.0).

States and Territories Of the industries listed in table 1.3, manufacturing production was the largest component of total 1999–2000 production in all States except Western Australia and New South Wales. The Mining industry is much larger than the Manufacturing industry in Western Australia and the Property and business services industry has passed manufacturing as the largest industry in New South Wales.

In Victoria, South Australia and Tasmania, manufacturing contributed substantially more than the next largest industry. Manufacturing remains a relatively small industry in the two Territories with several industries each contributing more to total Territory production.

The manufacturing industry's share of total State production fell in all States and Territories except Tasmania and Western Australia, over the period from 1994–95 to 1999–2000. Manufacturing's greatest falls in relative contribution to State/Territory production were recorded in Victoria (down from 17.6% to 16.4%) and New South Wales (down from 14.4% to 13.4%). Tasmania was the only state to record an increase (from 14.9% to 15.7%), while Western Australia remained steady (at 9.2%).

TRENDS IN AUSTRALIAN MANUFACTURING

This next section covers recent trends in the Australian manufacturing industry in two parts. The first presents information on production in real terms since 1991–92 and the second part presents statistics on sales of goods and services by manufacturing businesses. Further information on year to year changes in various aspects of the manufacturing industry also appears in several other places in this publication.

PRODUCTION LEVELS

This article presents information on volumes of production in Australia for manufacturing and other industries. The variable used to measure production is gross value added at basic prices which measures the value that industries add to their intermediate inputs through their economic activities. This variable is very similar to industry value added but not quite identical (see Glossary for details). Analysis in this article refers to volumes of production not the value of that production.

Manufacturing compared with other industries Table 1.4 shows that in 2000–01, in terms of production volumes, manufacturing continues to be the largest industry in the Australian economy although the Property and business services industry is almost as large. Table 1.4 also shows growth rates for 2000–01 and average growth rates over the previous 10 and 25 years.

Manufacturing compared
with other industries
continued

In terms of production volumes, 14 of the 17 industries listed in table 1.4 grew during 2000–01. Of these industries, manufacturing experienced the lowest growth in production (up 0.3%) and grew at a rate which was below the all industries growth rate of 1.9%. Over the 10 year period 1990–91 to 2000–01, the manufacturing industry experienced an average growth rate of 2.0% per annum which was the lowest of all industries except for the construction industry. The Manufacturing industry's average growth rate was a little over half of the growth rate of all industries in total and less than one-fifth of the rate of the fastest growing industry (communication services). Taking a longer term view over the 25 years from 1975–76 to 2000–01, gives a very similar picture with the manufacturing average growth rate of 1.8% per annum being the equal lowest of all industries.

1.4 PRODUCTION VOLUMES(a)

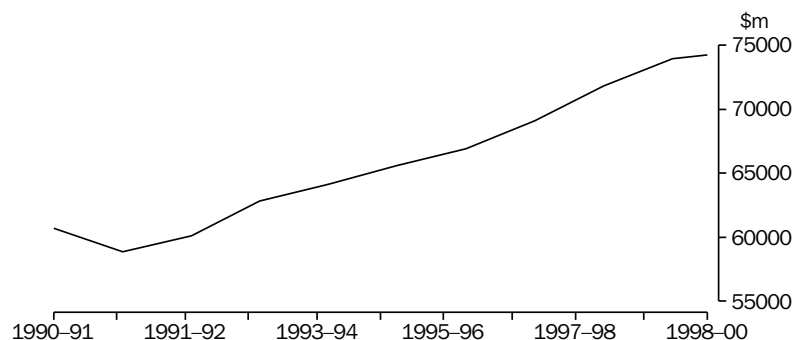
	2000–01	Change from last year	Average annual change over last 10 years	Average annual change over last 25 years
	\$m	%	%	%
Agriculture, forestry and fishing	18 402	–4.2	2.2	2.1
Mining and services to mining	29 766	5.8	4.3	4.7
Manufacturing	74 226	0.3	2.0	1.8
Electricity, gas and water supply	15 991	3.1	2.1	3.5
Construction	29 792	–17.6	1.5	1.8
Wholesale trade	32 365	–0.9	4.5	2.6
Retail trade	32 968	0.8	3.6	2.8
Accommodation, cafes and restaurants	14 726	1.7	3.8	3.1
Transport and storage	31 485	0.9	3.6	3.9
Communication services	20 374	10.3	10.2	8.6
Finance and insurance	40 436	4.6	3.5	4.6
Property and business services	74 063	9.3	6.0	5.4
Government administration and defence	24 830	3.2	4.0	2.4
Education	27 544	1.6	2.3	3.3
Health and community services	35 259	2.7	3.2	3.9
Cultural and recreational services	12 132	11.2	3.6	3.5
Personal and other services	15 450	7.2	4.5	3.3
All industries	529 809	1.9	3.6	3.3

(a) Production as measured by industry gross value added at 1999–2000 prices.

Source: Australian National Accounts: National Income, Expenditure and Product, June Quarter 2000 (Cat. no. 5206.0).

Manufacturing production growth

1.5 MANUFACTURING PRODUCTION LEVELS(a)



(a) Production as measured by industry gross value added. Chain volume measures, reference year

Source: Australian National Accounts.

As shown by graph 1.5, in volume terms, manufacturing production has grown steadily since 1991-92 after a fall from the previous year. In 2000-01, production reached a level which was 22.3% higher than it had been 10 years earlier.

Production by manufacturing subdivisions

Table 1.6 shows that manufacturing subdivisions experienced a variety of growth/decline rates from 1999-2000 to 2000-01 ranging from substantial falls in production recorded for the Wood and paper product manufacturing industry (down 13.1%) and the Other manufacturing industry (down 15.0%) to the 10.9% increase experienced by the Food, beverage and tobacco manufacturing industry.

Taking a longer term view, table 1.6 shows that the Textile, clothing, footwear and leather manufacturing industry has been shrinking for some time and more recently, the Other manufacturing industry as well. Several other manufacturing subdivisions are growing only very slowly. In contrast, Food, beverage and tobacco manufacturing has been growing strongly and has been growing at an increasing rate. Similar patterns, but at lower growth rates, have been recorded for Petroleum, coal, chemical and associated product manufacturing and machinery and equipment manufacturing.

1.6 PRODUCTION VOLUMES IN MANUFACTURING(a)

Industry	2000-01 production \$m	Change from last year %	Average annual change over last 5 years %	Average annual change over last 10 years %	Average annual change over last 20 years %
Food, beverage and tobacco mfg	17 088	10.9	6.6	4.2	2.9
Textile, clothing, footwear and leather mfg	2 920	-4.2	-1.7	-2.5	-1.2
Wood and paper product mfg	6 354	-13.1	-0.9	0.7	0.3
Printing, publishing and recorded media	4 692	-7.8	0.9	1.2	2.1
Petroleum, coal, chemical and associated product mfg	10 827	4.1	2.9	2.6	2.3
Non-metallic mineral product mfg	4 627	8.2	0.9	0.4	0.4
Metal product mfg	11 373	-0.4	0.0	0.6	1.0
Machinery and equipment mfg	14 095	-2.0	3.8	3.3	1.9
Other mfg	2 250	-15.0	-2.0	-0.6	0.1
Total mfg	74 226	0.3	2.3	2.0	1.5

(a) Production as measured by industry gross value added at 1999-2000 prices.

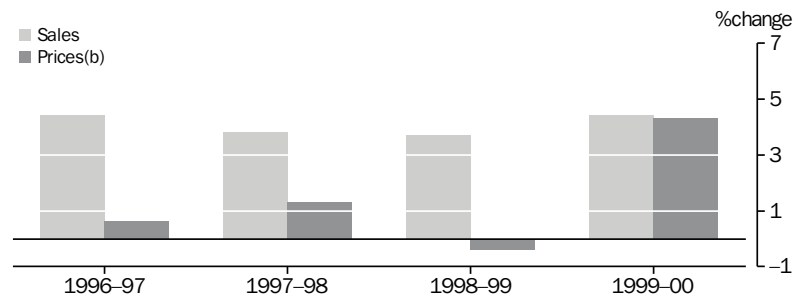
Source: Australian National Accounts.

SALES OF GOODS AND SERVICES

This section presents statistics for sales of goods and services by manufacturing businesses. Commencing with estimates for 1997-98, introduction of new international standards has slightly altered the composition of the variable 'sales of goods and services' by including royalties income from intellectual property which had been previously excluded. This change carried only a minimal effect on comparability of estimates for 1997-98 and later years with those for earlier years. A full explanation of the changes can be found in the 2000 issue of this publication.

As graph 1.7 shows, manufacturers sales of goods and services in current prices have grown each year and have grown at a faster rate than the general level of prices of manufactured goods which implies that sales volumes have also increased each year with the exception of 1999-2000 where sales values and prices increased at virtually identical rates.

1.7 MANUFACTURING, Annual Change(a)



(a) Percentage change from previous year.

(b) Prices of articles produced by manufacturers.

Source: ABS data available on request, Annual Manufacturing Survey; Producer Price Indexes, Australia, June 2001 (Cat. no. 6427.0).

1.8 SALES OF GOODS AND SERVICES(a)

	1995-96	1996-97	1997-98	1998-99	1999-00
<i>Industry</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>
Food, beverage and tobacco mfg	44 350	45 712	49 200	51 732	53 893
Textile, clothing, footwear and leather mfg	9 921	10 288	10 601	10 097	9 642
Wood and paper product mfg	11 845	11 890	12 796	14 436	15 483
Printing, publishing and recorded media	13 685	14 893	15 342	16 053	17 367
Petroleum, coal, chemical and associated product mfg	35 448	37 492	37 913	36 808	39 829
Non-metallic mineral product mfg	9 524	9 832	10 364	10 911	11 107
Metal product mfg	35 325	34 561	34 749	36 304	38 433
Machinery and equipment mfg	41 564	42 399	43 645	46 473	47 100
Other mfg	5 700	6 264	6 528	6 791	6 820
Total mfg	207 363	213 330	221 138	229 603	239 673

(a) From 1997-98, includes income from royalties from intellectual property. The effect of this change is minimal (0.3% or less).

Source: ABS data available on request, Annual Manufacturing Survey.

Between 1998-99 and 1999-2000, the value of sales of goods and services by the manufacturing industry grew by 4.4%, while average prices rose 4.3%, implying minimal change in the volume of goods and services produced. All manufacturing subdivisions increased the value of their sales of goods and services over this period except for Textile, clothing, footwear and leather manufacturing which recorded a 4.5% decrease. Largest increases were by Petroleum, coal, chemical and associated product manufacturing (up 8.2%), Printing, publishing and recorded media (also up 8.2%) and Wood and paper product manufacturing (up 7.3%).

Over the four year period from 1995-96 to 1999-2000, sales of goods and services by manufacturing businesses grew from \$207.4b to \$239.7b (up 15.6%). Over the same period, prices for Australian manufactured goods increased by approximately 6.1% which implies that the volume of goods and services produced by manufacturing businesses increased by almost 9% over that period.

Between 1995-96 and 1999-2000, all manufacturing subdivisions increased the value of their sales of goods and services except for Textile, clothing, footwear and leather manufacturing which recorded a 2.8% decrease. The largest percentage growth rates were recorded by Wood and paper product manufacturing (up 31%) and Printing, publishing and recorded media (up 27%).

ANALYSIS BY SIZE OF BUSINESS

This article presents information on the performance of Australian manufacturing businesses classified by business size with small businesses, medium sized businesses and large businesses being analysed separately. Information presented in this article excludes operations by non-employing businesses (i.e. unincorporated businesses where the only persons employed by the business are proprietors or partners of the business).

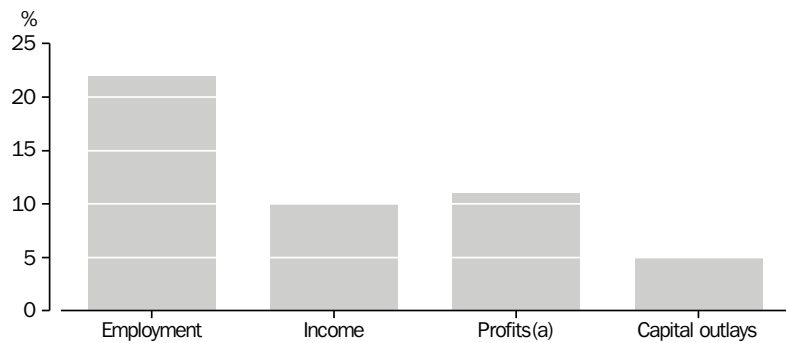
Employing businesses have been classified as small, as medium sized or as large according to the number of persons employed by the business at 30 June 2000. Businesses employing fewer than 20 persons have been classified as small businesses, those employing at least 20 but less than 100 persons have been classified as medium sized and those employing 100 or more persons have been classified as large. In a small number of cases, businesses which had low 30 June employment but operated on a large scale during 1999–2000 have been re-classified (see 'Business size' in the Glossary for more details). These re-classifications mostly related to participants in unincorporated joint ventures in the Metal product manufacturing industry.

Further information about business performance is contained in Chapter 2 of this publication.

SMALL MANUFACTURING BUSINESSES

Share of industry activity Small businesses make up around 87% of employing manufacturing businesses but as graph 1.9 shows, their share of manufacturing activity is much less.

1.9 SMALL BUSINESS, Share of Manufacturing Activity



(a) Operating profit before tax.

Source: ABS data available on request, Annual Manufacturing Survey.

Share of industry activity
continued

In 1999–2000, for manufacturing as a whole and for six of the nine manufacturing subdivisions, small businesses contributed 20% or more of industry employment although their share of income, profits and capital outlays was generally less than their employment share. As table 1.10 shows, the Other manufacturing industry has a relatively high contribution by small businesses with 44% of industry profits coming from small businesses.

1.10 SMALL BUSINESS SHARES OF INDUSTRY ACTIVITY—1999–2000

	<i>Persons employed at 30 June</i>	<i>Operating income</i>	<i>Operating profit before tax(a)</i>	<i>Capital outlays</i>
	%	%	%	%
Food, beverage and tobacco mfg	9	4	1	3
Textile, clothing, footwear and leather mfg	30	21	27	10
Wood and paper product mfg	30	14	18	3
Printing, publishing and recorded media	23	14	10	5
Petroleum, coal, chemical and associated product mfg	15	6	6	6
Non-metallic mineral product mfg	19	8	4	5
Metal product mfg	28	13	16	3
Machinery and equipment mfg	20	10	19	7
Other mfg	53	39	44	28
Total mfg	22	10	11	5

(a) Many small manufacturing businesses are unincorporated and this affects the apparent profit share relative to medium and large businesses. See the explanation under Profitability.

Summary of operations

In 1999–2000, small manufacturing businesses employed 211,000 people, generated \$25.1b in income and almost \$1.8b in profits. They also outlaid over \$500m on new capital equipment. Operating income for small manufacturing businesses in total was only 2.2% higher than 1998–99 income but profits rose much more (up 26%). Largest relative profit increases for small businesses were in the Textile, clothing, footwear and leather manufacturing industry and the Metal product manufacturing industry (each up 73%). The only large relative fall in small business profits was for the Food, beverage and tobacco manufacturing industry (down 63%).

1.11 SMALL BUSINESS OPERATIONS—1999–2000

	<i>Persons employed at 30 June</i>	<i>Operating income</i>	<i>Operating profit before tax</i>	<i>Capital outlays</i>
	'000	\$m	\$m	\$m
Food, beverage and tobacco mfg	17.0	2 217	54	77
Textile, clothing, footwear and leather mfg	19.8	2 004	108	22
Wood and paper product mfg	19.3	2 258	223	52
Printing, publishing and recorded media	22.8	2 389	206	35
Petroleum, coal, chemical and associated product mfg	15.6	2 557	162	126
Non-metallic mineral product mfg	7.6	904	41	28
Metal product mfg	39.4	5 167	462	53
Machinery and equipment mfg	40.9	4 973	361	79
Other mfg	28.8	2 664	152	55
Total mfg	211.2	25 146	1 769	526

Source: ABS data available on request, Annual Manufacturing Survey.

Profitability This section presents information on the profitability of small manufacturing businesses as measured in the annual manufacturing survey.

Table 1.12 illustrates profitability in terms of the spread of profit margins. Quartiles give an indication of the spread of 1999–2000 profit margins for small manufacturing businesses. These indicate for example that the best performing 25% of small manufacturers experienced profit margins of \$157 or more of operating profit before tax per \$1,000 of operating income, while at the other end of the scale, 25% of small manufacturers experienced profit margins of \$2 or less of operating profit before tax per \$1,000 of operating income with a large proportion of these recording an operating loss.

Profits per person employed for 1999–2000 (not adjusted) were \$8,400 for small manufacturing businesses overall, ranging from a low of \$3,200 for the Food, beverage and tobacco manufacturing industry to a high of \$11,700 for the Metal product manufacturing industry.

Note: When making comparisons between the profitability of small manufacturing businesses and the profitability of other manufacturing businesses, readers should note that the types of legal organisation involved have an effect on profit margin values. The effect stems from the statistical treatment of compensation paid to the managers of businesses. For incorporated businesses, such compensation is in the form of wages and salaries which is included in the statistics for labour costs. However, compensation received by proprietors and partners of unincorporated businesses are generally taken in the form of drawings from profits and are not included in the statistics. Because unincorporated businesses constitute a much higher proportion of small businesses than they do of other businesses, the effect on profitability measures is much greater for small businesses.

Profitability *continued*

To illustrate the size of this effect, table 1.12 includes, in addition to the recorded profits data, a set of adjusted average profit margins which estimates the result which would have occurred had each working proprietor and each working partner of the unincorporated manufacturing businesses been paid average wages and salaries for their industry. The adjusted data shows that had the proprietors of unincorporated manufacturing businesses been paid average industry wages, then the overall profit margin for small manufacturers would have been 5.1% instead of the 7.0% compiled using recorded data. The adjusted average profit margin for small manufacturers (5.1%) falls below the average profit margins for medium sized manufacturers (5.6%) and large manufacturers (6.5%) whereas their reported average profit margin (7.0%) is higher than for other sized manufacturers.

1.12 PROFITABILITY(a) OF SMALL MANUFACTURERS—1999–2000

<i>Industry</i>	<i>Proportion of businesses making a profit(b)</i>	<i>Average profit margin</i>	<i>First quartile profit margin(c)</i>	<i>Median profit margin(d)</i>	<i>Third quartile profit margin(e)</i>	<i>Adjusted average profit margin(f)</i>
	%	%	%	%	%	%
Food, beverage and tobacco mfg	70	2.4	−0.3	4.7	12.7	1.1
Textile, clothing, footwear and leather mfg	79	5.4	1.1	6.3	20.7	2.9
Wood and paper product mfg	84	9.9	2.4	6.6	14.6	7.7
Printing, publishing and recorded media	67	8.6	−2.6	4.6	15.0	5.9
Petroleum, coal, chemical and associated product mfg	68	6.3	−0.9	2.8	13.6	5.8
Non-metallic mineral product mfg	74	4.6	−0.9	5.4	11.9	2.7
Metal product mfg	75	8.9	0.0	6.5	16.9	7.4
Machinery and equipment mfg	73	7.3	−0.7	5.8	13.9	5.3
Other mfg	90	5.7	2.8	8.7	16.1	2.6
Total mfg	77	7.0	0.2	6.1	15.7	5.1

(a) The profitability measure used in this table is the profit margin i.e. the value of operating profit before tax expressed as a percentage of the value of total operating income. This statistic is also affected by the exclusion of drawings by working proprietors and partners.

(b) The percentage of businesses with a profit margin greater than zero.

(c) 75% of businesses in the industry have a profit margin greater than this value (or losses smaller than this).

(d) 50% of businesses in the industry have a profit margin greater than this value.

(e) 25% of businesses in the industry have a profit margin greater than this value.

(f) Results which would have applied had working proprietors and partners of unincorporated businesses received average industry wages.

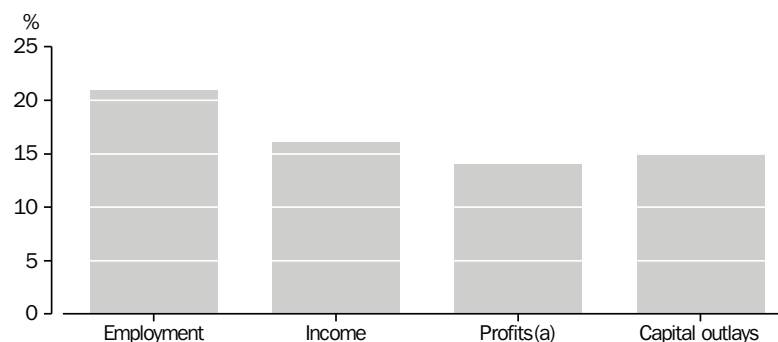
Source: ABS data available on request, *Annual Manufacturing Survey*.

MEDIUM SIZED MANUFACTURING BUSINESSES

Share of industry activity

Medium sized businesses make up around 10% of employing manufacturing businesses but as graph 1.13 illustrates, their share of manufacturing activity is generally more.

1.13 MEDIUM SIZED BUSINESS, Share of Manufacturing Activity



(a) Operating profit before tax.

Source: ABS data available on request, Annual Manufacturing Survey.

In 1999–2000, medium sized businesses contributed between 20% and 33% of industry employment for manufacturing as a whole and for eight of the nine manufacturing subdivisions although their share of income, profits and capital outlays was generally less than their employment share.

1.14 MEDIUM SIZED BUSINESS SHARES OF INDUSTRY ACTIVITY—1999–2000

Industry	Persons employed at 30 June	Operating income	Operating profit before tax	Capital outlays
	%	%	%	%
Food, beverage and tobacco mfg	13	11	11	11
Textile, clothing, footwear and leather mfg	27	25	31	42
Wood and paper product mfg	23	17	10	7
Printing, publishing and recorded media	26	20	14	41
Petroleum, coal, chemical and associated product mfg	23	15	16	14
Non-metallic mineral product mfg	21	19	13	14
Metal product mfg	22	16	12	10
Machinery and equipment mfg	20	15	12	19
Other mfg	33	40	47	30
Total mfg	21	16	14	15

Source: ABS data available on request, Annual Manufacturing Survey.

Summary of operations

In 1999–2000, medium sized manufacturing businesses employed 203,500 people, generated \$38.6b of income, \$2.2b in profits and outlaid \$1.6b on new capital equipment. Operating income for medium sized manufacturing businesses in total was 1.9% lower than for 1998–99 but profits were down 16.3%. Largest relative profit falls for medium sized businesses were in the Non-metallic mineral product manufacturing industry (down 62%) and the Wood and paper product manufacturing industry (down 43%). The only large relative rise in profits for medium sized businesses was for the Metal product manufacturing industry (up 40%).

1.15 MEDIUM SIZED BUSINESSES, OPERATIONS—1999–2000

<i>Industry</i>	<i>Persons employed at 30 June</i>	<i>Operating income</i>	<i>Operating profit before tax</i>	<i>Capital outlays</i>
	<i>'000</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>
Food, beverage and tobacco mfg	25.2	5 978	346	251
Textile, clothing, footwear and leather mfg	17.5	2 480	126	97
Wood and paper product mfg	15.1	2 701	126	114
Printing, publishing and recorded media	25.7	3 598	286	316
Petroleum, coal, chemical and associated product mfg	23.3	5 919	409	277
Non-metallic mineral product mfg	8.2	2 098	148	81
Metal product mfg	30.8	6 081	333	174
Machinery and equipment mfg	40.3	6 964	232	225
Other mfg	17.5	2 762	163	59
Total mfg	203.5	38 595	2 169	1 594

Source: ABS data available on request, Annual Manufacturing Survey.

Profitability This section presents information on the profitability of medium sized manufacturing businesses as measured in the annual manufacturing survey.

The average profit margin for medium sized manufacturing businesses in 1999–2000 was 5.6%, up from 4.8% in 1998–99. Profits per person employed for 1999–2000 were \$10,700 for medium sized manufacturing businesses overall, ranging from a low of \$7,200 for the Textile, clothing, footwear and leather manufacturing industry to a high of \$17,500 for the Petroleum, coal, chemical and associated product manufacturing industry.

Table 1.16 illustrates profitability in terms of the spread of profit margins. Quartiles give an indication of the spread of 1999–2000 profit margins for medium sized manufacturing businesses. These indicate for example that the best performing 25% of medium sized manufacturers experienced profit margins of \$94 or more of operating profit before tax per \$1,000 of operating income while at the other end of the scale, 25% of medium sized manufacturers experienced profit margins of \$6 or less of operating profit before tax per \$1,000 of operating income with a large proportion of these recording an operating loss.

1.16 PROFITABILITY(a) OF MEDIUM SIZED MANUFACTURERS—1999–2000

<i>Industry</i>	<i>Proportion of businesses making a profit(b)</i>	<i>Average profit margin</i>	<i>First quartile profit margin(c)</i>	<i>Median profit margin(d)</i>	<i>Third quartile profit margin(e)</i>
	%	%			
Food, beverage and tobacco mfg	75	5.8	0.0	1.9	6.0
Textile, clothing, footwear and leather mfg	75	5.1	0.0	3.0	8.2
Wood and paper product mfg	78	4.7	1.0	5.6	7.2
Printing, publishing and recorded media	87	7.9	3.2	8.5	11.7
Petroleum, coal, chemical and associated product mfg	82	6.9	0.8	4.2	10.7
Non-metallic mineral product mfg	77	7.0	1.0	5.1	10.6
Metal product mfg	85	5.5	1.0	3.9	8.3
Machinery and equipment mfg	73	3.3	−0.8	3.0	8.6
Other mfg	84	5.9	0.7	4.1	8.9
Total mfg	79	5.6	0.6	4.3	9.4

(a) The profitability measure used in this table is the profit margin i.e. the value of operating profit before tax expressed as a percentage of the value of total operating income.

(b) The percentage of businesses with a profit margin greater than zero.

(c) 75% of businesses in the industry have a either a profit margin greater than this value or losses smaller than this.

(d) 50% of businesses in the industry have a profit margin greater than this value.

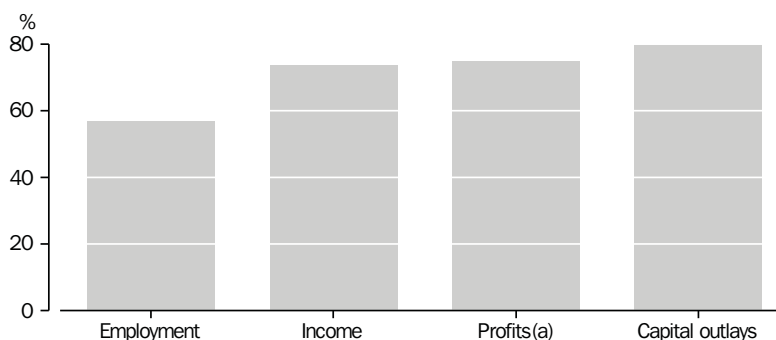
(e) 25% of businesses in the industry have a profit margin greater than this value.

Source: ABS data available on request, Annual Manufacturing Survey.

LARGE MANUFACTURING BUSINESSES

Share of industry activity Large businesses make up only 3% of employing manufacturing businesses but as graph 1.17 illustrates, their share of manufacturing employment is more than 50% and their share of economic activity is more than 70%.

1.17 LARGE BUSINESSES, Share of Manufacturing Activity



(a) Operating profit before tax.

Source: ABS data available on request, Annual Manufacturing Survey.

Share of industry activity
continued

Data in table 1.18 shows that apart from the 'Other manufacturing' industry which contains very few large businesses, the pattern holds at the industry subdivision as well. In these industries, large businesses contributed between 43% and 77% of industry employment and their share of income, profits and capital outlays was generally substantially more than their employment share.

1.18 LARGE BUSINESS SHARES OF INDUSTRY ACTIVITY—1999–2000

<i>Industry</i>	<i>Persons employed at 30 June</i>	<i>Operating income</i>	<i>Operating profit before tax</i>	<i>Capital outlays</i>
	%	%	%	%
Food, beverage and tobacco mfg	77	85	87	85
Textile, clothing, footwear and leather mfg	43	54	42	48
Wood and paper product mfg	47	68	73	90
Printing, publishing and recorded media	52	66	76	54
Petroleum, coal, chemical and associated product mfg	62	79	78	79
Non-metallic mineral product mfg	60	73	83	81
Metal product mfg	51	71	72	87
Machinery and equipment mfg	60	75	69	74
Other mfg	14	21	9	42
Total mfg	57	74	75	80

Source: ABS data available on request, Annual Manufacturing Survey.

Summary of operations

In 1999–2000, large manufacturing businesses employed 542,100 people (1.6% fewer than the previous year), generated almost \$180b of operating income and \$12b of profits. They also outlaid over \$8b on new capital equipment. Operating income for large manufacturing businesses in total was 5.4% higher than for 1998–99 income but profits increased much more (up 36%) mainly due to profit increases in the Wood and Paper product manufacturing industry. All industry subdivisions reflected an increase in operating income and profits by large businesses.

1.19 LARGE BUSINESSES, OPERATIONS—1999–2000

<i>Industry</i>	<i>Persons employed at 30 June</i>	<i>Operating income</i>	<i>Operating profit before tax</i>	<i>Capital outlays</i>
	'000	\$m	\$m	\$m
Food, beverage and tobacco mfg	145.1	46 820	2 745	1 888
Textile, clothing, footwear and leather mfg	28.4	5 254	166	111
Wood and paper product mfg	30.1	10 673	922	1 516
Printing, publishing and recorded media	52.0	11 612	1 519	414
Petroleum, coal, chemical and associated product mfg	63.7	31 860	1 977	1 561
Non-metallic mineral product mfg	23.4	8 239	954	456
Metal product mfg	71.9	27 733	2 055	1 495
Machinery and equipment mfg	119.9	36 061	1 303	869
Other mfg	7.6	1 456	30	82
Total mfg	542.1	179 684	11 671	8 393

Source: ABS data available on request, Annual Manufacturing Survey.

Profitability This section presents information on the profitability of large manufacturing businesses as measured in the annual manufacturing survey.

The average profit margin for large manufacturing businesses in 1999–2000 was 6.5%, up from 5.0% in 1998–99. Profits per person employed in 1999–2000 were \$21,500 for large manufacturing businesses overall, ranging from a low of \$4,000 for the Other manufacturing industry to a high of \$40,000 for the Non-metallic mineral product manufacturing industry.

Table 1.20 illustrates profitability in terms of the spread of profit margins. Quartiles give an indication of the spread of 1999–2000 profit margins for large manufacturing businesses. These indicate for example that the best performing 25% of large manufacturers experienced profit margins of \$105 or more of operating profit before tax per \$1,000 of operating income while at the other end of the scale, 25% of large manufacturers experienced profit margins of \$7 or less of operating profit before tax per \$1,000 of operating income with a large proportion of these recording an operating loss.

1.20 PROFITABILITY(a) OF LARGE MANUFACTURERS—1999–2000

<i>Industry</i>	<i>Proportion of businesses making a profit(b)</i>	<i>Average profit margin</i>	<i>First quartile profit margin(c)</i>	<i>Median profit margin(d)</i>	<i>Third quartile profit margin(e)</i>
<i>Industry</i>	<i>%</i>	<i>%</i>	<i>%</i>	<i>%</i>	<i>%</i>
Food, beverage and tobacco mfg	76	5.9	0.2	2.9	7.7
Textile, clothing, footwear and leather mfg	73	3.2	–0.4	4.3	7.6
Wood and paper product mfg	85	8.6	2.7	8.5	12.5
Printing, publishing and recorded media	86	13.1	2.1	6.6	15.7
Petroleum, coal, chemical and associated product mfg	82	6.2	1.4	6.5	10.7
Non-metallic mineral product mfg	80	11.6	1.2	8.6	17.6
Metal product mfg	82	7.4	1.6	5.4	10.6
Machinery and equipment mfg	73	3.6	–0.1	4.0	9.5
Other mfg	67	2.1	–1.1	2.0	5.2
Total mfg	79	6.5	0.7	4.9	10.5

(a) The profitability measure used in this table is the profit margin i.e. the value of operating profit before tax expressed as a percentage of the value of total operating income.

(b) The percentage of businesses with a profit margin greater than zero.

(c) 75% of businesses in the industry have either a profit margin greater than this value or losses smaller than this.

(d) 50% of businesses in the industry have a profit margin greater than this value

(e) 25% of businesses in the industry have a profit margin greater than this value.

Source: ABS data available on request, Annual Manufacturing Survey.

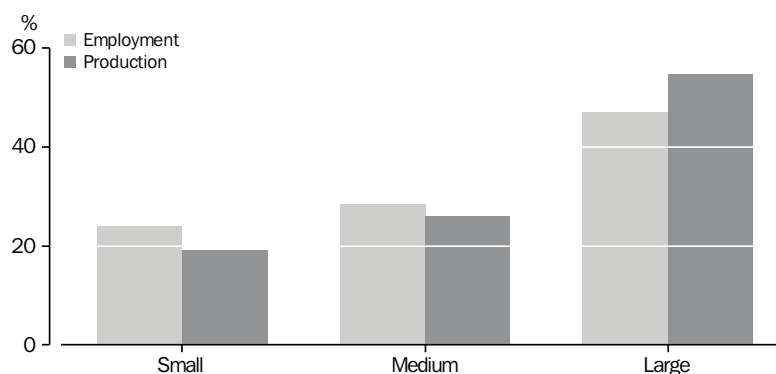
ACTIVITY BY SIZE OF ESTABLISHMENT

The statistics in this article are based on data for manufacturing establishments. It shows the extent to which large manufacturing establishments (those employing 100 or more people) dominate their industries. The economic variables used to illustrate the contributions by establishment size are employment (at 30 June 2000), and 1999–2000 Industry value added (IVA) which is a key measure of production by an industry. Definitions are contained in the Glossary.

Dominance by large establishments

The general pattern in Australian manufacturing industries is for a relatively small number of large manufacturing establishments to dominate the activity levels of their industries. Large manufacturing establishments employed 47.1% of the manufacturing workforce in June 2000 and generated 54.7% of 1999–2000 manufacturing IVA. Establishments employing 20–99 people accounted for 28.5% of the manufacturing workforce and generated 26% of manufacturing IVA. The remaining 24.4% of the manufacturing workforce and 19.2% of IVA were contributed by a large number of small establishments. Overall value added per person employed was greater in large establishments than in smaller establishments.

1.21 ESTABLISHMENT SIZE DATA—1999–2000



Source: *Manufacturing Industry, Australia, 1999–2000* (Cat. no. 8221.0).

All manufacturing subdivisions (except Other manufacturing where small businesses are more dominant) tended to follow this pattern. The highest degree of industry dominance of IVA (value added) by large establishments in 1999–2000 was the 75.3% recorded for Food, beverage and tobacco manufacturing. Six of the subdivisions had more than 50% of IVA contributed by large establishments. Large establishments typically contribute more to IVA than to employment levels.

Dominance by large establishments *continued*

Note: More than any other industry, Metal product manufacturing size data for establishments has been affected by the influence of unincorporated joint ventures. In table 1.22, this especially affects the IVA estimate for establishments employing fewer than 20 persons. See the Glossary for more information about the statistical treatment of these establishments.

1.22 INDUSTRY CONTRIBUTION, BY SIZE OF ESTABLISHMENT—1999–2000

Industry	Employing less than 20 people		Employing 20–99 people		Employing 100 or more persons	
	Proportion of total employment	Proportion of total IVA	Proportion of total employment	Proportion of total IVA	Proportion of total employment	Proportion of total IVA
	%	%	%	%	%	%
Food, beverage and tobacco mfg	11.2	5.4	22.7	19.3	66.2	75.3
Textile, clothing, footwear and leather mfg	31.4	23.1	32.6	33.5	36.0	43.3
Wood and paper product mfg	34.0	19.3	29.3	26.9	36.7	53.6
Printing, publishing and recorded media	26.7	13.9	27.4	25.4	45.8	60.7
Petroleum, coal, chemical and associated product mfg	17.2	11.6	34.2	30.6	48.6	57.8
Non-metallic mineral product mfg	25.5	12.2	33.2	36.7	41.3	51.0
Metal product mfg	29.1	50.1	29.0	25.4	41.9	24.5
Machinery and equipment mfg	21.8	14.8	25.7	23.3	52.6	61.9
Other mfg	50.3	44.9	38.3	41.1	11.3	13.7
Total mfg	24.4	19.2	28.5	26.0	47.1	54.7

Source: *Manufacturing Industry, Australia, 1999–2000* (Cat. no. 8221.0).

DISTRIBUTION ACROSS STATES AND TERRITORIES

This article is based on manufacturing establishment statistics. It shows how manufacturing activity is spread across Australia's States and Territories and indicates which broad manufacturing industries are of most importance to the various States and Territories. In this article, production is measured in terms of the variable 'Industry value added' (see Glossary for definition). Further information about State and Territory distribution of individual industries is given in Chapter 2 under the relevant industry headings.

For information about distribution of manufacturing activity within States, readers should consult the 1999 issue of this publication which presents sub-State data from the 1996–97 manufacturing census (the most recent census).

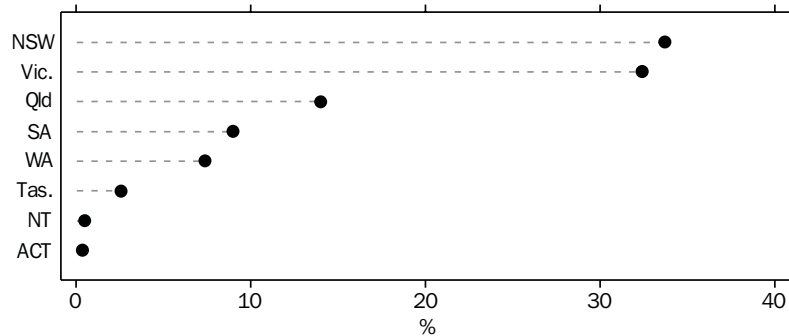
AUSTRALIA—STATES AND TERRITORIES



Production and employment

Graph 1.23 shows relative contributions to national production by States and Territories in 1999–2000. For some years, New South Wales and Victoria have contributed approximately two-thirds of Australian manufacturing activity between them and this continues to be the case in 1999–2000 with New South Wales having slightly the larger share.

1.23 MANUFACTURING PRODUCTION(a)—1999–2000



(a) Production is measured by Industry value added.
Source: *Manufacturing Industry, Australia, 1999–2000* (Cat. no. 8221.0).

The State/Territory distribution of 1999–2000 manufacturing activity is shown in table 1.24. The table also shows Production (Industry value added) per person employed in manufacturing. In this regard, 1999–2000 results ranged from \$63,000 per person employed in the Australian Capital Territory to \$107,000 per person employed in the Northern Territory. The main causes of difference in the State/Territory relativities in manufacturing overall is the industry mix within the particular State or Territory. Some industries such as Textile, clothing, footwear and leather manufacturing have relatively low production per person employed while Metal manufacturing (which dominates Northern Territory manufacturing) generally has relatively high production per person employed.

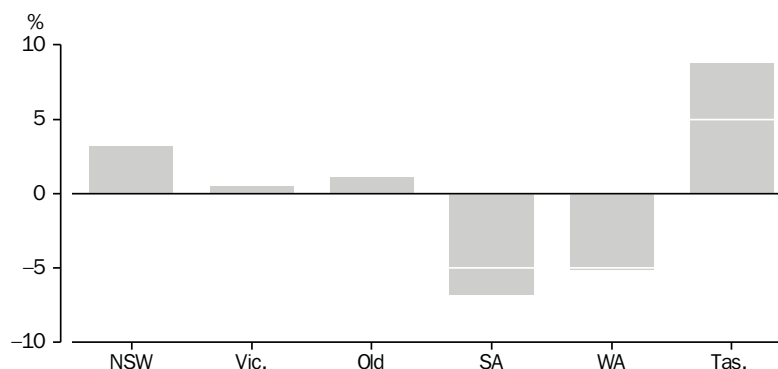
1.24 MANUFACTURING ACTIVITY—1999–2000

<i>State and Territory</i>	<i>Employment at end of June</i>	<i>Turnover</i>	<i>Industry value added</i>	<i>Industry value added per person employed</i>
	<i>'000</i>	<i>\$b</i>	<i>\$b</i>	<i>\$ '000</i>
New South Wales	292	73.3	23.1	79
Victoria	292	74.3	22.2	76
Queensland	142	34.1	9.6	68
South Australia	84	21.4	6.2	74
Western Australia	73	18.7	5.1	69
Tasmania	20	5.5	1.8	88
Northern Territory	3	1.0	0.4	107
Australian Capital Territory	4	0.7	0.2	63
Australia	911	229.0	68.5	75

Source: Manufacturing Industry, Australia, 1999–2000 (Cat. no. 8221.0).

Graph 1.25 shows that manufacturing production grew in four States and fell in the other two with all changes being less than 4%. Production grew more strongly in both the Northern Territory (up 9.3%) and the Australian Capital Territory (up 8.9%) than in any of the States but these increases were from very small industrial bases. For the second year in succession, the largest relative growth for any State was for Tasmania (up 2.8% in 1999–2000, mostly as a result of increased production in the Metal product manufacturing industry). South Australian production fell by 3.7% as a result of falls in Machinery and equipment manufacturing and Petroleum, coal, chemical and associated product manufacturing. Production fell by 3.0% in Victorian manufacturing, largely as a result of a decrease in Food, beverage and tobacco manufacturing.

1.25 CHANGE IN PRODUCTION—1997–98 TO 1998–99



Source: *Manufacturing industry, Australia* (Cat. no. 8221.0).

New South Wales

In 1999–2000, New South Wales had marginally lower manufacturing employment (at 30 June) and manufacturing turnover but marginally higher manufacturing production than Victoria and substantially more than any other State or Territory. The largest manufacturing industries within New South Wales in 1999–2000 were Food, beverage and tobacco manufacturing with 47,600 persons employed and \$4.4b of production, Metal product manufacturing (48,100 and \$3.9b) and Machinery and equipment manufacturing (58,400 and \$3.9b).

New South Wales experienced a small increase (of 0.9%) in manufacturing production between 1998–99 and 1999–2000. Industries with the greatest relative growth were Wood and paper product manufacturing (up 13.3%) and Printing, publishing and recorded media (up 11.6%). The largest relative fall was by the Petroleum, coal, chemical and associated product manufacturing industry (down 7.6%).

Victoria

In 1999–2000, Victoria had the highest manufacturing employment (at 30 June) and manufacturing turnover of all States and Territories but marginally lower manufacturing production than New South Wales. The largest manufacturing industries in Victoria in 1999–2000 were Machinery and equipment manufacturing with 67,600 people employed and \$5.0b of production, Food, beverage and tobacco manufacturing (46,800 and \$4.2b) and Petroleum, coal, chemical and associated product manufacturing (37,000 and \$3.8b).

Victoria experienced a fall of 3.0% in manufacturing production between 1998–99 and 1999–2000. The largest falls were in Textile, clothing, footwear and leather manufacturing (down 11.2%), Machinery and equipment manufacturing (down 8.7%) and Food, beverage and tobacco manufacturing (down 6.2%). The main production increases were by Petroleum, coal, chemical and associated product manufacturing (up 7.7%) and Printing, publishing and recorded media (up 4.4%).

Queensland	<p>In 1999–2000, Queensland maintained its position as the third largest of the States and Territories in terms of both manufacturing employment (142,100 people) and manufacturing production (\$9.6b). The largest manufacturing industries within Queensland in 1999–2000 were Food, beverage and tobacco manufacturing with 35,200 employed and \$2.3b of production, Metal product manufacturing (25,500 and \$2.0b), Machinery and equipment manufacturing (24,500 and \$1.3b) and Petroleum, coal, chemical and associated product manufacturing (11,100 and \$1.1b).</p> <p>Queensland experienced a small increase (of 0.7%) in manufacturing production between 1998–99 and 1999–2000 despite a fall of 9.6% in its largest manufacturing industry — Food, beverage and tobacco manufacturing. Relatively large increases in production were recorded for Non-metallic mineral product manufacturing (up 21.7%), Printing, publishing and recorded media (up 13.5%) and Wood and paper product manufacturing (up 12.8%).</p>
South Australia	<p>In 1999–2000, South Australia continued to be the fourth largest of the States and Territories in terms of both manufacturing employment (84,000 people) and manufacturing production (\$6.2b). The largest manufacturing industries within South Australia were Machinery and equipment manufacturing with 28,100 employed and \$1.8b of production and Food, beverage and tobacco manufacturing (15,300 and \$1.7b).</p> <p>South Australia experienced a fall of 3.7% in manufacturing production between 1998–99 and 1999–2000, largely as a result of a fall of 21.3% in its largest manufacturing industry, Machinery and equipment manufacturing. Production increases were generally in relatively small industries except for Food, beverage and tobacco manufacturing where production grew by \$142m (up 9.1%).</p>
Western Australia	<p>In 1999–2000, Western Australian manufacturing remained the smallest of the mainland States in terms of both employment (73,200 people) and production (\$5.1b) but nevertheless has much more manufacturing activity than Tasmania or the Territories. The largest manufacturing industries within Western Australia in 1999–2000 were Food, beverage and tobacco manufacturing with 13,600 employed and \$0.9b of production, Metal product manufacturing (15,700 and \$0.9b) and Petroleum, coal, chemical and associated product manufacturing (6,700 and \$0.9b).</p> <p>Western Australia experienced a rise of 1.7% in manufacturing production between 1998–99 and 1999–2000 despite a 20.1% fall in production for Metal product manufacturing (which took that industry from largest to third largest manufacturing industry in Western Australia). The largest increase in production was by Petroleum, coal, chemical and associated product manufacturing (up \$125m or 16.7%).</p>

Tasmania While having a substantially larger manufacturing industry than the two Territories, Tasmania is the smallest of the States in terms of both manufacturing employment (20,200 people) and manufacturing production (\$1.8b). The largest manufacturing industries within Tasmania are Food, beverage and tobacco manufacturing with 5,500 employed and \$0.5b of production and Wood and paper product manufacturing (3,600 and \$0.4b).

Tasmania experienced a rise of 2.8% in manufacturing production between 1998–99 and 1999–2000 mainly as a result of an increase of \$74m (37.4%) in production by the Metal product manufacturing industry. There were no significant production decreases.

Northern Territory Manufacturing is not a large industry in the Northern Territory. The industry employed 3,300 people in June 2000 and generated around \$350m of production in 1999–2000. Metal product manufacturing was by far the largest industry in the Northern Territory contributing around 35% of manufacturing employment and around 55% of manufacturing production.

Australian Capital Territory Manufacturing is not a large industry in the Australian Capital Territory. The industry employed 3,900 people in June 2000 and generated around \$245m of production in 1999–2000. Printing, publishing and recorded media contributed around 40% of the manufacturing employment and around 45% of manufacturing production.

THE MANUFACTURING WORKFORCE

The next series of articles presents information about people employed in the manufacturing industry or who have recently left the manufacturing industry. The estimates include working proprietors as well as employees. It also includes information on rates of industrial disputation and trade union membership for persons employed in the manufacturing industry.

PERSONS EMPLOYED

Persons employed in the manufacturing industry In August 2001, the manufacturing industry employed 12.0% of all persons employed in Australia. Males outnumbered females by a ratio of almost 3 to 1 (73% males and 27% females).

Full-time and part-time jobs In August 2001, the vast majority of males employed in the manufacturing industry (94.9%) were employed full-time. The corresponding proportion for females was considerably lower (72%). The proportion of people with full-time jobs in manufacturing has fallen slightly over the past 10 years, from 96.1% for males and 74.9% for females in 1991.

Full-time and part-time jobs *continued*

After adjusting for people working zero hours in the survey week (for example, people on leave for the whole week), average hours worked in the manufacturing industry had increased only slightly over the 10 year period from August 1991 (39.3 hours) to August 2001 (40.0 hours). However, several compositional changes have occurred. The largest change has been to the proportion of people working 50 hours and more per week, increasing from 14.7% in 1991 to 19.4% of all persons employed in August 2001. This change reflects an increase for both male and female workers. The proportion of women working 50 and over hours almost doubled from 5.6% to 10%, while the corresponding estimate for males rose from 18.3% to 22.7%. Workers also recorded an increase in those working less than 30 hours a week, from 11.8% in 1991 to 13.4% in 2001. Falls were recorded in the number of persons working between 30 and 39 hour weeks (down from 34.6% to 29.5%), and between 40 and 49 hour weeks (down from 38.9% to 37.8%).

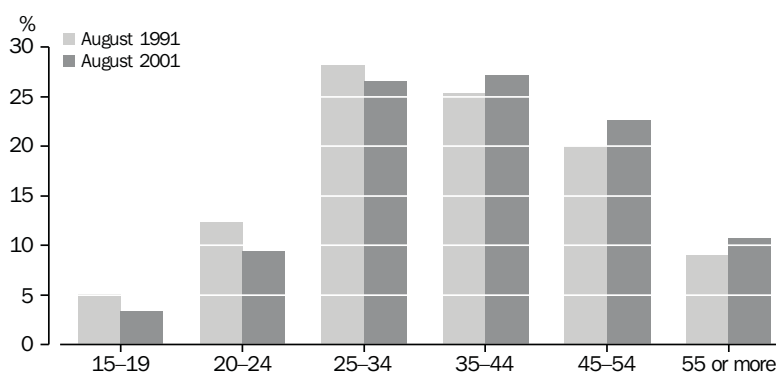
In August 2001, the length of the working week in manufacturing was:

- up to 30 hours for 8.5% of males and 26.9% of females
- 30 but less than 40 hours for 27.6% of males and 34.6% of females
- 40 but less than 50 hours for 41.1% of males and 23.8% of females
- 50 or more hours for 22.7% of males and 10% of females.

Age profile

The manufacturing workforce is dominated by the two age groups 25–34 and 35–44, which together make up 54% of the manufacturing workforce (compared to 49% for civilian industry overall). Graph 1.26 shows that over the 10 year period from 1991 to 2001, these age groups have recorded the least significant proportional change. However, the younger age groups of 15–19 and 20–24 have shown significant decreases. The proportion of workers aged 15–19 has fallen from 5.1% to 3.4% of all persons employed in manufacturing, while the proportion of those aged 20–24 fell from 12.3% to 9.4%.

1.26 AGE PROFILE OF MANUFACTURING WORKFORCE



Source: Labour Force, Australia, August 2001 (Cat. no. 6203.0).

Manufacturing industry
subdivisions

In August 2001, the largest manufacturing subdivisions in terms of employment were Machinery and equipment manufacturing (22.9% of people employed in manufacturing), Food, beverage and tobacco manufacturing (16.7%) and Metal product manufacturing (14.2%). The largest employers of males were Machinery and equipment manufacturing (25.7%) and Metal product manufacturing (17.1%). The largest employers of females were Food, beverage and tobacco manufacturing (20.4%) and Printing, publishing and recorded media (17.3%).

Comparisons with earlier periods are necessarily approximate due to changes in industry classifications used. However, in August 1991, relative industry sizes appear to have been very similar to the current profile (August 2001). Machinery and equipment manufacturing was the largest employer in 1991 (21.7%) followed Food, beverage and tobacco manufacturing (15.9%) and Metal product manufacturing (15.2%). The most substantial changes are that in 1991, Printing, publishing and recorded media employed relatively fewer women (13.3%) and Textile, clothing, footwear and leather manufacturing employed more (21.5% in 1991 which fell to 15.8% in 2001).

Further information on employment and other aspects of manufacturing industry subdivisions is included in Chapter 2.

1.27 EMPLOYED PERSONS—AUGUST 2001

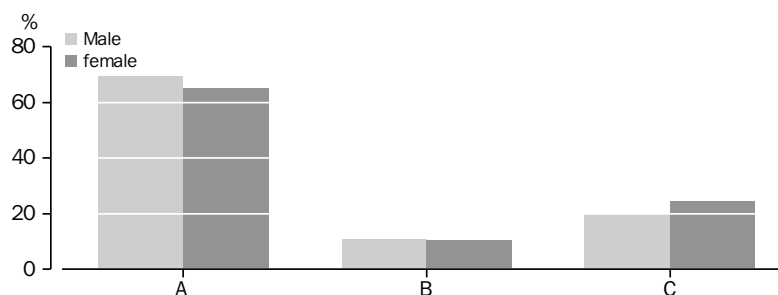
	Males	Females	Persons
<i>Industry</i>	%	%	%
Food, beverage and tobacco mfg	15.4	20.4	16.7
Textile, clothing, footwear and leather mfg	4.7	15.8	7.7
Wood and paper product mfg	7.1	4.2	6.3
Printing, publishing and recorded media	7.1	17.3	9.8
Petroleum, coal, chemical and associated product mfg	9.8	11.7	10.3
Non-metallic mineral product mfg	5.0	2.5	4.4
Metal product mfg	17.1	6.2	14.2
Machinery and equipment mfg	25.7	15.3	22.9
Other mfg	8.1	6.6	7.7
Total mfg	100.0	100.0	100.0

Source: Labour Force, Australia, August 2001 (Cat. no. 6203.0).

Australian and overseas
born

At August 2001, 68.2% of people employed in the Australian manufacturing industry were Australian born. The corresponding figure for all civilian industries was 75.9%. This compares to 1991 when 64.4% of persons employed in manufacturing and 74.9% in all civilian industries were Australian born. Of those manufacturing workers born overseas 66.6% were born in other than the main English speaking countries, virtually identical to the 1991 proportion (66.7%). As graph 1.28 shows, of all males employed in the Australian manufacturing industry in August 2001, 69.3% were Australian born. For females, the corresponding proportion was 65%.

1.28 EMPLOYED PERSONS MANUFACTURING BIRTHPLACE—AUGUST 2001



A – Born in Australia
 B – Born Overseas in mainly English speaking country
 C – Born Overseas in Other than mainly English speaking country

Source: Labour Force, Australia, August 2001 (Cat. no. 6203.0).

Table 1.29 shows the proportions of the manufacturing workforce according to whether born in Australia or overseas. In August 2001 just under half (48.6%) of the people employed in the Textile, clothing, footwear and leather manufacturing industry were born outside Australia (42.3% of males in the industry and 53.7% of females), and that just under one-third (29.6%) of all employment in this industry was made up of female workers born outside Australia. This industry recorded the highest proportion of workers born outside Australia, as well as the highest proportion of workers born in other than mainly English speaking countries (39%). Proportions of those born outside Australia for the other subdivisions were substantially lower, ranging from 26.1% for Food, beverage and tobacco manufacturing to 35.8% for Petroleum, coal, chemical and associated product manufacturing.

1.29 EMPLOYED PERSONS, BY BIRTHPLACE—AUGUST 2001

Industry	Proportion of total persons employed					
	Born in Australia			Born outside Australia		
	Males	Females	Persons	Males	Females	Persons
	%	%	%	%	%	%
Food, beverage and tobacco mfg	50.7	23.2	73.9	16.7	9.4	26.0
Textile, clothing, footwear and leather mfg	25.9	25.5	51.4	19.0	29.6	48.6
Wood and paper product mfg	59.7	13.7	73.4	22.4	4.1	26.5
Printing, publishing and recorded media	38.5	33.2	71.7	14.7	13.6	28.3
Petroleum, coal, chemical and associated product mfg	44.8	19.3	64.2	25.0	10.8	35.8
Non-metallic mineral product mfg	61.3	11.8	73.1	23.4	3.6	26.9
Metal product mfg	61.4	8.6	70.0	26.9	3.2	30.0
Machinery and equipment mfg	55.0	11.3	66.3	27.1	6.5	33.6
Other mfg	54.5	13.7	68.2	22.6	9.2	31.8
Total mfg	50.8	17.4	68.2	22.5	10.5	33.0
Total civilian	41.7	31.1	72.8	14.0	10.1	24.1

Source: ABS data available on request, Labour Force Survey, August 2001.

PERSONS PREVIOUSLY EMPLOYED

The August 2001 Labour force survey estimated that there were 394,200 people who were unemployed at the time but who had been employed at some time during the previous two years. Table 1.30 shows that of these 394,200 people, 58,400 (15%) had last been employed in the manufacturing industry. This was the second largest number for a single industry, behind Retail trade (17%).

For male ex-workers, manufacturing with 45,100 people represented the largest number for a single industry while for female ex-workers, manufacturing with 13,300 was smaller in this regard than Retail trade, Accommodation, cafes and restaurants, and about the same as Health and Community services.

1.30 UNEMPLOYED PERSONS(a), PREVIOUS INDUSTRY(b)—AUGUST 2001

	Males	Females	Persons
Industry	'000	'000	'000
Agriculture, forestry and fishing	13.7	5.5	19.2
Manufacturing	45.1	13.3	58.4
Construction	39.0	*2.1	41.1
Retail trade	33.0	32.2	65.3
Accommodation, cafes and restaurants	16.4	19.6	36.0
Property and business services	32.2	18.7	50.8
Other services industries	16.8	27.2	43.9
Other industries	53.6	25.6	79.4
All industries	249.8	144.4	394.2

(a) Persons aged 15 or over who were in the workforce in August 2000 but were not employed during the survey week.

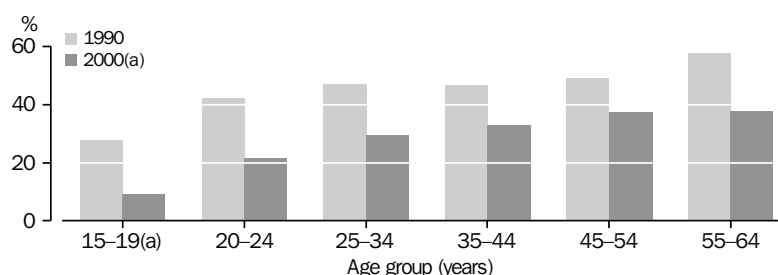
(b) Industry of last full time job.

* Subject to sampling variability too high for most practical uses.

Source: Labour Force, Australia, August 2001 (Cat. no. 6203.0).

Graph 1.31 shows the relative proportions of unemployed workers classified according to the reason for ceasing employment.

1.37 TRADE UNION MEMBERSHIP, MANUFACTURING



(a) The 2000 estimate has a relative standard error of greater than 25%. Care should be exercised when using it.

Source: Employee Earnings, Benefits and Trade Union membership, August 2000 (Cat. no. 6310.0).

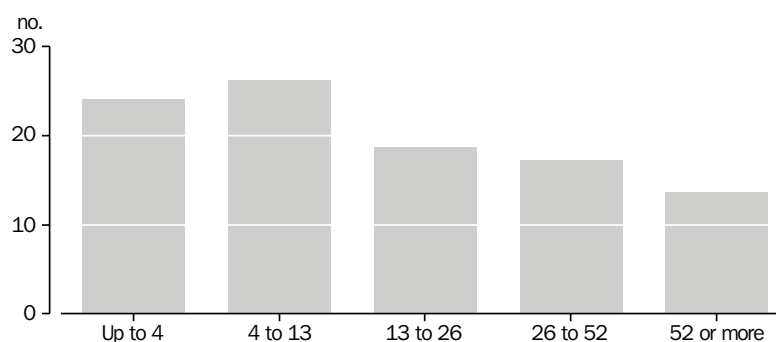
Persons previously employed
continued

Manufacturing had a higher proportion of ex-workers who had been retrenched (42%) than the corresponding all industries proportion (32%), and was second to Construction (47% retrenched). For manufacturing, 41% of male ex-workers had been retrenched, a lower proportion than for female ex-workers (47%). Of those retrenched, from manufacturing employment, 45% had been labourers or related workers, 29% had been trades persons or related workers and 14% had been intermediate production or transport workers. The remaining 12% had been in other occupations (managerial, professional, clerical, sales or service).

Twenty nine percent of ex-Manufacturing workers were classified as job leavers, i.e. they had chosen to leave their employment. 35% of female ex-manufacturing workers were job leavers, compared to 28% of male workers who had left the same industry.

Graph 1.32 shows the duration of unemployment for ex-manufacturing workers.

1.32 EX-MANUFACTURING, Weeks Unemployed(a)



(a) As at August 2000.

Source: Labour Force Australia, August 2000 (Cat. no. 6203.0).

Just under half of ex-manufacturing workers had been unemployed for 13 weeks or more at the time of the August 2001 survey including 21% who had been unemployed for between 26 weeks and less than 52 weeks, and 9% who had been unemployed for 52 weeks or more. Of those who had been unemployed for 13 weeks or more 46% had been labourers or related workers, 24% had been trades persons or related workers and 16% had been intermediate production and transport workers. The remaining 14% had been in other occupations (managerial, professional, clerical, sales or service workers). For periods of unemployment less than 13 weeks, labourers and related workers only comprised 31% of total unemployed.

INDUSTRIAL DISPUTES

Manufacturing compared
with other industries

The number of industrial disputes in Australia decreased in the year ending June 2001. There were 697 industrial disputes recorded in this period, compared to 769 recorded in the year ending June 2000. Manufacturing accounted for approximately one-third of disputes (244) closely followed by the Construction industry (225).

Manufacturers lost almost 156 working days per thousand employees, which was more than three times the rate for the total of all industries. Manufacturing contributed 39% of all employees involved in disputes, followed again by Construction (29%). Manufacturing contributed the highest percentage of working days lost (47%), followed by Construction (29%) and Mining and services to mining (10%).

For Manufacturing, the average number of working days lost per employee involved was 1.8, behind Electricity, gas and water supply (6.4) and Mining and services to mining (3.8).

1.33 INDUSTRIAL DISPUTES—2001

<i>Industry</i>	<i>Disputes</i>	<i>Employees involved</i>	<i>Working days lost</i>	<i>Working days lost per employee involved</i>	<i>Working days lost per thousand employees</i>
	<i>no.</i>	<i>'000</i>	<i>'000</i>	<i>no.</i>	<i>no.</i>
Mining and services to mining	52	8.8	33.7	3.8	443.4
Manufacturing	244	89.4	164.3	1.8	155.7
Electricity, gas and water supply	9	1.3	8.3	6.4	80.3
Construction	225	67.3	100.0	1.5	223.7
Wholesale trade; retail trade; accommodation, cafes and restaurants	24	3.1	3.5	1.1	1.8
Transport and storage	59	8.2	10.6	1.3	30.0
Communication services	9	0.5	0.2	0.4	1.2
Finance and insurance; property and business services	30	9.6	5.8	0.6	4.7
Government administration and defence	13	4.4	3.5	0.8	9.7
Education	13	32.3	16.1	0.5	26.9
Health and community services	12	1.0	0.7	0.7	0.9
Other services	29	5.8	5.8	1.0	12.6
Total	(a)697	231.9	349.5	1.5	44.7

(a) The total number of disputes may not equal the sum of the disputes in each industry. If a dispute involves a number of industries it is counted separately for each industry but only once at the total level for Australia.

Source: *Industrial Disputes, Australia, June 2001* (Cat. no. 6321.0). ABS data available on request.

Manufacturing subdivisions Table 1.34 shows that, of the disputes which occurred in the Manufacturing industry in the year ending June 2001, the majority were recorded in Metal product manufacturing (78), Machinery and equipment manufacturing (63) and Food, beverage and tobacco manufacturing (47). These three subdivisions accounted for 80% of manufacturing employees involved in disputes and 52% of the working days lost. Metal product manufacturing recorded the highest working days lost per thousand employees in manufacturing (280.2), followed by Petroleum, coal, chemical and associated product manufacturing (205.6).

1.34 INDUSTRIAL DISPUTES—2001

	Disputes	Employees involved	Working days lost	Working days lost per employee involved	Working days lost per thousand employees
<i>Industry</i>	<i>no.</i>	<i>'000</i>	<i>'000</i>	<i>no.</i>	<i>no.</i>
Food, beverage and tobacco mfg	47	12.1	32.2	2.7	180.9
Textile, clothing, footwear and leather mfg	5	2.0	3.6	1.8	48.6
Wood and paper product mfg	17	5.2	9.9	1.9	147.8
Printing, publishing and recorded media	11	3.6	3.9	1.1	33.9
Petroleum, coal, chemical and associated product mfg	31	4.4	22.0	5.0	205.6
Metal product mfg	78	35.5	48.2	1.4	280.2
Machinery and equipment mfg	63	23.7	36.3	1.5	157.1
Non-metallic mineral product mfg; Other mfg	21	3.0	8.3	2.8	74.1
Total	(a)244	89.4	164.3	1.8	155.7

(a) The total number of disputes does not equal the sum of the disputes in each industry. If a dispute involves a number of industries it is counted separately for each industry but only once at the total level for Australia.

Source: *Industrial Disputes, Australia, June 2001* (Cat. no. 6321.0). ABS data available on request.

Cause of disputes In the Manufacturing industry, the two main causes recorded for disputes, as measured by working days lost, were managerial policy (103,400 days lost) and 'other' causes (which include protests directed against persons or situations other than those relating to the employer/employee relationship) (37,800 days lost), accounting for 64% and 23% of the total, respectively. For all industries, managerial policy, (185,300 days lost) and 'other' causes (105,200 days lost), 52% and 29% of the total respectively, were also the two main causes of disputes.

Change from 2000 to 2001 The number of disputes involving manufacturers increased by 6% (from 231 to 244) from June 2000 to June 2001 compared to the decrease of 9% (769 to 697) for industry overall. All but three Manufacturing subdivisions recorded an increase in the number of disputes. Textile, clothing, footwear and leather manufacturing recorded a decrease of 62%, followed by Petroleum, coal chemical and associated product manufacturing and Non-metallic mineral product/Other manufacturing (down 28% and 16%, respectively). Wood and paper product manufacturing was the only manufacturing subdivision to report an increase in the number of employees involved in disputes, by 100 employees. Machinery and equipment manufacturing recorded the greatest decrease, of 11,100 employees involved in disputes.

Change from 2000 to 2001
continued

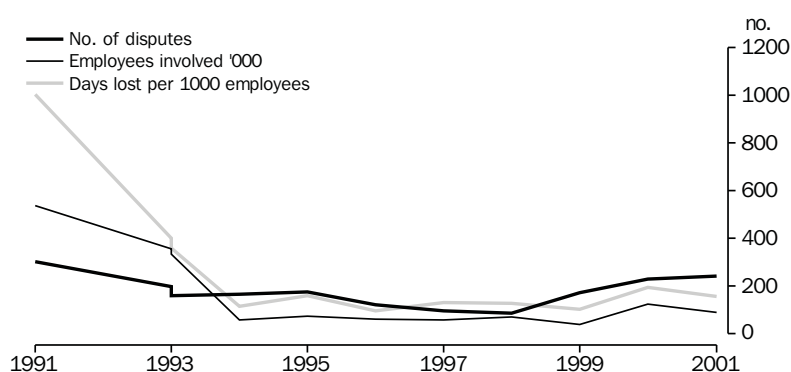
The greatest relative increase in the number of disputes was recorded in Machinery and equipment manufacturing (up 34%) from 47 disputes in 2000 to 63 in 2001. However the number of employees involved in disputes in this industry dropped from 34,800 to 23,700, and the number of working days lost per 1,000 employees fell from 316.7 to 157.1. The number of working days lost in manufacturing overall decreased from 209,000 to 164,300 in 2001. All subdivisions except Wood and paper product manufacturing and Petroleum, coal, chemical and associated product manufacturing recorded a decrease in the number of working days lost over this period.

Longer term comparison

Comparing 2001 with ten years earlier shows an increase in the number of disputes in Construction, Wholesale trade; retail trade; accommodation cafes and restaurants, Finance and insurance; property and business services and Government administration and defence and a decrease for all other industries including manufacturing. The Construction industry recorded an increase in involvement from 75 disputes in 1991 to 150 in 2001. Manufacturing recorded a decrease in disputes from 302 in 1991 to 244 in 2001. The total number of disputes fell 42% from 1,201 in 1991 to 697 in 2001, with the number of working days lost decreasing from 1,574,000 to 349,500. The high 1991 figures were primarily due to 441 disputes recorded in the Mining industry and the 302 disputes involving the Manufacturing industry.

Graph 1.35 shows the trends in industrial disputes recorded in the Manufacturing industry over the ten year period 1991–2001. The number of disputes has declined in total, but as can be seen, fluctuations have occurred. In particular, the number of days lost per 1000 employee has fallen dramatically from 1991, at 1005. The number of employees involved in disputes has remained more stable, but also peaked in 1991 at 538,222.

1.35 INDUSTRIAL DISPUTES IN MANUFACTURING



Source: *Industrial Disputes, Australia, June 2001* (Cat. no. 6321.0).

TRADE UNION MEMBERSHIP

Manufacturing compared to other industries

In August 2000, 330,800 employees in the manufacturing industry (31% of employees) were members of a trade union. This represented a higher proportion of members than for industry overall, where 25% of the workforce belonged to a union. Over the five year period, 1995 to 2000 in the manufacturing industry, the proportion of trade union members has fallen 8 percentage points, the same as industry overall. The greatest overall falls in union membership rates over this period were recorded in the Communication services industry and Mining (down 28 and 14 percentage points respectively).

1.36 TRADE UNION MEMBERSHIP—AUGUST 2000

Industry	Trade union members			Trade union members as a proportion of all employees		
	Males	Females	Persons	Males	Females	Persons
	'000	'000	'000	%	%	%
Agriculture, forestry and fishing	8	2	10	6.0	3.7	5.4
Mining	22	0	22	35.0	4.5	32.3
Manufacturing	267	64	331	34.1	22.8	31.1
Electricity, gas and water supply	31	4	35	56.6	34.9	53.1
Construction	114	2	116	29.5	3.7	26.4
Wholesale trade	35	7	42	12.3	5.8	10.4
Retail trade	79	120	198	15.4	19.7	17.7
Accommodation, cafes and restaurants	17	24	41	10.0	10.6	10.3
Transport and storage	107	19	127	42.1	20.9	36.4
Communication services	47	14	61	42.9	27.1	37.7
Finance and insurance	26	52	78	18.9	28.3	24.3
Property and business services	44	26	70	9.2	6.1	7.8
Government administration and defence	80	55	135	43.8	32.0	38.1
Education	93	177	271	45.2	43.5	44.0
Health and community services	50	210	260	30.4	32.8	32.3
Cultural and recreational services	19	13	31	19.8	14.1	17.1
Personal and other services	56	19	75	39.8	14.5	27.7
Total	1 095	807	1 902	26.3	22.8	24.7

Source: *Employee Earnings, Benefits and Trade Union Membership, Australia, August 2000* (Cat. no. 6310.0).

Manufacturing industry —
profile of trade union
members

Gender

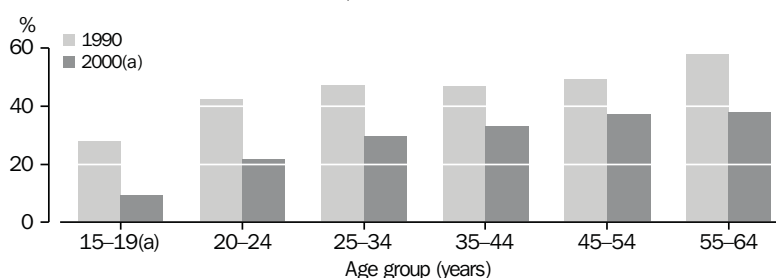
At August 2000, of all manufacturing trade union members, 81% were male and 19% were female. Employment in the manufacturing industry was predominantly male and proportionately, men made up an even greater percentage of union members. Of all manufacturing employees, 267,200 males (34%) and 63,600 females (23%) were union members. For males, this is a higher proportion than industry overall (26%), while for females it is the same proportion (23% overall).

Work status Thirty four per cent of full-time manufacturing employees were trade union members in August 2000. Only 10% of part-time employees were members. The proportion of full-time male employees who were trade union members (36%) was substantially higher than that of full-time female employees (27%), whereas the membership rates for male and female part-time employees were equal at 10%.

Background At August 2000, 62% of manufacturing trade union members were born in Australia with the remaining 38% born overseas. Of those born overseas, 26% were born in mainly English speaking countries and 74% were born in other countries. This compares to industry overall with 75% of members born in Australia and 25% born overseas — 40% in main English speaking countries, and 60% in other countries.

Age Graph 1.31 shows the proportion of Manufacturing trade union members by age group in 2000 and 1990, when total union membership in the industry was 46%. All age groups have recorded significant decreases over the 10 year period. The 20–24 year old age group recorded the greatest fall in members, from 42% of employees in 1990 to 22% in 2000. The 55–64 year old age group reported the greatest proportion of union members in both 1990 (58%) and 2000 (38%).

1.37 TRADE UNION MEMBERSHIP, MANUFACTURING



(a) The 2000 estimate has a relative standard error of greater than 25%. Care should be exercised when using it.

Source: *Employee Earnings, Benefits and Trade Union membership, August 2000* (Cat. no. 6310.0).

Within manufacturing In August 2000, the manufacturing subdivision with the highest proportion of female trade union members was Textile, clothing, footwear and leather manufacturing, where 61% of union members were female. The Textile, clothing, footwear and leather manufacturing subdivision reflected the second highest rate of union membership per female worker (31% of all female workers were union members). Food, beverage and tobacco manufacturing attracted the greatest proportion of both female and male workers as union member with 37% and 43%, respectively.

1.38 TRADE UNION MEMBERSHIP—AUGUST 2000

Industry	Trade union members			Trade union members as a proportion of all employees		
	Males	Females	Persons	Males	Females	Persons
	'000	'000	'000	%	%	%
Food, beverage and tobacco mfg	51.4	20.9	72.2	43.3	36.5	41.0
Textile, clothing, footwear and leather mfg	8.5	13.4	21.9	30.8	30.9	30.8
Wood and paper product mfg	21.6	*1.8	23.4	34.5	21.4	33.0
Printing, publishing and recorded media	20.9	5.0	26.0	26.7	10.8	20.9
Petroleum, coal, chemical and associated product mfg	23.6	6.1	29.7	34.8	16.9	28.6
Non-metallic mineral product mfg	13.8	**0.2	14.0	40.5	4.1	35.9
Metal product mfg	55.0	5.6	60.6	35.8	24.0	34.2
Machinery and equipment mfg	63.3	9.2	72.5	33.5	20.3	31.0
Other mfg	9.1	*1.4	10.5	17.4	10.0	15.8
Total mfg	267.2	63.6	330.8	34.1	22.8	31.1

* This estimate has a relative standard error of greater than 25%, care should be exercised when using it.

** This estimate has a standard error of greater than 50%, and is considered too unreliable for general use.

Source: *Employee Earnings, Benefits and Trade Union Membership, Australia, August 2000* (Cat. no. 6310.0).

Over the five year period, 1995–2000 all manufacturing subdivisions experienced a decline in total trade union membership. Metal product manufacturing fell the least, from 37% in 1995 to 34% in 2000. Textile, clothing, footwear and leather manufacturing experienced the greatest fall in membership, down from 43% in 1995 to 31% in 2000. The membership rates of all male employees fell in each subdivision. However female membership rates rose in the Metal product manufacturing industry from 11% in 1995 to 24% in 2000.

ENERGY USE BY MANUFACTURERS

Energy use This article presents information about primary and secondary energy use by Manufacturing and the rest of the economy, and was originally printed in *Energy and Greenhouse Gas Emissions Accounts, Australia 1992–93 to 1997–98* (Cat. no. 4604.0), published in May 2001.

The supply and use of energy is driven primarily by population growth and fluctuations in economic activity. Australia has extensive fossil fuel deposits and the cost of extraction and use of these energy sources is relatively low. This comparative advantage in producing energy has created an economy which is heavily dependent on relatively energy intensive industries. The sustained economic growth which occurred in the Australian economy over the reporting period has resulted in increased domestic supply and use of energy to maintain the pace of economic activity. International demand has also resulted in increased exports of primary energy, particularly coal and uranium.

Primary energy Table 1.39 presents information about the direct use of energy products by industry for intermediate use in production, as well as direct consumption by final use (household consumption and exports). Total domestic use (Australian industries and households) of primary energy producers increased by about 17% between 1992–93 and 1997–98 (from 4,165 to 4,866 PJ). The Manufacturing and Electricity sectors accounted for the bulk of this energy use (about 89%), as these sectors are responsible for transforming primary energy products into secondary energy products for use. The majority of primary energy supply, however, is exported (8,667 PJ in 1997–98).

The manufacturing industry is the largest domestic user of natural gas. It used around 42% of domestically available natural gas in 1997–98, increasing its use from 316 PJ in 1992–93 to 359 PJ in 1997–98. Other major users included the electricity supply industry (20% of domestic use), and the mining industry (17%). Direct consumption by households accounted for 14% of total domestic use of natural gas.

1.39 AUSTRALIAN PRIMARY ENERGY USE

	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98
	PJ	PJ	PJ	PJ	PJ	PJ
Agriculture; hunting and trapping; forestry and fishing	4	5	5	15	6	7
Mining	121	125	138	151	156	164
Manufacturing	2 244	2 303	2 367	2 414	2 464	2 489
Electricity	1 498	1 525	1 594	1 656	1 712	1 855
Construction	1	1	1	1	2	4
Transport	23	27	31	32	34	36
Other services(a)	78	79	84	85	86	90
Total intermediate use	3 969	4 065	4 220	4 356	4 460	4 645
Household consumption	197	198	208	213	219	222
Total domestic use(b)	4 165	4 262	4 429	4 567	4 678	4 866
Exports	5 450	6 270	6 642	7 297	7 766	8 667
Unallocated products(c)	109	–668	–660	–79	232	–285
Total(d)	9 727	9 865	10 410	11 787	12 676	13 250

(a) Includes water and gas.

(b) Total intermediate use plus household consumption.

(c) Includes change in inventories and statistical discrepancies.

(d) Values may not add due to rounding.

Source: ABS Energy and Greenhouse Gas Emissions Accounts Australia, 1992–93 to 1997–98 (Cat. no. 4604.0).

Secondary energy The household sector is the major user of secondary energy sources, particularly automotive petrol (429 PJ) and electricity (166 PJ). Households used about 30% of total secondary energy products consumed domestically in 1997–98. Manufacturing used about 23% of secondary energy (domestically) and was the largest consumer of electricity (240 PJ).

1.40 AUSTRALIAN SECONDARY ENERGY USE

	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
	PJ	PJ	PJ	PJ	PJ	PJ
Agriculture; hunting and trapping; forestry and fishing	93	96	98	102	105	108
Mining	112	116	122	134	143	150
Manufacturing	478	494	513	514	502	521
Electricity	108	108	115	118	110	118
Construction	61	63	64	65	67	69
Transport	348	359	384	418	426	423
Other services	178	183	193	203	210	218
Total intermediate use	1 377	1 418	1 488	1 554	1 563	1 606
Household consumption	648	655	677	678	684	691
Total domestic use(a)	2 026	2 073	2 167	2 229	2 248	2 295
Exports	166	158	136	173	195	186
Unallocated products	11	23	17	-15	-9	3
Total(b)	2 203	2 253	2 319	2 387	2 435	2 489

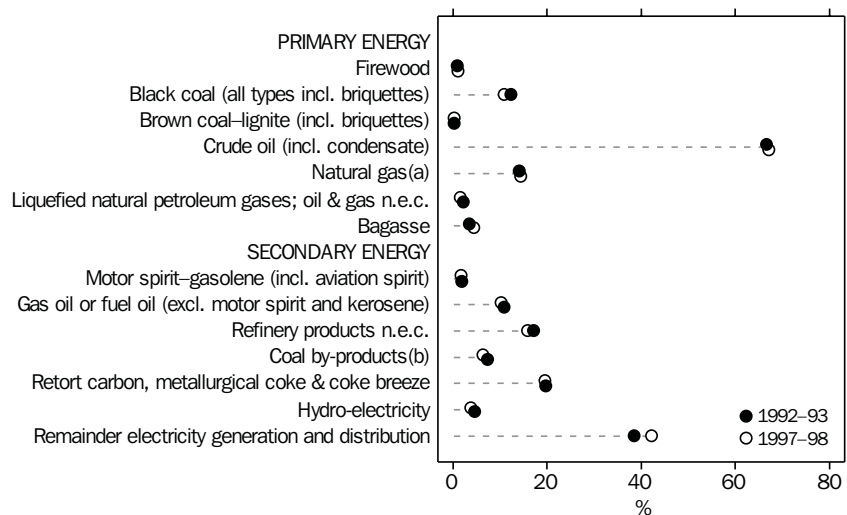
(a) Total intermediate use plus household consumption.

(b) Values may not add due to rounding.

Source: *Energy and Greenhouse Gas Emissions Accounts Australia, 1992-93 to 1997-98 (Cat. no. 4604.0)*.

Graph 1.41 shows the distribution of energy use by source for Manufacturing in 1992-93 and 1997-98. Little relative change has occurred in the proportions of energy use, both primary and secondary. Crude oil (including condensate) has maintained the greatest proportion of primary energy use and Non-hydro electricity generation and distribution formed an even greater percentage of secondary energy use (from 38.5% to 42.2%).

1.41 DISTRIBUTION OF ENERGY USE BY MANUFACTURERS BY SOURCE



(a) Natural gas includes liquefied natural gas (LNG). According to the Input-Output Product Classification (IOPC), LNG should be included with liquefied natural petroleum gases; oil and gas n.e.c.. This break from the IOPC has occurred to maintain consistency with ABARE use data.

(b) Produced in the coke making process and used as a fuel in coke ovens and associated iron and steel plants.

Source: *Energy and Greenhouse Gas Emissions Accounts, 1992-93 to 1997-98 (Cat. no. 4604.0)*.

DEGREE OF TRANSFORMATION BY MANUFACTURERS

This article presents statistics for manufactured goods classified by degree of transformation. Table 1.43 shows the value of goods produced by manufacturers during 1999–2000 and either sold or transferred within the business. The duplication effect on data in table 1.43 resulting from counting both sales and transfers is minor. Transfers for further processing amount to less than 2% of the value of goods for total manufacturing and the highest proportion for any subdivision is around 3%.

The basic premise of the classification of goods by degree of transformation is that each manufactured product reaching the point of sale (or transfer) will have been subjected to one or more processes beginning at a raw material state and passing through a range of manufacturing processes and intermediate products to become a final end use product. The number and complexity of such processes determine the degree of transformation category to which that product is classified.

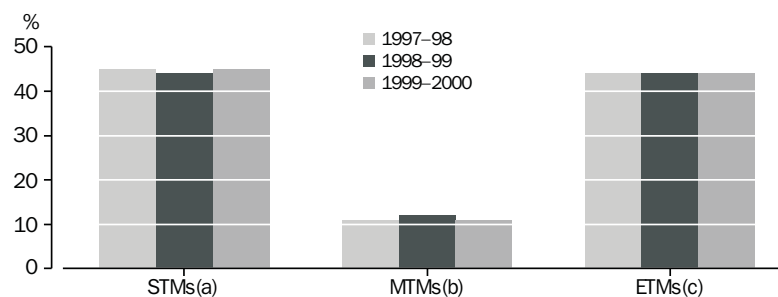
The concept of degree of transformation is also related to the concept of value adding. The amount and complexity of transformation strongly influence the amount of value added by manufacturing processes. However, in making the connection between degree of transformation and value adding, it should be remembered that these are not the only influences which determine the amount of value added. Furthermore, for a given Australian produced final product, not all of the transformations required to produce the product have necessarily been carried out in Australia.

The classification has five broad categories. However, the first three of these have been combined together in the graph and table below because the boundaries between the categories have not been finally established. The categories are:

- Primary products (such as butter, pasteurised milk, red meat, hides and skins)
- Primary product manufactures (such as beer, flour, refined sugar, wood pulp)
- Simply transformed manufactures (such as clay bricks, paper, pig iron, plaster)
- Moderately transformed manufactures (such as broadwoven fabrics, soaps and detergents, steel wire)
- Elaborately transformed manufactures (such as clothing, motor vehicles, machinery, paint)

Graph 1.42 shows that the proportions of simply transformed, moderately transformed and elaborately transformed manufactures have remained virtually unchanged for the last three years.

1.42 PROPORTIONS BY DEGREE OF TRANSFORMATION



- (a) Simply transformed manufactures
(b) Moderately transformed manufactures
(c) Elaborately transformed manufactures.

Source: ABS data available on request, Annual Manufacturing Survey.

Table 1.43 shows that Machinery and equipment manufacturing is the industry subdivision with the greatest value of elaborately transformed manufactures among its products while Metal product manufacturing and Wood and paper product manufacturing have the most even spread of values across the various degrees of transformation categories.

1.43 DEGREE OF TRANSFORMATION—1999–2000

	Simply transformed manufactures(a)	Moderately transformed manufactures	Elaborately transformed manufactures
<i>Industry</i>	<i>\$b</i>	<i>\$b</i>	<i>\$b</i>
Food, beverage and tobacco mfg	49.7	0.0	0.0
Textile, clothing, footwear and leather mfg	1.4	2.7	4.9
Wood and paper product mfg	5.1	4.3	3.8
Printing, publishing and recorded media	0.0	0.0	11.9
Petroleum, coal, chemical and associated product mfg	14.8	5.9	14.1
Non-metallic mineral product mfg	8.5	0.7	0.7
Metal product mfg	15.1	10.1	13.2
Machinery and equipment mfg	0.1	0.0	39.0
Other mfg	0.0	0.0	6.5
Total mfg	94.6	23.8	94.0

(a) Also includes products classified to the 'Primary Products' and 'Primary Product Manufactures' categories.

Source: ABS data available on request, Annual Manufacturing Survey.

Exports Data in this section about exports by degree of transformation have been taken from *Exports of primary and manufactured products, Australia, 2000* a publication by the Department of Foreign Affairs and Trade (DFAT). Readers should note that DFAT does not classify goods in exactly the same way as the ABS has in the above table, although the elaborately transformed manufactures category is very similar.

Elaborately transformed manufactures remain the fastest growing category of exports with average annual growth of 11.7% over the 10 years to 1999–2000.

Exports of Australian produce in 2000 comprised:

■ Unprocessed primary products and minerals	\$41.5b (39.6%)
■ Processed primary products and minerals	\$22.9b (21.9%)
■ Simply transformed manufactures	\$11.5b (11.0%)
■ Elaborately transformed manufactures	\$19.5b (18.6%)
■ Other (mainly non monetary gold)	\$9.2b (8.8%)

Average annual growth over ten years 1990 to 2000 was:

■ Unprocessed primary products and minerals	5.9%
■ Processed primary products and minerals	6.1%
■ Simply transformed manufactures	7.4%
■ Elaborately transformed manufactures	11.7%
■ Other (mainly non monetary gold)	7.1%

RESEARCH AND DEVELOPMENT EXPENDITURE

Research and experimental
development expenditure

In 1999–2000 total expenditure by all businesses in the Australian economy on research and experimental development (R&D) was \$4b, 0.5% lower than 1998–99 expenditure. The 1999–2000 estimate was the fourth consecutive decrease. Expenditure on R&D by the manufacturing industry has followed a similar trend in recent years, but has remained relatively stable from 1998–1999 to 1999–2000. Expenditure fell by 0.1% (\$2.7m) over this period. Manufacturing's contribution to the all industries total has remained consistent at slightly more than half (50.7% in 1999–2000).

Research and experimental
development expenditure
continued

As graph 1.44 shows, current expenditure (labour costs plus other expenditure) by manufacturers on R&D is several times larger than their capital expenditure on R&D. Within the manufacturing industry, 1999–2000 R&D expenditure consisted of 90.1% current expenditure and 9.9% capital expenditure, proportions which were similar to those for the total of all industries. Capital expenditure on R&D by manufacturers fell between 1998–99 and 1999–2000 (down 8.6%), while current expenditure increased marginally (up 0.9%). Of the total current expenditure for the manufacturing industry, approximately half (49.5%) related to labour costs which increased over this period (up 6.2%).

1.44 EXPENDITURE ON RESEARCH AND DEVELOPMENT

	1997–98	1998–99	1999–2000			
	Total expenditure	Total expenditure	Capital expenditure	Labour costs	Other current expenditure	Total expenditure
<i>Industry</i>	\$m	\$m	\$m	\$m	\$m	\$m
Food, beverage and tobacco mfg	181	208	25	81	81	186
Textile, clothing, footwear and leather mfg	21	20	1	8	8	17
Wood and paper product mfg	117	86	14	26	64	104
Printing, publishing and recorded media	17	20	1	9	5	15
Petroleum, coal, chemical and associated product mfg	328	351	76	160	177	413
Non-metallic mineral product mfg	70	53	6	20	23	49
Metal product mfg	368	296	14	89	123	227
Machinery and equipment mfg	1 090	1 001	65	509	448	1 022
Other mfg	36	19	3	12	6	20
Total mfg	2 229	2 055	204	914	934	2 052

Source: Research & Experimental Development, Business Enterprises, Australia, 1999–2000 (Cat. no. 8104.0).

Manufacturing subdivisions

In 1999–2000 expenditure on R&D decreased, from the previous year, in five of the nine manufacturing subdivisions (table 1.45). The most significant relative decrease was recorded by the Printing, publishing and recorded media industry (down 27%), although this industry had recorded a large increase the previous year (up 35%). Metal product manufacturing and Textile, clothing, footwear and leather manufacturing recorded the next greatest decrease (down 23% and almost 18%, respectively).

Of the four subdivisions that experienced an increase in R&D expenditure from 1998–99, the greatest relative increase occurred in the Wood and paper product manufacturing industry (up 21%) although this industry had recorded a significant decrease the previous year (down 24%).

Manufacturing subdivisions
continued

With \$1,022m of R&D expenditure in 1999–2000, Machinery and equipment manufacturing had by far the largest expenditure of the manufacturing subdivisions. This industry contributed a quarter (25.3%) of expenditure by all businesses in the economy and 49.8% of the total spent by manufacturers. In 1999–2000, R&D expenditure by this industry was principally current expenditure (93.7%) of which 53.2% was labour costs and 46.8% was other costs with only 6.3% of expenditure being capital expenditure. The second largest contributor to manufacturing R&D was Petroleum, coal, chemical and associated product manufacturing. This industry recorded an increase in R&D expenditure from 1998–99 to 1999–2000 (up 17.6%) and was responsible for 20.1% of all manufacturing R&D spending. Its primary spending (42.9%) was on other current expenditure. The other industry with more than 10% of total manufacturing R&D expenditure in 1999–2000 was Metal product manufacturing (11.1%).

1.45 EXPENDITURE ON RESEARCH AND DEVELOPMENT

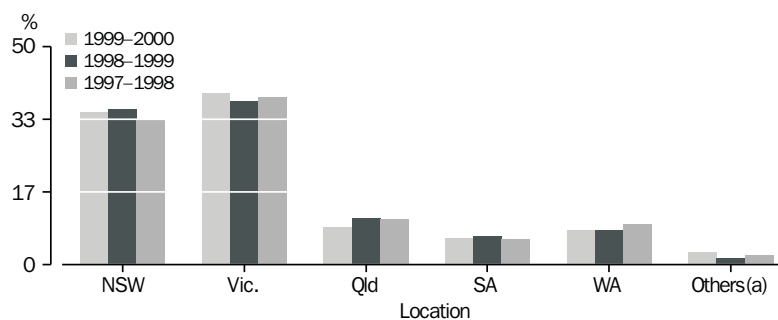
	1997–98	1998–99	1999–2000			
	Total expenditure	Total expenditure	Capital expenditure	Labour costs	Other current expenditure	Total expenditure
<i>Industry</i>	\$m	\$m	\$m	\$m	\$m	\$m
Food, beverage and tobacco mfg	181	208	25	81	81	186
Textile, clothing, footwear and leather mfg	21	20	1	8	8	17
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Other mfg	36	19	3	12	6	20
Total mfg	2 229	2 055	204	914	934	2 052

Source: Research and Experimental Development, Business Enterprises, Australia, 1999–2000 (Cat. no. 8104.0).

Expenditure by state

Less than 1% of R&D expenditure by Australian manufacturers was spent overseas. Of the expenditure which took place in Australia, state shares were Victoria (39%), New South Wales (35%), Queensland (9%), Western Australia (8%), South Australia (6%) and Tasmania and the Territories (2.8% in combination).

1.46 STATE PROPORTIONS OF R&D SPENDING



(a) Tasmania, the two Territories and overseas.

Source: *Research and Experimental Development, Business Enterprises, Australia, 1999-2000* (Cat. no. 8104.0).

In 1999-2000, Machinery and equipment manufacturing was by far the largest manufacturing subdivision in terms of R&D expenditure in Victoria (54.8% of total manufacturing), New South Wales (46.5%), Western Australia (52.6%) and South Australia (57.6%). This industry also contributed 67.4% of overseas research and development expenditure by Australian businesses. The second largest contributing industry in these States was Petroleum, coal, chemical and associated product manufacturing, which contributed 20.1% of all R&D, with the exception of Western Australia where Metal product manufacturing was the second largest.

Expenditure by size of business

Large businesses (businesses employing 100 people or more) were responsible for 74.6% of 1999-2000 R&D expenditure by manufacturers, medium sized businesses (employment of 20-99 people) were responsible for 19.2% and small businesses (employing fewer than 20 people) accounted for the remaining 6.2%.

R&D funding by source

The primary source of funding for Manufacturing R&D in 1999-2000 was Own funds (92.7%), a slightly higher proportion than for industry overall (87.7%). Other minor sources for funding in Manufacturing include Other businesses, the Competitive grants scheme, and other government funding. Overseas sources constituted 3.4% of R&D funding in Manufacturing (4.7% for industry overall).

CHAPTER 2

INTRODUCTION

PERFORMANCE OF THE MANUFACTURING INDUSTRY

Chapter 2 of this publication presents information from the annual manufacturing survey about the structure and performance of the manufacturing industry as a whole and of each of the broad industries (ANZSIC Subdivisions) within manufacturing. Comparative performance information is provided for other ANZSIC Divisions such as Wholesale trade, Construction and Mining. The source of the non-manufacturing data is the Economic Activity Survey which is also conducted annually by the ABS.

From survey data about management units (businesses), income statement and balance sheet information is presented along with some industry performance measures such as the profit margin, the ratio of long term debt to equity and the current ratio. Definitions of the various economic variables and performance measures are included in the Glossary. Performance measures are compiled and presented uniformly to facilitate direct comparison of the relative performances of industries.

Corresponding information may also be available for finer levels of manufacturing industry than those shown in this publication. Readers who are interested in obtaining data about the performance of finer industries within manufacturing should consult the NSW Office of the ABS — see the Explanatory Notes section ‘Unpublished data’. To assist readers to identify the finer level industries, a full list of manufacturing industries is contained in the Appendix—List of Manufacturing Industries immediately following the Glossary.

From statistics about manufacturing establishments (factories), information is presented on which are the industry classes within the subdivision with the greatest production and how that production is distributed across States and Territories. Since 1997–98, ‘Industry value added’ has been the measure generally used to represent production in manufacturing statistics.

Data presented in this chapter exclude the operations of non employing businesses which typically are sole proprietorships or partnerships with one or two working proprietors or partners but no other staff. Such businesses are numerous, especially in industries such as Retail trade, Construction and Transport. However, the omission of the operations of these businesses from the statistics is believed to have no serious effect on the reliability of the industry performance measures presented because such businesses account for only a small proportion of total production (estimated at around 1.5% of manufacturing production).

TOTAL MANUFACTURING

Performance of manufacturing relative to other industries

This article presents information about operations by private sector businesses and by public trading enterprises. Other activities of Federal, State and Local Governments are excluded.

Table 2.1 shows that with 13.4% of industry profits, manufacturing had the second largest share in 1999–2000 behind only Finance and insurance (27.4% of industry profits). However, in terms of profit margins (operating profit before tax as a percentage of operating income), manufacturing ranked tenth of the fifteen industries. At 6.5%, the manufacturing profit margin was less than one-third of the highest industry margin (22.4% for Finance and insurance) and well below the margin for all industries (9.1%). In terms of return on assets (pre-tax profits as a percentage of the total value of assets) manufacturing ranked seventh of the fifteen industries with 7.4%, just below the median value of 7.8% but well above that of the total of all industries (4.0%).

2.1 PERFORMANCE RATIOS—1999–2000

	Share of profits	Profit margin	Return on assets	Interest coverage	Investment rate
<i>Industry</i>	%	%	%	times	%
Agriculture, forestry and fishing	5.0	16.5	3.6	3.9	37.9
Mining	6.4	16.8	7.8	5.0	40.1
Manufacturing	13.4	6.5	7.4	4.6	18.8
Electricity, gas and water supply	4.6	14.5	3.8	2.4	49.0
Construction	3.8	5.4	11.7	9.1	10.9
Wholesale trade	7.6	4.1	9.1	6.8	12.4
Retail trade	5.6	3.7	13.0	3.8	11.4
Accommodation, cafes and restaurants	1.3	4.8	5.0	3.1	22.2
Transport and storage	2.9	5.5	4.7	2.8	23.6
Communication services	5.2	18.3	13.3	8.6	45.3
Finance and insurance	27.4	22.4	1.9	1.5	n.a.
Property and business services	10.5	11.4	6.4	3.3	13.3
Private community services(a)	2.9	8.9	9.3	8.0	13.6
Cultural and recreational services	2.3	13.3	9.2	7.7	36.5
Personal and other services	1.1	9.8	9.4	7.9	14.7
All industries(b)	100.0	9.1	4.0	2.6	20.9

(a) Includes private education, health and community services businesses but excludes those in the public sector.

(b) For the investment rate, the estimate for all industries excludes the Finance and insurance industry.

Source: *Business Operations and Industry Performance, Australia, 1999–2000* (Cat. no. 8140.0) and ABS data available on request, *Annual Manufacturing Survey*.

Changes in performance by the manufacturing industry

Excluding very small businesses (see the introduction to this chapter), it is estimated that approximately 50,000 manufacturing businesses were in operation at 30 June 2000 and that these businesses employed 957,000 people, a decrease of 2.0% from the previous year. During 1999–2000 manufacturing businesses generated sales of almost \$240b, an increase of 4.4% on 1998–99 sales. Between 1998–99 and 1999–2000, sales grew at a rate which was very similar to the rate of increase in the general level of prices for manufactured goods (up 4.3%). As a result, the volume of goods and services provided by manufacturing businesses is estimated to have remained virtually unchanged from 1998–99 to 1999–2000.

Operating profits before tax rose by 16.1% to \$15.6b between 1998–99 and 1999–2000. Operating profit per person employed rose by 18% from \$13,800 to \$16,300.

The balance sheet for the manufacturing industry shows an increase in net worth of \$5.4b (6.9%) as a result of assets increasing faster than liabilities. Capital outlays on fixed tangible assets decreased by 4.5% between 1998–99 to 1999–2000. Expenditure on plant, machinery and equipment (including motor vehicles) continues to dominate in 1999–2000 by accounting for \$8.6b (82%) of the total capital expenditure on fixed tangible assets by manufacturing businesses.

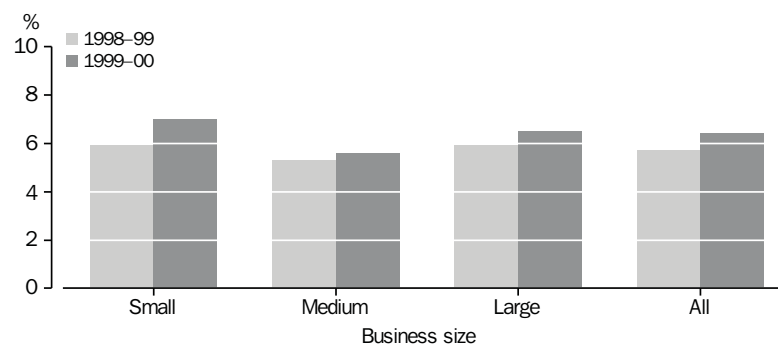
2.2 INCOME STATEMENT AND BALANCE SHEET

	1998–99	1999–2000	Change
	\$m	\$m	%
Income statement			
Sales of goods and services	229 603	239 673	4.4
Other operating income	3 447	3 751	8.8
<i>Total operating income</i>	<i>233 050</i>	<i>243 424</i>	<i>4.5</i>
Cost of sales	164 785	172 310	4.6
Labour costs	41 539	41 678	0.3
Depreciation	7 718	7 833	1.5
Interest expenses	3 939	4 368	10.9
Other operating expenses	1 626	1 627	0.1
<i>Total operating expenses</i>	<i>219 606</i>	<i>227 815</i>	<i>3.7</i>
Operating profit before tax	13 445	15 609	16.1
Balance sheet			
Current assets	80 270	84 901	5.8
Non-current assets	126 237	128 441	1.7
<i>Total assets</i>	<i>206 507</i>	<i>213 342</i>	<i>3.3</i>
Current liabilities	70 993	71 818	1.2
Non-current liabilities	57 086	57 671	1.0
<i>Total liabilities</i>	<i>128 079</i>	<i>129 489</i>	<i>1.1</i>
Net worth	78 428	83 853	6.9
Capital outlays			
Acquisition of fixed tangible assets(a)	11 010	10 513	–4.5

(a) Includes capitalised computer software but excludes intangible assets such as goodwill and patents.

Source: ABS data available on request, Annual Manufacturing Survey.

2.3 PROFIT MARGIN(a) BY SIZE OF BUSINESS



(a) Operating profit before tax as a percentage of operating income.

Source: ABS data available on request, Annual Manufacturing Survey.

The overall manufacturing industry profit margin improved substantially between 1998–99 and 1999–2000 (from \$51 to \$65 of operating profit before tax per \$1,000 of operating income) with 78% of manufacturers recording an operating profit before tax for 1999–2000. Just over 35% of manufacturers recorded a profit margin greater than 10% (i.e. more than \$100 of profit per \$1,000 of operating income). Results by business size showed that 79% of large manufacturers made a profit with the corresponding rates for medium sized manufacturers and small manufacturers being 79% and 77% respectively. Further information by size of business appears under ‘Analysis by size of business’ in Chapter 1.

Over the period from 1995–96 to 1999–2000, all of the performance measures shown in table 2.4 reflected a fairly stable performance by the manufacturing industry. The most notable of the performance trends has been the tendency for the long-term debt to equity ratio to rise.

2.4 INDUSTRY PERFORMANCE

Selected performance measures	Units	1995–96	1996–97	1997–98	1998–99	1999–2000
Profit margin	%	6.5	6.1	5.6	5.9	6.5
Return on assets	%	7.5	7.1	6.5	6.5	7.4
Long term debt to equity	%	43	56	61	73	69
Current ratio	times	1.3	1.3	1.3	1.1	1.2

Source: ABS data available on request, Annual Manufacturing Survey.

RELATIVE PERFORMANCE BY MANUFACTURING SUBDIVISIONS

This article presents a comparison of some key elements of the recent performance of the nine industry (ANZSIC) subdivisions within manufacturing. Comparisons are made in terms of performance by manufacturing management units (businesses). Further information appears later in this chapter where performance by individual industry subdivisions is examined. The Glossary contains definitions of the various performance measures presented.

Employment The number of persons employed by the manufacturing industry fell by 2.0% between June 1999 and June 2000, continuing the trend which has seen employment in the industry fall from just over one million in June 1996 to 957,000 in June 2000. Between 1999 and 2000, the number employed fell in all nine manufacturing subdivisions though in most cases, the falls were marginal. The largest relative falls were in the Textile, clothing, footwear and leather manufacturing industry (down 11.1%), Other manufacturing (down 3.6%) and Metal product manufacturing (down 3.5%).

Income In 1999–2000, manufacturing businesses generated \$243b of operating income of which almost \$240b (98%) was sales of goods and services. This represented an increase of 4.5% in operating income compared to the previous year. All manufacturing subdivisions increased their income between 1998–99 and 1999–2000 except for Textile, clothing, footwear and leather manufacturers (down 5.0%). Largest increases were by Petroleum, coal, chemical and associated product manufacturers (up 8.3%), Wood and paper product manufacturers (up 7.6%) and the Printing, publishing and recorded media industry (up 7.1%).

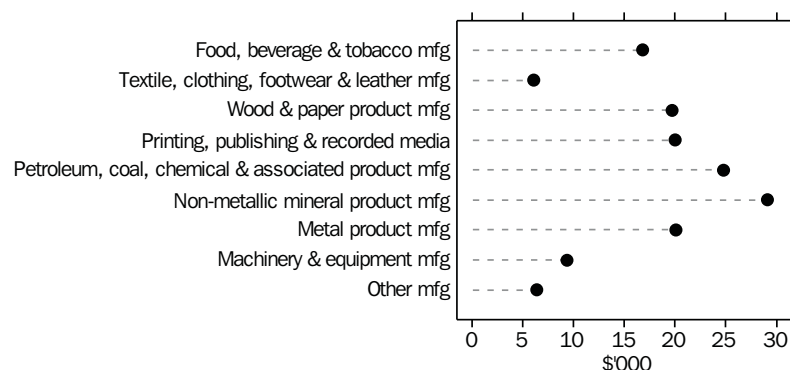
Operating income per person employed increased between 1998–99 and 1999–2000 for manufacturing as a whole (up 6.6%) and for all manufacturing subdivisions. The largest relative increases per person employed were recorded by Metal product manufacturers (up 10.0%), Petroleum, coal, chemical and associated product manufacturers (up 9.3%) and Wood and paper product manufacturers (up 9.0%).

Expenses Operating expenses for manufacturing businesses totalled almost \$230b in 1999–2000. Of these expenses, cost of sales made up 75% and labour costs made up 18%. This represented an increase of 3.8% in operating expenses between 1998–99 and 1999–2000. Operating expenses rose between 1998–99 and 1999–2000 in all manufacturing subdivisions except the Textile, clothing, footwear and leather manufacturing industry (down 5.5%).

Profits In 1999–2000, manufacturing businesses generated \$15.6b of operating profits before tax (OPBT). This represented an increase of 16% in OPBT compared to the previous year. All manufacturing subdivisions increased their OPBT between 1998–99 and 1999–2000 except for Machinery and equipment manufacturers where OPBT fell by 3.5%. Some quite large relative rises were recorded, the largest being for Petroleum, coal, chemical and associated product manufacturers (up 32%), the Printing, publishing and recorded media industry (up 30%), Non-metallic mineral product manufacturers (up 23%) and Metal product manufacturers (also up 23%).

OPBT per person employed increased between 1998–99 and 1999–2000 for manufacturing as a whole (up 18%) and for all manufacturing subdivisions. As graph 2.5 shows, OPBT per person employed presented a variety of results for manufacturing subdivisions in 1999–2000, ranging from \$6,100 per person employed by Textile, clothing, footwear and leather manufacturers to \$29,100 per person employed by Non-metallic mineral product manufacturers.

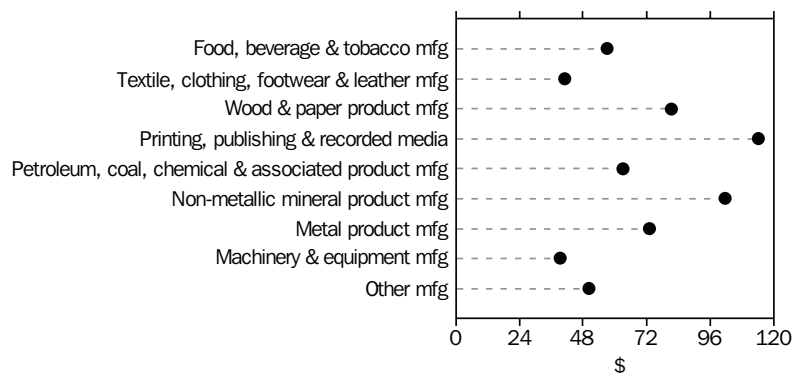
2.5 OPBT PER PERSON EMPLOYED—1999–2000



Source: ABS data available on request, Annual Manufacturing Survey.

Similarly a variety of results were recorded for 1999–2000 for OPBT generated per thousand dollars of operating income (graph 2.6). Results ranged from \$39 of OPBT per thousand dollars of operating income for Machinery and equipment manufacturers to \$114 of OPBT per thousand dollars of operating income for the Printing, publishing and recorded media industry.

2.6 OPBT PER \$'000 OF INCOME—1999–2000



Source: ABS data available on request, Annual Manufacturing Survey.

All manufacturing subdivisions increased their OPBT per thousand dollars of operating income between 1998–99 and 1999–2000 except for Machinery and equipment manufacturing (down from \$42 to \$39). The largest increases were:

- Printing, publishing and recorded media (from \$94 to \$114)
- Non-metallic mineral product manufacturing (from \$84 to \$103)
- Petroleum, coal, chemical and associated product manufacturing (from \$52 to \$63)
- Metal product manufacturing (from \$63 to \$73)

Assets and liabilities

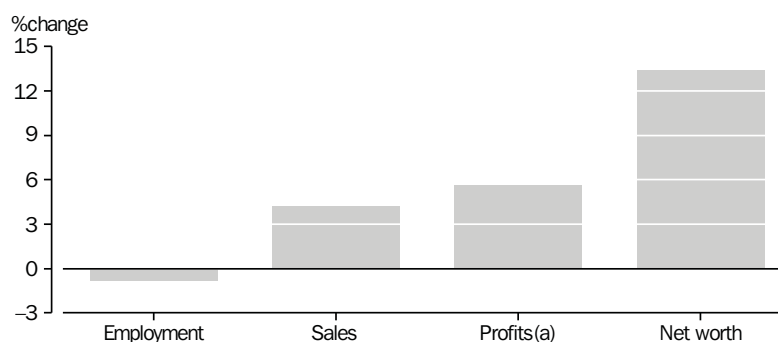
At the end of 1999–2000, manufacturers held \$213b in assets, of which 60% were non-current assets. For manufacturers as a whole, the value of assets at the end of 1999–2000 was 3.3% higher than a year earlier. Five industry subdivisions experienced a rise in the value of assets during 1999–2000 and four experienced a fall. The largest rises were by Non-metallic mineral product manufacturing (up 9.2%), Food, beverage and tobacco manufacturing (up 9.1%) and Printing, publishing and recorded media (up 8.8%). The largest falls were by the relatively small Other manufacturing industry (down 16.1%) and Wood and paper product manufacturing (down 13.3%).

At the end of 1999–2000, total liabilities for manufacturers were \$128b. Four industry subdivisions experienced a rise in the value of liabilities during 1999–2000 and five experienced a fall. The largest rises were by Printing, publishing and recorded media (up 21.1%) and Petroleum, coal, chemical and associated product manufacturing (up 9.1%). The largest falls were by Wood and paper product manufacturing (down 17.9%) and Other manufacturing (down 10.7%).

Assets and liabilities <i>continued</i>	Long term debt to equity has generally risen over the period 1995–96 to 1999–2000 although a small decrease was recorded between 1989–99 and 1999–2000. Over the four years, all manufacturing subdivisions experienced a rise except Non-metallic mineral product manufacturing. The most notable rise has been for Food, beverage and tobacco manufacturing where long term debt has risen from 34% of net worth in 1995–96 to 102% in 1999–2000.
Capital expenditure	In 1999–2000, manufacturers undertook capital expenditure on tangible assets of over \$10.5b but this was 4.5% less than the previous year's expenditure. Of this 1999–2000 expenditure, \$8.6b (82%) was on plant, machinery and equipment (including motor vehicles). Capital expenditure increased in four industry subdivisions including a more than doubling for Wood and paper product manufacturing (up 124%) and a 32% increase for Printing, publishing and recorded media. Of the five industry subdivisions which recorded falls in capital expenditure, the largest relative falls were recorded for Metal product manufacturing (down 40%) and Machinery and equipment manufacturing (down 20%).

FOOD, BEVERAGE AND TOBACCO MANUFACTURING

2.7 CHANGE FROM 1998–99 TO 1999–2000



(a) Operating profit before tax.

Source: ABS data available on request, Annual Manufacturing Survey.

In June 2000, Food, beverage and tobacco manufacturers employed 187,000 people, a decrease of 0.8% from the previous year. In 1999–2000, these manufacturers generated almost \$54b in sales and over \$3.1b in pre-tax profits. In terms of ANZSIC Subdivisions within manufacturing this industry is one of the largest.

Food, beverage and tobacco
manufacturing *continued*

The industry balance sheet shows that the net worth of the industry rose by around \$2.5b (13%) during 1999–2000. The industry experienced increases in both current and non-current assets resulting in overall growth of \$5.2b in the value of assets. Both current and non-current liabilities increased in value resulting in an increase of \$2.7b (7.0%) in the value of liabilities. Capital expenditure on tangible assets at \$2.2b was the largest value for any manufacturing subdivision despite having fallen by 13.5% from the previous year. The largest component of capital expenditure was outlays on plant, machinery and equipment (including motor vehicles) which amounted to \$1,771m (80% of capital outlays).

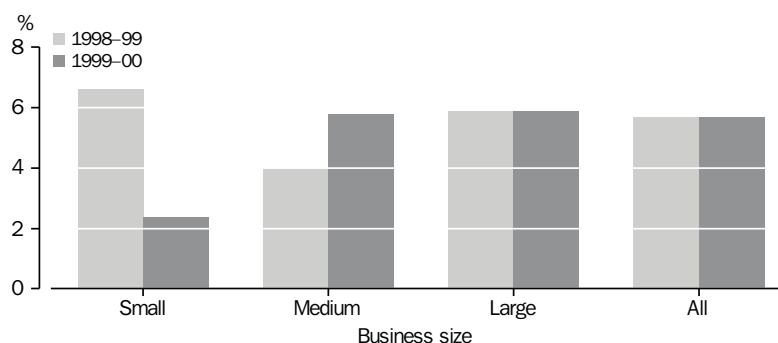
2.8 INCOME STATEMENT AND BALANCE SHEET

	1998–99	1999–2000	Change
	\$m	\$m	%
Income statement			
Sales of goods and services	51 732	53 893	4.2
Other operating income	1 086	1 122	3.4
<i>Total operating income</i>	<i>52 817</i>	<i>55 015</i>	<i>4.2</i>
Cost of sales	38 546	40 265	4.5
Labour costs	7 985	8 186	2.5
Depreciation	1 588	1 604	1.0
Interest expenses	1 492	1 608	7.8
Other operating expenses	227	206	–9.1
<i>Total operating expenses</i>	<i>49 837</i>	<i>51 869</i>	<i>4.1</i>
Operating profit before tax	2 980	3 145	5.6
Balance sheet			
Current assets	20 023	21 297	6.4
Non-current assets	36 775	40 676	10.6
<i>Total assets</i>	<i>56 798</i>	<i>61 973</i>	<i>9.1</i>
Current liabilities	18 290	19 601	7.2
Non-current liabilities	20 019	21 404	6.9
<i>Total liabilities</i>	<i>38 309</i>	<i>41 005</i>	<i>7.0</i>
Net worth	18 489	20 968	13.4
Capital outlays			
Acquisition of fixed tangible assets(a)	2 562	2 216	–13.5

(a) Includes capitalised computer software but excludes intangible assets such as goodwill and patents.

Source: ABS data available on request, Annual Manufacturing Survey.

2.9 PROFIT MARGIN(a) BY SIZE OF BUSINESS



(a) Operating profit before tax as a percentage of operating income.

Source: ABS data available on request, Annual Manufacturing Survey.

For 1999–2000, the industry profit margin was 5.7% (i.e. \$57 of pre-tax profits per \$1,000 of operating income) a small increase on the 1998–99 result. Pre-tax profits were recorded in 1999–2000 by 71% of Food, beverage and tobacco manufacturers (76% of large businesses, 75% of medium sized businesses and 71% of small businesses). Further information by size of business is under ‘Analysis by size of business’ in Chapter 1.

Performance measures for this industry have been fairly stable over the period from 1995–96 to 1999–2000 except for the long term debt to equity ratio which has grown rapidly.

2.10 INDUSTRY PERFORMANCE

Selected performance measures	Units	1995–96	1996–97	1997–98	1998–99	1999–2000
Profit margin	%	5.1	5.4	5.6	5.6	5.7
Return on assets	%	6.4	5.8	5.7	5.2	5.1
Long term debt to equity	%	34	58	68	108	102
Current ratio	times	1.0	1.1	1.2	1.1	1.1

Source: ABS data available on request, Annual Manufacturing Survey.

Industry composition

Table 2.11 contains data for 23 industry classes which make up the Food, beverage and tobacco manufacturing subdivision of the manufacturing industry. The statistics relate to establishments (see Glossary). Meat processing continues to be the largest industry class by far in terms of employment and turnover although in terms of value added, the wine manufacturing industry is almost as large.

2.11 INDUSTRY COMPOSITION—1999–2000

	Employment at end of June(a)	Turnover	Industry value added (production)
	no.	\$m	\$m
Meat processing	27 784	7 038	1 523
Poultry processing	13 241	2 544	750
Bacon, ham and smallgoods mfg	6 756	1 377	353
Milk and cream processing	6 114	3 027	640
Ice cream mfg	2 505	728	172
Dairy product mfg n.e.c.	8 614	4 593	1 060
Fruit and vegetable processing	11 264	3 632	975
Oil and fat mfg	1 408	934	226
Flour mill product mfg	2 340	1 373	328
Cereal food and baking mix mfg	5 477	2 188	724
Bread mfg	10 272	1 371	537
Cake and pastry mfg	9 810	1 078	401
Biscuit mfg	4 529	991	370
Sugar mfg	5 753	1 996	424
Confectionery mfg	6 226	1 542	608
Seafood processing	4 179	1 270	270
Prepared animal and bird feed mfg	4 843	2 506	486
Food mfg n.e.c.	14 460	3 164	954
Soft drink, cordial and syrup mfg	5 933	2 702	722
Beer and malt mfg	2 771	2 461	819
Wine mfg	9 173	3 576	1 502
Spirit mfg	243	234	71
Tobacco product mfg	1 105	916	328
Total Food, beverage and tobacco mfg	164 800	51 237	14 244

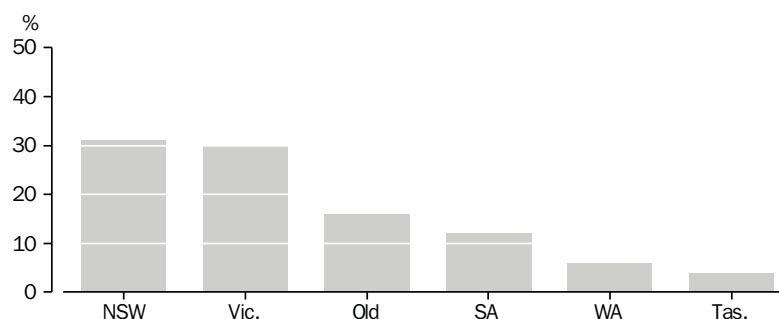
(a) Includes working proprietors.

Source: *Manufacturing Industry, Australia, 1999–2000* (Cat. no. 8221.0).

State and Territory
distribution of 1999–2000
production

Graph 2.12 shows how production by Food, beverage and tobacco manufacturing establishments is distributed by State and Territory. Production is measured by the variable 'Industry value added'. Further information about the geographic distribution of the Food, beverage and tobacco manufacturing industry is contained in Chapter 1 under the heading 'Distribution across States and Territories'.

2.12 PRODUCTION(a)—1999–2000

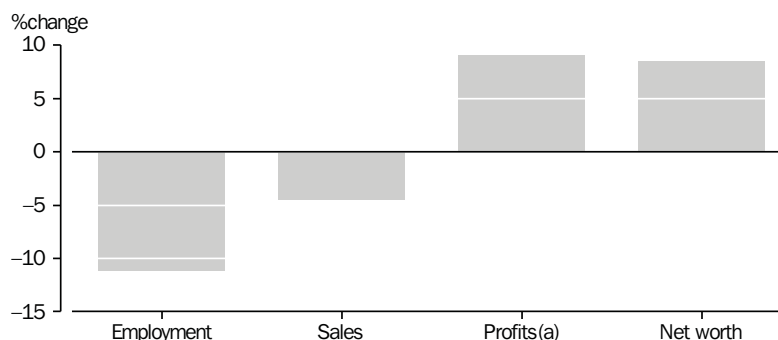


(a) As measured by Industry value added. NT and ACT each contributed less than 0.5% of production for this industry.

Source: *Manufacturing Industry, Australia, 1999–2000* (Cat. no. 8221.0).

TEXTILE, CLOTHING, FOOTWEAR AND LEATHER MANUFACTURING

2.13 CHANGE FROM 1998–99 TO 1999–2000



(a) Operating profit before tax.

Source: ABS data available on request, Annual Manufacturing Survey.

In June 2000, Textile, clothing, footwear and leather manufacturers employed 65,000 people, a decrease of 11% from the previous year. In 1999–2000, these manufacturers generated \$9.6b in sales (down 4.5%) and almost \$400m in pre-tax profits (up 9%). In terms of ANZSIC Subdivisions within manufacturing this industry is relatively small.

The industry balance sheet shows that the net worth of the industry rose by \$168m (8.5%) during 1999–2000. The industry experienced decreases in both the value of assets (down 3.4%) and the value of liabilities (down 9.1%). Capital expenditure on tangible assets fell by 10.7% to \$230m. The largest component of capital expenditure was outlays on plant, machinery and equipment (including motor vehicles) which amounted to \$191m (83% of capital outlays).

2.14 INCOME STATEMENT AND BALANCE SHEET

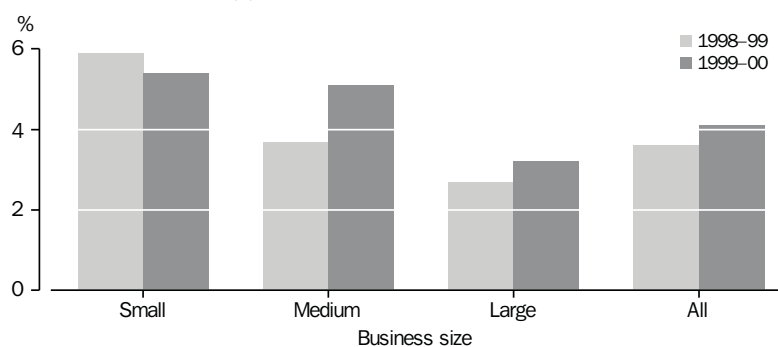
	1998–99	1999–2000	Change
	\$m	\$m	%
Income statement			
Sales of goods and services	10 097	9 642	–4.5
Other operating income	152	97	–36.3
<i>Total operating income</i>	<i>10 249</i>	<i>9 738</i>	<i>–5.0</i>
Cost of sales	7 058	6 791	–3.8
Labour costs	2 368	2 112	–10.8
Depreciation	245	249	1.7
Interest expenses	151	124	–17.6
Other operating expenses	61	64	4.9
<i>Total operating expenses</i>	<i>9 883</i>	<i>9 340</i>	<i>–5.5</i>
Operating profit before tax	366	399	9.0
Balance sheet			
Current assets	3 764	3 548	–5.7
Non-current assets	2 359	2 367	0.3
<i>Total assets</i>	<i>6 123</i>	<i>5 915</i>	<i>–3.4</i>
Current liabilities	2 449	2 322	–5.2
Non-current liabilities	1 700	1 451	–14.6
<i>Total liabilities</i>	<i>4 149</i>	<i>3 773</i>	<i>–9.1</i>
Net worth	1 974	2 142	8.5
Capital outlays			
Acquisition of fixed tangible assets(a)	258	230	–10.7

(a) Includes capitalised computer software but excludes intangible assets such as goodwill and patents.

Source: ABS data available on request, Annual Manufacturing Survey.

Performance indicators

2.15 PROFIT MARGIN(a) BY SIZE OF BUSINESS



(a) Operating profit before tax as a percentage of operating income.

Source: ABS data available on request, Annual Manufacturing Survey.

For 1999–2000, the industry profit margin was 4.1% (i.e. \$41 of pre-tax profits per \$1,000 of operating income) an increase on the 1998–99 result. Pre-tax profits were recorded in 1999–2000 by 78% of Textile, clothing, footwear and leather manufacturers (73% of large businesses, 75% of medium sized businesses and 79% of small businesses). (Further information by size of business is under ‘Analysis by size of business’ in Chapter 1).

Performance indicators
continued

Performance measures for this industry have been fairly stable over the period from 1995–96 to 1999–2000 except for the long term debt to equity ratio which has fallen sharply in 1999–2000 following a substantial rise in 1998–99.

2.16 INDUSTRY PERFORMANCE

<i>Selected performance measures</i>	<i>Units</i>	<i>1995–96</i>	<i>1996–97</i>	<i>1997–98</i>	<i>1998–99</i>	<i>1999–2000</i>
Profit margin	%	4.3	4.1	3.2	3.6	4.1
Return on assets	%	7.1	6.3	4.8	6.0	6.8
Long term debt to equity	%	49.0	57.0	56.0	86.0	68.0
Current ratio	times	1.4	1.4	1.5	1.5	1.5

Source: ABS data available on request, Annual Manufacturing Survey.

Industry composition

Table 2.17 contains data for the 19 industry classes which make up the Textile, clothing, footwear and leather manufacturing subdivision of the manufacturing industry. The statistics relate to establishments (see Glossary). Within this fairly small subdivision, the clothing manufacturing industries continue to be the largest industry classes.

2.17 INDUSTRY COMPOSITION—1999–2000

	<i>Employment at end of June(a)</i>	<i>Turnover</i>	<i>Industry value added (production)</i>
	<i>no.</i>	<i>\$m</i>	<i>\$m</i>
Wool scouring	1 532	534	133
Synthetic fibre textile mfg	3 438	721	233
Cotton textile mfg	2 709	476	159
Wool textile mfg	1 842	207	85
Textile finishing	935	126	59
Made-up textile product mfg	6 179	766	244
Textile floor covering mfg	3 273	752	251
Rope, cordage and twine mfg	637	101	40
Textile product mfg n.e.c.	2 436	307	101
Hosiery mfg	1 985	225	95
Cardigan and pullover mfg	2 158	225	62
Knitting mill product mfg n.e.c.	3 188	626	188
Men's and boys' wear mfg	7 113	670	255
Women's and girls' wear mfg	7 502	1 039	329
Sleepwear, underwear and infant clothing mfg	2 112	266	106
Clothing mfg n.e.c.	8 889	874	328
Footwear mfg	4 644	515	188
Leather tanning and fur dressing	2 460	656	162
Leather and leather substitute product mfg	585	76	25
Total textile, clothing, footwear and leather mfg	63 616	9 161	3 041

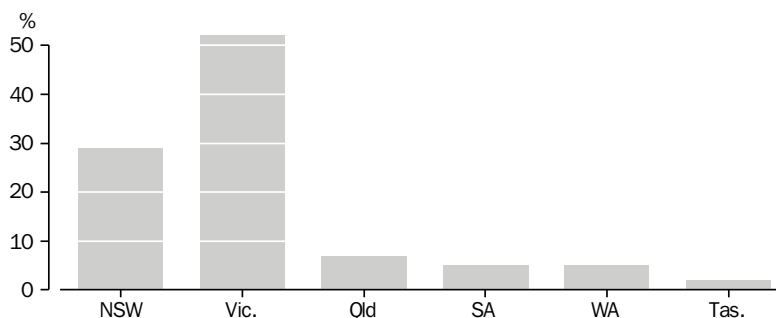
(a) Includes working proprietors.

Source: Manufacturing Industry, Australia, 1999–2000 (Cat. no. 8221.0).

State and Territory distribution of 1999–2000 production

Graph 2.18 shows how production by Textile, clothing, footwear and leather manufacturing establishments is distributed by State and Territory. Production is measured by the variable 'Industry value added'. Further information about the geographic distribution of the Textile, clothing, footwear and leather manufacturing industry is contained in Chapter 1 under the heading 'Distribution across States and Territories'.

2.18 PRODUCTION(a)—1999–2000

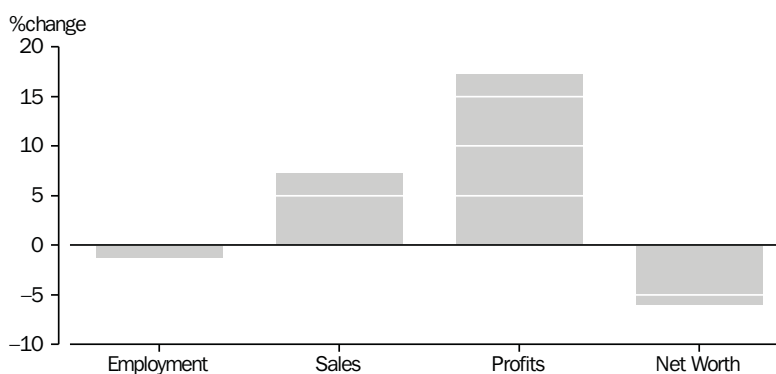


(a) As measured by Industry value added. NT and ACT each contributed less than 0.5% of production for this industry.

Source: *Manufacturing Industry, Australia, 1999–2000* (Cat. no. 8221.0).

WOOD AND PAPER PRODUCT MANUFACTURING

2.19 CHANGE FROM 1998–99 TO 1999–2000



Source: ABS data available on request, *Annual Manufacturing Survey*.

In June 2000, Wood and paper product manufacturers employed 64,000 people, a decrease of 1.3% from the previous year. In 1999–2000, these manufacturers generated \$15.5b in sales (up 7.3%) and almost \$1.3b in pre-tax profits (up 17%). In terms of ANZSIC Subdivisions within manufacturing this industry is relatively small.

Wood and paper product
manufacturing *continued*

The industry balance sheet shows that the net worth of the industry fell by \$318m (down 6.0%) during 1999–2000. The industry experienced decreases in both the value of assets (down 13.3%) and the value of liabilities (down 17.9%).

Capital expenditure on tangible assets in 1999–2000 was relatively much greater than it had been in 1998–99 (up 124% to \$1,682m). The largest component of 1999–2000 capital expenditure was outlays on plant, machinery and equipment (including motor vehicles) which amounted to \$1,169m (70%).

2.20 INCOME STATEMENT AND BALANCE SHEET

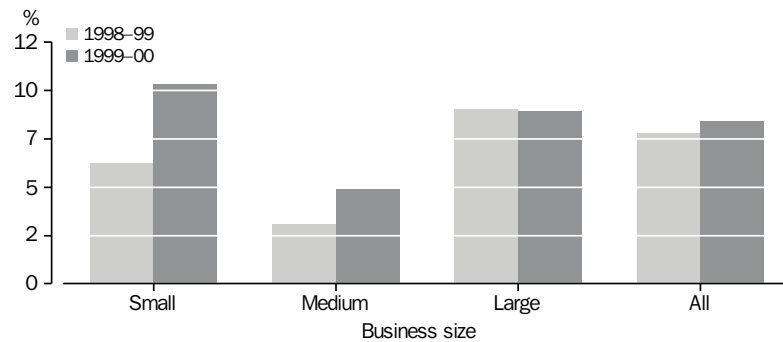
	1998–99	1999–2000	Change
	\$m	\$m	%
Income statement			
Sales of goods and services	14 436	15 483	7.3
Other operating income	96	150	55.9
<i>Total operating income</i>	<i>14 532</i>	<i>15 633</i>	<i>7.6</i>
Cost of sales	9 644	10 485	8.7
Labour costs	2 605	2 713	4.1
Depreciation	516	512	–0.7
Interest expenses	274	231	–15.7
Other operating expenses	409	420	2.6
<i>Total operating expenses</i>	<i>13 448</i>	<i>14 361</i>	<i>6.8</i>
Operating profit before tax	1 084	1 271	17.2
Balance sheet			
Current assets	4 456	4 833	8.5
Non-current assets	9 024	6 858	–24.0
<i>Total assets</i>	<i>13 480</i>	<i>11 692</i>	<i>–13.3</i>
Current liabilities	4 631	3 746	–19.1
Non-current liabilities	3 583	2 998	–16.3
<i>Total liabilities</i>	<i>8 213</i>	<i>6 743</i>	<i>–17.9</i>
Net worth	5 266	4 948	–6.0
Capital outlays			
Acquisition of fixed tangible assets(a)	750	1 682	124.1

(a) Includes capitalised computer software but excludes intangible assets such as goodwill and patents.

Source: ABS data available on request, Annual Manufacturing Survey.

Performance indicators

2.21 PROFIT MARGIN(a) BY SIZE OF BUSINESS



(a) Operating profit before tax as a percentage of operating income.

Source: ABS data available on request, Annual Manufacturing Survey.

For 1999–2000, the industry profit margin was 8.1% (i.e. \$81 of pre-tax profits per \$1,000 of operating income) an increase on the 1998–99 result. Pre-tax profits were recorded in 1999–2000 by 84% of Wood and paper product manufacturers (85% of large businesses, 78% of medium sized businesses and 84% of small businesses). Further information by size of business is under ‘Analysis by size of business’ in Chapter 1.

Performance measures for this industry indicate generally improving performance over the period from 1995–96 to 1999–2000. After a sharp rise between 1995–96 and 1996–97, the long term debt to equity ratio has tended to fall.

2.22 INDUSTRY PERFORMANCE

Selected performance measures	Units	1995–96	1996–97	1997–98	1998–99	1999–2000
Profit margin	%	5.1	6.8	6.4	7.5	8.1
Return on assets	%	6.4	6.6	6.4	8.0	10.9
Long term debt to equity	%	34	76	78	68	61
Current ratio	times	1.0	1.6	1.4	1.0	1.3

Source: ABS data available on request, Annual Manufacturing Survey.

Industry composition

Table 2.23 contains data for the 12 industry classes which make up the Wood and paper product manufacturing subdivision of the manufacturing industry. The statistics relate to establishments (see Glossary). Wooden structural component manufacturing continues to be the largest industry class followed by Pulp, paper and paperboard manufacturing.

2.23 INDUSTRY COMPOSITION—1999–2000

	Employment at end of June(a)	Turnover	Industry value added (production)
	no.	\$m	\$m
Log sawmilling	6 454	886	348
Wood chipping	848	513	168
Timber resawing and dressing	6 183	1 290	469
Plywood and veneer mfg	1 529	272	103
Fabricated wood mfg	3 376	967	290
Wooden structural component mfg	22 203	3 245	1 062
Wood product mfg n.e.c.	6 177	682	231
Pulp, paper and paperboard mfg	4 327	2 277	808
Solid paperboard container mfg	2 582	569	207
Corrugated paperboard container mfg	4 891	1 571	538
Paper bag and sack mfg	1 443	322	110
Paper product mfg n.e.c.	3 619	1 041	290
Total wood and paper product mfg	63 632	13 635	4 623

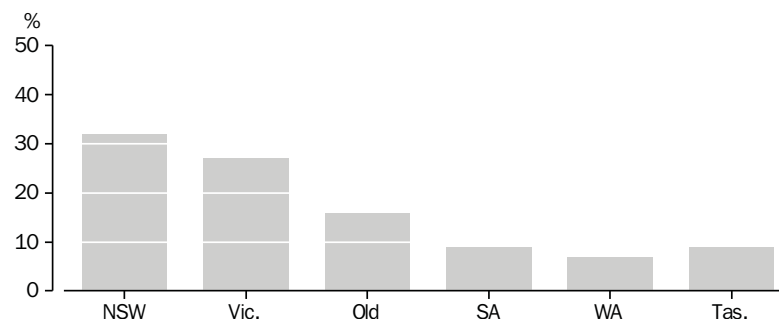
(a) Includes working proprietors.

Source: *Manufacturing Industry, Australia, 1999–2000* (Cat. no. 8221.0).

State and Territory
distribution of 1999–2000
production

Graph 2.24 shows how production by Wood and paper product manufacturing establishments is distributed by State and Territory. Production is measured by the variable 'Industry value added'. Further information about the geographic distribution of the Wood and paper product manufacturing industry is contained in Chapter 1 under the heading 'Distribution across States and Territories'.

2.24 PRODUCTION(a)—1999–2000

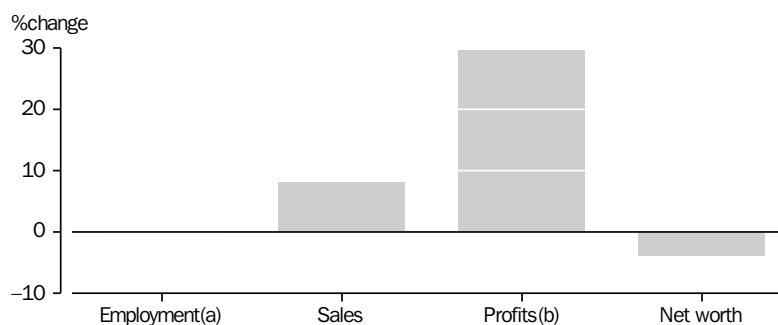


(a) Production is measured by Industry value added. NT and ACT each contributed less than 1% of production for this industry.

Source: *Manufacturing Industry, Australia, 1999–2000* (Cat. no. 8221.0).

PRINTING, PUBLISHING AND RECORDED MEDIA

2.25 CHANGE FROM 1998–99 TO 1999–2000



(a) Employment fell by 0.1%.

(b) Operating profit before tax.

Source: ABS data available on request, Annual Manufacturing Survey.

In June 2000, the Printing, publishing and recorded media industry employed 100,000 people with virtually no change in employment levels from the previous year (down 0.1%). In 1999–2000, this industry generated \$17.4b of sales (up 8.2%) and \$2.0b in pre-tax profits, a marked increase on the previous year (up almost 30%). In terms of the ANZSIC Subdivisions within manufacturing this industry is medium sized.

The industry balance sheet shows that the net worth of the industry fell by \$352m (3.7%) during 1999–2000. The industry experienced an increase of \$1,671m to the value of assets (up 8.8%) but the value of liabilities rose by over \$2b (up 21.1%). Capital expenditure on tangible assets rose by 32% to \$765m. The largest component of capital expenditure was outlays on plant, machinery and equipment (including motor vehicles) which amounted to \$698m (91% of capital outlays).

2.26 INCOME STATEMENT AND BALANCE SHEET

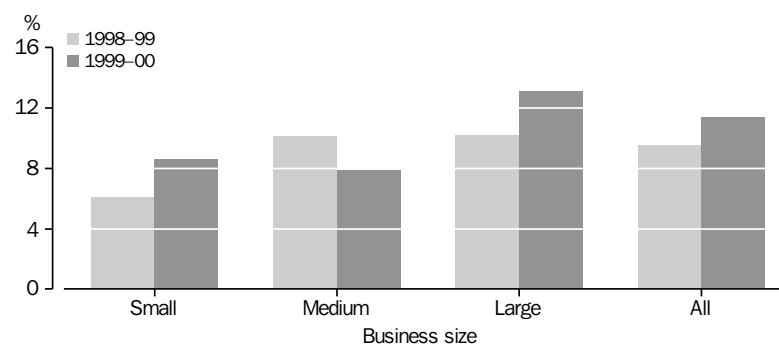
	1998–99	1999–2000	Change
	\$m	\$m	%
Income statement			
Sales of goods and services	16 053	17 367	8.2
Other operating income	384	233	–39.4
<i>Total operating income</i>	<i>16 437</i>	<i>17 600</i>	<i>7.1</i>
Cost of sales	9 763	10 168	4.1
Labour costs	4 131	4 269	3.3
Depreciation	589	695	18.1
Interest expenses	278	325	16.8
Other operating expenses	125	133	6.4
<i>Total operating expenses</i>	<i>14 887</i>	<i>15 590</i>	<i>4.7</i>
Operating profit before tax	1 550	2 010	29.7
Balance sheet			
Current assets	4 844	5 186	7.1
Non-current assets	14 253	15 581	9.3
<i>Total assets</i>	<i>19 096</i>	<i>20 767</i>	<i>8.8</i>
Current liabilities	5 280	5 241	–0.7
Non-current liabilities	4 314	6 376	47.8
<i>Total liabilities</i>	<i>9 594</i>	<i>11 617</i>	<i>21.1</i>
Net worth	9 502	9 150	–3.7
Capital outlays			
Acquisition of fixed tangible assets(a)	580	765	31.8

(a) Includes capitalised computer software but excludes intangible assets such as goodwill and patents.

Source: ABS data available on request, Annual Manufacturing Survey.

Performance indicators

2.27 PROFIT MARGIN(a) BY SIZE OF BUSINESS



(a) Operating profit before tax as a percentage of operating income.

Source: ABS data available on request, Annual Manufacturing Survey.

For 1999–2000, the industry profit margin was 11.4% (i.e. \$114 of pre-tax profits per \$1,000 of operating income) a substantial increase on the 1998–99 result. Pre-tax profits were recorded in 1999–2000 by 69% of Printing, publishing and recorded media businesses (86% of large businesses, 87% of medium sized businesses but only 67% of small businesses). Further information by size of business is under 'Analysis by size of business' in Chapter 1.

Performance indicators
continued

Performance measures for this industry have been fairly stable over the period from 1995–96 to 1999–2000. However, an increase of almost 50% in non-current liabilities between 1998–99 and 1999–2000 is reflected in a sharp rise in the long term debt to equity ratio.

2.28 INDUSTRY PERFORMANCE

<i>Selected performance measures</i>	<i>Units</i>	1995–96	1996–97	1997–98	1998–99	1999–2000
Profit margin	%	9.3	7.8	5.1	9.4	11.4
Return on assets	%	5.9	5.3	3.8	8.1	9.7
Long term debt to equity	%	57	55	39	45	70
Current ratio	times	1.3	1.5	1.5	0.9	1.0

Source: ABS data on available on request, Annual Manufacturing Survey.

Industry composition

Table 2.29 contains data for the seven industry classes which make up the Printing, publishing and recorded media subdivision of the manufacturing industry. The statistics relate to establishments (see Glossary). The printing related industries continue to be by far the largest industry classes in this subdivision.

2.29 INDUSTRY COMPOSITION—1999–2000

	<i>Employment at end of June(a)</i>	<i>Turnover</i>	<i>Industry value added (production)</i>
	<i>no.</i>	<i>\$m</i>	<i>\$m</i>
Paper stationery mfg	6 986	1 234	448
Printing	39 877	6 172	2 260
Services to printing	6 910	725	329
Newspaper printing or publishing	29 390	5 865	3 003
Other periodical publishing	7 171	1 264	421
Book and other publishing	5 931	1 268	375
Recorded media manufacturing and publishing	2 435	686	374
Total printing, publishing and recorded media	98 699	17 212	7 209

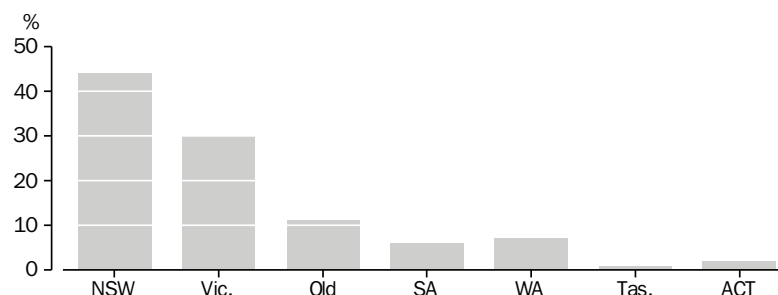
(a) Includes working proprietors.

Source: Manufacturing Industry, Australia, 1999–2000 (Cat. no. 8221.0).

State and Territory
distribution of 1999–2000
production

Graph 2.30 shows how production by Printing, publishing and recorded media establishments is distributed by State and Territory. Production is measured by the variable 'Industry value added'. Further information about the geographic distribution of the Printing, publishing and recorded media industry is contained in Chapter 1 under the heading 'Distribution across States and Territories'.

2.30 PRODUCTION(a)—1999–2000

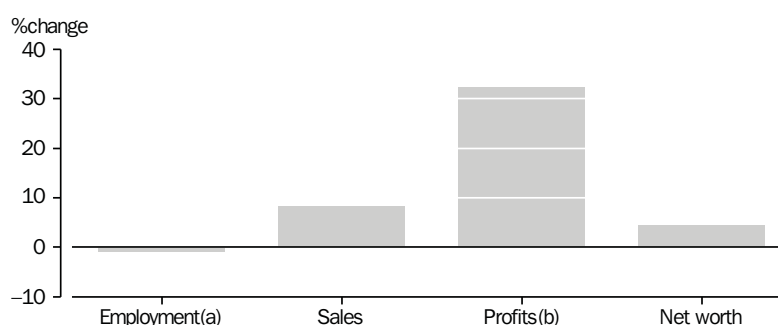


(a) As measured by Industry value added. The Northern Territory contributed less than 0.5% of production for this industry. Operating profit before tax.

Source: *Manufacturing Industry, Australia, 1999–2000* (Cat. no. 8221.0).

PETROLEUM, COAL, CHEMICAL AND ASSOCIATED PRODUCT MANUFACTURING

2.31 CHANGE FROM 1998–99 TO 1999–2000



(a) Employment fell by 0.9%. Operating profit before tax.

(b) Operating profit before tax.

Source: ABS data available on request, *Annual Manufacturing Survey*.

In June 2000, Petroleum, coal, chemical and associated product manufacturers employed 103,000 people, a small decrease from the previous year (down 0.9%). In 1999–2000, these manufacturers generated almost \$40b in sales (up 8.2%) and over \$2.5b in pre-tax profits which was a marked increase over the previous year (up 32.4%). In terms of ANZSIC Subdivisions within manufacturing this industry is one of the largest.

The industry balance sheet shows that the net worth of the industry rose by \$552m (4.3%) during 1999–2000. The industry experienced increases in both the value of assets (up 7.0%) and the value of liabilities (up 9.1%). Capital expenditure on tangible assets rose by 9.5% to \$1,964m. The largest component of capital expenditure was outlays on plant, machinery and equipment (including motor vehicles) which amounted to \$1,641m (84% of capital outlays).

2.32 INCOME STATEMENT AND BALANCE SHEET

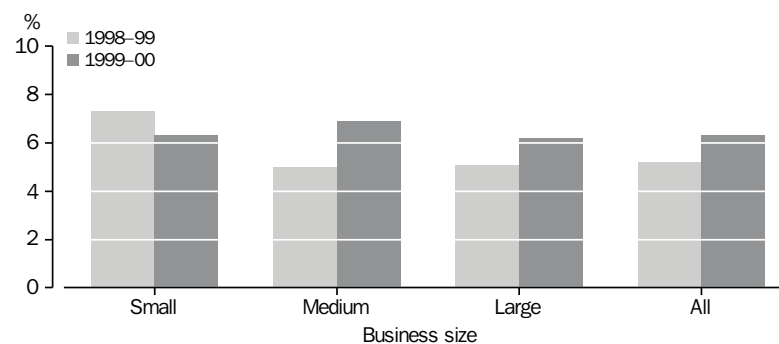
	1998-99	1999-2000	Relative change
	\$m	\$m	%
Income statement			
Sales of goods and services	36 808	39 829	8.2
Other operating income	426	507	19.0
<i>Total operating income</i>	<i>37 234</i>	<i>40 336</i>	<i>8.3</i>
Cost of sales	28 191	30 505	8.2
Labour costs	5 157	5 186	0.6
Depreciation	1 321	1 363	3.2
Interest expenses	443	527	19.1
Other operating expenses	197	206	4.6
<i>Total operating expenses</i>	<i>35 309</i>	<i>37 787</i>	<i>7.0</i>
Operating profit before tax	1 925	2 549	32.4
Balance sheet			
Current assets	12 887	13 940	8.2
Non-current assets	16 464	17 471	6.1
<i>Total assets</i>	<i>29 351</i>	<i>31 411</i>	<i>7.0</i>
Current liabilities	10 597	11 359	7.2
Non-current liabilities	5 941	6 687	12.6
<i>Total liabilities</i>	<i>16 537</i>	<i>18 046</i>	<i>9.1</i>
Net worth	12 813	13 365	4.3
Capital outlays			
Acquisition of fixed tangible assets(a)	1 794	1 964	9.5

(a) Includes capitalised computer software but excludes intangible assets such as goodwill and patents.

Source: ABS data available on request, Annual Manufacturing Survey.

Performance indicators

2.33 PROFIT MARGIN(a) BY SIZE OF BUSINESS



(a) Operating profit before tax as a percentage of operating income.

Source: ABS data available on request, Annual Manufacturing Survey.

Performance indicators
continued

For 1999–2000, the industry profit margin was 6.3% (i.e. \$63 of pre-tax profits per \$1,000 of operating income) an increase on the 1998–99 result. Pre-tax profits were recorded in 1999–2000 by 75% of Petroleum, coal, chemical and associated product manufacturers (82% of large businesses, 82% of medium sized businesses but only 68% of small businesses). Further information by size of business is under 'Analysis by size of business' in Chapter 1.

Performance measures for this industry indicate fairly stable levels of performance over the period from 1995–96 to 1999–2000.

2.34 INDUSTRY PERFORMANCE

<i>Selected performance measures</i>	<i>Units</i>	<i>1995–96</i>	<i>1996–97</i>	<i>1997–98</i>	<i>1998–99</i>	<i>1999–2000</i>
Profit margin	%	6.0	6.3	5.0	5.2	6.3
Return on assets	%	8.1	8.5	6.9	6.6	8.1
Long term debt to equity	%	46	36	47	46	50
Current ratio	times	1.3	1.3	1.2	1.2	1.2

Source: ABS data available on request, Annual Manufacturing Survey.

Industry composition

Table 2.35 contains data for the 23 industry classes which make up the Petroleum, coal, chemical and associated product manufacturing subdivision of the manufacturing industry. The statistics relate to establishments (see Glossary). In terms of employment and production, Medicinal and pharmaceutical product manufacturing remains the largest industry class within the subdivision. In 1999–2000, Petroleum refining was the largest industry class in terms of turnover.

Note: Turnover statistics are strongly affected by changes in price levels. Where price levels fluctuate strongly, such as they have recently in the Petroleum refining industry, turnover is not always a good indicator of levels of economic activity.

2.35 INDUSTRY COMPOSITION—1999–2000

	Employment at end of June(a)	Turnover	Industry value added (production)
	no.	\$m	\$m
Petroleum refining	3 811	8 158	1 211
Petroleum and coal product mfg n.e.c.	947	516	143
Fertiliser mfg	2 303	n.p.	n.p.
Industrial gas mfg	1 334	n.p.	n.p.
Synthetic resin mfg	3 651	1 959	430
Organic industrial chemical mfg n.e.c.	1 271	778	181
Inorganic industrial chemical mfg n.e.c.	3 863	1 814	512
Explosive mfg	1 147	544	173
Paint mfg	5 686	1 620	532
Medicinal and pharmaceutical product mfg	12 722	5 360	1 625
Pesticide mfg	1 373	1 380	334
Soap and other detergent mfg	3 295	1 317	355
Cosmetic and toiletry preparation mfg	4 387	1 059	271
Ink mfg	958	324	96
Chemical product mfg n.e.c.	3 242	1 023	286
Rubber tyre mfg	3 491	755	336
Rubber product mfg n.e.c.	3 795	600	235
Plastic blow moulded product mfg	3 056	682	246
Plastic extruded product mfg	3 532	911	281
Plastic bag and film mfg	6 640	1 516	502
Plastic product rigid fibre reinforced mfg	4 262	679	234
Plastic foam product mfg	2 794	565	197
Plastic injection moulded product mfg	17 016	2 780	1 059
Total petroleum, coal, chemical and associated product mfg	94 575	35 958	9 778

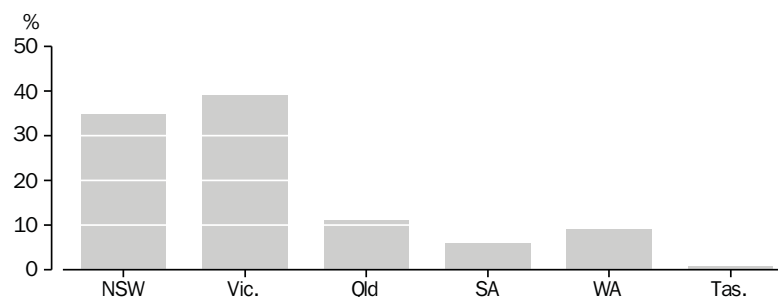
(a) Includes working proprietors.

Source: *Manufacturing Industry, Australia, 1999–2000* (Cat. no. 8221.0).

State and Territory
distribution of 1999–2000
production

Graph 2.36 shows how production by Petroleum, coal, chemical and associated product manufacturing establishments is distributed by State and Territory. Production is measured by the variable 'Industry value added'. Further information about the geographic distribution of the Wood and paper product manufacturing industry is contained in Chapter 1 under the heading 'Distribution across States and Territories'.

2.36 PRODUCTION(a)—1999–2000

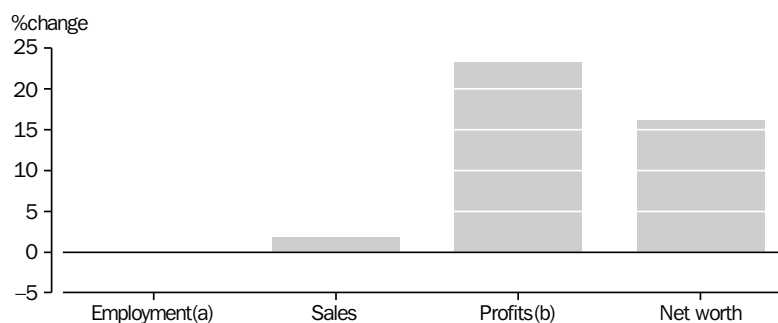


(a) Production is measured by Industry value added. The NT and the ACT each contributed less than 0.5% of production for this industry.

Source: *Manufacturing Industry, Australia, 1999–2000* (Cat. no. 8221.0).

NON-METALLIC MINERAL PRODUCT MANUFACTURING

2.37 CHANGE FROM 1998-99 TO 1999-2000



(a) Employment fell by 0.1%.

(b) Operating profit before tax.

Source: ABS data available on request, Annual Manufacturing Survey.

In June 2000, Non-metallic mineral product manufacturers employed 39,000 people which represented virtually no change from the previous year (down 0.1%). In 1999-2000, these manufacturers generated \$11.1b in sales (up 1.8%) and \$1.1b in pre-tax profits (up 23.3%). In terms of ANZSIC Subdivisions within manufacturing this industry is relatively small.

The industry balance sheet shows that the net worth of the industry rose by \$846m (16.1%) during 1999-2000. The industry experienced an increase in the value of assets (up 9.2%) and a relatively smaller rise in the value of liabilities (up 3.8%). Capital expenditure on tangible assets rose by 6.8% to \$566m. The largest component of capital expenditure was outlays on plant, machinery and equipment (including motor vehicles) which amounted to \$461m (81% of capital outlays).

2.38 INCOME STATEMENT AND BALANCE SHEET

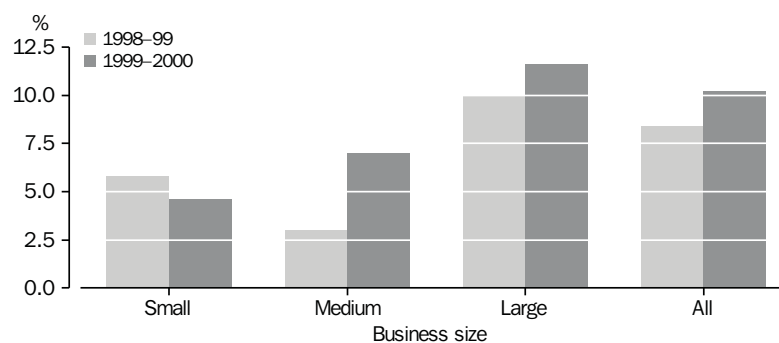
	1998–99	1999–2000	Relative change
	\$m	\$m	%
Income statement			
Sales of goods and services	10 911	11 107	1.8
Other operating income	178	134	–24.6
<i>Total operating income</i>	<i>11 089</i>	<i>11 241</i>	<i>1.4</i>
Cost of sales	7 339	7 229	–1.5
Labour costs	1 959	1 970	0.6
Depreciation	554	556	0.5
Interest expenses	235	247	5.4
Other operating expenses	76	95	25.0
<i>Total operating expenses</i>	<i>10 162</i>	<i>10 098</i>	<i>–0.6</i>
Operating profit before tax	927	1 143	23.3
Balance sheet			
Current assets	3 813	4 531	18.8
Non-current assets	8 242	8 628	4.7
<i>Total assets</i>	<i>12 055</i>	<i>13 159</i>	<i>9.2</i>
Current liabilities	4 095	4 147	1.3
Non-current liabilities	2 717	2 923	7.6
<i>Total liabilities</i>	<i>6 813</i>	<i>7 070</i>	<i>3.8</i>
Net worth	5 243	6 089	16.1
Capital outlays			
Acquisition of fixed tangible assets(a)	530	566	6.8

(a) Includes capitalised computer software but excludes intangible assets such as goodwill and patents.

Source: ABS available on request, Manufacturing Survey.

Performance indicators

2.39 PROFIT MARGIN(a) BY SIZE OF BUSINESS



(a) Operating profit before tax as a percentage of operating income.

Source: ABS data available on request, Annual Manufacturing Survey.

For 1999–2000, the industry profit margin was 10.3% (i.e. \$103 of pre-tax profits per \$1,000 of operating income) a marked increase on the 1998–99 result. Pre-tax profits were recorded in 1999–2000 by 74% of Non-metallic mineral product manufacturers (80% of large businesses, 77% of medium sized businesses and 73% of small businesses). Further information by size of business is under 'Analysis by size of business' in Chapter 1.

Performance indicators
continued

Performance measures for this industry indicate fairly stable levels of performance over the period from 1995–96 to 1999–2000 apart from low current ratios in 1997–98 and 1998–99 and a high long term debt to equity position in 1996–97.

2.40 INDUSTRY PERFORMANCE

<i>Selected performance measures</i>	<i>Units</i>	<i>1995–96</i>	<i>1996–97</i>	<i>1997–98</i>	<i>1998–99</i>	<i>1999–2000</i>
Profit margin	%	9.5	8.2	7.5	8.4	10.3
Return on assets	%	7.4	7.4	6.7	7.7	8.7
Long term debt to equity	%	51	92	63	52	48
Current ratio	times	1.2	1.2	0.9	0.9	1.1

Source: ABS data available on request, Annual Manufacturing Survey

Industry composition

Table 2.41 contains data for the 12 industry classes which make up the Non-metallic mineral product manufacturing subdivision of the manufacturing industry. The statistics relate to establishments (see Glossary). Concrete slurry (ready mixed concrete) manufacturing continues to be the largest industry class within the subdivision.

2.41 INDUSTRY COMPOSITION—1999–2000

	<i>Employment at end of June(a)</i>	<i>Turnover</i>	<i>Industry value added (production)</i>
	<i>no.</i>	<i>\$m</i>	<i>\$m</i>
Glass and glass product mfg	4 943	1 063	397
Clay brick mfg	3 674	934	413
Ceramic product mfg	882	219	80
Ceramic tile and pipe mfg	871	169	82
Ceramic product mfg n.e.c.	1 776	257	104
Cement and lime mfg	2 029	1 361	547
Plaster product mfg	1 803	659	297
Concrete slurry mfg(b)	5 555	2 752	567
Concrete pipe and box culvert mfg	1 367	n.p.	n.p.
Concrete product mfg n.e.c.	6 756	n.p.	n.p.
Non-metallic mineral product mfg n.e.c.	5 234	1 185	448
Non-metallic mineral product mfg	—	—	—
Total non-metallic mineral product mfg	34 891	10 484	3 688

(a) Includes working proprietors.

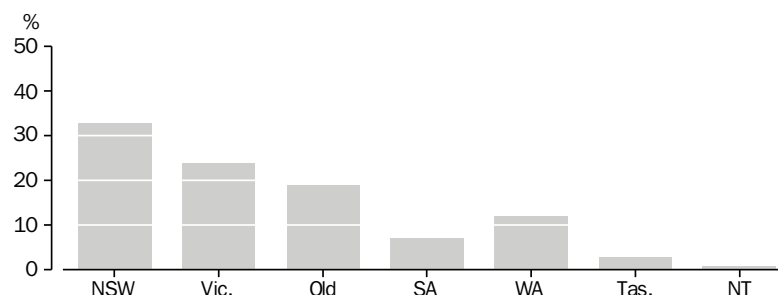
(b) Principally ready mixed concrete manufacturing.

Source: Manufacturing Industry, Australia, 1999–2000 (Cat. no. 8221.0).

State and Territory distribution of 1999–2000 production

Graph 2.42 shows how production by Non-metallic mineral product manufacturing establishments is distributed by State and Territory. Production is measured by the variable 'Industry value added'. Further information about the geographic distribution of the Non-metallic mineral product manufacturing industry is contained in Chapter 1 under the heading 'Distribution across States and Territories'.

2.42 PRODUCTION(a)—1999–2000

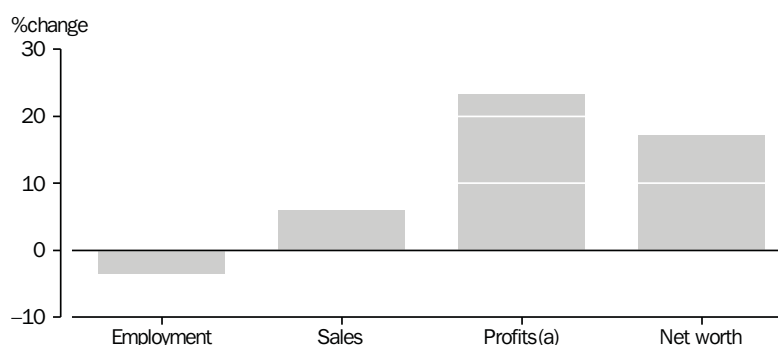


(a) As measured by Industry value added. The ACT contributed less than 1% of production for this industry.

Source: *Manufacturing Industry, Australia, 1999–2000* (Cat. no. 8221.0).

METAL PRODUCT MANUFACTURING

2.43 CHANGE FROM 1998–99 TO 1999–2000



(a) Operating profit before tax.

Source: ABS data available on request, *Annual Manufacturing Survey*.

In June 2000, Metal product manufacturers employed around 142,000 people, a fall of 3.5% from the previous year. During 1999–2000, these manufacturers generated \$38b in sales of goods and services and over \$2.8b in operating profit before tax. Among the manufacturing subdivisions, Metal product manufacturing is one of the largest industries.

Metal product manufacturing
businesses *continued*

The industry balance sheet shows that the net worth of the industry rose by \$2,273m (17.1%) from 1998–99 to 1999–2000. The industry experienced a small increase in the value of assets (up 0.5%) but a substantial fall in the value of liabilities (down 8.6%). Capital expenditure on tangible assets fell by almost 40% to \$1,721m. The largest component of capital expenditure in 1999–2000 was outlays on plant, machinery and equipment (including motor vehicles) which amounted to \$1.593m (93% of total acquisitions).

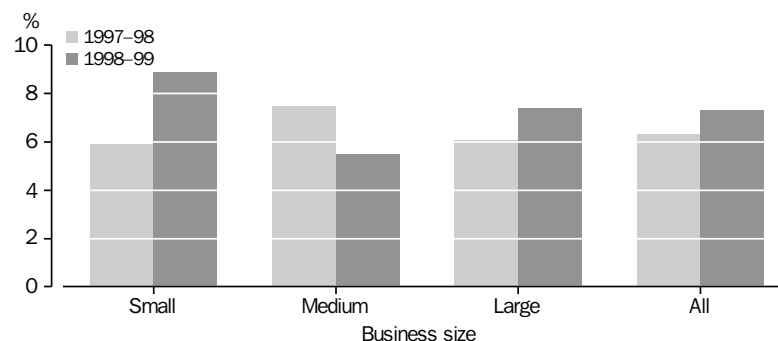
2.44 INCOME STATEMENT AND BALANCE SHEET

	1998–99	1999–2000	Change
	\$m	\$m	%
Income statement			
Sales of goods and services	36 304	38 433	5.9
Other operating income	434	549	26.5
<i>Total operating income</i>	36 738	38 982	6.1
Cost of sales	25 569	27 315	6.8
Labour costs	6 611	6 451	–2.4
Depreciation	1 419	1 361	–4.1
Interest expenses	592	799	35.0
Other operating expenses	232	204	–12.1
<i>Total operating expenses</i>	34 424	36 131	5.0
Operating profit before tax	2 314	2 851	23.2
Balance sheet			
Current assets	12 245	13 318	8.8
Non-current assets	25 230	24 339	–3.5
<i>Total assets</i>	37 475	37 657	0.5
Current liabilities	12 209	12 240	0.3
Non-current liabilities	12 008	9 885	–17.7
<i>Total liabilities</i>	24 217	22 126	–8.6
Net worth	13 258	15 531	17.1
Capital outlays			
Acquisition of fixed tangible assets(a)	2 848	1 721	–39.6

(a) Includes capitalised computer software but excludes intangible assets such as goodwill and patents.

Source: ABS data available on request, Annual Manufacturing Survey.

2.45 PROFIT MARGIN(a) BY SIZE OF BUSINESS



(a) Operating profit before tax as a percentage of operating income.

Source: ABS data available on request, Annual Manufacturing Survey.

For 1999–2000, the industry profit margin was 7.3% (i.e. \$73 of pre-tax profits per \$1,000 of operating income) an increase on the 1998–99 result. Pre-tax profits were recorded in 1999–2000 by 76% of Metal product manufacturers (80% of large businesses, 85% of medium sized businesses and 75% of small businesses). Further information by size of business is under ‘Analysis by size of business’ in Chapter 1.

Performance measures for this industry indicate that the high long term debt to equity position experienced in 1997–98 and 1998–99 was substantially reduced in 1999–2000 through an 18% reduction in non-current liabilities.

2.46 INDUSTRY PERFORMANCE

Selected performance measures	Units	1995–96	1996–97	1997–98	1998–99	1999–2000
Profit margin	%	7.5	6.6	7.8	6.3	7.3
Return on assets	%	7.6	7.2	8.3	6.2	7.6
Long term debt to equity	%	34	57	80	91	64
Current ratio	times	1.6	1.3	1.3	1.0	1.1

Source: ABS data available on request, Annual Manufacturing Survey.

Industry composition

Table 2.47 contains data for the 21 industry classes which make up the Metal product manufacturing subdivision of the manufacturing industry. The statistics relate to establishments (see Glossary). Despite a decrease in employment of 2,000 (11%) and a decrease in production of \$350m (17%) between 1998–99 and 1999–2000, Basic iron and steel manufacturing remains the largest industry class within the subdivision followed by Structural steel fabricating.

2.47 INDUSTRY COMPOSITION—1999–2000

	Employment at end of June(a)	Turnover	Industry value added (production)
	no.	\$m	\$m
Basic iron and steel mfg	16 830	8 693	1 745
Iron and steel casting and forging	5 987	1 049	447
Steel pipe and tube mfg	3 229	1 151	346
Alumina production	5 548	3 216	732
Aluminium smelting	5 133	3 928	939
Copper, silver, lead and zinc smelting, refining	3 770	2 953	499
Basic non-ferrous metal mfg n.e.c.	1 405	1 731	189
Aluminium rolling, drawing, extruding	3 207	1 402	280
Non-ferrous metal rolling, drawing, extruding n.e.c.	1 466	865	189
Non-ferrous metal casting	1 354	166	60
Structural steel fabricating	19 162	3 798	1 214
Architectural aluminium product mfg	15 289	2 593	794
Structural metal product mfg n.e.c.	6 094	826	263
Metal container mfg	3 621	1 124	309
Sheet metal product mfg n.e.c.	13 788	2 090	707
Hand tool and general hardware mfg	1 522	188	79
Spring and wire product mfg	4 582	807	249
Nut, bolt, screw and rivet mfg	1 687	286	116
Metal coating and finishing	6 178	717	322
Non-ferrous pipe fitting mfg	2 601	404	161
Fabricated metal product mfg n.e.c.	19 388	2 609	970
Total metal product mfg	141 843	40 596	10 610

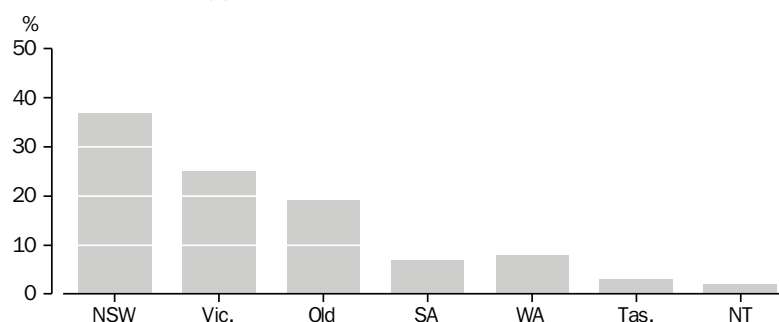
(a) Includes working proprietors.

Source: *Manufacturing Industry, Australia, 1999–2000* (Cat. no. 8221.0).

State and Territory
distribution of 1999–2000
production

Graph 2.48 shows how production by Metal product manufacturing establishments is distributed by State and Territory. Production is measured by the variable 'Industry value added'. Further information about the geographic distribution of the Metal product manufacturing industry is contained in Chapter 1 under the heading 'Distribution across States and Territories'.

2.48 PRODUCTION(a)—1999–2000

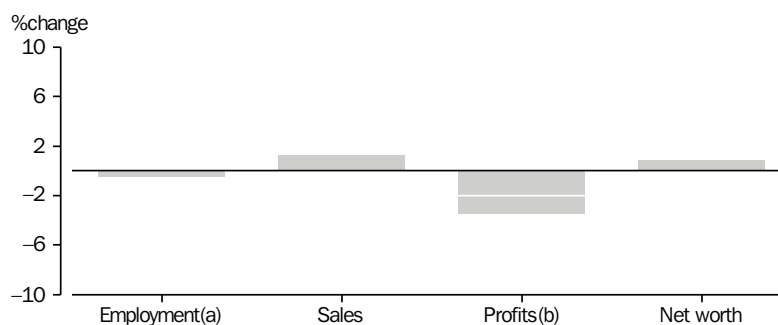


(a) As measured by Industry value added. The Australian Capital Territory contributed less than 0.5% of production for this industry.

Source: *Manufacturing Industry, Australia, 1999–2000* (Cat. no. 8221.0).

MACHINERY AND EQUIPMENT MANUFACTURING

2.49 CHANGE FROM 1998–99 TO 1999–2000



(a) Employment fell by 0.5%.

(b) Operating profit before tax.

Source: ABS data available on request, Annual Manufacturing Survey.

In June 2000, Machinery and equipment manufacturers employed around 201,000 people, a fall of 0.5% from the previous year. This is the largest employment of any manufacturing subdivision. During 1999–2000, this industry generated \$47b in sales of goods and services and \$1.9b in operating profit before tax. Among the manufacturing subdivisions, Metal product manufacturing is one of the largest industries.

The industry balance sheet shows that the net worth of the industry rose by \$96m (0.9%) from 1998–99 to 1999–2000. The industry experienced a small decrease in the value of assets (down 2.9%) but an even greater fall in the value of liabilities (down 5.1%). Capital expenditure on tangible assets fell by almost 20% to \$1,173m. The largest component of capital expenditure in 1999–2000 was outlays on plant, machinery and equipment (including motor vehicles) which amounted to \$944m (80% of total acquisitions).

2.50 INCOME STATEMENT AND BALANCE SHEET

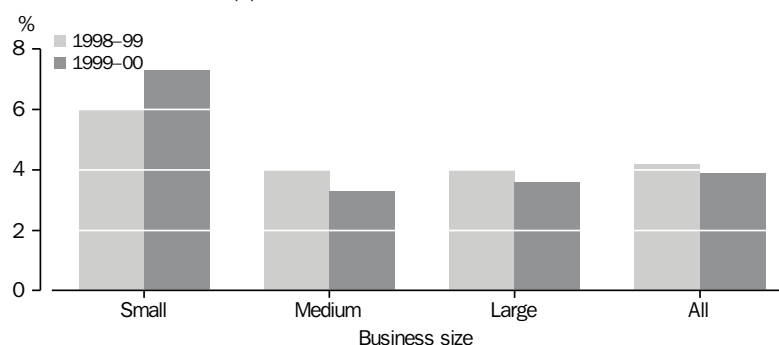
	1998–99	1999–2000	Change
	\$m	\$m	%
Income statement			
Sales of goods and services	46 473	47 100	1.3
Other operating income	630	899	42.7
<i>Total operating income</i>	<i>47 103</i>	<i>47 998</i>	<i>1.9</i>
Cost of sales	34 123	34 840	2.1
Labour costs	9 021	9 212	2.1
Depreciation	1 358	1 383	1.8
Interest expenses	404	439	8.7
Other operating expenses	234	229	–2.1
<i>Total operating expenses</i>	<i>45 140</i>	<i>46 103</i>	<i>2.1</i>
Operating profit before tax	1 963	1 895	–3.5
Balance sheet			
Current assets	16 178	16 648	2.9
Non-current assets	12 591	11 299	–10.3
<i>Total assets</i>	<i>28 769</i>	<i>27 948</i>	<i>–2.9</i>
Current liabilities	12 118	11 961	–1.3
Non-current liabilities	6 060	5 299	–12.6
<i>Total liabilities</i>	<i>18 178</i>	<i>17 260</i>	<i>–5.1</i>
Net worth	10 591	10 687	0.9
Capital outlays			
Acquisition of fixed tangible assets(a)	1 464	1 173	–19.9

(a) Includes capitalised computer software but excludes intangible assets such as goodwill and patents.

Source: ABS data available on request, Annual Manufacturing Survey.

Performance indicators

2.51 PROFIT MARGIN(a) BY SIZE OF BUSINESS



(a) Operating profit before tax as a percentage of operating income.

Source: ABS data available on request, Annual Manufacturing Survey.

For 1999–2000, the industry profit margin was 3.9% (i.e. \$39 of pre-tax profits per \$1,000 of operating income) a decrease from the 1998–99 result and the lowest of any manufacturing subdivision. Pre-tax profits were recorded in 1999–2000 by 73% of Machinery and equipment manufacturers with a very consistent result by different sized businesses (73% of large businesses, 73% of medium sized businesses and 73% of small businesses). Further information by size of business is under 'Analysis by size of business' in Chapter 1.

Performance indicators
continued

While the long term debt to equity position and the current ratio have been stable for this industry over the period 1995–96 to 1999–2000, the ratios of pre-tax profits to income and to assets have fallen markedly over the period.

2.52 INDUSTRY PERFORMANCE

<i>Selected performance measures</i>	<i>Units</i>	<i>1995–96</i>	<i>1996–97</i>	<i>1997–98</i>	<i>1998–99</i>	<i>1999–2000</i>
Profit margin	%	6.3	5.9	4.6	4.2	3.9
Return on assets	%	9.2	9.2	7.0	6.8	6.8
Long term debt to equity	%	43	50	57	57	50
Current ratio	times	1.5	1.5	1.4	1.3	1.4

Source: ABS data available on request, Annual Manufacturing Survey.

Industry composition

Table 2.53 contains data for the 28 industry classes which make up the Machinery and equipment manufacturing subdivision of the manufacturing industry. The statistics relate to establishments (see Glossary). Motor vehicle manufacturing and associated manufacturing industries continue to be the largest industry classes within the subdivision.

2.53 INDUSTRY COMPOSITION—1999–2000

	Employment at end of June(a)	Turnover	Industry value added (production)
	no.	\$m	\$m
Motor vehicle mfg	16 519	10 737	1 662
Motor vehicle body mfg	10 260	1 560	477
Automotive electrical and instrument mfg	5 287	1 286	349
Automotive component mfg n.e.c.	22 422	3 852	1 390
Shipbuilding	8 164	1 763	601
Boatbuilding	4 416	530	184
Railway equipment mfg	4 761	877	350
Aircraft mfg	11 678	1 832	852
Transport equipment mfg n.e.c.	420	55	23
Photographic and optical good mfg	2 464	769	284
Medical and surgical equipment mfg	5 111	718	290
Professional and scientific equipment mfg n.e.c.	4 635	767	289
Computer and business machine mfg	2 600	1 215	184
Telecommunication, broadcasting and transceiving equipment mfg	5 969	1 694	510
Electronic equipment mfg n.e.c.	11 506	2 300	774
Household appliance mfg	8 996	1 879	573
Electric cable and wire mfg	3 408	1 118	322
Battery mfg	602	139	65
Electric light and sign mfg	4 629	555	203
Electrical equipment mfg n.e.c.	13 261	2 371	831
Agricultural machinery mfg	5 811	843	291
Mining and construction machinery mfg	7 316	1 366	448
Food processing machinery mfg	2 387	382	142
Machine tool and part mfg	6 545	741	343
Lifting and material handling equipment mfg	8 335	1 577	589
Pump and compressor mfg	3 392	653	234
Commercial space heating and cooling equipment mfg	2 090	397	146
Industrial machinery and equipment mfg n.e.c.	12 646	1 813	645
Total machinery and equipment mfg	195 628	43 784	13 053

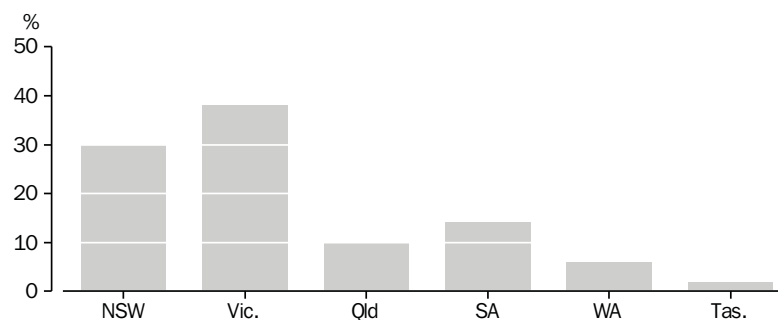
(a) Includes working proprietors.

Source: *Manufacturing Industry, Australia, 1999–2000* (Cat. no. 8221.0).

State and Territory
distribution of 1999–2000
production

Graph 2.54 shows how production by Machinery and equipment manufacturing establishments is distributed by State and Territory. Production is measured by the variable 'Industry value added'. Further information about the geographic distribution of the Machinery and equipment manufacturing industry is contained in Chapter 1 under the heading 'Distribution across States and Territories'.

2.54 PRODUCTION(a)—1999–2000



(a) As measured by Industry value added. Production is measured by Industry value added. The NT and the ACT each contributed less than 0.5% of production for this industry.

Source: *Manufacturing Industry, Australia, 1999–2000* (Cat. no. 8221.0).

OTHER MANUFACTURING

2.55 CHANGE FROM 1998–99 TO 1999–2000



(a) Sales rose by 0.4%.

(b) Operating profit before tax.

Source: ABS data available on request, *Annual Manufacturing Survey*.

In June 2000, businesses in the Other manufacturing subdivision employed around 54,000 people, a fall of 3.6% from the previous year. During 1999–2000, this industry generated almost \$7b in sales of goods and services and \$346m in operating profit before tax. Among the manufacturing subdivisions, Other manufacturing is the smallest.

The industry balance sheet shows that the net worth of the industry fell by almost a quarter during 1999–2000 as a result of a 16.1% fall in the value of assets and a relatively much smaller fall in the value of liabilities (down 10.7%). Capital expenditure on tangible assets fell by 12.1% to \$196m. The largest component of capital expenditure in 1999–2000 was outlays on plant, machinery and equipment (including motor vehicles) which amounted to \$163m (83% of total acquisitions).

2.56 INCOME STATEMENT AND BALANCE SHEET

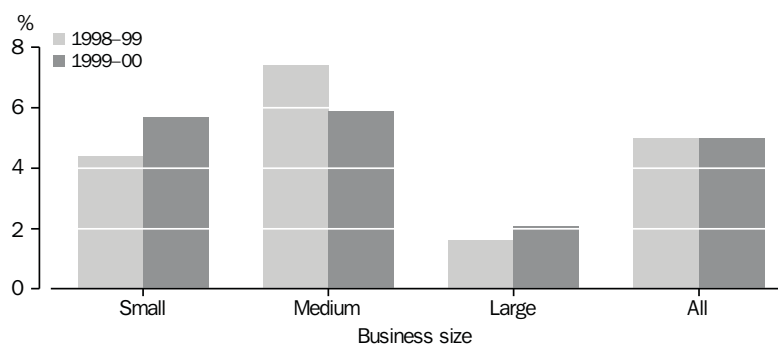
	1998–99	1999–2000	Change
	\$m	\$m	%
Income statement			
Sales of goods and services	6 791	6 820	0.4
Other operating income	62	62	–0.6
<i>Total operating income</i>	<i>6 853</i>	<i>6 882</i>	<i>0.4</i>
Cost of sales	4 552	4 711	3.5
Labour costs	1 701	1 579	–7.2
Depreciation	128	109	–14.7
Interest expenses	71	67	–6.6
Other operating expenses	65	70	7.7
<i>Total operating expenses</i>	<i>6 517</i>	<i>6 536</i>	<i>0.3</i>
Operating profit before tax	336	346	2.9
Balance sheet			
Current assets	2 061	1 599	–22.4
Non-current assets	1 300	1 222	–6.0
<i>Total assets</i>	<i>3 361</i>	<i>2 821</i>	<i>–16.1</i>
Current liabilities	1 324	1 200	–9.3
Non-current liabilities	745	648	–13.0
<i>Total liabilities</i>	<i>2 069</i>	<i>1 848</i>	<i>–10.7</i>
Net worth	1 292	973	–24.7
Capital outlays			
Acquisition of fixed tangible assets(a)	223	196	–12.1

(a) Includes capitalised computer software but excludes intangible assets such as goodwill and patents.

Source: ABS data available on request, Annual Manufacturing Survey.

Performance indicators

2.57 PROFIT MARGIN(a) BY SIZE OF BUSINESS



(a) Operating profit before tax as a percentage of operating income.

Source: ABS data available on request, Annual Manufacturing Survey.

For 1999–2000, the industry profit margin was 5.0% (i.e. \$50 of pre-tax profits per \$1,000 of operating income) a slight increase over the 1998–99 result. Pre-tax profits were recorded in 1999–2000 by 89% of businesses in the Other manufacturing subdivision (67% of large businesses, 84% of medium sized businesses and 90% of small businesses). Further information by size of business is under 'Analysis by size of business' in Chapter 1.

Performance indicators
continued

Table 58 shows that in terms of the measures shown, this industry has recorded quite consistent performance levels over the period 1995–96 to 1999–2000.

2.58 INDUSTRY PERFORMANCE

<i>Selected performance measures</i>	<i>Units</i>	1995–96	1996–97	1997–98	1998–99	1999–2000
Profit margin	%	5.8	4.6	5.1	4.9	5.0
Return on assets	%	10.9	8.7	11.2	10.0	12.3
Long term debt to equity	%	64	61	56	58	67
Current ratio	times	1.4	1.3	1.5	1.6	1.3

Source: ABS data available on request, Annual Manufacturing Survey.

Industry composition

Table 2.59 contains data for the nine industry classes which make up the Other manufacturing subdivision of the manufacturing industry. The statistics relate to establishments (see Glossary). The largest industry class by far in this subdivision is Wooden furniture and upholstered seat manufacturing.

2.59 INDUSTRY COMPOSITION—1999–2000

	<i>Employment at end of June(a)</i>	<i>Turnover</i>	<i>Industry value added (production)</i>
	<i>no.</i>	<i>\$m</i>	<i>\$m</i>
Prefabricated metal building mfg	2 041	446	129
Prefabricated building mfg n.e.c.	530	88	24
Wooden furniture and upholstered seat mfg	27 083	2 999	1 008
Sheet metal furniture mfg	3 419	435	136
Mattress mfg (except rubber)	2 729	483	166
Furniture mfg n.e.c.	7 295	1 066	373
Jewellery and silverware mfg	2 543	452	101
Toy and sporting good mfg	2 237	276	92
Manufacturing n.e.c.	5 132	640	187
Total other mfg	53 009	6 884	2 215

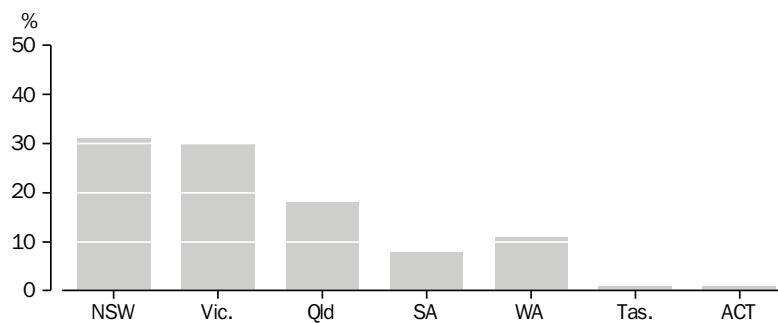
(a) Includes working proprietors.

Source: Manufacturing Industry, Australia, 1999–2000 (Cat. no. 8221.0).

State and Territory
distribution of 1999–2000
production

Graph 2.60 shows how production by Other manufacturing establishments is distributed by State and Territory. Production is measured by the variable 'Industry value added'. Further information about the geographic distribution of the Other manufacturing industry is contained in Chapter 1 under the heading 'Distribution across States and Territories'.

2.60 PRODUCTION(a)—1999–2000



(a) As measured by Industry value added. The Northern Territory contributed less than 0.5% of production for this industry.

Source: *Manufacturing Industry, Australia, 1999–2000* (Cat. no. 8221.0).

CHAPTER 3

LATEST INDICATORS

INTRODUCTION

Chapter 3 provides indicative information about the manufacturing industry from a number of quarterly surveys. A general picture of the manufacturing industry can be built up from these surveys but readers should be aware that the results of these surveys, though generally consistent, are not always identical. Readers should also note that quarterly information provided by businesses is often preliminary in nature and when summed to represent financial years, may differ from data collected in the annual surveys for those years.

There are several reasons why these small differences arise including

- **Sampling variability:** The surveys obtain information from samples of manufacturers and thus, the results are subject to sampling error (see the Glossary for explanation).
- **Scope differences:** While most surveys are set up to provide estimates for the whole manufacturing industry, some are constrained by practical considerations to estimate for a different population. For example, the quarterly Company Profits Survey estimates profits data only for incorporated businesses (companies) which employ more than 30 people.

Key features of the different surveys are mentioned in the relevant articles. However, no attempt has been made to provide exhaustive explanatory or definitional material. Readers wishing to pursue finer details of the various surveys should consult the Explanatory Notes to the relevant publications or contact the ABS.

SALES OF GOODS

This section presents summary information on manufacturer's sales of goods for the past two financial years. Estimates are given in current prices i.e. the amounts actually received by the manufacturers and in volume terms (expressed in 1999–2000 prices). The volume estimates of sales reflect the same transactions as the value estimates but values have been adjusted for changes in prices using a technique known as 'chain volume measures'. The Explanatory Notes contain a more detailed explanation of how chain volume measures are compiled.

Sales of goods and implied price changes

The total sales of goods by manufacturers increased by 6.1% from 1999–2000 to 2000–01 measured in current price values and by 1.5% in volume terms. This result implies an average price increase for manufactured goods of around 4.5% between the two years. As would be expected in periods of relatively small price movements, changes from 1999–2000 to 2000–01 tended to be in the same direction for both the value of sales and volume measures of sales and all subdivisions recorded results consistent with increases in the level of prices. The largest increases in current price sales were recorded by Petroleum, coal, chemical and associated product manufacturing, (up 16.9%), Food, beverage and tobacco manufacturing (up 14.9%) and Non-metallic mineral product manufacturing (up 8.5%). The same industries also recorded the greatest increases in the volume of sales.

Sales of goods and implied price changes *continued*

The largest decreases in current price sales were recorded by Wood and paper product manufacturing (down 11.2%), Other manufacturing (down 7.4%) and Printing, publishing and recorded media (down 4.4%). The same industries (in the same order) also recorded the greatest decreases in the volume of sales.

A guide to changes in average price levels for the industries shown in Table 3.1 can be derived by dividing 2000–01 current price sales by 2000–01 volume of sales. Taking Food, beverage and tobacco manufacturing as an example gives $61,133/58,963 = 1.036$ implying that average price levels for that industry for 2000–01 were 3.6% higher than average price levels for 1999–2000. On this basis, all industry subdivisions experienced increases in the average level of prices with Petroleum, coal, chemical and associated products showing the largest increase (up 8.5%) mainly as a result of increased prices for petroleum products.

Readers should note that these implied price changes for manufacturing as a whole will not necessarily be identical to the price changes shown for the same industries in table 3.12. The difference mainly arises from differences in what is being measured; i.e. table 3.1 covers sales of all goods produced by manufacturing businesses whereas the price changes in Table 3.12 exclude sales to other businesses in the same industry.

3.1 SALES OF GOODS PRODUCED

Industry	Current prices			Chain volume measures(a)		
	1999–2000	2000–01	Change	1999–2000	2000–01	Change
	\$m	\$m	%	\$m	\$m	%
Food, beverage and tobacco mfg	53 226	61 133	14.9	53 229	58 963	10.8
Textile, clothing, footwear and leather mfg	11 650	11 485	–1.4	11 649	11 252	–3.4
Wood and paper product mfg	18 177	16 146	–11.2	18 175	15 250	–16.1
Printing, publishing and recorded media	17 258	16 505	–4.4	17 258	15 927	–7.7
Petroleum, coal, chemical and associated product mfg	39 060	45 671	16.9	39 061	42 113	7.8
Non-metallic mineral product mfg	9 639	10 456	8.5	9 639	10 359	7.5
Metal product mfg	34 492	35 811	3.8	34 495	34 063	–1.3
Machinery and equipment mfg	50 427	52 043	3.2	50 432	50 712	0.6
Other mfg	7 745	7 174	–7.4	7 745	6 741	–13.0
Total mfg	241 677	256 423	6.1	241 683	245 380	1.5

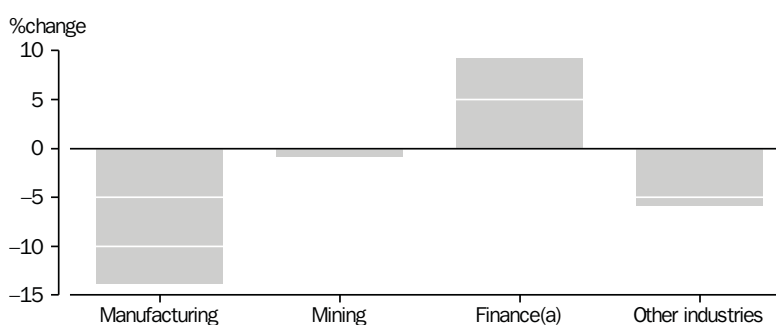
(a) Reference year for chain volume measures is 1999–2000 and thus, values for that year are the same under both measures.

Source: *Inventories and Sales, Selected industries, Australia, June Quarter 2001* (Cat. no. 5629.0).

CAPITAL EXPENDITURE

This article relates to private sector capital expenditure for most industries. Excluded is all capital expenditure by governments and all private expenditure in the Agriculture, Education and Health and community services industries. For the industries covered, the manufacturing industry was responsible for 21% of 2000–01 capital expenditure by private sector businesses in Australia, a decrease from 23% the year before. Capital expenditure by the manufacturing industry decreased by \$1,335m (down 13.8%) between 1999–2000 and 2000–01. This decrease resulted from a 17.7% fall in expenditure on buildings and structures and a 13.1% decrease in expenditure on equipment, plant and machinery over the same period.

3.2 CHANGE FROM 1999–2000 TO 2000–01



(a) Finance and insurance.

Source: *Private New Capital Expenditure and Expected Expenditure, Australia, June Quarter 2001* (Cat. no. 5625.0).

Total private sector capital expenditure fell by 7.0% (to \$39,491m) from 1999–2000 to 2000–01. This resulted mainly from substantial falls in three industries, Wholesale trade (down 20.5%), Transport and storage (down 17.0%) and Manufacturing (down 13.8%). Finance and insurance and Other services were the only industries to record an increase in capital expenditure over this period (up 9.2% and 1.3% respectively). Manufacturing's 13.8% decrease in capital expenditure was largely driven by reduced expenditure by Wood and paper product manufacturing (down 41.4%), Metal product manufacturing (down 27.7%) and Petroleum, coal, chemical and associated product manufacturing (down 23.4%). The largest relative increases were recorded by Textile, clothing, footwear and leather manufacturing (up 18.4%). Machinery and equipment manufacturing also recorded an increase (up 11.6%), as did Non-metallic mineral product manufacturing (up 9%).

In 2000–01, the industries within manufacturing which undertook the most capital expenditure were Food, beverage and tobacco manufacturing (24.2% of total manufacturing) and Machinery and equipment manufacturing (20.4% of the total). This industry also recorded the greatest increase in share of manufacturing expenditure, rising from 15.7% of manufacturing capital expenditure the year before.

3.3 PRIVATE NEW CAPITAL EXPENDITURE

	1999–2000	2000–01	Change
<i>Industry</i>	<i>\$m</i>	<i>\$m</i>	<i>%</i>
Food, beverage and tobacco mfg	2 221	2 021	–9.0
Textile, clothing, footwear and leather mfg	196	232	18.4
Wood and paper product mfg	987	578	–41.4
Printing, publishing and recorded media	782	677	–13.4
Petroleum, coal, chemical and associated product mfg	1 801	1 379	–23.4
Non-metallic mineral product mfg	469	511	9.0
Metal product mfg	1 482	1 072	–27.7
Machinery and equipment mfg	1 524	1 701	11.6
Other mfg	221	179	–19.0
Total mfg	9 685	8 350	–13.8
Of which			
Buildings and structures	1 501	1 236	–17.7
Equipment, plant and machinery	8 184	7 115	–13.1

Source: *Private New Capital Expenditure and Expected Expenditure, Australia, June Quarter 2001* (Cat. no. 5625.0).

COMPANY PROFITS

This article presents data for company profits. Not all businesses are represented. The information has been compiled from the ABS quarterly Survey of Company Profits which covers only incorporated companies which employ more than 30 people (i.e. the survey does not measure profits for companies employing 30 or fewer people or for unincorporated businesses regardless of size). This article is primarily intended to provide indications of the direction and magnitude of changes to industry profits, though it also gives an approximate guide to profit levels.

The survey shows that manufacturing industry profits fell by \$154m, or 1.4% between 1999–2000 and 2000–01 following an increase in profits of 9.3% between 1998–99 and 1999–2000. Mining was the only industry to record an increase in profit between 1999–2000 and 2000–01(28%) following an even greater increase (of 107%) the previous year.

3.4 COMPANY PROFITS BEFORE INCOME TAX

	1999–2000	2000–01	Change
	<i>\$m</i>	<i>\$m</i>	<i>%</i>
Mining	10 082	12 905	28.0
Manufacturing	11 258	11 104	–1.4
Construction	1 066	901	–15.5
Wholesale trade	3 013	2 703	–10.3
Retail trade	2 265	1 005	–55.6
Transport & storage	1 898	1 493	–21.3
Services to finance & insurance	–38	–908	–2 289.5
Property & business services	854	369	–56.8
Other services	3 685	3 236	–12.2
All industry	34 082	32 807	–3.7

Source: *Company Profits, Australia, June Quarter 2001* (Cat. no.5651.0).

Company profits *continued*

Between 1999–2000 and 2000–01 most manufacturing subdivisions experienced decreases in pre-tax profits, the most notable relative decreases being for the Other manufacturing industry (down 54.9%) and Non-metallic mineral product manufacturing (down 41.8%).

The Metal product manufacturing industry recorded a substantial increase (of 149%) after an increase of 183% the previous year. Food, beverage and tobacco manufacturing and Machinery and equipment manufacturing were the two other subdivisions to record an increase in profit (17.0% and 5.4% respectively).

3.5 MANUFACTURERS' PROFITS BEFORE INCOME TAX

	1999–2000	2000–01	Change
	\$m	\$m	%
Food, beverage and tobacco mfg	2 711	3 172	17.0
Textile, clothing, footwear and leather mfg	246	162	–34.2
Wood and paper product mfg	994	857	–13.8
Printing, publishing and recorded media	1 621	1 282	–20.9
Petroleum, coal, chemical and associated product mfg	2 227	1 566	–29.7
Non-metallic mineral product mfg	1 161	676	–41.8
Metal product mfg	744	1 855	149.3
Machinery and equipment mfg	1 379	1 453	5.4
Other mfg	175	79	–54.9
Total mfg	11 258	11 104	–1.4

Source: Company Profits, Australia, June Quarter 2001 (Cat. no.5651.0).

EMPLOYEES AND THEIR EARNINGS

This article presents data for employees only (i.e. estimates exclude working proprietors and partners of unincorporated manufacturing businesses). It also presents average weekly earnings for employees, covering wages and salaries, overtime and penalty pay. Chapter 2 presents labour costs in a wider context including not only the wages and salaries etc. covered in this section but also other labour costs such as redundancy payments, workers' compensation costs and superannuation contributions by employers.

Wage and salary earners

Table 3.6 presents estimates of the average number of wage and salary earners (paid employees) in Australian manufacturing in the years ended February 2000 and February 2001. The manufacturing industry recorded a decrease of 34,000 paid employees between the two periods (down 3.8%). The overall fall in the number of paid employees in Manufacturing resulted from a 1.1% fall in full-time employees and a fall of 21.7% in part-time employees. However part-time employees had increased by 18.8% over the previous year. The fall from the year ended February 2000 to the year ended February 2001 in numbers of part-time employees reduced their share of all Manufacturing employees from 13% to 11%.

3.6 WAGE AND SALARY EARNERS

	Manufacturing	Total of all industries(a)
FEBRUARY 2000		
	'000	'000
Full-time	774	4 876
Part-time	118	2 279
Total	892	7 155
FEBRUARY 2001		
	'000	'000
Full-time	766	4 941
Part-time	93	2 386
Total	858	7 327
CHANGE		
	%	%
Full-time	-1.1	1.3
Part-time	-21.7	4.7
Total	-3.8	2.4

(a) Excludes Agriculture, forestry and fishing.

Source: *Wage and Salary Earners, Australia, March Quarter 2001* (Cat. no. 6248.0).

While the average numbers of employees in the Manufacturing industry in Australia fell between the year ended February 2000 and the year ended February 2001, the States and Territories experienced a variety of change patterns in their average numbers of employees. As table 3.7 shows, five States recorded a decrease in the number of employees. This contrasts with industry overall which recorded decreases for only three jurisdictions, New South Wales, Queensland and the Australian Capital Territory.

3.7 WAGE AND SALARY EARNERS

	Manufacturing (average over year)			Manufacturing share of all industries		
	Year ended February 2000	Year ended February 2001	Change	Year ended February 2000	Year ended February 2001	
	'000	'000	%	%	%	
New South Wales	270.7	267.5	-1.2	11.1	11.2	
Victoria	303.9	293.7	-3.4	16.7	15.4	
Queensland	138.2	142.7	3.2	10.6	10.7	
South Australia	82.0	77.6	-5.3	15.6	14.5	
Western Australia	70.4	67.6	-3.9	9.7	9.0	
Tasmania	22.4	19.8	-11.3	14.0	12.6	
Northern Territory	2.9	2.9	1.4	3.9	3.7	
Australian Capital Territory	3.0	3.8	25.3	2.0	2.4	
Australia	893.5	875.6	-2.0	12.4	11.9	

Source: *Wage and Salary Earners, Australia, March Quarter 2001* (Cat. no. 6248.0).

Wage and salary earners
continued

Over the last 10 years, the change in numbers of paid employees has been more pronounced. Between the year ended February 2001 and 10 years earlier, the total number of paid employees in Manufacturing fell 18.2% from 1,070,900 to 875,600. This contrasts markedly to the increase in the total for all industries of 13.4% over the same period. Manufacturing's proportion of all paid employees fell from 16.5% to 11.9% over those ten years. All States and Territories recorded decreases in the number of manufacturing employees over this period.

Table 3.8 presents information on average total earnings (i.e. ordinary time earnings plus overtime earnings) at the mid-point of the June quarter 2001 for full-time employees. At that time, average earnings for full-time Manufacturing employees at \$815, were lower than the all industries' full-time average of \$861. Twelve of the sixteen industries recorded higher average full-time earning rates than Manufacturing.

3.8 AVERAGE WEEKLY EARNINGS(a)—JUNE QUARTER 2001

	Full time adult males	Full time adult females	Full time adult persons
Industry	\$	\$	\$
Mining	1 500	993	1 449
Manufacturing	856	671	815
Electricity, gas and water supply	1 142	907	1 111
Construction	817	579	786
Wholesale trade	869	723	827
Retail trade	679	592	649
Accommodation, cafes and restaurants	685	609	657
Transport and storage	969	722	913
Communication services	1 025	867	978
Finance and insurance	1 228	797	1 002
Property and business services	1 034	733	912
Government administration and defence	968	831	912
Education	1 029	886	943
Health and community services	1 005	799	867
Cultural and recreational services	878	758	834
Personal and other services	945	707	863
All industries(b)	923	751	861

(a) Average gross earnings before tax (including overtime).

(b) Excluding Agriculture, forestry and fishing.

Source: *Average Weekly Earnings, States and Australia, June Quarter 2001* (Cat. no. 6302.0).

Unlike table 3.8 which presented data for average total earnings, table 3.9 and graph 3.10 present data for ordinary time earnings (i.e. average weekly earnings without overtime earnings). Table 3.9 shows that average weekly ordinary time earnings for full-time adult employees in Manufacturing grew by 3% from June quarter 2000 to June quarter 2001. While full-time males experienced an increase of 3.4%, full-time female employees recorded an increase of only 1.0 % in average ordinary time earnings, well below the all industries average of 5.3%.

Average weekly earnings of employees *continued*

If industries are ranked from the highest increase (Property and business services — up 9.8%) to the lowest (Construction — down 2.0%), Manufacturing would rank equal thirteenth of the sixteen industries along with Communication services and well below the all industries increase of 5.3%. Table 3.9 also shows that ordinary time earnings of adult full-time female employees rose minimally in comparison to corresponding male employees. Manufacturing recorded the lowest increase of all sectors in female full-time earnings.

3.9 CHANGE IN AVERAGE EARNINGS(a)—2000 TO 2001

<i>Industry</i>	<i>Full time adult males</i>	<i>Full time adult females</i>	<i>Full time adult persons</i>
	%	%	%
Mining	4.8	4.7	4.9
Manufacturing	3.4	1.0	3.0
Electricity, gas and water supply	7.0	7.6	7.2
Construction	-2.7	1.7	-2.0
Wholesale trade	4.5	10.3	5.5
Retail trade	0.1	5.0	2.0
Accommodation, cafes and restaurants	7.0	6.0	6.6
Transport and storage	4.5	3.4	4.6
Communication services	2.6	4.6	3.0
Finance and insurance	0.9	6.1	3.7
Property and business services	10.9	7.9	9.8
Government administration and defence	6.2	5.5	5.8
Education	7.9	6.4	7.1
Health and community services	6.5	4.1	5.6
Cultural and recreational services	6.4	4.8	6.3
Personal and other services	6.6	8.8	8.0
All industries(b)	4.9	5.6	5.3

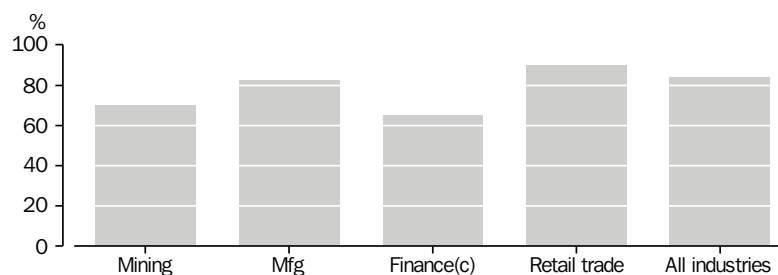
(a) Change from June quarter 2000 to June quarter 2001 in average ordinary time earnings i.e. gross earnings before tax (excluding overtime).

(b) Excluding Agriculture, forestry and fishing.

Source: *Average Weekly Earnings, States and Australia, June Quarter 2001* (Cat. no. 6302.0).

Graph 3.10 shows ordinary time earnings of adult full-time female employees as a percentage of corresponding male earnings. In terms of this percentage, manufacturing at 82% is slightly lower than the all industries average (of around 84%). Percentages range from 65% for the Finance and insurance industry to 90% for Retail trade.

3.10 FEMALE/MALE ORDINARY TIME(a) EARNINGS RATIO(b)



(a) Gross earnings before tax less overtime earnings.

(b) Female earnings expressed as a percentage of male earnings

(c) Finance and Insurance.

Source: *Average Weekly Earnings, States and Australia* (Cat no. 6302.0).

ARTICLES PRODUCED BY MANUFACTURERS

Table 3.11 presents quantities of production for selected manufactured commodities for 1998–99, 1999–2000 and 2000–01.

Over half of the selected commodities reflect lower levels of production for 2000–01 than for 1999–2000. The greatest relative decreases in production between the two years occurred for Man-made fibre broadwoven fabric (down 33.5%), Wool broadwoven fabric (down 26.1%) and Wool yarn (down 21.7%). Of those commodities that experienced relative increases in production levels, the largest were recorded in Wool and man-made fibre tops (up 10.8%) and Gas (up 5.8%).

3.11 PRODUCTION OF SELECTED MANUFACTURED COMMODITIES

<i>Commodity</i>	<i>Unit of quantity(a)</i>	<i>1998-99</i>	<i>1999-2000</i>	<i>2000-01</i>
Red meat	'000 t	r3 009	r3 031	3 130
Chicken meat	'000 t	564	r598	619
Beer	million L	r1 738	r1 768	1 745
Tobacco and cigarettes	t	21 045	20 688	19 125
Scoured and carbonised wool	t	129 753	r118 558	124 679
Wool and man-made fibre tops	t	53 162	55 335	61 135
Wool yarn	t	17 688	19 020	14 894
Cotton yarn	t	36 814	33 368	33 203
Synthetic fibre yarn	t	10 311	11 148	9 080
Wool broadwoven fabric	'000 m ²	6 254	5 427	4 013
Cotton broadwoven fabric	'000 m ²	55 824	47 230	39 305
Man-made fibre broadwoven fabric	'000 m ²	136 886	r132 847	88 294
Knitted or crocheted fabrics	t	14 004	14 135	14 946
Textile floor coverings	'000 m ²	45 142	46 401	43 941
Footwear (excl. waterproof and sports)	'000 pairs	11 238	r9 697	8 129
Newsprint	'000 t	399	381	392
Wood pulp	'000 t	871	861	895
Hardwood woodchips	'000 t	4 856	6 164	6 402
Paperboard containers	'000 t	1 285	1 385	1 395
Superphosphates	'000 t	1 464	1 429	1 379
Cement, Portland	'000 t	7 705	7 937	6 820
Clay bricks	million	1 593	1 736	1 448
Ready mixed concrete	'000 m ³	18 600	r20 364	17 250
Basic iron, spiegeleisen and sponge iron	'000 t	7 453	6 489	6 489
Electricity	million kWh	179 630	184 790	188 546
Gas	PJ	675	726	768

(a) See 'Symbols and other usages'.

Source: *Manufacturing Production, Australia (Cat. no. 8301.0)*.

PRICES OF ARTICLES PRODUCED AND MATERIALS USED

This section presents information on changes in price for articles produced by Australian manufacturers and changes in price of materials used in processing by Australian manufacturers. Price changes are net for the industry shown which means that changes shown in table 3.12 cover all goods produced by an industry except goods which are sold or transferred to establishments in the same industry. For example, the price changes shown in table 3.12 for the Textiles manufacturing industry cover all goods produced by establishments in the Textiles manufacturing industry except those goods which are sold or transferred to other establishments in the Textiles manufacturing industry. The same principle applies to other industries and to the Manufacturing industry as a whole. Price movements in table 3.13 are also on a net industry basis.

Changes in prices of articles produced

Table 3.12 shows that over the past two years, prices of manufactured products have risen overall and in particular, for petroleum and coal products and for base metal products.

Between 1998–99 and 1999–2000, the prices of articles produced by the manufacturing industry increased overall by 4.3%. All of the industries shown in table 3.12 recorded increases, the largest by far being for Petroleum and coal products (up 58.4%). This reflects substantial price increases for refined petroleum products over this period following a decrease in price (down 14.6%) between 1997–98 and 1998–99.

Between 1999–2000 and 2000–01 the price of articles produced by the manufacturing industry increased by 6.6%. The overall manufacturing increase was strongly influenced again by the very large increase recorded for the Petroleum and coal products industry (up 38.3%). No manufacturing subdivisions recorded a decrease in the price of articles produced between 1999–2000 and 2000–01.

3.12 PRICE CHANGES OF ARTICLES PRODUCED BY MANUFACTURERS

<i>Industry</i>	<i>Change from 1998–99 to 1999–2000</i>	<i>Change from 1999–2000 to 2000–01</i>
	<i>%</i>	<i>%</i>
Food, beverages and tobacco	2.0	5.0
Textiles and textile products	0.9	4.6
Knitting mills, clothing, footwear and leather	1.4	1.0
Log sawmilling and other wood products	4.1	3.7
Paper and paper products	0.8	3.2
Printing, publishing and recorded media	3.7	2.4
Petroleum and coal products	58.4	38.3
Chemicals	0.9	3.6
Rubber and plastics	0.8	3.7
Non-metallic mineral products	0.3	0.3
Base metal products	6.2	10.1
Fabricated metal products	1.4	1.3
Transport equipment and parts	1.5	3.8
Electronic equipment and other machinery	0.7	2.2
Other manufacturing	2.1	4.0
Total mfg	4.3	6.6

Source: Producer Price Indexes, Australia, June 2001 (Cat. no. 6427.0).

Changes in prices of materials used

Between 1998–99 and 1999–2000, the manufacturing industry recorded a price increase for materials used (up 9.3%). The increase was largely contributed by the rise in the price of materials used in Petroleum and coal products (up 67.2%), which reflected a world wide increase in crude oil prices. The next largest increase, recorded for the Leather and leather products industry was substantially lower (up 4.6%).

Between 1999–2000 and 2000–01 manufacturing recorded a price increase of 14.3% for materials used. Again, Petroleum and coal products recorded the greatest fluctuation, increasing by 38%. The next greatest increase, for Footwear was significantly lower at 12%. All of the industries listed in Table 3.13 recorded an increase in the price of materials used between 1999–2000 and 2000–01, though a number recorded decreases in the previous year.

3.13 PRICE CHANGES IN MATERIALS USED BY MANUFACTURERS

<i>Industry</i>	<i>Change from 1998–99 to 1999–2000</i>	<i>Change from 1999–2000 to 2000–01</i>
	%	%
Food, beverages and tobacco	0.3	9.2
Textiles and textile products	–2.6	11.7
Knitting mills and clothing	–3.6	3.8
Footwear	–2.6	12.0
Leather and leather products	4.6	9.6
Sawmilling and timber products	2.7	8.0
Paper and paper products	2.3	10.2
Printing, publishing and recorded media	–0.4	8.2
Petroleum and coal products	67.2	38.0
Chemicals	2.3	10.8
Rubber and plastics	0.6	11.8
Non-metallic mineral products	–0.5	0.7
Basic metal products	0.9	9.9
Fabricated metal products	–0.1	5.3
Transport equipment and parts	3.2	3.9
Electronic equipment and other machinery	–0.3	4.4
Other mfg	3.0	5.7
Total mfg	9.3	14.3

Source: Producer Price Indexes, Australia, June 2001 (Cat. no. 6427.0).

CHAPTER 4

INTERNATIONAL TRADE

INTRODUCTION

This article relating to benefits from exporting was mainly written by Tim Harcourt, the Chief Economist for the Australian Trade Commission (Austrade). The article follows on from the work presented in the joint *ABS/Austrade publication A Portrait of Australian Exporters* (Cat. no. 8154.0).

BENEFITS FROM EXPORTING

The benefits of exporting activity to Australia are usually described in terms of macro-economics. Economists usually talk about Australia's balance of payments and the benefits of exports to economic growth. Exporting is also advocated from a business perspective because exports help businesses expand (which is especially important given the small size of Australia's domestic market) and can have a favourable effect on profit margins. Exporting also helps a business keep up with the latest international trends in technology, training and consumer tastes giving Australian businesses a world view and an incentive to innovate and grow.

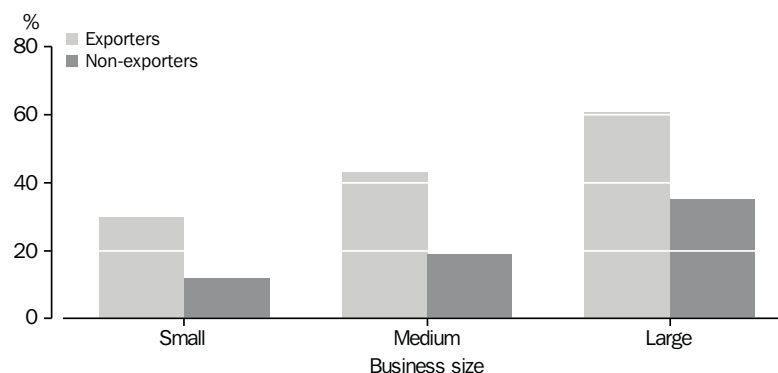
But is this all that exporting does? Is it just about macro-economic and business performance? What about Australian workers and Australian communities in general? How do they benefit from exporting?

A report from Austrade and the Centre for Applied Economic Research at the University of New South Wales focused particularly on the benefits to the workforce. The report made extensive use of an ABS/Austrade publication, *A Portrait of Australian Exporters* (Cat. no. 8154.0) which was based on the ABS Business Longitudinal Survey (BLS). The BLS sampled from a population of some 540,000 Australian companies from 1994–95 to 1997–98. The data show that exporters, generally speaking, are good employers as they outperform non-exporters in terms of wages and salaries, employment conditions, occupational health and safety and employment status. More recent data from the annual manufacturing survey indicates that these relationships continue to hold for manufacturers.

For example, in terms of wages and salaries, exporters, on average, pay better than non-exporters. This is because exporters are usually more innovative than non-exporters, investing in technology and using advanced management techniques. Their workers are typically highly skilled. The higher productivity generated enables exporters to pay higher wages. According to the BLS data, 34 % of exporters paid their workers above average weekly earnings (AWE) compared to only 12% of non-exporters.

It is often argued that this may simply be a function of scale (exporters, on average, being larger businesses and hence more capital-intensive). However, as graph 4.1 shows that on average, exporters pay better than non-exporters regardless of business size.

4.1 MANUFACTURERS PAYING MORE THAN AVERAGE WEEKLY EARNINGS



Source: ABS data available on request, Annual Manufacturing Survey.

Exporting manufacturers

The results for the economy as a whole have prompted further interest in the results for different industries. Most interest has been in manufacturing given its labour intensity and traditional role as a large-scale employer of Australian workers. The ABS manufacturing survey is a good source of data on the role of manufacturing exporters and the labour market. Information on relative performance of exporting manufacturers and non-exporting manufacturers is provided below in the article 'Manufacturers who export'.

Manufacturing exporters behaved similarly to exporters in other industries in respect of being, on average, more committed to staff training than non-exporters, out-spending them by a ratio of almost 2.3 to 1. Assuming average hours worked to be similar for exporters and non-exporters, manufacturing exporters had a higher capital/labour ratio than non-exporters by almost 2 to 1. Also as table 4.2 shows, average wages and salaries were higher for exporters in all manufacturing subdivisions and much higher in some industries.

4.2 AVERAGE WAGES AND SALARIES(a)—1999–2000

	Exporters	Non-exporters
Commodity	\$'000	\$'000
Food, beverage and tobacco mfg	41.3	33.9
Textile, clothing, footwear and leather mfg	36.5	25.4
Wood and paper product mfg	46.6	33.3
Printing, publishing and recorded media	43.0	39.3
Petroleum, coal, chemical and associated product mfg	50.3	38.6
Non-metallic mineral product mfg	46.3	42.1
Metal product mfg	50.0	35.1
Machinery and equipment mfg	43.0	39.5
Other mfg	33.3	27.7
Total mfg	44.4	35.3

(a) Wages and salaries paid during 1999–2000 divided by the number of employees at 30 June 2000.

Source: ABS data available on request, Annual Manufacturing Survey, 1999–2000.

Exporting manufacturers
continued

In conclusion, the manufacturing survey has provided further evidence on how exporters compare to non-exporters in the labour market. As for the economy as whole, manufacturing exporters, on average, tend to employ more workers than non-exporters and pay higher wages. They also spend a significantly higher proportion of their budget on the training of their staff. This shows that manufacturing exporters, like Australian exporters in general, practice a high skill, high wage, high productivity strategy in raising their international competitiveness and expanding their sales in world markets.

EXPORTS AND IMPORTS BY INDUSTRY

Table 4.3 provides an approximate measure of the size of Australian markets for manufactured goods and of import penetration of those markets. There are several classification, valuation and transaction timing differences affecting the various data sources for the table. As a result, the total market estimates and import penetration estimates should be regarded as approximate and the generally small movements in penetration rates as indicative rather than conclusive. Also, exports data shown in table 4.3 exclude a small proportion of exports which cannot be allocated to industry because of ABS confidentiality provisions.

The imports and exports data in this article are classified to 'Industry of origin'. This concept allocates internationally traded commodities back to the industry of original manufacture rather than to the industries of the businesses actually undertaking the imports or exports. Also, because it is not always known which manufacturing industry actually produced a particular set of traded commodities, all commodities are allocated to the industry which produces most of that type of commodity i.e. the industry most likely to have been the source.

4.3 AUSTRALIAN MARKET FOR MANUFACTURED GOODS

<i>Industry/period</i>	<i>Manufacturers' sales(a)</i>	<i>Exports by industry of origin(b)</i>	<i>Imports by industry of origin(b)</i>	<i>Total Australian market(c)</i>	<i>Estimated import penetration(d)</i>
	\$b	\$b	\$b	\$b	%
Food, beverage and tobacco mfg					
1999–2000	53.2	13.3	4.5	44.4	10
2000–2001	59.0	16.5	5.1	47.5	11
Textile, clothing, footwear and leather mfg					
1999–2000	11.6	2.6	6.9	15.9	43
2000–2001	11.3	2.9	7.4	15.7	47
Wood and paper product mfg					
1999–2000	18.2	1.4	3.5	20.3	17
2000–2001	15.3	1.6	3.6	17.2	21
Printing, publishing and recorded media					
1999–2000	17.3	0.5	2.0	18.8	11
2000–2001	15.9	0.5	1.9	17.3	11
Petroleum, coal, chemical and associated product mfg					
1999–2000	39.1	6.9	16.8	49.0	34
2000–2001	42.1	8.9	19.3	52.5	37
Non-metallic mineral product mfg					
1999–2000	9.6	0.3	1.4	10.7	13
2000–2001	10.4	0.4	1.4	11.4	12
Metal product mfg					
1999–2000	34.5	18.3	7.9	24.1	33
2000–2001	34.1	21.0	7.4	20.5	36
Machinery and equipment mfg					
1999–2000	50.4	13.9	56.2	92.8	61
2000–2001	50.7	16.1	58.7	93.2	63
Other mfg					
1999–2000	7.7	0.8	3.1	10.1	31
2000–2001	6.7	0.9	3.5	9.4	38
Total mfg					
1999–2000	241.7	58.0	102.4	286.1	36
2000–01	245.4	69.0	108.3	284.7	38

(a) Includes exports by manufacturers.

(b) Commodity exports and imports are classified to the industry of origin i.e. the industry most likely to have manufactured the commodity.

(c) Manufacturers sales minus exports plus imports.

(d) Imports as a percentage of the estimated total Australian market.

Source: *International Merchandise Trade, Australia* (Cat. no. 5422.0); *Stocks and Sales, Selected Industries, Australia* (Cat. no. 5629.0).

Exports by industry of origin Total exports for the Australian manufacturing industry of origin in 2000–01 were estimated to be \$69b which was an \$11b (19%) increase on 1999–2000. Each of the nine manufacturing industries of origin increased exports by at least 10% between 1999–2000 and 2000–01 with the largest relative increase being by Petroleum, coal, chemical and associated product manufacturing (up 29%) (this increase would have been affected by increased prices more than the other industries however because of fluctuations in oil prices).

The Metal product manufacturing industry continued to have the highest value of exports with \$21b worth of goods being sold overseas, accounting for around 30% of all manufacturing exports. Other manufacturing industries to have exports valued at over \$10b were Food, beverage and tobacco manufacturing (\$16.5b) and Machinery and equipment manufacturing (\$16.1b).

Imports by industry of origin Imports also increased between 1998–99 and 1999–2000 but only by a little under 6%. This resulted in Australian manufactured goods experiencing a trade deficit against the rest of the world of \$38.3b in 2000–01 down 10% from the \$42.3b experienced in 1999–2000.

At \$58.7b in value, goods classified to the Machinery and equipment manufacturing industry accounted for around 54% of manufacturing imports. Petroleum, coal, chemical and associated product manufacturing was the next largest with its \$19.3b accounting for just under 18% of imports of manufactured goods. The level of imports by industry of origin increased for all manufacturing subdivisions except for Metal product manufacturing and Printing, publishing and recorded media.

Market size by industry of origin By adding imports to the sales by domestic manufacturers and then subtracting exports, an estimate of the size of the Australian market for manufactured goods can be calculated. Table 4.3 contains such estimates for the years 1999–2000 and 2000–01. Under this method the estimate for the Australian domestic market for manufactured goods in 1999–2000 was \$284.7b, a slight decrease of \$1.4b (0.5%) from the previous year. The estimated market for manufactured goods was approximately \$14,950 per head of resident Australian population in 2000–01.

The industry (of origin) with the largest Australian market for its products was the Machinery and equipment manufacturing industry (which covers a wide range of consumer goods and capital goods) with an estimated 2000–01 market size of \$93.2b. This was followed by Petroleum, coal, chemical and associated product manufacturing (\$52.5b) and Food, beverage and tobacco manufacturing (\$47.5b).

The market for goods grew in four of the nine manufacturing subdivisions between 1999–2000 and 2000–01. The largest relative growth occurred in Food, beverage and tobacco manufacturing (up 7.0%) while the largest relative falls were by Wood and paper product manufacturing (down 15.4%) and Metal product manufacturing (down 15.0%).

Import penetration Import penetration estimates provide an insight into the level of imported goods which make their way into the Australian market. In 2000–01, imports were estimated to satisfy 38% of the Australian market for all manufactured goods.

The greatest level of import penetration for an industry (of origin) in 2000–01 was for Machinery and equipment manufacturing where an estimated 63% of the Australian market was satisfied by imports. The Textile, clothing, footwear and leather manufacturing industry also recorded a high level of import penetration, with 47% of the Australian market being satisfied by overseas products.

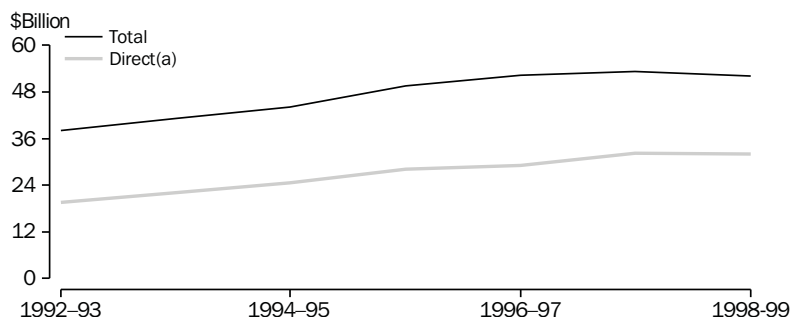
Markets (industry of origin) dominated by domestic goods in 2000–01 were the Food, beverage and tobacco manufacturing (89% of demand satisfied by domestic products), Printing, publishing and recorded media (also 89%) and Non-metallic mineral product manufacturing (88%).

MANUFACTURERS WHO EXPORT

This article presents a range of statistics about manufacturing establishments. It provides information on the performance of exporters relative to non-exporters. Direct exporters are those manufacturers who are involved in export of goods which they have produced. Readers should note that direct exports make up only part of the exports of goods manufactured in Australia. Substantial export of Australian manufactured goods is undertaken by other businesses, principally wholesalers. Information on total exports of manufactured goods is contained in a previous article on exports and imports by industry.

Graph 4.4 shows that, in recent years, the value of direct exports by manufacturers has grown more quickly than the value of total exports of manufactured goods, indicating that manufacturers are taking an increasing role in the export of the goods that they produce. Except for a very small fall in 1996–97, the proportion of exports of manufactured goods undertaken by manufacturers has grown steadily from 1992–93 when it was 51.4% to 1999–2000 when it reached 63.4%.

4.4 EXPORTS OF MANUFACTURED GOODS



(a) Exports by manufacturers or their agents.

Source: *Manufacturing Industry, Australia, 1998–99* (Cat. no. 8221.0).

Exports as a proportion of goods manufactured

Direct exports by manufacturers as a proportion of goods that they manufactured increased from 15.7% of sales in 1998–99 to 17.5% in 1999–2000 continuing a steadily rising trend over recent years. The industries which directly export the highest proportion of their manufactured goods are Metal product manufacturing (28.2%), Food, beverage and tobacco manufacturing (22.1%) and Machinery and equipment manufacturing (20.1%). The proportion of goods directly exported by manufacturers increased between 1998–99 and 1999–2000 for seven of the nine manufacturing subdivisions, particularly in Food, beverage and tobacco manufacturing, Textile, clothing, footwear and leather manufacturing and Machinery and equipment manufacturing.

4.5 EXPORT PERCENTAGE(a) OF MANUFACTURING ESTABLISHMENTS BY EMPLOYMENT SIZE—1999–2000

	Employment size			Total
	Under 50	50 but under 100	100 or more	
Industry	%	%	%	%
Food, beverage and tobacco mfg	15.2	15.3	24.6	22.1
Textile, clothing, footwear and leather mfg	6.4	21.0	24.7	17.4
Wood and paper product mfg	4.6	16.9	4.2	5.9
Printing, publishing and recorded media	5.8	4.8	2.8	4.3
Petroleum, coal, chemical and associated product mfg	9.3	10.8	12.8	11.8
Non-metallic mineral product mfg	1.6	1.7	3.9	2.8
Metal product mfg(b)	31.5	6.8	30.2	28.2
Machinery and equipment mfg	8.8	17.6	23.8	20.1
Other mfg	3.0	6.2	3.6	3.7
Total mfg	13.8	11.7	20.3	17.5

(a) The value of direct exports as a percentage of the value of goods manufactured for sale.

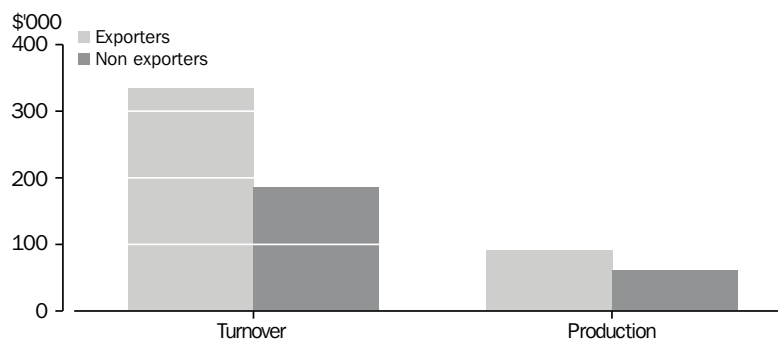
(b) Statistics classified by employment size for this industry can be misleading because of the influence of unincorporated joint venture businesses. For further information, refer to the note immediately preceding table 1.22 and to the Glossary.

Source: *Manufacturing Industry, Australia, 1999–2000* (Cat. no. 8221.0).

Performance measures

Graph 4.6 and table 4.7 show that in total, manufacturing establishments which undertook export activity in 1999–2000 averaged 80% more turnover per person employed and 47% more production (Industry value added) per person employed than those which undertook none.

4.6 PERFORMANCE PER PERSON EMPLOYED(a)—1999–2000



(a) See table 4.2 for information on average wages and salaries.

Source: ABS data available on request, Annual Manufacturing Survey 1999–2000.

In 1999–2000, in all industry subdivisions direct exporters recorded higher averages per person employed for both performance measures shown in table 4.7 than non-exporters with the lone exception being turnover per person employed in Non-metallic mineral product manufacturing. Between 1998–99 and 1999–2000 production per person employed remained virtually unchanged for both exporting manufacturers and non-exporters. At the industry level, production per person employed rose for exporters in five of the nine subdivisions and in four of the nine subdivisions for non-exporters. All of the rises and falls were quite small.

4.7 PERFORMANCE OF EXPORTING MANUFACTURERS—1999–2000

Industry	Turnover per person employed		IVA per person employed	
	Direct exporters	Non-exporters	Direct exporters	Non-exporters
	\$'000	\$'000	\$'000	\$'000
Food, beverage and tobacco mfg	371	245	105	66
Textile, clothing, footwear and leather mfg	193	106	58	40
Wood and paper product mfg	327	171	108	59
Printing, publishing and recorded media	223	162	85	70
Petroleum, coal, chemical and associated product mfg	439	288	109	94
Non-metallic mineral product mfg	281	311	109	104
Metal product mfg	431	189	101	57
Machinery and equipment mfg	281	146	76	54
Other mfg	174	117	48	40
Total mfg	334	186	91	62

Source: ABS data available on request, Annual Manufacturing Survey, 1999–2000.

EXPORTS AND IMPORTS OF MANUFACTURED GOODS

This section shows 2000–01 levels of imports and exports for major manufactured commodity items. Table 4.8 shows 2000–01 exports of manufactured products with exports valued at \$500m or more.

Comparisons of 2000–01 value of exports for manufactured goods with data from 1999–2000 shows that the overall value of exports of manufactured goods has increased by 19%. The majority of the commodities show increased value of exports but relative increases have ranged widely. The greatest percentage increase was recorded in Copper and alloys (49.3%), followed by Petroleum products (45%). Over half of the commodities recorded increases of 20% and more.

Of those commodities recording a decrease in exports, Iron and steel recorded the greatest decrease (down 47.4%), followed by Power generating machinery (down 4%).

4.8 EXPORTS OF SELECTED MANUFACTURED COMMODITIES(a)—2000–01

<i>Commodity</i>	<i>\$m</i>
Gold, non-monetary (excl. gold ores and concentrates)	5 110
Aluminium	4 736
Alumina	4 135
Meat of bovine animals, fresh, chilled or frozen	4 127
Cars and other road vehicles (incl. air-cushion vehicles)	3 840
Petroleum products	3 288
Beverages	1 931
Milk and cream and milk products other than butter or cheese	1 726
Office machines and automatic data processing machines	1 563
Machinery specialised for particular industries	1 348
Copper and alloys, unwrought	1 259
Nickel and alloys, unwrought	1 136
Crustaceans, molluscs and aquatic invertebrates (except canned or bottled)	1 096
Meat of sheep and goats, fresh, chilled or frozen	990
Cheese and curd	951
Power generating machinery and equipment	890
Zinc and alloys, unwrought	782
Fruit and nuts, fresh, dried or preserved and fruit preparations (incl. fruit juices)	767
Wood in chips or particles	744
Iron and steel	742
Aircraft and associated equipment, spacecraft (including satellites) and spacecraft launch vehicles	611

(a) Excludes commodities subject to a 'No Commodity Details' restriction.

Source: *International Merchandise Trade* (Cat. no. 5422.0).

Degree of transformation of exports

For information about exports of goods classified by degree of transformation see the section 'Degree of transformation by manufacturers' in Chapter 1.

Imports of manufactured goods

Table 4.9 shows 2000–01 imports of manufactured products with imports valued at \$1b or more in that year.

Comparing 2000–01 data with that of 1999–2000 shows that the overall value of imports of manufactured goods has increased by around 5.8%. The majority of the commodities show increased value of imports, ranging from 1.3% for Printed matter to 27.1% for Television and radio broadcast receivers. The largest decreases were recorded by Aircraft and associated equipment (down 33%) and Motor vehicles for the transport of goods (down 11%).

4.9 IMPORTS OF MAJOR MANUFACTURED COMMODITIES—2000–01

	\$m
Passenger motor vehicles (other than public transport type vehicles), station wagons and racing cars	8 579
Telecommunication equipment n.e.s. and parts n.e.s. and accessories	6 049
Automatic data processing machines and units thereof	5 240
Medical and pharmaceutical products	4 371
Articles of apparel and clothing accessories	3 187
Aircraft and associated equipment, spacecraft (including satellites) and spacecraft launch vehicles	2 876
Organic chemicals	2 854
Parts and accessories for office and automatic data processing machines	2 578
Paper and paperboard and articles of paper pulp, or paper or of paperboard	2 444
Parts and accessories of motor vehicles and tractors, track-laying and wheeled	2 421
Plastics in primary and non-primary form	2 185
Motor vehicles for the transport of goods including off highway dumpers	2 153
Electrical machinery and apparatus n.e.s.	1 801
Measuring, checking, analysing and controlling instruments and apparatus n.e.s.	1 747
Iron and steel	1 430
Chemical materials and products n.e.s.	1 406
Internal combustion piston engines, and parts thereof n.e.s.	1 401
Baby carriages, toys, games and sporting goods	1 374
Television and radio broadcast receivers	1 354
Household type electrical and non electrical equipment n.e.s.	1 186
Electrical apparatus for switching or protecting electrical circuits	1 070
Pumps, centrifuges, filtering or purifying apparatus and parts thereof	1 062
Manufactures of base metal, n.e.s.	1 062
Printed matter	1 014

(a) Excludes commodities subject to a 'No Commodity Details' restriction.

Source: *International Merchandise Trade* (Cat. no. 5422.0).

CHAPTER 5

INTRODUCTION

AUSTRALIAN AND NEW ZEALAND MANUFACTURING

This article presents a range of economic statistics for Australia, for New Zealand and for the 'Free trade area' (FTA) set up under the Closer Economic Relations (CER) Trade Agreement which came into effect on 1 January 1983. The central provision of this agreement, signed by both Australian and New Zealand Governments, was the creation of a World Trade Organisation (WTO) consistent free trade area comprised of Australia and New Zealand.

The WTO recognises the right of countries to create regional FTAs providing that "...contracting parties recognise the desirability of increasing freedom of trade by the development, through voluntary agreements, of closer integration between the economies of the countries parties to such agreements. They also recognise that the purpose of a customs union or of a free-trade area should be to facilitate trade between the constituent territories and not to raise barriers to the trade of other contracting parties with such territories." For further information see the WTO Website at <<http://www.wto.org>>.

The objectives of the CER Agreement, set out in Article 1 of the Treaty, are:

- to strengthen the broader relationship between Australia and New Zealand;
- to develop closer economic relations between Australia and New Zealand through a mutually beneficial expansion of free trade between the two countries;
- to eliminate barriers to trade between Australia and New Zealand in a gradual and progressive manner under an agreed timetable and with a minimum of disruption; and
- to develop trade between New Zealand and Australia under conditions of fair competition.

Since its inception in 1983, the CER Agreement has undergone three general reviews which:

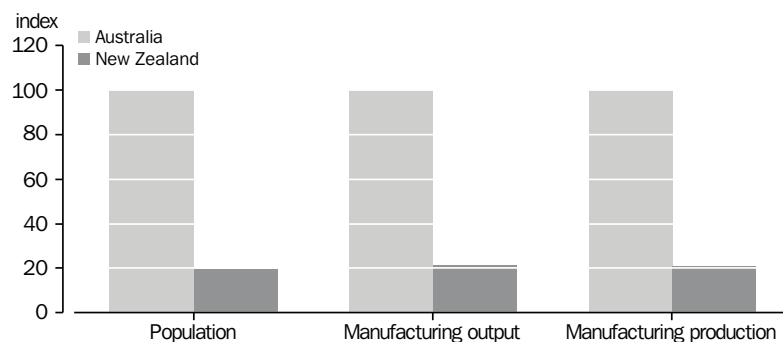
- accelerated the achievement of free trade in goods meeting the CER rules of origin, so that by June 1990 all tariffs and quantitative restrictions on trade were eliminated;
- widened the scope of the 1983 Agreement to include trade in services; and,
- deepened the CER Agreement by seeking to harmonise a range of non-tariff measures that affect the free flow of goods and services, including quarantine and customs issues, standards and business law.

In addition, several aspects of the CER Agreement have, over the years, been amended, refined or simply become redundant. The more important of these changes include refinements to the rules of origin and the phasing out of margin of preference obligations.

The CER Agreement is now one of the most comprehensive bilateral free trade agreements in existence, and the first to include free trade in services. It fully conforms to the requirements of Article XXIV of the General Agreement on Trade and Tariff, now superseded by the WTO Agreement. More information relating to the Agreement, can be found via http://www.dfat.gov.au/geo/new_zealand/anz_cer/cer.pdf.

The statistics included in this section show the values and relative sizes of the manufacturing industry in the two countries individually as well as the overall size of the combined manufacturing industries of Australia and New Zealand. All financial information in this article is presented in terms of Australian dollars. Data for New Zealand have been converted into Australian dollars using Purchasing Power Parities (PPP) factors published by the OECD. Current price estimates have been used where chain volume (constant price) estimates are not available. Some minor differences in approach and standards occur in the statistics of the two countries. The Explanatory Notes provide further information on these.

5.1 RELATIVITIES AUSTRALIA AND NEW ZEALAND



Note: Australia = 100.

Source: ABS and Statistics New Zealand.

As graph 5.1 shows, New Zealand has slightly less than one-fifth as many people as Australia and slightly more than one-fifth as much manufacturing output and manufacturing production.

NATIONAL ACCOUNTS

Below are statistics based on the National Accounts of Australia and New Zealand over the last 10 years comparing the size and average annual growth rates of their individual and combined manufacturing production. Data for both countries have been brought to common valuation (Australian dollars) and prices (1995–96 prices) to facilitate comparisons but the measures reflect slightly different concepts. New Zealand data are for Gross Domestic Product while Australian data are for the very similar but not identical variable, Industry Gross Value Added.

5.2 PRODUCTION

Industry	Australia (Chain-Volume GVA in 1995–96 prices)		New Zealand (Chain Volume GDP in 1995–96 prices)		Australia and New Zealand Free Trade Area	
	1990–91	2000–01	1990–91	2000–01	1990–91	2000–01
	\$m	\$m	\$m	\$m	\$m	\$m
Food, beverage and tobacco mfg	10 938	14 741	3 585	4 636	14 523	19 377
Textile, clothing, footwear and leather mfg	3 683	2 905	777	796	4 460	3 700
Wood and paper product mfg	3 966	4 259	1 417	1 973	5 382	6 233
Printing, publication and recording media	6 044	6 531	1 081	1 113	7 126	7 644
Petroleum, coal, chemical and associated product mfg	8 408	10 658	1 258	1 890	9 666	12 548
Non-metallic minerals product mfg	3 057	3 885	418	553	3 475	4 439
Metal product mfg	11 243	12 681	1 111	1 616	12 354	14 297
Machinery and equipment mfg	11 062	13 425	1 673	2 066	12 735	15 491
Other mfg	2 268	2 101	390	398	2 658	2 499
Total mfg	60 651	71 350	11 710	15 041	72 361	86 391

Source: ABS and Statistics New Zealand published and unpublished data.

As table 5.2 shows, over the 10 year period to 2000–01, production in the manufacturing industry for the FTA grew at an average annual rate of 2.0% (1.8% for Australia and 2.8% for New Zealand). The manufacturing industry with the highest average annual growth rate was Food, beverage and tobacco manufacturing (at 3.3%) which also has the lowest rate of import penetration and the second highest rate of export orientation (see below). Annual growth rates in this industry were quite similar at 3.4% for Australia and 2.9% for New Zealand. The second fastest growing industry over this period was the Petroleum, coal, chemical and associated product manufacturing industry with an annual growth rate of 2.9% for the FTA incorporating a rate of 4.6% for New Zealand, the highest rate recorded over the period for any industry in either country, and 2.7% for Australia.

Textile, clothing, footwear and leather manufacturing and the Other manufacturing industry (which is relatively small in each country) declined in Australia over the last 10 years at average annual rates of 3.1% and 0.8% respectively. Average annual rates of decline for the FTA were less at 2.1% and 0.7% respectively, as a result of the Australian falls being offset to some extent by small increases in New Zealand production for those industries.

Australia's share of overall FTA manufacturing production fell by 1.2 percentage points to 82.6% over the 10 year period from 1990–91 to 2000–01 (with the corresponding increase producing a New Zealand share of 17.4%). The industry most concentrated in Australia in 2000–01 was the Metal products manufacturing industry with a share of 88.7% in 2000–01 but this reflected a fall of 2.3 percentage points compared to 10 years earlier. In 2000–01, New Zealand had its highest share of FTA production (31.7%) in the Wood and paper products manufacturing industry, an increase of 5.4 percentage points over the previous 10 years.

RECENT TRENDS IN MANUFACTURING OUTPUT

The output data represent the sum of current price sales data from the New Zealand quarterly Economic Survey of Manufacturing and the Australian quarterly Economic Activity Survey (previously the Quarterly Survey of Inventories and Sales) and then adding in the change in inventories (Australia) and PPP adjusted change in stocks (New Zealand). This measure better represents output than simply using manufacturers sales.

5.3 OUTPUT

Industry	1999–2000			2000–01		
	Australia	New Zealand	Free Trade	Australia	New Zealand	Free Trade
	\$m	\$m	\$m	\$m	\$m	\$m
Food, beverage and tobacco mfg	54 017	17 710	71 727	62 056	21 124	83 180
Textile, clothing, footwear and leather mfg	11 519	2 319	13 838	11 564	2 536	14 100
Wood and paper product mfg	18 087	6 105	24 192	16 172	6 063	22 235
Printing, publication and recording media	17 344	2 245	19 589	16 408	2 427	18 835
Petroleum, coal, chemical and associated product mfg	39 981	5 702	45 683	46 291	7 187	53 478
Non-metallic minerals product mfg	9 500	1 418	10 918	10 549	1 352	11 901
Metal product mfg	34 118	5 545	39 663	35 686	5 971	41 657
Machinery and equipment mfg	52 036	6 564	58 600	52 427	7 472	59 899
Other mfg	7 863	1 512	9 375	7 107	1 374	8 481
Total mfg	244 465	49 120	293 585	258 260	55 506	313 766

NOTE: All values are in Australian dollars.

Source: ABS and Statistics New Zealand.

Table 5.3 shows that, at current prices, the total output of the Free Trade area in 2000–01 was \$A314b, a 6.9% increase on the \$A294b for the previous 12 months.

The largest increases in output at industry subdivision level were recorded by Petroleum, coal, chemical and associated product manufacturing (up 17%) (up 16% in Australia and up 26% in New Zealand) followed by Food, beverage and tobacco manufacturing (up 16% overall) with Australian output up 16% and New Zealand output up 19%. The third largest increase was for Non-metallic mineral product manufacturing (up 9% overall) with Australian output up 11% and New Zealand output down 5%. The largest decrease was recorded for Other manufacturing (down 10%) with very similar falls in each country.

Although Australia is the major contributor to each manufacturing industry, New Zealand supplied about a quarter of the output for the FTA in two industries, Food, beverage and tobacco manufacturing and Wood and paper product manufacturing, (25% and 27% respectively, in 2000–01). In that year, the Australian proportion of output for the FTA ranged from 73% for Wood and paper product manufacturing to 89% for Non-metallic mineral product manufacturing.

MARKET SIZE

Market size has been estimated by taking the combined sales (including PPP adjusted New Zealand data) used in the compilation of output in the previous section and adding in data from the International trade system for Australia and New Zealand to approximate the size of the local and combined FTA markets.

Imports and exports data are both shown on an industry of origin basis (see Glossary). Further information on Australian based international trade is shown in the article Exports and Imports by industry in Chapter 4 of this publication.

5.4 AUSTRALIA AND NEW ZEALAND FTA MARKET SIZE

<i>Australia and New Zealand Free Trade Area Market Size(a)</i>						
<i>Industry</i>	<i>Australian Market(b)</i>	<i>New Zealand Market(c)</i>	<i>FTA Sales</i>	<i>FTA Imports(d)</i>	<i>FTA Exports(d)</i>	<i>FTA Market(d)</i>
	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>	<i>\$m</i>
1999–2000						
Food, beverage and tobacco mfg	44 415	9 626	70 704	4 641	21 398	53 947
Textile, clothing, footwear and leather mfg	15 914	2 419	14 006	7 774	3 396	18 383
Wood and paper product mfg	20 323	4 623	24 246	3 267	2 528	24 985
Printing, publication and recording media	18 793	2 707	19 498	2 290	317	21 471
Petroleum, coal, chemical and associated product mfg	48 985	8 123	44 663	19 049	6 786	56 926
Non-metallic minerals product mfg	10 737	1 681	11 041	1 657	274	12 425
Metal product mfg	24 107	5 135	39 996	8 341	19 078	29 259
Machinery and equipment mfg	92 746	14 225	56 882	64 393	13 209	108 066
Other mfg	10 057	1 949	9 263	3 454	701	12 016
Total mfg	286 077	50 487	290 301	114 867	67 687	337 481
2000–2001						
Food, beverage and tobacco mfg	49 602	10 109	82 003	5 151	27 541	59 612
Textile, clothing, footwear and leather mfg	15 938	2 476	14 012	8 571	4 093	18 491
Wood and paper product mfg	18 090	4 648	22 215	3 352	2 950	22 618
Printing, publication and recording media	17 875	2 880	18 918	2 216	378	20 756
Petroleum, coal, chemical and associated product mfg	56 087	10 257	52 681	22 053	8 667	66 067
Non-metallic minerals product mfg	11 480	1 642	11 819	1 664	345	13 138
Metal product mfg	22 218	5 399	41 687	7 912	22 028	27 571
Machinery and equipment mfg	94 528	15 091	59 446	67 242	15 750	110 938
Other mfg	9 824	1 826	8 549	3 969	827	11 692
Total mfg	295 639	54 327	311 327	122 130	82 577	350 880

NOTE: All values are in Australian dollars.

Source: ABS and Statistics New Zealand.

Table 5.4 shows that the FTA is a net importer in seven of the nine manufacturing industries, with imports exceeding exports by nearly \$A40b in 2000–01, down 16% from \$A47b the year before. The Machinery and equipment manufacturing industry was by far the largest contributor to the manufacturing trade imbalance in 2000–01 with an excess of imports over exports of \$A51b. In 1999–2000 the excess for this industry was also \$A51b.

The industries where exports from the FTA were greater than imports were Food, beverage and tobacco manufacturing (57% and 36% of the manufacturing trade balance for 2000–01 and 1999–2000 respectively) and Metal product manufacturing (36% and 23% respectively). The industry closest to actual balance was Wood and paper product manufacturing.

The largest FTA manufacturing industry market was for Machinery and equipment manufacturing (32% of the FTA in 2000–01) followed by Petroleum, coal, chemical and associated product manufacturing (19%) and Food, beverage and tobacco manufacturing (17%). These industries were also the largest industries, in the same order, in both Australia and New Zealand.

IMPORT PENETRATION AND EXPORT ORIENTATION

Import penetration data is calculated by expressing imports as a percentage of the total market (sales plus imports minus exports). Conversely, export orientation is calculated as the value of exports as a percentage of the total market. A value of more than 100% in export orientation implies that the value of goods exported is greater than the value of domestic sales.

5.5 IMPORT PENETRATION AND EXPORT ORIENTATION

Industry	Import Penetration			Export Orientation		
	Australia(a)	New Zealand(b)	Free Trade Area(c)	Australia(a)	New Zealand(b)	Free Trade Area(c)
	%	%	%	%	%	%
1999–2000						
Food, beverage and tobacco mfg	10	16	9	30	97	40
Textile, clothing, footwear and leather mfg	43	68	42	16	66	18
Wood and paper product mfg	17	17	13	7	48	10
Printing, publication and recording media	11	20	11	3	3	1
Petroleum, coal, chemical and associated product mfg	34	53	33	14	22	12
Non-metallic minerals product mfg	13	21	13	3	4	2
Metal product mfg	33	29	29	76	36	65
Machinery and equipment mfg	61	74	60	15	20	12
Other mfg	31	30	29	8	8	6
Total mfg	36	43	34	20	40	20
2000–2001						
Food, beverage and tobacco mfg	10	18	9	34	124	46
Textile, clothing, footwear and leather mfg	46	75	46	18	77	22
Wood and paper product mfg	20	19	15	9	49	13
Printing, publication and recording media	11	20	11	3	4	2
Petroleum, coal, chemical and associated product mfg	34	50	33	16	18	13
Non-metallic minerals product mfg	12	22	13	3	5	3
Metal product mfg	33	30	29	95	38	80
Machinery and equipment mfg	62	70	61	17	19	14
Other mfg	36	36	34	9	12	7
Total mfg	37	43	35	23	44	24

(a) Includes imports/exports from/to New Zealand.
(b) Includes imports/exports from/to Australia.
(c) Net of Trans-Tasman trade.

Source: ABS and Statistics New Zealand.

Table 5.5 shows that the import penetration ratio for the FTA exceeds the export orientation ratio by over 11 percentage points in both years shown. Import penetration ratios were higher than export orientation ratios for Australia in both years but New Zealand had a higher export orientation ratio in 2000–01, largely due to the increase in its Food, beverage and tobacco manufacturing industry export orientation ratio which rose from 97% for 1999–2000 to 124% for 2000–01.

The highest import penetration ratio recorded in 2000–01 for the FTA was for the Machinery and equipment manufacturing industry while the lowest ratio was recorded for the Food, beverage and tobacco manufacturing industry which had the only import penetration ratio below 10%. Import penetration ratios for Australia and New Zealand were both higher than the ratio for the FTA, evidence of significant trans-Tasman trade for food products.

IMPORT PENETRATION AND
EXPORT ORIENTATION
continued

For export orientation, Metal product manufacturing had the highest ratio for the FTA, greatly influenced by the Australian industry which had a ratio of 95% in 2000–01. As discussed above, the exports from New Zealand by Food, beverage and tobacco manufacturers exceeded the size of the New Zealand market resulting in the highest export orientation ratio recorded for any industry at any level of the FTA. The lowest export orientation ratio for the FTA was recorded by the Printing, publishing and recorded media industry which was 2% or less for both years shown, and below 4% or less in both constituent countries. This industry also had the lowest (or equal lowest) ratio in both countries.

Textile, clothing, footwear and leather manufacturing in New Zealand had high ratios for both export orientation and import penetration, evidence of an industry open to imports and with a strong export focus.

EXPLANATORY NOTES

MAIN CONCEPTS

1 This publication brings together information from a variety of ABS and non-ABS sources. Though considerable explanatory material has been provided below, it has not been feasible to explain every concept for every ABS series included. Readers who are interested in more comprehensive explanatory material than is provided here are encouraged to consult the relevant ABS publication or to contact the ABS (contact information appears on the back page).

Statistical business units

2 Data in this publication relate to either manufacturing management units or to manufacturing establishments. Technical definitions of 'management unit' and 'establishment' appear in the Glossary.

3 Management unit statistics focus on businesses and business operations, particularly the financial aspects. The focus of these statistics is on profit levels, the main income and expense items which make up those profits, and on capital formation. Management unit statistics also include information on the value of assets and liabilities.

4 While management unit statistics focus on business operations, establishment statistics focus more on the production and distribution processes. They address topics such as goods produced, exports, value added and prices of materials and goods.

5 A rule of thumb which can be applied to statistics about manufacturing is that management unit statistics are about the operations of manufacturing businesses (with the focus on the business as a whole); establishment statistics are about the operations of factories (with the focus on activities at the factory location). Because of the differences in scope explained below, aggregate management unit data will not be identical to aggregate establishment data.

Scope of management unit statistics

6 Management unit statistics for a given industry include all operations by management units which are primarily engaged in activities covered by that industry. A management unit is classified to the manufacturing industry if manufacturing is its primary income earning activity. All operations (manufacturing and non-manufacturing) of a mainly manufacturing business would be included in management unit statistics for the manufacturing industry. This principle also applies to finer levels of industry classification.

Scope of establishment statistics	<p>7 Following the same principle, establishment statistics for a particular industry include all operations by establishments which are primarily engaged in activities covered by that industry. For example, establishment statistics for the manufacturing industry would include all operations by establishments which are mainly engaged in manufacturing activities i.e. manufacturing activities are their main source of income. However, the operations of establishments which are not 'mainly engaged in manufacturing activities' will be excluded even when the parent management unit belongs to the manufacturing industry.</p>
Implications of unit scope differences	<p>8 The choice of statistical unit can have subtle but important implications for interpreting the results from surveys.</p> <p>9 For a large majority of manufacturers, it matters little whether the statistics are compiled for management units or for establishments. More than 90% of Australian manufacturers operate under a simple structure whereby a management unit (business) runs a single manufacturing establishment (factory). Operations by this type of business are relevant to both management unit statistics and establishment statistics and are therefore included in both.</p> <p>10 The treatment of the operations of more complex businesses is not so straightforward. For example, a management unit which operates both a factory and a retail store, but which has manufacturing as its primary income source, will be classified as a manufacturing management unit. Operations of the management unit as a whole (employment, sales, profits and other data from both the factory and the store) will be included in manufacturing management unit statistics. For manufacturing establishment statistics, operations of the factory will be included but operations of the retail store will be excluded.</p> <p>11 On the other hand, a management unit which operates both a factory and a retail store but which has retailing as its primary income source will be classified to retail trade. Operations of this business will not be included in manufacturing management unit statistics. However, the operations of the factory will be included in manufacturing establishment statistics.</p>
Coverage of the statistics	<p>12 The business surveys from which data for nearly all tables in this publication have been compiled are sourced from the ABS Business Register. The Business Register does not include all businesses operating in Australia. Excluded are those businesses which do not employ staff and have not registered with the Australian Taxation Office as group employers.</p> <p>13 Though these very small businesses are fairly numerous, their exclusion has very little effect on the statistics compiled for the manufacturing industry as a whole. It is estimated that if these businesses were to be included, the effect on results for total manufacturing would be less than 1%.</p>

Coverage of the statistics *continued* **14** For some industries, particularly those like the clothing industry where numbers of small home based businesses are involved, the underestimation from excluding non-employed businesses may be a little higher. However, no serious understatement of economic activity from this cause is likely for any manufacturing industry.

Sampling error **15** Most of the estimates in this publication are based on information gathered from sample surveys. Because the entire population of businesses was not approached to obtain these estimates, the estimates are subject to sampling error i.e. the imprecision which arises when a sample of businesses is not perfectly representative of the population of businesses from which the sample was drawn.

INDUSTRY CLASSIFICATION

Industry Classification: The ANZSIC **16** The framework used in this publication to present information about the manufacturing industry and other industries is provided by the *Australian and New Zealand Standard Industrial Classification (ANZSIC) 1993* (Cat. no. 1292.0). The ANZSIC also provides the structure for presenting breakdowns of the manufacturing industry.

17 The ANZSIC distinguishes four levels of industry classification to accommodate both broad analysis and fine dissection of statistical data about the Australian economy. The four levels constitute a hierarchy, Division being the broadest classification level, followed by Subdivision, Group and Class as increasingly finer dissections. A manufacturing example of the four levels is:

Division	Manufacturing
Subdivision	Metal product manufacturing
Group	Iron and steel manufacturing
Class	Steel pipe and tube manufacturing

A list of all manufacturing subdivisions, groups and classes is contained in an appendix to this publication.

ANZSIC Divisions	18 Manufacturing as a whole comprises one of the 17 ANZSIC Divisions covering the Australian economy. Examples of other ANZSIC divisions are Agriculture, Mining, Retail trade, Health and community services and Construction.
ANZSIC Subdivisions	19 There are nine subdivisions within the Manufacturing Division. Each represents a grouping of broadly related outputs and activities. Where numerical codes are used to identify ANZSIC subdivisions, such codes are comprised of two digits. In the case of manufacturing, the digits 21 to 29 are used. For example Subdivision 28 — Machinery and equipment manufacturing and Subdivision 23 — Wood and paper product manufacturing.
ANZSIC Groups	20 Each manufacturing subdivision is further divided into several groups of reasonably homogeneous industries. The ANZSIC Group level is distinguished by use of three digit numerical codes, the first two digits designating the ANZSIC Subdivision to which the group belongs. For example, Group 212 — Dairy product manufacturing belongs to ANZSIC Subdivision 21 — Food, beverage and tobacco manufacturing.
ANZSIC Classes	21 Fourth and finest level of dissection is the ANZSIC class level. Each ANZSIC group is divided into one or more classes. The ANZSIC class level is distinguished by use of four digit numerical codes, the first three digits designating the ANZSIC Group to which the class belongs. For example, Class 2122 — Ice cream manufacturing belongs to Group 212 — Dairy product manufacturing.

In the ANZSIC, industry classes are created if certain criteria are met. The most important of these are that classes:

- represent recognisable segments of Australian and New Zealand industry;
- are consistent with the requirements of users of the statistics;
- are homogeneous in terms of activities i.e. that classes are made up of business units which undertake similar economic activities;
- are economically significant; and
- wherever possible align with the corresponding international classification.

REVISED INTERNATIONAL STANDARDS FOR MEASURING ACTIVITY

22 Some changes to national accounting standards were introduced into manufacturing statistics from reference year 1997–98. The effects of the changes on the statistical series were minor. A full explanation of the changes can be found in the 2000 issue of this publication.

23 Chain volume measures represent a replacement methodology for measuring changes in economic activities which are measured in dollar terms and then adjusted to remove the effects of price changes. These measures were previously known as constant price estimates. The 'volume measures' part of the term simply means that they measure changes in volume of activity not value of activity. The 'chain' part of the term means that the series is rebased every year as results of the annual manufacturing survey become available and data for all periods covered by the series are benchmarked to the rebased values including all past periods. The previous method involved rebasing the series only every five or so years which meant that the quality of prices changes data tended to decay the more removed the current period became from the base year.

24 Chain volume measures have been introduced because they provide a better measure of growth in volume than the previously published constant price estimates. To understand this it is necessary to briefly explain how constant price estimates of manufacturing value added have been derived in the past.

25 There were two major steps involved in the calculation of constant price estimates of manufacturing value added. First, at the ANZSIC class level, turnover was deflated by a manufacturing output price index. This resulted in constant price series of turnover. Second, these estimates were then used to extrapolate base year current price estimates of value added. Third, the resulting constant price estimates of value added were summed to obtain estimates for total manufacturing. The assumption underlying this approach is that output and intermediate inputs grow at the same rate in constant price terms. It is because this assumption is most likely to hold at a detailed level that it was applied at the ANZSIC class level.

26 Constant price estimates of turnover eliminate the direct effect of price changes and therefore only reflect volume changes. In concept they are derived by replacing the unit price of each type of manufacturing article traded in the current period with the corresponding unit price in the chosen base year. The base year unit prices used to derive constant price estimates are effectively the weights used to combine quantities of different goods and services.

27 The unit prices of different goods and services tend to grow at different rates — some at dramatically different rates. For example, the prices of computer equipment are estimated to have declined by about 75% between 1989–90 and 1997–98, while the prices of most other goods and services have increased. Thus, over time, the price relativities of some goods and services change appreciably.

CHAIN VOLUME MEASURES
continued

28 Changes in price relativities adversely affect the usefulness of constant price estimates, particularly for periods distant from the base year, and consequently the base year used to derive constant price estimates needs to be changed from time to time. It was ABS practice to change the base year every five years, but it was found that better estimates of growth in volume can be obtained by rebasing every year and linking the resulting indexes to form annually reweighted chain volume measures. The ABS therefore decided to replace constant price estimates with annually reweighted chain Laspeyres volume measures. They are formed in a multi-stage process of which the major steps are described in Section 15 of the *Information Paper Introduction of Chain Volume Measures in the Australian National Accounts* (Cat. no. 5248.0).

29 Part of the process of calculating chain volume measures of manufacturing value added has been to update the turnover-value added ratios annually.

30 The impact of the change from constant price estimates to chain volume measures of manufacturing value added largely depends on the extent of differences in growth rates between the prices and volumes of the components. In the case of manufacturing value added, the introduction of chain volume measures has not had a dramatic effect on growth rates from 1989–90 to the present.

31 Chain volume measures are not generally additive. In other words, in general, component chain volume measures do not sum to a total in the way current price components do, but by choosing the reference year to coincide with the latest base year additivity for the reference year and the following year is ensured. This implies advancing the reference year each year, while this changes the levels of the estimates it does not of itself change the growth rates.

RELATED STATISTICS

Related publications

32 A full list of the material used to compile this publication is contained in the list of references.

33 Current publications produced by the ABS are listed in the *Catalogue of Publications and Products, Australia* (Cat. no. 1101.0). The ABS also issues, on Tuesdays and Fridays, a *Release Advice* (Cat. no. 1105.0) which lists publications to be released in the next few days. The Catalogue and Release Advice are available from any ABS office.

Unpublished data **34** In addition to the data contained in this publication, more detailed industry information can often be made available on request. For example, data may be available at the ANZSIC group (3 digit level) or ANZSIC Class (4 digit level) for some of the annual data series. This is particularly true of data in Chapter 2 of this publication.

35 For further information about unpublished data relating to the manufacturing industry or to manufacturing activities, readers should consult John Ridley in the ABS Sydney Office on 02 9268 4541.

NOTES FOR ARTICLE ON AUSTRALIAN AND NEW ZEALAND MANUFACTURING

The principle of commonality, and, striking a balance **36** Some conceptual and practical differences exist between Australian economic statistics and New Zealand economic statistics. Therefore, in putting this article together, a balance has had to be struck between theoretical purity and practical data considerations. For example, for most purposes, it would be preferable if all dollar aggregates in time series were constant price 'volume' measures. As this has not always been possible (see the reference to the treatment of stocks/inventories in the Recent trends in manufacturing output segment below) the data in this article has been arrived at on the basis of the best available common data item. In the case referred to, chain volume data for Australian Inventories was available whereas only original current price data were available for New Zealand. Thus, original, current price data were used for both. In other circumstances, commonality has been preserved and a better theoretical result obtained through re-calculation of data on another basis. For example, the Australian National Accounts volume data used in this article has been released by the ABS on a 1999–2000 base year. For the purposes of this article the ABS has recalculated these data on a 1995–96 base year to match that used by the New Zealand Department of Statistics for their Gross Domestic Product data.

Industry classification **37** Even though Australia and New Zealand share a common industry classification, the ANZSIC, there are differences in the timing of the application of the use of the ANZSIC for some collection activities, in some collections. For example, the New Zealand Economic Survey of Manufacturing presents statistics on as close as possible to an ANZSIC basis using the results of a sample survey which is based on a very similar but earlier classification, the New Zealand Standard Industrial Classification (NZSIC). The conversion of the sample design to an ANZSIC basis is scheduled for the near future but in the interim, some small scope differences between the Australian and New Zealand statistics will exist. The main differences relate to two activities which are included in the Australian manufacturing statistics but excluded from the corresponding statistics for New Zealand. These two activities are Book publishing (around 5% of production by the Printing, publishing and recorded media industry in Australia) and dental laboratories (a very small component of Australian Machinery and equipment manufacturing).

Conversion of New Zealand
currency to Australian
currency

38 Data for New Zealand have been converted into Australian dollars using Purchasing Price Parities (PPP) factors published by the OECD. The latest factor available is for the 2000 calendar year and that factor has been used for 2000–01 data. Data for earlier financial years reflects an average of the two PPP calendar year factors which cover the relevant financial year. For quarterly data, the PPP for the year has been applied to appropriate quarters. Further information about OECD PPPs can be found on the OECD Website at <www.oecd.org/std/nahome.htm>.

Conversion to common
financial years

39 The National Accounts for New Zealand are usually presented on a year ended March basis while those for Australia are presented for the year ended June. Since quarterly data are available for both, the New Zealand data has been re-constituted on a year ended June to match the usual Australian presentation. The National Accounting aggregate usually regarded as the ‘production’ measure is a value added figure calculated by subtracting the costs of goods and services used up in the production process, for any period, from the value of the goods and services produced by that industry in the same period. In the Australian National Accounts, the data aggregate available for industries is known as Industry gross value added.

Recent trends in
manufacturing output

40 These data were arrived at by summing data from the New Zealand Economic Survey of Manufacturing and the Australian Quarterly Economic Activity Survey (previously Quarterly survey of inventories and sales). For the New Zealand survey, sales data are available at current and constant prices but for constant prices, it is only available for the seasonally adjusted series. At current prices, sales are available for original, seasonally adjusted and for trend while data are available on both current and chain volume basis for original, seasonally adjusted and trend from the Australian survey. Because the change in stocks/inventories from both countries are added to sales to approximate Output, it was decided to only use the current price original data from both countries as this was the common match to the available stocks/inventories data.

41 The data item Sales of goods and services from the New Zealand survey is a good match for the sales (income from sales of goods and services) data item from the ABS Quarterly Economic Activity Survey (was Inventories and Sales up to March quarter 2001). Likewise, the New Zealand statistical unit, Kind-of-activity unit is aimed at a similar level of business as the Management unit in ABS statistics. In the New Zealand data, ANZSIC Subdivision 21, Food, beverage and tobacco manufacturing were published separately as two estimation industries which have been added together for the purposes of this analysis.

Market size **42** This segment starts by taking the combined sales (including PPP adjusted New Zealand data) from the Recent trends in manufacturing output section and adding in Trade data for Australia and New Zealand to calculate the size of the market for the CER free trade area. The general method is to add in imports to either country from the rest of the world (excluding Australia or New Zealand) and to subtract exports from either country to the rest of the world (excluding Australia or New Zealand). New Zealand data, of course, has to be adjusted using PPP factors. Market size data for the FTA are therefore net of trans-Tasman trade. As the source trade data are for annual periods ended June then the PPP factor used for the New Zealand data are the average of the two calendar years covering the financial year.

43 The individual market size data shown for Australia and New Zealand are not net of trans-Tasman trade, however, the data for these two countries does not add to the FTA due to the influence of classification, timing and other differences. For more information on this topic please refer to the Information Paper listed below.

44 Imports and exports data are both on an industry of origin basis (see Glossary). Further information on Australian based international trade is shown in the article Exports and Imports by industry in Chapter 4 of this publication. Further information relating to reconciliation of merchandise trade flows between Australia and New Zealand is available in a Feature article in the September quarter 2000 issue of *International Merchandise Trade, Australia* (Cat. no. 5422.0). Import penetration is obtained by calculating the value of imports, as a percentage of the size of the market. Conversely, a value for export orientation has been calculated by deriving the value of exports as a percentage of the size of the market.

APPENDIX — LIST OF MANUFACTURING INDUSTRIES

ANZSIC DIVISION, SUBDIVISION, GROUP AND CLASS TITLES AND CODES

C Manufacturing

21	Food, Beverage and Tobacco Manufacturing
211	Meat and Meat Product Manufacturing
2111	Meat Processing
2112	Poultry Processing
2113	Bacon, Ham and Small good Manufacturing
212	Dairy Product Manufacturing
2121	Milk and Cream Processing
2122	Ice Cream Manufacturing
2129	Dairy Product Manufacturing n.e.c.
213	Fruit and Vegetable Processing
2130	Fruit and Vegetable Processing
214	Oil and Fat Manufacturing
2140	Oil and Fat Manufacturing
215	Flour Mill and Cereal Food Manufacturing
2151	Flour Mill Product Manufacturing
2152	Cereal Food and Baking Mix Manufacturing
216	Bakery Product Manufacturing
2161	Bread Manufacturing
2162	Cake and Pastry Manufacturing
2163	Biscuit Manufacturing
217	Other Food Manufacturing
2171	Sugar Manufacturing
2172	Confectionery Manufacturing
2173	Seafood Processing
2174	Prepared Animal and Bird Feed Manufacturing
2179	Food Manufacturing n.e.c.
218	Beverage and Malt Manufacturing
2181	Soft Drink, Cordial and Syrup Manufacturing
2182	Beer and Malt Manufacturing
2183	Wine Manufacturing
2184	Spirit Manufacturing
219	Tobacco Product Manufacturing
2190	Tobacco Product Manufacturing
22	Textile, Clothing, Footwear and Leather Manufacturing
221	Textile Fibre, Yarn and Woven Fabric Manufacturing
2211	Wool Scouring
2212	Synthetic Fibre Textile Manufacturing
2213	Cotton Textile Manufacturing
2214	Wool Textile Manufacturing
2215	Textile Finishing
222	Textile Product Manufacturing
2221	Made-Up Textile Product Manufacturing
2222	Textile Floor Covering Manufacturing
2223	Rope, Cordage and Twine Manufacturing
2229	Textile Product Manufacturing n.e.c.

ANZSIC DIVISION, SUBDIVISION, GROUP AND CLASS TITLES AND CODES

223	Knitting Mills
2231	Hosiery manufacturing
2232	Cardigan and Pullover Manufacturing
2239	Knitting Mill Product Manufacturing n.e.c.
224	Clothing Manufacturing
2241	Men's and Boy's Wear Manufacturing
2242	Women's and Girl's Wear Manufacturing
2243	Sleepwear, Underwear and Infant Clothing Manufacturing
2249	Clothing Manufacturing n.e.c.
225	Footwear Manufacturing
2250	Footwear Manufacturing
226	Leather and Leather Product Manufacturing
2261	Leather Tanning and Fur Dressing
2262	Leather and Leather Substitute Product Manufacturing
23	Wood and Paper Product Manufacturing
231	Log Saw milling and Timber Dressing
2311	Log Saw milling
2312	Wood Chipping
2313	Timber Resawing and Dressing
232	Other Wood Product Manufacturing
2321	Plywood and Veneer Manufacturing
2322	Fabricated Wood Manufacturing
2323	Wooden Structural Component Manufacturing
2329	Wood Product Manufacturing n.e.c.
233	Paper and Paper Product Manufacturing
2331	Pulp, Paper and Paperboard Manufacturing
2332	Solid Paperboard Container Manufacturing
2333	Corrugated Paperboard Container Manufacturing
2334	Paper Bag and Sack Manufacturing
2339	Paper Product Manufacturing n.e.c.
24	Printing, Publishing and Recorded Media
241	Printing and Services to Printing
2411	Paper Stationery Manufacturing
2412	Printing
2413	Services to Printing
242	Publishing
2421	Newspaper Printing or Publishing
2422	Other Periodical Publishing
2423	Book and Other Publishing
243	Recorded Media Manufacturing and Publishing
2430	Recorded Media Manufacturing and Publishing
25	Petroleum, Coal, Chemical and Associated Product Manufacturing
251	Petroleum Refining
2510	Petroleum Refining
252	Petroleum and Coal Product Manufacturing n.e.c.
2520	Petroleum and Coal Product Manufacturing n.e.c.

ANZSIC DIVISION, SUBDIVISION, GROUP AND CLASS TITLES AND CODES

253	Basic Chemical Manufacturing
2531	Fertiliser Manufacturing
2532	Industrial Gas Manufacturing
2533	Synthetic Resin Manufacturing
2534	Organic Industrial Chemical Manufacturing n.e.c.
2535	Inorganic Industrial Chemical Manufacturing n.e.c.
254	Other Chemical Product Manufacturing
2541	Explosive Manufacturing
2542	Paint Manufacturing
2543	Medicinal and Pharmaceutical Product Manufacturing
2544	Pesticide Manufacturing
2545	Soap and Other Detergent Manufacturing
2546	Cosmetic and Toiletry Preparation Manufacturing
2547	Ink manufacturing
2549	Chemical Product Manufacturing n.e.c.
255	Rubber Product Manufacturing
2551	Rubber Tyre Manufacturing
2559	Rubber Product Manufacturing n.e.c.
256	Plastic Product Manufacturing
2561	Plastic Blow Moulded Product Manufacturing
2562	Plastic Extruded Product Manufacturing
2563	Plastic Bag and Film Manufacturing
2564	Plastic Product Rigid Fibre Reinforced Manufacturing
2565	Plastic Foam product Manufacturing
2566	Plastic Injection Moulded Product Manufacturing
26	Non-Metallic Mineral Product Manufacturing
261	Glass and Glass Product Manufacturing
2610	Glass and Glass Product Manufacturing
262	Ceramic Product Manufacturing
2621	Clay Brick Manufacturing
2622	Ceramic Product Manufacturing
2623	Ceramic Tile and Pipe Manufacturing
2629	Ceramic Product Manufacturing n.e.c.
263	Cement, Lime, Plaster and Concrete Product Manufacturing
2631	Cement and Lime Manufacturing
2632	Plaster Product Manufacturing
2633	Concrete Slurry Manufacturing
2634	Concrete Pipe and Box Culvert Manufacturing
2635	Concrete Product Manufacturing n.e.c.
264	Non-Metallic Mineral Product Manufacturing n.e.c.
2640	Non-Metallic Mineral Product Manufacturing n.e.c.
27	Metal Product Manufacturing
271	Iron and Steel Manufacturing
2711	Basic Iron and Steel Manufacturing
2712	Iron and Steel Casting and Forging
2713	Steel Pipe and Tube Manufacturing

ANZSIC DIVISION, SUBDIVISION, GROUP AND CLASS TITLES AND CODES

272	Basic Non-Ferrous Metal Manufacturing
2721	Alumina Production
2722	Aluminium Smelting
2723	Copper, Silver, Lead and Zinc Smelting, Refining
2729	Basic Non-Ferrous Metal Manufacturing n.e.c.
273	Non-Ferrous Basic Metal Product Manufacturing
2731	Aluminium Rolling, Drawing, Extruding
2732	Non-Ferrous Metal Rolling, Drawing, Extruding n.e.c.
2733	Non-Ferrous Metal Casting
274	Structural Metal Product Manufacturing
2741	Structural Steel Fabricating
2742	Architectural Aluminium Product Manufacturing
2749	Structural Metal Product Manufacturing n.e.c.
275	Sheet Metal Product Manufacturing
2751	Metal Container Manufacturing
2759	Sheet Metal Product Manufacturing n.e.c.
276	Fabricated Metal Product Manufacturing
2761	Hand Tool and General Hardware Manufacturing
2762	Spring and Wire Product Manufacturing
2763	Nut, Bolt, Screw and Rivet Manufacturing
2764	Metal Coating and Finishing
2765	Non-Ferrous Pipe Fitting Manufacturing
2769	Fabricated Metal Product Manufacturing n.e.c.
28	Machinery and Equipment Manufacturing
281	Motor Vehicle and Part Manufacturing
2811	Motor Vehicle Manufacturing
2812	Motor Vehicle Body Manufacturing
2813	Automotive Electrical and Instrument Manufacturing
2819	Automotive Component Manufacturing n.e.c.
282	Other Transport Equipment Manufacturing
2821	Shipbuilding
2822	Boatbuilding
2823	Railway Equipment Manufacturing
2824	Aircraft Manufacturing
2829	Transport Equipment Manufacturing n.e.c.
283	Photographic and Scientific Equipment Manufacturing
2831	Photographic and Optical Good Manufacturing
2832	Medical and Surgical Equipment Manufacturing
2839	Professional and Scientific Equipment Manufacturing n.e.c.
284	Electronic Equipment Manufacturing
2841	Computer and Business Machine Manufacturing
2842	Telecommunication, Broadcasting and Transceiving Equipment Manufacturing
2849	Electronic Equipment Manufacturing n.e.c.

ANZSIC DIVISION, SUBDIVISION, GROUP AND CLASS TITLES AND CODES

285	Electrical Equipment and Appliance Manufacturing
2851	Household Appliance Manufacturing
2852	Electric Cable and Wire Manufacturing
2853	Battery Manufacturing
2854	Electric Light and Sign Manufacturing
2859	Electrical Equipment Manufacturing n.e.c.
286	Industrial Machinery and Equipment Manufacturing
2861	Agricultural Machinery Manufacturing
2862	Mining and Construction Machinery Manufacturing
2863	Food Processing Machinery Manufacturing
2864	Machine Tool and Part Manufacturing
2865	Lifting and Material Handling Equipment Manufacturing
2866	Pump and Compressor Manufacturing
2867	Commercial Space Heating and Cooling Equipment Manufacturing
2869	Industrial Machinery and Equipment Manufacturing n.e.c.
29	Other Manufacturing
291	Prefabricated Building Manufacturing
2911	Prefabricated Metal Building Manufacturing
2919	Prefabricated Building Manufacturing n.e.c.
292	Furniture Manufacturing
2921	Wooden Furniture and Upholstered Seat Manufacturing
2922	Sheet Metal Furniture Manufacturing
2923	Mattress Manufacturing (Except Rubber)
2929	Furniture Manufacturing n.e.c.
294	Other Manufacturing
2941	Jewellery and Silverware Manufacturing
2942	Toy and Sporting Good Manufacturing
2949	Manufacturing n.e.c.

Source: Australian and New Zealand Standard Industrial Classification (ANZSIC), 1993 (Cat.no. 1292.0).

GLOSSARY

Average hours worked Aggregate hours worked by a group divided by the number of persons in that group.

Average weekly earnings Average weekly earnings statistics represent average gross (before tax) earnings of employees excluding retrospective pay, pay in advance, leave loadings and severance and redundancy payments. It is calculated by dividing estimates of gross earnings for a particular week in the middle of the quarter by estimates of the number of employees working full time in the same week. Estimates are produced for ordinary time earnings (excluding overtime earnings) and total earnings.

Business See Management unit

Business expenses See Operating expenses

Business size For the purposes of this publication, business size is defined as:

- Small businesses are those which employ fewer than 20 people (except if employment is zero and sales exceed \$10m).
- Medium sized businesses are those which employ 20 to 99 people plus any which employ zero and have sales between \$10m and \$50m.
- Large businesses are those which employ 100 or more people plus any which employ zero and have sales of \$50m or more.

However, small businesses exclude non-employing businesses i.e. unincorporated businesses where the only persons working in the business are the proprietors or partners in the business. While omission of these businesses from the statistics has very little effect on the industry estimates, their omission will potentially affect small business statistics to greater extent. For example it has been estimated by the Australian Taxation Office that these non-employing businesses were responsible for around 1.5% of total manufacturing sales of goods and services. As small manufacturing businesses contribute only around one-fifth of manufacturers' sales, this implies that their omission would understate activity for small businesses by around 7% to 8% overall.

Non-employing businesses are different from the zero employment cases included in the above definitions. The zero employment cases are almost without exception either businesses which have ceased operations during the reference year or are incorporated businesses which are participants in unincorporated joint ventures (see entry for UJVs). These businesses have zero employment but in all other respects have operated during the reference year on a much larger scale than small businesses do and it is more appropriate to treat them as large or medium sized businesses rather than small.

Capital expenditure Acquisition of fixed tangible assets (e.g. land, buildings, plant and machinery), property and intangible assets (e.g. computer software, patents and licences) including those assets acquired under a finance lease. Also includes work done by own employees or proprietors of the business in constructing assets for use by the business or for rental or lease to others.

The term 'Net fixed capital expenditure' refers to outlays on fixed assets (i.e. excluding intangible assets) less amounts received from sales of fixed assets.

Capital work done for own use or for rental or lease See the entry for 'Own account capital work'.

Chain volume measures Chain volume measures represent a replacement methodology for measuring changes in economic activities which are measured in dollar terms and then adjusted to remove the effects of price changes. These measures were previously known as constant price estimates. The 'volume measures' part of the term simply means that they measure changes in volume of activity not value of activity. The 'chain' part of the term means that the series is rebased every year as results of the annual manufacturing survey become available and data for all periods covered by the series are benchmarked to the rebased values. The previous method involved rebasing the series only every five or so years which meant that the quality of prices changes data tended to decay the more removed the current period became from the base year. Further explanation is provided in the Explanatory Notes.

Closing inventories The value of all inventories of finished goods, work-in-progress, raw materials, fuels, containers and packaging as at the end of the financial year. Businesses are asked to value their inventories for statistical purposes using the same method as used in their balance sheets.

Commission manufacturing Significant amounts of manufacturing are undertaken on a commission basis by one manufacturer on behalf of another manufacturer or by a manufacturer on behalf of a non-manufacturer. Typically, a commission manufacturing transaction will involve a client commissioning the production of goods by a producing establishment from materials provided by the client. Ownership of those materials remains with the client. Similarly, the goods made from those materials are owned by the client.

For the purposes of the estimates in this publication, the producing establishment reports the commission fee as service income along with wages and salaries and any other expenses incurred.

Commission manufacturing <i>continued</i>	If the client is a manufacturing establishment, then in addition to data for their own manufacturing operations, the client reports the sales and stocks of the commissioned goods, the cost of the materials provided to the producing establishment, the commission fee paid and the value of any other intermediate inputs related to the commission transaction. If the client is not a manufacturing establishment, no data are reported by the client.
Constant prices	Data are presented in constant prices to represent the volume of goods and services produced. By analysing year to year movements in constant price terms, changes in manufacturing activity levels can be analysed in the absence of distortions caused by price changes. Recently, the ABS has changed its method of calculating estimates adjusted for price changes. Constant price estimates are now referred to as either 'volume measures' or 'chain volume measures'. For further explanation see the entry for chain volume measures.
Cost of sales	Cost of sales is calculated as opening inventories less closing inventories plus payroll tax and fringe benefits tax plus intermediate input expenses.
Current assets	The book value of current assets as at the end of the financial year. This includes cash on hand, inventories, trade debtors and other accounts receivable.
Current liabilities	The book value of current liabilities as at the end of the financial year. This includes trade creditors, other accounts payable and bank overdrafts. Also includes provisions for short term liabilities such as provisions for taxation, provisions for employee entitlements, provisions for claims.
Current ratio	The ratio of current assets to current liabilities, i.e. the value of current assets divided by the value of current liabilities. This liquidity measure indicates ability to meet immediate financial obligations from current assets. A ratio of less than 1 would indicate current liabilities in excess of current assets. An increase in the ratio indicates that liquidity is improving.
Debt to equity	See 'Long-term debt to equity ratio'.
Degree of transformation	Degree of transformation is a classification variable within the Trade Export Classification (TREC). Degree of transformation categories and classification of commodities to those categories was initiated by the Department of Foreign Affairs and Trade (DFAT). The classification will be further developed over the next few years.
Depreciation	Includes depreciation allowed on buildings and other fixed tangible assets.
Dividends received	Payments received from related and unrelated businesses.

- Employed** Persons aged 15 and over who, during the reference week:
- worked for one hour or more for pay, profit, commission or payment in kind in a job or business, or on a farm (comprising employees, employers and own account workers); or
 - worked for one hour or more without pay in a family business or on a farm (i.e. contributing family workers); or
 - were employees who had a job but were not at work and were: on paid leave; on leave without pay for less than four weeks up to the end of the reference week; stood down without pay because of bad weather or plant breakdown at their place of employment for less than four weeks up to the end of the reference week; on strike or locked out; on workers' compensation and expected to be returning to their job; or receiving wages or salary while undertaking full-time study; or
 - were employers, own account workers or contributing family workers who had a job, business or farm, but were not at work.

Employee A person who works for a public or private employer and receives remuneration in wages, salary, commission, tips, piece-rates or pay in kind, or in their own business, either with or without employees, if that business was an incorporated business.

Employment at end of June The number of working proprietors and working partners, plus all employees for whom pay as you earn (PAYE) tax is deducted (including permanent, part-time, temporary and casual employees, and managerial and executive employees) during the last pay period ending in June. Employees absent on paid or prepaid leave are included, as are employees on workers' compensation who continue to be paid through the payroll system. Non-salaried directors, self-employed persons such as consultants and for whom PAYE tax is not deducted and volunteer workers are excluded.

Enterprise group A unit covering all the operations in Australia of one or more legal entities under common ownership and/or control. It covers all the operations in Australia of legal entities which are related in terms of the current Corporations Law (as amended by the *Corporations Legislation Amendment Act 1991*). These may be legal entities such as trusts and partnerships as well as companies. Majority ownership is not required for control to be exercised.

Establishment	The establishment is the smallest accounting unit of a business, within a State or Territory, controlling its productive activities and maintaining a specified range of detailed data i.e. the data needed to compile turnover, opening and closing inventories, purchases and transfers in, motor vehicle running expenses, freight and cartage expenses, commission expenses, rent, leasing and hiring expenses and repair and maintenance expenses. In general, an establishment covers all operations at a physical location, but may consist of groups of locations provided they are within the same State or Territory. The majority of establishments operate at one location only.
Establishment size	<p>Establishment size is based on the number of persons employed at 30 June of the reference year. They exclude non-employing units (see entry for 'business size').</p> <p>However, they differ from statistics classified by business size in that statistics based on establishment size exclude operations by businesses which ceased operations during the reference year and that participants in unincorporated joint ventures contribute according to their 30 June employment levels which usually means that their contribution is recorded against the size group containing the smallest establishments.</p>
Export orientation	The value of exports as a percentage of the size of the market.
Fixed tangible assets	Includes land, buildings and other structures, plant, machinery and equipment and computer software (if capitalised).
Full-time employees	Permanent, temporary and casual employees who normally work the agreed or award hours for a full-time employee in their occupation and who received pay for any part of the reference period. If agreed or award hours do not apply, employees are regarded as full time if they ordinarily work 35 hours or more per week.
Full-time workers	Employed persons who usually worked 35 hours or more a week (in all jobs) and others who, although usually working less than 35 hours a week, worked 35 hours or more during the reference week.
Gross earnings	Payments to employees before tax and other items (such as superannuation) are deducted. They comprise amounts paid from interstate or overseas; ordinary time and overtime earnings; over award payments; penalty payments, shift and other remunerative allowances; commissions and retainers; bonuses and similar payments; payments under incentive or piecework; payments under profit-sharing schemes; leave loadings; annual and long service leave payments; sick leave payments; advance and retrospective payments; salaries and fees paid to company directors, members of boards, committees, commissions, councils, etc.; amounts paid to employees on workers' compensation who continue to be paid through the payroll; and severance, termination and redundancy payments.

Gross factor incomes	Calculated by summing incomes for the factors of production. Equals compensation of employees plus gross operating surplus plus gross mixed income.
Gross mixed income	The surplus accruing to owners of unincorporated enterprises from the processes of production.
Gross operating surplus	Industry value added less labour costs.
Gross output	Sales of goods and services plus government funding for operational costs plus capital work done for own use plus closing inventories minus opening inventories.
Gross value added at basic prices	See 'Industry value added'. Gross value added at basic prices is a national accounting measure of production which at industry level is virtually identical to industry value added.
Historic data	<p>Prior to Federation in 1901, statistics were not generally compiled on a consistent basis across the various Australian colonies, and for this reason, a statistical picture of the national manufacturing industry cannot be presented for this period with any confidence. However, from 1901 statistics have been compiled on a consistent basis across States allowing compilation of consistently defined national data.</p> <p>Statistics on the manufacturing industry in the twentieth century divide into two distinct periods. In the first period, from 1901 to 1968, manufacturing statistics were compiled on an activity basis (i.e. businesses were asked to report information on their manufacturing activities regardless of the main industry of the business). Also, prior to 1967–68, the manufacturing industry included a number of activities that are not now included (such as electricity generation, motor vehicle repair and servicing and making hot mix bitumen for road making).</p> <p>From 1968–69 onwards, statistics for the manufacturing industry have been a component of the ABS suite of economic censuses and surveys which have been compiled on the an industry basis whereby businesses and establishments are assigned to an industry on the basis of their predominant activity, with the effect that manufacturing statistics include any secondary non-manufacturing activities but exclude any secondary manufacturing activities carried out by non-manufacturing businesses and establishments. Data for 1968–69 onward are also are based on a different set of definitions and classifications to the earlier series.</p>
Import penetration	The value of imports as a percentage of the size of the market.
Industry class	Within ANZSIC, there is a structure comprising four levels ranging from industry division (broadest level) to the industry class (finest level). At the industry class level, the activities are narrowly defined and recognised by a four digit code e.g. industry class 2331 for Pulp, paper and paperboard manufacturing. Information on the structure of the ANZSIC is contained in the Explanatory Notes.

Industry gross product (IGP) For periods prior to 1997–98, estimates of IGP represented the measure of the contribution by manufacturing industries to gross domestic product (GDP). However, commencing with estimates for 1997–98 following introduction of new international standards for measuring economic variables, IGP has been replaced by the variable ‘Industry value added’ (IVA) for the purpose of measuring industry contribution to GDP.

The relationship between IVA estimates and IGP estimates is IVA:

- plus Intellectual property royalty expenses
- less Intellectual property royalty income
- less Computer software expenses not capitalised by the business
- less Selected indirect taxes (For manufacturing industries, the main types are fringe benefits tax, payroll tax, land rates and land taxes.)

equals IGP

Industry group This is the intermediate level within the manufacturing industry division of ANZSIC and is recognised by a three digit code e.g. industry group 233 for Paper and paper product manufacturing. It gives more detail than the industry subdivision and is created in a way that groups like industry classes together. Information on the structure of the ANZSIC is contained in the Explanatory Notes.

Industry of origin This concept allocates internationally traded commodities back to the industry of original manufacture rather than to the industries of the businesses actually undertaking the imports or exports. However, because it is not always known which manufacturing industry actually produced a particular set of traded commodities, all commodities are allocated to the industry which produces most of that type of commodity i.e. the industry most likely to have been the source.

Industry subdivision This is the broadest level category within the manufacturing industry division of ANZSIC and is recognised by a two digit code e.g. industry subdivision 23 for Wood and paper product manufacturing. Industry subdivisions are built up from industry groups which, in turn, are built up from industry classes. Information on the structure of the ANZSIC is contained in the Explanatory Notes.

Industry subdivision The manufacturing industry subdivisions and their numeric codes are:
continued

- 21 Food, beverage and tobacco mfg
- 22 Textile, clothing, footwear and leather mfg
- 23 Wood and paper product mfg
- 24 Printing, publishing and recorded media
- 25 Petroleum, coal, chemical and associated product mfg
- 26 Non-metallic mineral product mfg
- 27 Metal product mfg
- 28 Machinery and equipment mfg
- 29 Other manufacturing

Industry value added (IVA) IVA represents the value added by an industry to the intermediate inputs used by the industry. Commencing with estimates for 1997–98, IVA has replaced industry gross product (IGP) as the measure of the contribution by manufacturing industries to gross domestic product. See the entry for ‘Industry gross product’ for an explanation of the differences between IVA and IGP.

The derivation of IVA is as follows:

Turnover

- plus Closing inventories
- less Opening inventories
- less Intermediate input expenses

equals IVA

However, readers should note that IVA is not a measure of operating profits before tax. Wages, salaries and most other labour costs are not taken into account in its calculation and nor are most insurance premiums, interest expenses or depreciation and a number of lesser expenses (see the entry for ‘Operating expenses’ for further detail).

Insurance premiums Payments in respect of different types of insurance, excluding workers’ compensation costs (included in labour costs) and compulsory third party motor vehicle insurance premiums (included in motor vehicle running expenses).

Interest coverage The number of times over that businesses can meet their interest expenses from their earnings before interest, i.e. the value of earnings before interest and tax divided by the value of interest expenses.

Interest expenses	Interest paid on loans from banks and other financial institutions, interest paid in respect of finance leases, interest paid on loans from related businesses, interest equivalents such as hedging costs and expenses associated with discounted bills. Excludes bank service charges and fees.
Interest income	Includes interest received from bank etc accounts, loans, finance leases and earnings on discounted bills.
Intermediate input expenses	<p>Intermediate input expenses cover the major expenses incurred by manufacturers in producing and distributing goods and services produced (except labour costs) i.e. purchases of materials, components, containers and packaging materials, electricity, fuels and water, motor vehicle running expenses, freight and cartage expenses, repair and maintenance expenses, rent leasing and hiring expenses (except for finance lease payments) and contract, subcontract and commission expenses.</p> <p>Intermediate input expenses also include advertising expenses, audit and other accounting expenses, bank fees and charges (except interest), cleaning expenses, environmental protection expenses, intellectual property royalty expenses, legal fees, management fees, paper, printing and stationery expenses, postal and telecommunication expenses, purchases of finished goods for resale, staff training expenses, and travel, accommodation and entertainment expenses.</p> <p>In establishment statistics of intermediate input expenses, account is also taken of transfers of goods between establishments owned and operated by the same business. These are valued at their commercial value.</p>
Intermediate inputs	<p>Intermediate inputs consist of materials and certain services which are used up in the production and distribution processes. Definitions of relevant component items are also included in this Glossary. It is calculated as:</p> <ul style="list-style-type: none"> ■ Intermediate input expenses ■ plus Opening inventories ■ less Closing inventories
Job leavers	Unemployed persons who have worked full time for two weeks or more in the past two years and left that job voluntarily, that is because of unsatisfactory work arrangements/pay/hours; the job was seasonal, temporary or a holiday job and they left that job to return to studies; their last job was running their own business and they closed down or sold that business for reasons other than financial difficulties; or any other reason.

Job losers	Unemployed persons who have worked full time for two weeks or more in the past two years and left that job involuntarily, that is, were laid off or retrenched from that job; left that job because of their own ill-health or injury; the job was seasonal, temporary or a holiday job and they did not leave that job to return to studies; or their last job was running their own business and the business closed down because of financial difficulties.
Labour costs	For the purposes of this publication, labour costs include wages and salaries (including severance and termination pay), employers' contributions to superannuation funds and workers' compensation costs. Other labour costs such as payroll tax, fringe benefits tax, staff training expenditure and staff amenities expenses are included in cost of sales.
Labour costs for Research and Development	Wages and salaries, overtime allowances, penalty rates, leave loadings, bonuses, commission payments, all paid leave, employer contributions to superannuation and pension schemes, payroll tax, fringe benefits tax, payments to contract staff on the payroll, severance, termination and redundancy payments and workers' compensation insurance for staff engaged in research and experimental development activities.
Large businesses	Businesses which employ 100 or more people plus any incorporated businesses with zero employment and sales of \$50m or more. See the entry for business size for further explanation.
Large establishments	An establishment employing 100 or more people.
Long-term debt to equity ratio	The value of non-current liabilities divided by the value of net worth. An increase in this ratio signifies that an industry's debt position has worsened relative to its capacity to repay.
Management unit	The management unit is the highest-level unit within a business, having regard to industry homogeneity, for which accounts are maintained. In nearly all cases, the management unit is simply the legal entity which owns the business (that is, company, partnership, trust, sole operator, etc.). In the case of large diversified businesses, however, there may be more than one management unit, each coinciding with a 'division' or 'line of business'. A division or line of business is recognised where separate and comprehensive accounts are compiled for it. For the purposes of interpreting the data in this publication, "management unit" and "business" can be regarded as being synonymous.
Manufacturing establishment	An establishment predominantly engaged in manufacturing activities. The data collected for such establishments cover all activities of the establishment (including non-manufacturing activities). Conversely, there are some establishments predominantly engaged in non-manufacturing activities which also undertake limited manufacturing activities and which are excluded from the statistics in this publication.

Manufacturing management unit	A management unit predominantly engaged in manufacturing activities. The data collected for such management units cover all activities of the management unit (including in respect of non-manufacturing activities). Conversely, there are some management units predominantly engaged in non-manufacturing activities which have one or more establishments which engage in manufacturing activities and which are excluded.
Median value	The median is the middle observation in a set of observations ranked from largest to smallest i.e. that observation for which there are as many observations with higher values as there are observations with lower values. For example if the set were made up of the integers 1 to 9, then the median value would be the number 5 because it has four values higher and four values lower.
Medium sized businesses	Businesses which employ 20 to 99 people plus any incorporated businesses with zero employment and sales between \$10m and \$50m. See the entry for business size for further explanation.
Medium sized establishments	An establishment employing 20 to 99 people.
New Capital Expenditure	Refers to the acquisition of new tangible assets either on own account or under a finance lease and includes major improvements, alterations and additions. In general, this is expenditure charged to fixed tangible assets accounts excluding expenditure on second hand assets unless these are imported for the first time.
Net worth	Total assets minus total liabilities and is equal to the interests of shareholders or other owners in the assets of the business.
Non-current assets	The book value of non-current assets as at the end of the financial year. Includes plant and machinery needed for normal operations, capitalised interest, property and goodwill.
Non-current liabilities	The book value of non-current liabilities as at the end of the financial year. Includes bank loans, debentures and unsecured notes.
Non-employing businesses	Unincorporated businesses which do not employ staff and which have not registered as group employers with the Australian Taxation Office. Typically, such businesses will have one or two working proprietors or partners but no other staff. Such businesses are not listed on the ABS Business Register and where surveys are based solely on that register (the annual manufacturing survey is one of these) then estimates will not take account of the operations of non-employing businesses.

Number of employees	All wage and salary earners who received pay for any part of the relevant pay period. All permanent, temporary, casual, managerial and executive employees are included. Part-time and casual employees who may have received pay for only a few hours during the reference period are included. Employees on paid leave and those employees on workers' compensation who continue to be paid through the employer's payroll are also included. Casual employees who work on an irregular basis and who were not paid for the relevant pay period, employees on leave without pay, on strike or stood down without pay for the whole of the pay period are excluded.
Operating profit before tax (OPBT)	Operating profit before tax: a measure of profit before extraordinary items are brought into account and prior to the deduction of income tax and appropriations to owners (e.g. dividends paid).
Opening inventories	The value of all inventories of finished goods, work-in-progress, raw materials, fuels, containers and packaging as at the start of the financial year. Businesses are asked to value their inventories for statistical purposes using the same method as used in their balance sheets.
Operating income	The total income of a business net of discounts allowed and excluding extraordinary items and sales taxes and excise collected on behalf of governments.
Other operating expenses	<p>For the purposes of this publication, comprises bad and doubtful debts, computer software expenses not capitalised by businesses, insurance premiums (except workers' compensation and compulsory third party motor vehicle insurance premiums), land rates and taxes, mineral/petroleum exploration expenses not capitalised by businesses and natural resource royalties expenses.</p> <p>Some expenses incurred by businesses are ignored for the purposes of calculating the economic and accounting variables presented in this publication. These excluded expenses are abnormal expenses, capitalised expenses, income tax and other direct taxes, sales taxes and excise payable to Governments, capital repayments or losses on asset sales, dividends, donations or foreign exchange losses.</p>
Other operating income	<p>Includes government funding for operational costs, income from natural resource royalties, interest income and dividends received. It also includes asset revaluations and profits and losses on sales of fixed tangible assets and profits and losses from foreign exchange value fluctuations. As losses on certain types of transactions and asset writedowns are included, it is feasible for negative values to exceed positive values and thus for other operating income to be negative.</p> <p>However, unrealised gains or losses and extraordinary profits or losses are not included. It would exclude for example profits or losses associated with the sale of a segment of the business or goodwill revaluations.</p>

Own account capital work	Capitalised work done by the employees or proprietors of an establishment for use by the business or for rental or lease to other businesses. The main types of work are manufacturing, constructing, installing or repairing assets and development of computer software. This work is valued at the capitalised costs of the materials and the wages and salaries involved. Conceptually, this item should also include own account mineral exploration and own account production of literary, entertainment or artistic originals. However, these activities are relatively unimportant for manufacturers and have not been measured for manufacturing industries.
Part-time employees	Permanent, temporary and casual employees who are not classified as full-time employees as defined.
Petajoule	Physical measure of energy use. Equals 10^{15} joules.
Primary energy source	Are those forms of energy that are obtained directly from nature. They include both non-renewable and renewable energy. Primary energy sources include firewood, coal, crude oil, natural gases, uranium, bagasse and solar energy. In this publication hydro-electricity is treated as a secondary energy product.
Profit margin	The percentage of operating income available as operating profit, i.e. the value of OPBT multiplied by 100 and the result divided by the value of operating income.
Purchases	Purchases of materials, components, supplies, consumables, containers, packaging materials, electricity, fuels (except for motor vehicles) and water. It also includes purchases of goods for resale without processing.
Quartiles	In identifying quartiles, observations are ranked from largest to smallest (or vice versa) and then divided into four equal sized groupings. The last observation in each grouping is the quartile observation. The second quartile is known as the median. For example, if there were 1,000 manufacturers in a particular industry, the 1,000 individual observations would be ranked. The 250th observation would be the first quartile, the 500th observation would be the second quartile (median) and the 750th observation would be the third quartile.
Real terms	The expression 'in real terms' is used to describe changes which have occurred in the volume of goods or services. It refers either to changes which have been measured in volume terms (e.g. tonnes of steel or dozens of shirts) or have been measured in value terms and then adjusted to remove the effects of price changes.

Research and development activity	<p>In the business context is systematic investigation or experimentation involving innovation or technical risk, the outcome of which is new knowledge, with or without a specific practical application or new or improved products, processes materials, devices or services. R&D activity extends to modifications to existing products/processes. R&D activity ceases and pre-production begins when work is no longer experimental.</p> <p>Research and development expenditure on waste management and environmental protection includes wages and salaries of employees engaged in research and development (R&D) as well as payments made to private businesses for R&D relating to the prevention, reduction or elimination of pollution or any other degradation of the environment.</p>
Return on assets	Operating profit before tax as a percentage of the total book value of assets, i.e. the value of OPBT multiplied by 100 and the result divided by the value of total assets.
Return on net worth	Operating profit before tax as a percentage of the shareholders' funds, i.e. the value of OPBT multiplied by 100 and the result divided by the value of net worth.
Royalty expenses	Payments made by a business for the use of rights owned by another business or person. Included in other operating expenses.
Sales of goods and services	Includes sales of goods whether or not manufactured by the business plus service income.
Sales and transfers out of goods	Includes sales of goods whether or not produced by the business and sales of goods produced for the business on a commission basis (see the entry for "Commission manufacturing"). Also includes transfers of goods to other establishments of the same business or to related businesses and installation and delivery charges not separately invoiced to customers. Sales are valued net of discounts given and exclusive of excise, sales tax and duties receivable on behalf of the Government. Exports are valued f.o.b. (export freight charges are excluded). Transfers to other establishments of the same business are valued at commercial value (i.e. the value which would have applied had the establishments concerned not been under common ownership).
Sampling error	Most of the estimates in this publication are based on information gained from sample surveys. Because the entire population of businesses was not surveyed to obtain these estimates, they are subject to sampling error i.e. the imprecision which arises when a sample of businesses is not perfectly representative of the population of businesses from which the sample was drawn.
Secondary energy source	Are products that have been derived from a Primary energy source. Include: refined petroleum products; coal by-products; coke and electricity.

Selected expenses	Includes payments made for services provided by other businesses (including self-employed persons) such as rent, leasing and hiring of plant, motor vehicles, land and buildings; freight and cartage expenses; office supplies and services; telephone and postage; advertising, accounting and legal services; repairs and maintenance; work performed on a contract, subcontract or commission basis; and charges by government such as rates and motor vehicle registration.
Service income	Income received from service activities. Included are income from work done or sales made on a commission basis, agency commissions, income from repair, maintenance or servicing, installation and delivery charges separately invoiced to customers, advertising income and management fees/charges received from related or unrelated businesses. Service income is valued net of discounts given. For periods commencing with 1997–98, under new international standards, rent, leasing and hiring income (except from finance leases) and income from intellectual property royalties have also been classified as service income. Rent, leasing and hiring income is revenue derived from the ownership of land, buildings, vehicles, machinery or equipment, excluding any income from finance leases. For further explanation on the treatment of commission manufacturing activities see the entry for ‘Commission manufacturing’.
Small businesses	Businesses which employ fewer than 20 people (unless they have zero employment and sales over \$10m). Excludes non-employing unincorporated businesses. See the entry for business size for further explanation.
Small establishments	An establishment employing fewer than 20 people. Excludes establishments of non-employing unincorporated businesses.
Trading profit	A measure of profit directly attributable to trading in goods and services. It is derived by deducting the cost of sales from sales of goods and services.
Transfers between establishments of the same business	Transfers of goods between establishments owned and operated by the same business are valued, for statistical purposes, at prices commensurate with the prices which would have been received if the establishments concerned had been under separate ownership, that is, at commercial selling price.
Turnover	Turnover comprises sales (exclusive of excise and sales tax) of goods whether or not produced by the establishment and transfers of goods to other establishments of the same business, service income, funding from governments for operational costs and own account capital work. Definitions of the various component items appear in this Glossary.

Turnover *continued*

There are some conceptual differences between turnover as estimated in this publication and turnover as defined by the new international standards. These differences are explained as part of the definition of the component item 'Own account capital work'. Full compliance with the new standards would make virtually no difference to estimates of turnover.

Readers should note that the above definition of turnover is the definition used to calculate the variable 'Industry value added'. A slightly different definition of turnover was used prior to 1997–98 to calculate the now superseded variable 'Industry gross product'. This earlier definition excluded income from intellectual property royalties and the value of computer software developed in-house for use by the business or for rental or lease to other businesses.

A significant proportion of the commodities manufactured by some industries is manufactured on commission for non-manufacturing businesses from materials owned and supplied by those non-manufacturing businesses. In these circumstances, the manufacturing turnover figures do not reflect the gross value of those commodities but only the commission earned relating to them (see the entry for "Commission manufacturing" for further details).

**Unincorporated Joint
Ventures (UJVs)**

Unincorporated Joint Ventures (UJVs) are large scale operations where the expertise, resources and risks associated with a particular venture are shared by a number of participating businesses. Typically, each participant will incur an agreed proportion of venture costs and will receive an agreed proportion of venture output. Also typically, each venture will have a business which acts as venture manager and which employs all staff and undertakes processing. Processing costs are shared among the participants but a variety of accounting arrangements are possible.

In manufacturing, most UJVs occur in non-ferrous metals processing (in the Metal Products manufacturing subdivision) but occur in other industries as well.

For the purpose of manufacturing statistics, a management unit (business) and an establishment unit are delineated for each participant and for the venture manager as well. Because of the nature of UJVs, this means that for each venture there will be a number of business units with substantial income but no employees and one unit with employees but quite possibly no income. Because for any single venture, all venture participants and the venture manager are all in the same industry, aggregate statistics reflect the correct levels of economic activity. However, statistics based on employment size will be severely affected.

An attempt has been made to overcome the distorting effect of UJVs in statistics based on business size (see entry for business size for details).

Unemployed	<p>Persons aged 15 and over who were not employed during the reference week, and:</p> <ul style="list-style-type: none"> ■ had actively looked for full-time or part-time work at any time in the four weeks up to the end of the reference week and; ■ were available for work in the reference week, or would have been available except for temporary illness (i.e. lasting for less than four weeks to the end of the reference week); or ■ were waiting to start a new job within four weeks from the end of the reference week and would have started in the reference week if the job had been available then; or ■ were waiting to be called back to a full-time or part-time job from which they had been stood down without pay for less than four weeks up to the end of the reference week (including the whole of the reference week) for reasons other than bad weather or plant breakdown.
Unemployed persons classified by industry and occupation	Unemployed persons who had worked full time for two weeks or more in the last two years are classified according to the industry and occupation of their most recent full-time job.
Volume measures	See chain volume measures.
Wages and salaries	The gross wages and salaries (including capitalised wages and salaries) of all employees of the establishment. The item includes severance, termination and redundancy payments, but excludes reimbursements or allowances to employees for travel, entertainment, etc. For the 1995–96 collection, provisions for employee entitlements (e.g. provisions for annual leave and leave bonus, long service leave, sick leave and severance, termination and redundancy payments) are excluded. The drawings of working proprietors are also excluded.
Wages and salaries to turnover ratio	The wages and salaries paid by manufacturing establishments which operated during the year ended 30 June as a proportion of the turnover of manufacturing establishments which operated during the same year.

LIST OF REFERENCES

Where ABS time series data has been presented in tables or graphs, only the latest edition of the product used to extract the data is listed as source material and in the references below. Earlier editions of the product are available from ABS libraries and selected other libraries.

ABS – PUBLISHED DATA

Australian and New Zealand Standard Industrial Classification (ANZSIC), 1993 (Cat. no. 1292.0).

Australian National Accounts, National Income, Expenditure and Product, June Quarter 2001 (Cat. no. 5206.0).

Australian National Accounts, State Accounts 1999–2000 (Cat. no. 5222.0).

Average Weekly Earnings, States and Australia, March Quarter 2001 (Cat. no. 6302.0).

Business Operations and Industry Performance, Preliminary, 1998–99 (Cat. no. 8142.0).

Company Profits, Australia, June Quarter 2001 (Cat. no. 5651.0).

Employee Earnings, Benefits and Trade Union Membership, Australia, August 2000 (Cat. no. 6310.0).

Energy and Greenhouse Gas Emissions Accounts, 1992–93 to 1997–98 (Cat. no. 4604.0).

Industrial Disputes, Australia (Cat. no. 6322.0, 2000).

International Merchandise Trade, Australia, June Quarter 2001 (Cat. no. 5422.0).

Inventories and Sales, Selected Industries, Australia, June Quarter 2001 (Cat. no. 5629.0).

Labour Force, Australia, August 2001 (Cat. no. 6203.0).

Manufacturing Production, Australia, June Quarter 2001 (Cat. no. 8301.0).

Manufacturing Industry, Australia, 1999–2000 (Cat. no. 8221.0).

Private New Capital Expenditure and Expected Expenditure, Australia, June Quarter 2001 (Cat. no. 5625.0).

Producer Price Indexes, Australia, June Quarter 2001 (Cat. no. 6427.0).

A Portrait of Australian Exporters, 1997–98, (Joint publication by ABS and Austrade) (Cat. no. 8154.0).

Research and Experimental Development, Business Enterprises, Australia, 1999–2000 (Cat. no. 8104.0).

ABS – PUBLISHED DATA
continued

Wage and Salary Earners, Australia, June Quarter 2001
(Cat. no. 6248.0).

Year Book Australia, 2001 (Cat. no. 1301.0).

ABS – PREVIOUSLY UNPUBLISHED DATA

Labour Force Survey, August 2001.

Annual Manufacturing Survey, 1999–2000.

EXTERNAL REFERENCES:

ABARE, 1999, *Australian Energy, Market Developments and Projections to 2014–15 – Research report 99.4*, ABARE, Canberra.

Curthoys Ann, A. W. Martin & T. Rowse (eds) *Australians from 1939 to 1988*, Fairfax, Syme & Weldon Associates Australia 1988.

Davison Graeme, J.W. McCarty & Ailsa McLeary (eds) *Australians 1888 to 1988*, Fairfax, Syme & Weldon Associates Australia 1988.

DFAT *Exports of primary and manufactured products, Australia 2000*, DFAT Trade Development Branch.

Background Guide to the Australia New Zealand Economic Relationship. This document can be viewed on the DFAT Website at
<http://www.dfat.gov.au/geo/new_zealand/anz_cer.pdf>.

Gammage Bill, Peter Spearritt & Louise Douglas (eds) *Australians 1939 to 1988*, Fairfax, Syme & Weldon Associates Australia 1988.

Harcourt Tim, (2000) *Why Australia Needs Exports: The Economic Case for Exporting*, Australian Trade Commission and the Centre for Applied Economic Research (CAER), UNSW, Sydney.

National Occupational Health and Safety Commission *Compendium of Workers' Compensation Statistics, Australia, 1997–98*.

Organisation for Economic Co-operation and Development (OECD). See their Website at <www.oecd.org/std/nahome.htm> for more information about Purchasing Power Parities.

United Nations Industrial Development Organisation *International Yearbook of Industrial Statistics 1997 & 1998*.

Vamplew Wray (ed) *Australians: Historical Statistics* Fairfax, Syme & Weldon Associates Australia 1988.

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