2002

Final Issue

8225.0

MANUFACTURING

AUSTRALIA

EMBARGO: 11:30AM (CANBERRA TIME) WED 2 APR 2003

CONTENTS

■ For further information about these and related statistics, contact the National Information Service on 1300 135 070 or Keith James on Canberra 02 6252 5436

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 Australian Bureau of Statistics (ABS) and non-ABS sources. Except where indicated, the sources used are ABS data.

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.

FINAL ISSUE

This is the final issue of this publication. *Manufacturing Australia* (cat. no. 8225.0) was originally intended as a showcase on the range of management unit information, while the main publication from the annual manufacturing collection, *Manufacturing Industry, Australia* (cat. no. 8221.0) focussed on establishment data. With the cessation of the establishment collection, *Manufacturing Industry, Australia* (cat. no. 8221.0) has become the vehicle for disseminating management unit information.

CHANGES IN THIS ISSUE

For the first time, all of the data in Chapters 1 and 2 of this publication, sourced from the annual manufacturing survey, relate to manufacturing businesses (management units). Previously, data for both businesses and establishments have been collected and then released in this publication. However, from the 2000–01 reference year, data for manufacturing businesses only are being collected. For further information see the 2000–01 issue of *Manufacturing Industry, Australia* (cat. no. 8221.0).

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. Bread manufacturing) may be available from the ABS on request.

INQUIRIES

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

Dennis Trewin
Australian Statistician

CONTENTS

LIST OF ABBREVIATIONS AND OTHER USAGES

ABBREVIATIONS

ABS	Australian Bureau of Statistics
ANZSIC	Australian and New Zealand Standard Industrial Classification
AWE	average weekly earnings
BLS	Business Longitudinal Survey
DFAT	Department of Foreign Affairs and Trade
GDP	Gross domestic product.
IGP	Industry gross product
IVA	Industry value added
OPBT	operating profits before tax
PAYE	pay as you earn
R&D	Research and development
UJV	Unincorporated Joint Ventures

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
L	litre
mfg	manufacturing
m^3	cubic metre
n.a.	not available
n.e.c.	not elsewhere classified
n.e.s.	not elsewhere specified
no.	number
n.a.	not available
n.p.	not available for publication but included in totals where applicable
PJ	petajoule
r	revised
t	tonne
$b	billions of dollars
$m	millions of dollars
*	data subject to sampling variability of between 25% and 50%
**	data subject to sampling variability greater than 50%
—	nil or rounded to zero (including null cells)

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 2001, refer to the year ended 31 December 2001. Those shown, for example 2000–01, refer to the year ended 30 June 2001. 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 Explanatory Notes. A list of all manufacturing subdivisions, groups and classes is contained in the Appendix to this publication.

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 2000–01 than any other industry.

1.1 INDUSTRY SHARES OF TOTAL PRODUCTION—2000–01

	NSW	*Vic.*	*Qld*	*SA*	*WA*	*Tas.*	*NT*	*ACT*	*Aust.*
Industry	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*	*%*
Agriculture, forestry and fishing	3	4	5	5	4	7	4	—	4
Mining and services to mining	2	2	5	3	23	2	31	—	5
Manufacturing	**13**	**16**	**10**	**15**	**9**	**15**	**4**	**2**	**13**
Electricity, gas and water supply	2	3	2	3	3	6	2	3	3
Construction	6	5	6	5	6	5	3	6	6
Wholesale trade	5	5	5	4	4	3	2	2	5
Retail trade	5	5	7	6	5	6	4	5	5
Accommodation, cafes and restaurants	3	2	4	3	2	3	3	3	3
Transport and storage	5	5	6	5	5	5	4	3	5
Communication services	3	4	3	3	3	3	3	2	3
Finance and insurance	9	8	5	6	4	5	2	4	7
Property and business services	14	14	10	10	10	5	7	14	12
Government administration and defence	3	2	4	3	2	5	8	25	3
Education	4	5	5	5	3	5	5	6	4
Health and community services	6	6	6	7	6	9	6	6	6
Cultural and recreational services	2	2	2	2	1	1	2	3	2
Personal and other services	2	2	3	3	2	2	2	3	2
Ownership of dwellings	12	9	9	10	7	9	5	8	10
General government	2	2	3	2	2	3	3	5	2

Source: Australian National Accounts: State Accounts, 2000–01 (cat. no. 5220.0).

MANUFACTURING'S CONTRIBUTION TO TOTAL AUSTRALIAN PRODUCTION *continued*

Over the five year period to 2000–01, Manufacturing's share of national production fell marginally from 14% to 13%. 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 Property and business services (from 10% to 12%) and Finance and insurance (from 6% to 7%).

States and territories

Table 1.1 indicates that manufacturing production was the largest component of total 2000–01 production in all states except Western Australia, New South Wales and Queensland. The Mining and services to 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 from 1999–2000. The Property and business services industry is comparable to manufacturing industry in Queensland. In South Australia and Tasmania, manufacturing contributed substantially more than the next largest industry.

Manufacturing remains a relatively small industry in the two territories with the Mining and services to mining industry being strong in the Northern Territory, and Government administration and defence strong in the Australian Capital Territory.

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 2000–01. Manufacturing's greatest falls in relative contribution to state/territory production were recorded in South Australia (down from 17% to 15%) and Victoria (down from 18% to 16%). Tasmania and Western Australia were the only states to record an increase though the increases were less than 1%.

TRENDS IN AUSTRALIAN MANUFACTURING INDUSTRY

This next section covers recent trends in the Australian manufacturing industry in two parts. The first presents information on production in real terms over the last twenty years 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 1.2 shows that in 2001–02, 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. It also shows growth rates for 2001–02 and average growth rates over the previous 10 and 20 years.

In terms of production volumes, 15 of the 17 industries listed in table 1.2 grew during 2001–02. Manufacturing experienced a modest growth in production (up 3.2%) and grew at a rate which was below the All industries growth rate of 3.9%. Over the 10 year period 1991–92 to 2001–02, the Manufacturing industry experienced an average growth rate of 2.1% per annum which was second lowest of all industries (the Electricity, gas and water supply industry recorded the lowest average growth rate of 1.9%). The Manufacturing industry's average growth rate was two-thirds of the growth rate of All industries in total and less than one-quarter of the rate of the fastest growing industry (Communication services). A longer term view over the 20 years from 1981–82 to 2001–02 gives a different picture with the Manufacturing average growth rate of 1.7% per annum being the lowest of all industries.

1.2 PRODUCTION VOLUMES(a)

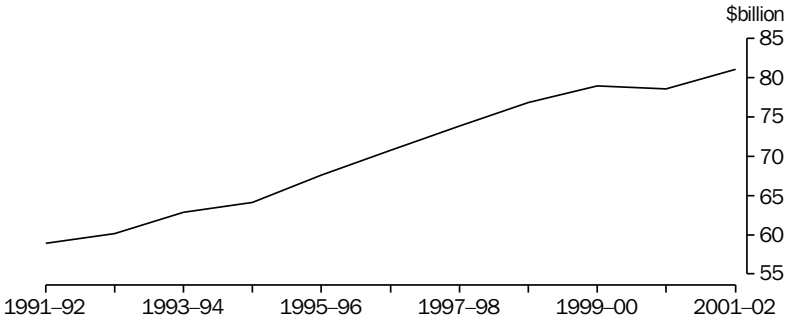
	2001–02	*Change from last year*	*Average annual change over last 10 years*	*Average annual change over last 20 years*
	$m	*%*	*%*	*%*
Agriculture, forestry and fishing	22 212	2.6	2.9	3.9
Mining and services to mining	31 657	–0.3	3.9	5.3
Manufacturing	**81 104**	**3.2**	**2.1**	**1.7**
Electricity, gas and water supply	16 312	–0.9	1.9	3.0
Construction	37 666	11.7	2.7	2.3
Wholesale trade	32 680	3.6	4.5	3.0
Retail trade	35 953	5.5	3.8	3.0
Accommodation, cafes and restaurants	17 122	4.1	4.0	3.5
Transport and storage	33 650	3.2	3.6	3.4
Communication services	20 432	3.0	9.3	8.5
Finance and insurance	46 249	4.7	3.7	4.9
Property and business services	78 738	4.9	5.5	5.6
Government administration and defence	24 300	1.0	2.4	2.5
Education	29 734	1.5	2.2	2.5
Health and community services	39 606	5.7	3.7	4.1
Cultural and recreational services	11 820	1.6	3.5	3.6
Personal and other services	15 704	7.6	4.4	3.8
All industries	574 938	3.9	3.5	3.4

(a) As measured by industry gross value added, chain volume measures at 2000–01 prices.

Source: Australian National Accounts: National Income, Expenditure and Product, June quarter 2002 (cat. no. 5206.0).

Manufacturing production growth

1.3 MANUFACTURING PRODUCTION LEVELS(a)



(a) As measured by industry gross value added, chain volume measures at 2000–01 prices.

Source: Australian National Accounts: National Income, Expenditure and Product, June quarter 2002 (cat. no. 5206.0).

As shown by graph 1.3, in volume terms, Manufacturing production has grown steadily since 1991–92. In 2001–02, production reached a level which was 37.7% higher than it had been ten years earlier. There was a marginal decline between 1999–2000 and 2000–01. However Manufacturing is back into recovery showing an increase of 3.2% in volume terms between 2000–01 and 2001–02.

Production by manufacturing subdivisions

Table 1.4 shows that Manufacturing industries experienced a variety of rates of growth/decline from 2000–01 to 2001–02 ranging from a substantial fall in production recorded for Textile, clothing, footwear and leather manufacturing (down 18.1%) to a large increase experienced by the Other manufacturing industry (up 21.6%).

Taking a longer term view, table 1.4 shows that the Textile, clothing, footwear and leather manufacturing industry has been shrinking over the last twenty years. Food, beverage and tobacco manufacturing recorded a decline of 0.5% in 2001–02 over the previous year but has been growing steadily over the last twenty years. Petroleum, coal, chemical and associated product manufacturing has also recorded steady growth over this period.

1.4 PRODUCTION VOLUMES(a)

Industry	*2001–02 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	15 414	–0.5	4.7	3.4	2.6
Textile, clothing, footwear and leather mfg	2 562	–18.1	–4.7	–4.0	–2.0
Wood and paper product mfg	6 041	6.2	1.1	1.7	0.9
Printing, publishing and recorded media	6 468	1.5	1.0	1.3	2.2
Petroleum, coal, chemical and associated product mfg	10 333	3.0	3.0	2.7	2.4
Non-metallic mineral product mfg	4 231	–4.8	0.8	0.5	0.5
Metal product mfg	16 222	10.1	1.8	1.6	1.6
Machinery and equipment mfg	16 196	3.3	3.7	3.3	2.1
Other mfg	3 638	21.6	2.2	1.6	1.4
Total mfg	**81 104**	**3.2**	**2.5**	**2.1**	**1.7**

(a) As measured by industry gross value added, chain volume measures at 2000–01 prices.

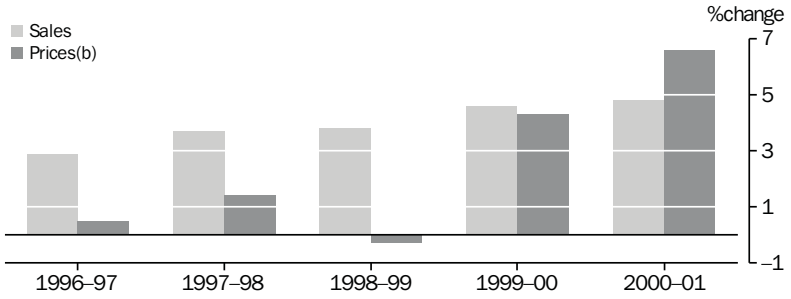
Source: Australian National Accounts: National Income, Expenditure and Product, June quarter 2002 (cat. no. 5206.0).

SALES AND SERVICE INCOME

This section presents statistics for sales of goods and services by manufacturing businesses. Commencing with estimates for 1997–98, the introduction of new international standards has slightly altered the composition of the variable 'sales and service income' by including royalties income from intellectual property which had previously been excluded. This change is estimated to have only a minimal effect on the 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 1.5 shows, Manufacturers sales and service income in current prices grew at a faster rate than the general level of prices of manufacturers goods until 1999–2000, implying increased sales volumes in the period. In 1999–2000, sales values and prices increased at virtually identical rates (4.6% and 4.4% respectively) and in 2000–01 prices increased at a faster rate than sales values (6.6% and 4.8% respectively) implying flat sales volumes for 1999–2000 and contracting volumes for 2000–01.

1.5 MANUFACTURING, Annual Change(a)



(a) Percentage change from previous year.
(b) Prices of articles produced by manufacturers.

Source: ABS data on request, Annual Manufacturing Survey. Producer Price Indexes, June 2002 (cat. no. 6427.0).

Table 1.6 provides an industry breakdown.

1.6 SALES OF GOODS AND SERVICES(a)

	1995–96	*1996–97*	*1997–98*	*1998–99*	*1999–2000*	*2000–01*
Industry	*$b*	*$b*	*$b*	*$b*	*$b*	*$b*
Food, beverage and tobacco mfg	44.4	45.7	49.2	51.7	54.6	56.6
Textile, clothing, footwear and leather mfg	9.9	10.3	10.6	10.1	9.3	9.1
Wood and paper product mfg	11.8	11.9	12.8	14.4	15.5	15.1
Printing, publishing and recorded media	13.7	14.9	15.3	16.1	17.5	15.9
Petroleum, coal, chemical and associated product mfg	35.4	37.5	37.9	36.8	39.8	47.1
Non-metallic mineral product mfg	9.5	9.8	10.4	10.9	11.1	9.8
Metal product mfg	35.3	34.6	34.7	36.3	38.7	40.5
Machinery and equipment mfg	41.6	42.4	43.6	46.5	46.8	50.6
Other mfg	5.7	6.3	6.5	6.8	6.9	7.0
Total mfg	**207.4**	**213.3**	**221.1**	**229.6**	**240.1**	**251.8**

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

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

SALES AND SERVICE INCOME *continued*

Between 1999–2000 and 2000–01 average prices rose by 6.6% while the value of sales and service income by manufacturing industry rose by 4.8%, implying a fall in the volume of goods and services produced of around 2%. Five manufacturing subdivisions increased the value of their sales of goods and services and four decreased over this period. Largest increases were recorded by Petroleum, coal, chemical and associated product manufacturing (up 18.3%), Machinery and equipment manufacturing (up 8.2%) and Metal product manufacturing (up 4.6%). The largest decreases were recorded by Non-metallic mineral product manufacturing (down 11.7%), Printing, publishing and recorded media (down 9.1%) and Wood and paper product manufacturing (down 2.7%).

Over the five-year period 1995–96 to 2000–01, sales of goods and services by manufacturing industries grew from $207b to $252b (up 21%). Over the same period, prices for Australian manufactured goods increased by around 13% which implies that the volume of goods and services produced by manufacturing businesses increased by about 8% over that period.

Between 1995–96 and 2000–01, eight of the nine manufacturing subdivisions increased the value of their sales of goods and services. The exception was Textile, clothing, footwear and leather manufacturing (down 8.2%). The largest percentage growth rates were recorded by Petroleum, coal, chemical and associated product manufacturing (up 32.9%), Food, beverage and tobacco manufacturing (up 27.7%) and Wood and paper product manufacturing (up 27.3%).

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) and businesses which ceased prior to 30 June 2001.

Employing businesses have been classified as small, medium sized or large according to the number of persons employed by the business at 30 June 2001. 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 2000–01 have been re-classified (see 'Business size' in the Glossary for more details). These re-classifications mostly related to participants in Unincorporated Joint Ventures (UJVs) in the Metal product manufacturing industry.

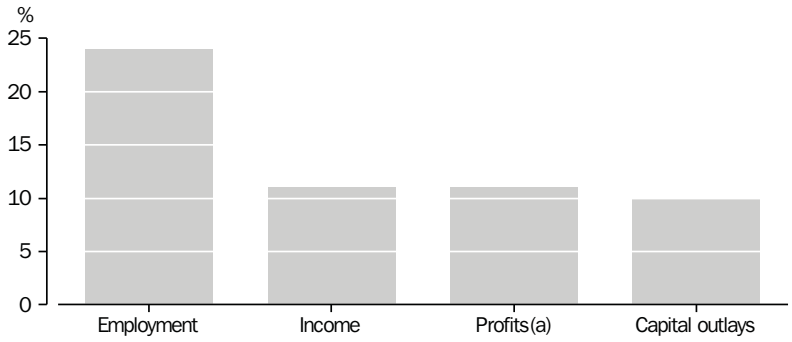
Further information about business performance is contained in Chapter 2 of this publication.

SMALL MANUFACTURING BUSINESSES

Share of industry activity

Small businesses make up around 86% of employing manufacturing businesses but as graph 1.7 shows, their share of manufacturing activity is much less significant.

1.7 SMALL BUSINESS, Share of Manufacturing Activity



(a) Operating profit before tax.

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

In 2000–01, for manufacturing as a whole and for seven of the nine manufacturing subdivisions, small businesses contributed 20% or more of industry employment although their share of income and capital outlays was generally less than their employment share. Their operating profit before tax was 11% of total manufacturing. As table 1.8 shows, Textile, clothing, footwear and leather manufacturing and Other manufacturing industries had a relatively high contribution by small businesses, with 66% and 55% (respectively) of industry profits coming from small businesses.

1.8 SMALL BUSINESS SHARES OF INDUSTRY ACTIVITY—2000–01

	Persons employed at 30 June	*Operating income*	*Operating profit before tax(a)*	*Capital outlays*
	%	%	%	%
Food, beverage and tobacco mfg	11	4	4	3
Textile, clothing, footwear and leather mfg	34	21	66	19
Wood and paper product mfg	33	15	13	15
Printing, publishing and recorded media	22	15	11	11
Petroleum, coal, chemical and associated product mfg	16	5	6	5
Non-metallic mineral product mfg	20	9	1	8
Metal product mfg(b)	31	16	14	17
Machinery and equipment mfg	23	10	13	10
Other mfg	54	44	55	30
Total mfg	**24**	**11**	**11**	**10**

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

(b) See the entry for Business size in the Glossary regarding the effects of UJVs on employment size data.

Source: ABS data available on request, Annual Manufacturing Survey, 2000–01.

Summary of operations

In 2000–01, small manufacturing businesses employed 226,200 people, generated $27.1b in income and $1.7b in profits. They also outlaid $1.0b in capital expenditure. Operating income for small manufacturing businesses in total was 4.1% higher than for 1999–2000 but profits fell by 26.4%. The largest relative falls in small business profits were for the Non-metallic mineral product manufacturing industry (down 81.5%) and Wood and paper product manufacturing industry (down 41.8%). The subdivisions to record profit increases for small businesses were Food, beverage and tobacco manufacturing (up 127.0%) and Other manufacturing (up 19.2%).

1.9 SMALL BUSINESS OPERATIONS—2000–01

	Persons employed at 30 June	*Operating income*	*Operating profit before tax*	*Capital outlays*
	'000	*$m*	*$m*	*$m*
Food, beverage and tobacco mfg	20.7	2 420	150	78
Textile, clothing, footwear and leather mfg	19.8	1 874	88	52
Wood and paper product mfg	21.2	2 260	130	83
Printing, publishing and recorded media	20.3	2 297	155	85
Petroleum, coal, chemical and associated product mfg	15.8	2 504	134	91
Non-metallic mineral product mfg	7.3	902	8	48
Metal product mfg (a)	46.0	6 560	559	333
Machinery and equipment mfg	45.6	5 217	241	145
Other mfg	29.5	3 039	189	44
Total mfg	**226.2**	**27 073**	**1 653**	**959**

Source: ABS data available on request, Annual Manufacturing Survey, 2000–01.

Profitability

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

Table 1.10 illustrates profitability in terms of the spread of profit margins. Quartiles give an indication of the spread of 2000–01 profit margins for small manufacturing businesses. These indicate for example that the best performing 25% of small manufacturers achieved profit margins of $138 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 loss margins of $10 or more of operating profit before tax per $1,000 of operating income.

Profits per person employed for 2000–01 were $7,300 for small manufacturing businesses overall, ranging from a low of $1,100 for the Non-metallic mineral product manufacturing industry to a high of $12,100 for the Metal product manufacturing industry.

Profitability *continued*

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. 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.

To illustrate the size of this effect, table 1.10 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 partner of the unincorporated manufacturing businesses been paid the 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 3.9% instead of the 6.1% compiled using recorded data. The adjusted average profit margin for small manufacturers (3.9%) is lower than the average profit margins for both medium sized manufacturers (4.5%) and large manufacturers (6.5%).

1.10 PROFITABILITY(a) OF SMALL MANUFACTURERS—2000–01

Industry	*Proportion of businesses making a profit(b)* %	*Average profit margin* %	*First quartile profit margin(c)* %	*Median profit margin(d)* %	*Third quartile profit margin(e)* %	*Adjusted average profit margin(f)* %
Food, beverage and tobacco mfg	70	6.2	–1.6	4.6	13.4	4.4
Textile, clothing, footwear and leather mfg	66	4.7	–2.2	3.1	15.8	1.4
Wood and paper product mfg	71	5.7	–0.4	3.7	14.3	2.4
Printing, publishing and recorded media	79	6.8	0.5	5.1	11.4	4.0
Petroleum, coal, chemical and associated product mfg	67	5.4	–3.1	3.9	15.8	4.3
Non-metallic mineral product mfg	64	0.9	–2.4	3.3	10.9	–0.3
Metal product mfg	73	8.5	–0.2	5.2	13.3	6.8
Machinery and equipment mfg	63	4.6	–1.3	3.2	12.4	2.7
Other mfg	66	6.2	–2.1	5.0	17.1	2.7
Total mfg	**69**	**6.1**	**–1.0**	**4.7**	**13.8**	**3.9**

(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 from the statistics.

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

(c) Seventy-five per cent of businesses in the industry have a profit margin greater than this value.

(d) Fifty per cent of businesses in the industry have a profit margin greater than this value.

(e) Twenty-five per cent 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.

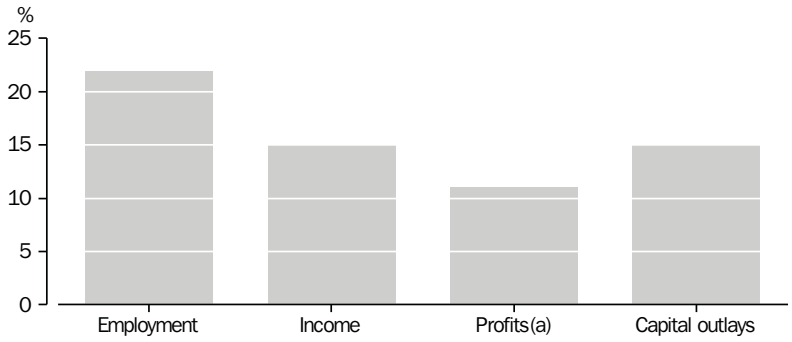
Source: ABS data available on request, Annual Manufacturing Survey, 2000–01.

MEDIUM SIZED MANUFACTURING BUSINESSES

Share of industry activity

Medium sized businesses make up around 11% of employing manufacturing businesses but as graph 1.11 shows, their share of manufacturing activity is generally more significant.

1.11 MEDIUM SIZED BUSINESS, Share of Manufacturing Activity



(a) Operating profit before tax.

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

In 2000–01, medium sized businesses contributed between 20% and 32% of industry employment for eight of the nine manufacturing subdivisions and for manufacturing as a whole although their share of income, profits and capital outlays was generally less than their employment share. The Textile, clothing, footwear and leather manufacturing and Other manufacturing industries were structured differently, with their shares of income, profits and capital outlays higher than (or equal to) their employment share.

1.12 MEDIUM SIZED BUSINESS SHARES OF INDUSTRY ACTIVITY—2000–01

	Persons employed at 30 June	*Operating income*	*Operating profit before tax*	*Capital outlays*
Industry	*%*	*%*	*%*	*%*
Food, beverage and tobacco mfg	15	12	8	12
Textile, clothing, footwear and leather mfg	29	29	36	31
Wood and paper product mfg	22	14	11	9
Printing, publishing and recorded media	26	21	5	28
Petroleum, coal, chemical and associated product mfg	23	12	13	14
Non-metallic mineral product mfg	20	16	7	12
Metal product mfg	23	14	9	14
Machinery and equipment mfg	22	15	19	15
Other mfg	32	37	35	38
Total mfg	**22**	**15**	**11**	**15**

Source: ABS data available on request, Annual Manufacturing Survey, 2000–01.

Summary of operations

In 2000–01, medium sized manufacturing businesses employed 208,200 people, generated $38.0b of income, $1.7b in profits and outlayed $1.5b in capital expenditure. Operating income for medium sized manufacturing businesses in total was 1.1% higher than for 1999–2000 but profits were down 23.3%. The subdivisions with the largest relative profit falls for medium sized businesses were the Printing, publishing and recorded media industry (down 76.5%), Textile, clothing, footwear and leather manufacturing (down 61.4%) and Non-metallic mineral product manufacturing (down 57.2%) industries. The only subdivisions to show increases in profits for medium sized businesses were Machinery and equipment manufacturing (up 39.2%) and Metal product manufacturing (up 2.5%).

1.13 MEDIUM SIZED BUSINESSES, OPERATIONS—2000–01

Industry	*Persons employed at 30 June* '000	*Operating income* $m	*Operating profit before tax* $m	*Capital outlays* $m
Food, beverage and tobacco mfg	28.1	6 744	316	275
Textile, clothing, footwear and leather mfg	16.8	2 660	48	84
Wood and paper product mfg	14.1	2 177	109	51
Printing, publishing and recorded media	23.9	3 306	67	224
Petroleum, coal, chemical and associated product mfg	22.8	5 545	292	269
Non-metallic mineral product mfg	7.3	1 593	63	67
Metal product mfg	33.6	5 892	349	272
Machinery and equipment mfg	44.2	7 531	349	224
Other mfg	17.4	2 564	121	55
Total mfg	**208.2**	**38 011**	**1 714**	**1 522**

Source: ABS data available on request, Annual Manufacturing Survey, 2000–01.

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 2000–01 was 4.5%. Profits per person employed for 2000–01 were $8,200 for medium sized manufacturing businesses overall, ranging from a low of $2,800 for the Printing, publishing and recorded media industry to a high of $12,800 for the Petroleum, coal, chemical and associated product manufacturing industry.

Table 1.14 illustrates profitability in terms of the spread of profit margins. Quartiles give an indication of the spread of 2000–01 profit margins for medium sized manufacturing businesses. These indicate for example that the best performing 25% of medium sized manufacturers achieved profit margins of $83 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 $1 or less of operating profit before tax per $1,000 of operating income.

1.14 PROFITABILITY(a) OF MEDIUM SIZED MANUFACTURERS—2000–01

Industry	Proportion of businesses making a profit(b) %	Average profit margin %	First quartile profit margin(c) %	Median profit margin(d) %	Third quartile profit margin(e) %
Food, beverage and tobacco mfg	73	4.7	–0.4	2.6	8.3
Textile, clothing, footwear and leather mfg	65	1.8	–1.5	1.6	6.2
Wood and paper product mfg	77	5.0	0.4	4.5	9.3
Printing, publishing and recorded media	80	2.0	0.5	2.3	8.2
Petroleum, coal, chemical and associated product mfg	74	5.3	–1.0	3.9	8.0
Non-metallic mineral product mfg	68	4.0	–2.1	3.7	9.6
Metal product mfg	76	5.9	0.1	3.4	8.8
Machinery and equipment mfg	78	4.6	0.4	3.8	8.1
Other mfg	75	4.7	0.1	3.6	7.3
Total mfg	**76**	**4.5**	**0.1**	**3.5**	**8.3**

(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) Seventy-five per cent of businesses in the industry have either a profit margin greater than this value or losses smaller than this.

(d) Fifty per cent of businesses in the industry have a profit margin greater than this value.

(e) Twenty-five per cent of businesses in the industry have a profit margin greater than this value.

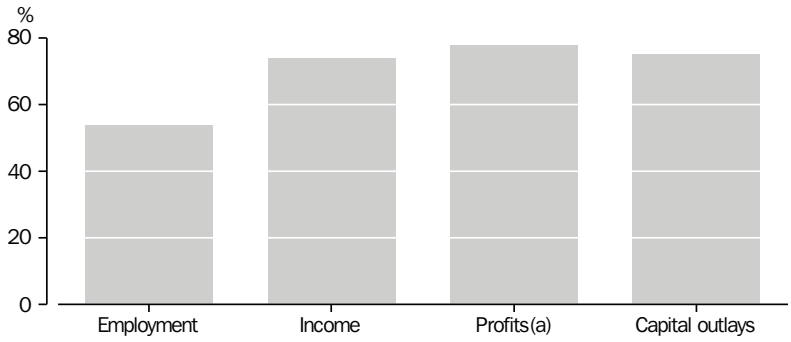
Source: ABS data available on request, Annual Manufacturing Survey, 2000–01.

LARGE MANUFACTURING BUSINESSES

Share of industry activity

Large businesses make up only 3% of employing manufacturing businesses but as graph 1.15 illustrates, their share of manufacturing employment is more than 50% and their share of economic activity, as measured by income, profits and capital outlays, is around 75%.

1.15 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 1.16 shows that apart from the Other manufacturing industry which contains very few large businesses, this pattern holds at the industry subdivision as well. In these industries, large businesses contributed between 37% and 74% of industry employment and their share of income, profits and capital outlays was greater than their employment share, with the exception of profits in the Textile, clothing, footwear and leather manufacturing industry.

1.16 LARGE BUSINESS SHARES OF INDUSTRY ACTIVITY—2000–01

Industry	*Persons employed at 30 June* %	*Operating income* %	*Operating profit before tax* %	*Capital outlays* %
Food, beverage and tobacco mfg	74	84	88	85
Textile, clothing, footwear and leather mfg	37	50	–2	51
Wood and paper product mfg	46	71	77	76
Printing, publishing and recorded media	52	65	84	61
Petroleum, coal, chemical and associated product mfg	62	83	81	81
Non-metallic mineral product mfg	60	75	92	80
Metal product mfg(a)	46	69	77	70
Machinery and equipment mfg	56	75	68	75
Other mfg	14	20	10	32
Total mfg	**54**	**74**	**78**	**75**

(a) See the entry for Business size in the Glossary regarding the effects of UJVs on employment size data.

Source: ABS data available on request, Annual Manufacturing Survey, 2000–01.

Summary of operations

In 2000–01, large manufacturing businesses employed 511,500 people (5.3% fewer than the previous year), generated $189b of operating income and $12b of profit. They also outlayed $7.6b in capital expenditure. Operating income for large manufacturing businesses in total was 5.8% higher than for 1999–2000 and profits increased 6.3% mainly due to a profit increase in the Metal product manufacturing industry. Five industry subdivisions recorded increases in operating income and the other four recorded decreases. Seven industry subdivisions recorded decreases in profits by large businesses and profits increased in two. The largest relative decrease for operating income was the Printing, publishing and recorded media industry (down 12.9%); whilst the largest relative decrease for profit was the Textile, clothing, footwear and leather manufacturing industry. The largest increase in operating income was for the Petroleum, coal, chemical and associated product manufacturing industry (up 24.2%).

1.17 LARGE BUSINESSES, OPERATIONS—2000–01

Industry	Persons employed at 30 June '000	Operating income $m	Operating profit before tax $m	Capital outlays $m
Food, beverage and tobacco mfg	140.8	48 199	3 326	2 026
Textile, clothing, footwear and leather mfg	21.2	4 512	–3	140
Wood and paper product mfg	29.7	10 770	798	418
Printing, publishing and recorded media	47.5	10 220	1 180	483
Petroleum, coal, chemical and associated product mfg	62.6	39 417	1 815	1 502
Non-metallic mineral product mfg	22.5	7 400	833	457
Metal product mfg	67.5	28 280	2 968	1 381
Machinery and equipment mfg	112.4	38 493	1 264	1 134
Other mfg	7.3	1 372	35	47
Total mfg	**511.5**	**188 663**	**12 216**	**7 588**

Source: ABS data available on request, Annual Manufacturing Survey, 2000–01.

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 2000–01 was 6.5%. Profits per person employed in 2000–01 were $23,900 for large manufacturing businesses overall, ranging from a low of a $100 loss for the Textile, clothing, footwear and leather manufacturing industry to a high of $44,000 for the Metal product manufacturing industry.

Table 1.18 illustrates profitability in terms of the spread of profit margins. Quartiles give an indication of the spread of 2000–01 profit margins for large manufacturing businesses. These indicate for example that the best performing 25% of large manufacturers experienced profit margins of $93 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 did not achieve a profit.

1.18 PROFITABILITY(a) OF LARGE MANUFACTURERS—2000–01

Industry	Proportion of businesses making a profit(b) %	Average profit margin %	First quartile profit margin(c) %	Median profit margin(d) %	Third quartile profit margin(e) %
Food, beverage and tobacco mfg	75	6.9	0.1	2.9	8.0
Textile, clothing, footwear and leather mfg	65	–0.1	–1.1	1.7	5.3
Wood and paper product mfg	77	7.4	0.8	4.3	9.6
Printing, publishing and recorded media	79	11.5	1.1	5.2	13.3
Petroleum, coal, chemical and associated product mfg	77	4.6	0.2	4.4	9.0
Non-metallic mineral product mfg	77	11.3	0.8	7.7	15.7
Metal product mfg	71	10.5	–0.8	3.6	8.1
Machinery and equipment mfg	76	3.3	0.2	3.6	8.3
Other mfg	64	2.6	–1.9	1.9	8.2
Total mfg	**75**	**6.5**	**0.0**	**3.6**	**9.3**

(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) Seventy-five per cent of businesses in the industry have a profit margin greater than this value (or losses smaller than this).

(d) Fifty per cent of businesses in the industry have a profit margin greater than this value.

(e) Twenty-five per cent of businesses in the industry have a profit margin greater than this value.

Source: Annual Manufacturing Survey.

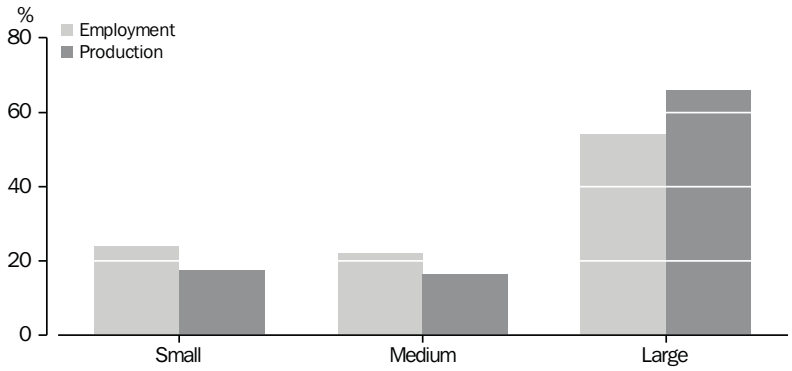
ACTIVITY BY SIZE OF BUSINESS

The statistics in this article show the extent to which large manufacturing businesses (i.e. management units employing 100 or more people) dominate their industries. The economic variables used to illustrate the contributions by businesses size are employment (at 30 June 2001), and 2000–01 industry value added (IVA) which is a key measure of production by an industry. Definitions are contained in the Glossary.

Dominance by large businesses

The general pattern in Australian manufacturing industries is for a relatively small number of large manufacturing businesses to dominate the activity levels of their industries. Large manufacturing businesses employed 54.1% of the manufacturing workforce in June 2001 and generated 66.1% of 2000–01 manufacturing IVA. Businesses employing 20–99 people accounted for 22.0% of the manufacturing workforce and generated 16.3% of manufacturing IVA. The remaining 23.9% of the manufacturing workforce and 17.5% of IVA were contributed by a large number of small businesses. Overall value added per person employed was greater in large businesses than in smaller businesses.

1.19 MANAGEMENT UNIT SIZE DATA—2000–01



Source: Manufacturing Industry, Australia, 2000–01 (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 businesses in 2000–01 was the 84.7% recorded for Food, beverage and tobacco manufacturing. Seven of the subdivisions had more than 50% of IVA contributed by large businesses. Large businesses typically contribute more to IVA than to employment levels.

Note: More than any other industry, Metal product manufacturing data by size of business has been affected by the influence of unincorporated joint ventures. In table 1.20, this especially affects the IVA estimate for businesses employing fewer than 20 persons. See the Glossary for more information about the statistical treatment of these businesses.

1.20 INDUSTRY CONTRIBUTION, BY SIZE OF MANAGEMENT UNIT—2000–01

	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	10.9	5.1	14.8	10.2	74.2	84.7
Textile, clothing, footwear and leather mfg	34.2	24.8	29.1	30.1	36.7	45.1
Wood and paper product mfg	32.5	17.1	21.7	15.6	45.8	67.3
Printing, publishing and recorded media	22.2	14.1	26.0	19.5	51.8	66.4
Petroleum, coal, chemical and associated product mfg	15.6	12.5	22.5	15.9	61.9	71.5
Non-metallic mineral product mfg	19.8	8.4	19.8	13.5	60.5	78.1
Metal product mfg	31.3	35.7	22.8	14.0	45.9	50.3
Machinery and equipment mfg	22.6	14.1	21.9	19.0	55.6	66.8
Other mfg	54.3	46.4	32.1	35.3	13.5	18.4
Total mfg	**23.9**	**17.5**	**22.0**	**16.3**	**54.1**	**66.1**

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

DISTRIBUTION ACROSS STATES AND TERRITORIES

This article is based on manufacturing management unit statistics.

Note: Management units do not normally apportion activity by state/territory. However, approximately 400 management units from the 2000–01 manufacturing collection (i.e. those with significant operations in more than one state or territory) were requested to provide additional details on employment, wages and salaries, and sales of goods and services for each state and/or territory in which they operated. This has enabled the production of state/territory data for employment, wages and salaries, sales and service income and IVA at the industry subdivision level.

The article 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 the article, production is measured in terms of the variable 'industry value added' (IVA) (see the Glossary for definition). Further information about state and territory distribution of individual industries is given in Chapter 2 under the relevant industry headings.

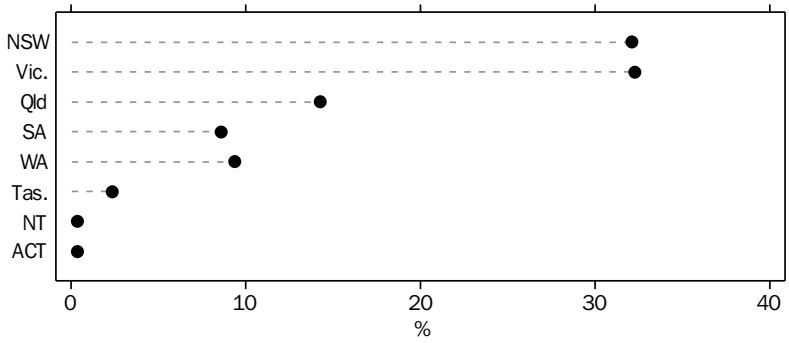
For information about distribution of manufacturing activity within states, readers should consult the 1999 issue of this publication which presents sub-state data from the 1996–97 manufacturing census (the most recent census).

1.21 States and territories of Australia

Production and employment

Graph 1.22 shows relative contributions to national production by states and territories in 2000–01. 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 2000–01.

1.22 MANUFACTURING PRODUCTION(a)—2000–01



(a) Production is measured by industry value added.

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

The state/territory distribution of 2000–01 manufacturing activity is shown in table 1.23. The table also shows production (IVA) per person employed in manufacturing. In this regard, 2000–01 results ranged from $67,000 per person employed in both the Australian Capital Territory and South Australia to $91,000 per person employed in the Northern Territory and Western Australia. The main causes of difference in the state/territory relativities in manufacturing overall is the industry mix within the particular state or territory.

1.23 MANUFACTURING ACTIVITY—2000–01

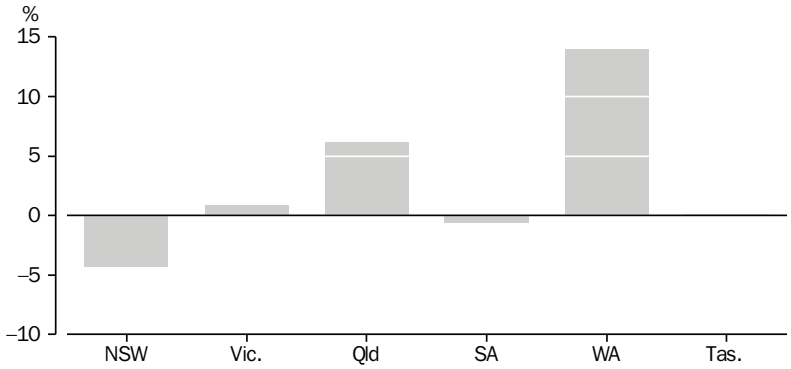
State and Territory	*Employment at end of June* '000	*Sales and service income* $b	*Industry value added* $b	*Industry value added per person employed* $ '000
New South Wales	296	78.7	23.1	78
Victoria	302	80.6	23.3	77
Queensland	153	40.3	10.3	68
South Australia	93	23.6	6.2	67
Western Australia	74	21.7	6.8	91
Tasmania	21	5.0	1.8	85
Northern Territory	3	1.1	0.3	91
Australian Capital Territory	4	0.7	0.3	67
Australia	**946**	**251.8**	**71.9**	**76**

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

Production and employment *continued*

Graph 1.24 shows that manufacturing production grew in four states and fell in the other two with Western Australia (up 14.0% or $832m) recording the largest percentage and dollar increase and New South Wales (down 4.3% or $1041m) recording the largest percentage and dollar decrease. Tasmania (up 0.1%) recorded the smallest percentage movement from 1999–2000 to 2000–01. Production fell in both the Northern Territory (down 5.5%) and the Australian Capital Territory (down 5.0%) but these decreases were from very small industrial bases. Queensland production rose by 6.2%, mainly as a result of increases in Metal product manufacturing and Food, beverage and tobacco manufacturing, while Victoria (up 0.9%) rose mainly as a result of increases in Food, beverage and tobacco manufacturing and Machinery and equipment manufacturing which more than offset decreases in four of the nine industry subdivisions, especially Printing, publishing and recorded media. South Australian production fell slightly by 0.6%.

1.24 CHANGE IN PRODUCTION 1999–2000 TO 2000–01



Source: Manufacturing industry, Australia (cat. no. 8221.0).

Victoria

In 2000–01, Victoria had the highest manufacturing employment (at 30 June), sales and service income and production of all states and territories. The largest manufacturing industries within Victoria in 2000–01 were Machinery and equipment manufacturing with 68,700 persons employed and $5.3b of production, Food, beverage and tobacco manufacturing (53,700 persons and $4.6b) and Petroleum, coal, chemical and associated product manufacturing (38,900 persons and $3.7b).

Victoria experienced an increase of 0.9% in manufacturing production between 1999–2000 and 2000–01. Increases occurred in five industry subdivisions but were largely offset by decreases in the other four. Production grew significantly in Food, beverage and tobacco manufacturing (up $354m or 8.4%), Machinery and equipment manufacturing (up $126m or 2.4%), Metal product manufacturing (up $112m or 3.5%) and Other manufacturing (up $99m or 14.2%), while significant falls were recorded in Printing, publishing and recorded media (down $256m or 11.5%), Textile, clothing, footwear and leather manufacturing (down $112m or 7.9%) and Petroleum, coal, chemical and associated product manufacturing (down $99m or 2.6%).

New South Wales

In 2000–01, New South Wales had marginally lower manufacturing employment (at 30 June), sales and service income, and production than Victoria but substantially more than any other state or territory. The largest manufacturing industries within New South Wales in 2000–01 were Food, beverage and tobacco manufacturing with 53,000 persons employed and $4.7b of production, Metal product manufacturing (52,000 persons and $4.3b) and Machinery and equipment manufacturing (58,700 persons and $4.1b).

New South Wales experienced a decrease (of 4.3%) in manufacturing production between 1999–2000 and 2000–01. Decreases occurred in six industry subdivisions with increases in the other three. Production fell significantly in Printing, publishing and recorded media (down $591m or 18.1%), Food, beverage and tobacco manufacturing (down $336m or 7.3%) and Petroleum, coal, chemical and associated product manufacturing (down $214m or 6.5%), while the main gains were recorded by Machinery and equipment manufacturing (up $286m or 7.5%) and Metal product manufacturing (up $156m or 3.7%).

Queensland

In 2000–01, Queensland maintained its position as the third largest of the states and territories in terms of both manufacturing employment (152,700 persons) and manufacturing production ($10.3b). The largest manufacturing industries within Queensland in 2000–01 were Food, beverage and tobacco manufacturing with 41,900 persons employed and $2.6b of production, Metal product manufacturing (24,400 persons and $2.4b), Machinery and equipment manufacturing (27,300 persons and $1.4b) and Petroleum, coal, chemical and associated product manufacturing (12,300 persons and $1.2b).

Queensland experienced an increase (of 6.2%) in manufacturing production between 1999–2000 and 2000–01. Decreases occurred in five industry subdivisions but were more than offset by the increases in the other four. Relatively large increases in production were recorded for Metal product manufacturing (up $714m or 43.3%), Food, beverage and tobacco manufacturing (up $111m or 4.5%) and Textile, clothing, footwear and leather manufacturing (up $30m or 16.6%), while significant falls were recorded by Non-metallic mineral product manufacturing (down $119m or 16.5%) and Printing, publishing and recorded media (down $89m or 10.0%).

Western Australia

In 2000–01, Western Australian manufacturing remained the smallest of the mainland states in terms of employment (74,500 persons), however Western Australian manufacturing production ($6.8b) exceeded that of South Australia ($6.2b) in 2000–01. The largest manufacturing industries within Western Australia in 2000–01 were Metal product manufacturing with 15,300 persons employed and $2.3b of production, Petroleum, coal, chemical and associated product manufacturing (7,400 persons and $1.2b) and Food, beverage and tobacco manufacturing (14,100 persons and $0.9b).

Western Australia *continued*

Western Australia experienced a rise of 14.0% in manufacturing production between 1999–2000 and 2000–01, the largest percentage increase of any state or territory. Increases occurred in six industry subdivisions and decreases in the other three. Production grew significantly in Metal product manufacturing (up $680m or 42.8%) and Petroleum, coal, chemical and associated product manufacturing (up $431m or 53.5%), while the falls were recorded by Food, beverage and tobacco manufacturing (down $146m or 13.5%), Machinery and equipment manufacturing (down $89m or 12.0%) and Non-metallic mineral product manufacturing (down $85m or 15.9%).

South Australia

In 2000–01, South Australia continued to be the fourth largest of the states and territories in terms of manufacturing employment (92,900 persons), however South Australian manufacturing production ($6.2b) is now the smallest of the mainland states after being surpassed by Western Australia. The largest manufacturing industries within South Australia in 2000–01 were Machinery and equipment manufacturing with 31,000 persons employed and $1.8b of production and Food, beverage and tobacco manufacturing (19,700 persons and $1.5b).

South Australia experienced a fall of 0.6% in manufacturing production between 1999–2000 and 2000–01. Decreases occurred in five industry subdivisions but were largely offset by increases in the other four. Production fell significantly in Wood and paper product manufacturing (down $56m or 9.3%) and Printing, publishing and recorded media (down $39m or 9.0%), while the main gains were recorded by Machinery and equipment manufacturing (up $45m or 2.6%), Metal product manufacturing (up $42m or 5.8%) and Textile, clothing, footwear and leather manufacturing (up $13m or 7.6%).

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 (20,600 persons) and manufacturing production ($1.8b). The largest manufacturing industries within Tasmania in 2000–01 were Metal product manufacturing with 3,900 persons employed and $469m of production, Food, beverage and tobacco manufacturing (6,300 persons and $409m) and Wood and paper product manufacturing (2,900 persons and $323m).

Tasmanian manufacturing production remained steady between 1999–2000 and 2000–01. Decreases occurred in six industry subdivisions but were offset by increases in the other three. Production grew significantly in Metal product manufacturing (up $166m or 54.7%) and Petroleum, coal, chemical and associated product manufacturing (up $41m or 41.3%), while the largest falls were recorded by Wood and paper product manufacturing (down $131m or 28.8%), Machinery and equipment manufacturing (down $26m or 13.8%) and Non-metallic mineral product manufacturing (down $24m or 18.7%).

Northern Territory

Manufacturing is not a large industry in the Northern Territory. The industry employed 3,300 persons in June 2001 and generated $301m of production in 2000–01.

The Northern Territory experienced a fall of 5.5% in manufacturing production between 1999–2000 and 2000–01, the largest percentage decline in any state or territory.

Australian Capital Territory

Manufacturing is not a large industry in the Australian Capital Territory. The industry employed 4,100 persons in June 2001 and generated $274m of production in 2000–01. Printing, publishing and recorded media contributed 38.6% of the manufacturing employment and 43.3% of manufacturing production.

The Australian Capital Territory experienced a fall of 5.0% in manufacturing production between 1999–2000 and 2000–01.

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 2002, the manufacturing industry employed 12.1% of all persons employed in Australia. Males outnumbered females by a ratio of almost 3 to 1 (74% males and 26% females).

Full-time and part-time jobs

In August 2002, the vast majority of males employed in the manufacturing industry (94.6%) were employed full-time. The corresponding proportion for females was considerably lower (71.4%). The proportion of people with full-time jobs in manufacturing has fallen slightly over the past ten years, from 96.1% for males and 75.1% for females in 1992. This is consistent with the decline in the proportion of full-time employment over the same time period for all industries, with male full-time employment falling from 89.3% to 84.8% and female full-time employment falling from 56.6% to 54.5%.

Between August 2001 and August 2002 average weekly hours worked for all persons employed increased marginally from 38.4 hours to 38.5 hours. This compares with a slight decrease for all industries from 35.0 hours in August 2001 to 34.7 hours in August 2002.

Full-time and part-time jobs

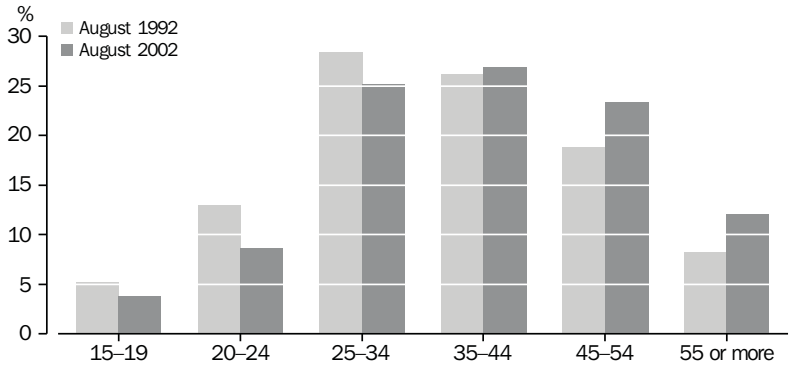
In August 2002, the length of the working week in manufacturing was:

- 1 but less than 30 hours for 8.2% of males and 26.0% of females
- 30 but less than 40 hours for 26.5% of males and 30.7% of females
- 40 but less than 49 hours for 38.3% of males and 30.3% of females
- 49 or more hours for 22.5% of males and 8.8% of females.

Age profile

The manufacturing workforce is dominated by the two age groups 25–34 and 35–44, which together make up 52% of the manufacturing workforce (compared to 48% for all industries). Graph 1.25 shows that over the ten-year period from 1992 to 2002, 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 5.2% to 3.8% of all persons employed in manufacturing, while the proportion of those aged 20–24 fell from 13.0% to 8.7%. At the same time, the proportion of workers aged 45 and over has increased significantly.

1.25 AGE PROFILE OF MANUFACTURING WORKFORCE



Source: Labour Force, Australia, August 2002 (cat. no. 6203.0).

Manufacturing industry subdivisions

In August 2002, the largest manufacturing subdivisions in terms of employment were Machinery and equipment manufacturing (22.0% of people employed in manufacturing), Food, beverage and tobacco manufacturing (17.2%) and Metal product manufacturing (15.3%). The largest employers of males were Machinery and equipment manufacturing (24.4%) and Metal product manufacturing (18.0%). The largest employers of females were Food, beverage and tobacco manufacturing (21.6%) and Textiles, clothing, footwear and leather manufacturing (16.6%).

Comparisons with earlier periods are necessarily approximate due to changes in industry classifications used. However, in August 1992, relative industry sizes appear to have been very similar to the current profile (August 2002). Machinery and equipment manufacturing was the largest employer in 1992 (21.7%) followed by Food, beverage and tobacco manufacturing (16.9%) and Metal product manufacturing (16.2%).

Manufacturing industry subdivisions *continued*

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

1.26 EMPLOYED PERSONS—AUGUST 2002

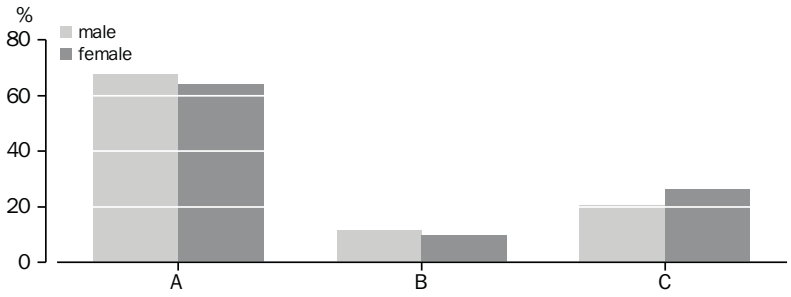
	Males	*Females*	*Persons*
Industry	*%*	*%*	*%*
Food, beverage and tobacco mfg	15.7	21.6	17.2
Textile, clothing, footwear and leather mfg	3.9	16.6	7.2
Wood and paper product mfg	6.9	4.4	6.3
Printing, publishing and recorded media	8.9	14.1	10.2
Petroleum, coal, chemical and associated product mfg	9.9	12.2	10.5
Non-metallic mineral product mfg	4.9	3.3	4.5
Metal product mfg	18.0	7.6	15.3
Machinery and equipment mfg	24.4	15.1	22.0
Other mfg	7.4	5.2	6.9
Total mfg	**100.0**	**100.0**	**100.0**

Source: Labour Force, Australia, August 2002 (cat. no. 6203.0).

Australian and overseas born

The proportion of Australian and overseas born people working in the Australian manufacturing industry in 2002 has shown little change from 2001. At August 2002, 66.8% of people employed in the industry were Australian born. The corresponding figure for all industries was 75.5%. This compares to 2001 when 65.2% of persons employed in manufacturing and 75.9% in all industries were Australian born. Of those manufacturing workers born overseas 66.6% were born in other than the main English speaking countries, identical to the 2001 proportion. As graph 1.27 shows, of all males employed in the Australian manufacturing industry in August 2001, 67.8% were Australian born. For females, the corresponding proportion was 64.0%.

1.27 EMPLOYED PERSONS MANUFACTURING BIRTHPLACE—AUGUST 2002



A – Born in Australia
B – Born Overseas Main English Speaking Country
C – Born Overseas Other than Main English Speaking Country

Source: ABS data on request, Labour Force Survey.

Australian and overseas born *continued*

Table 1.28 shows the proportions of the manufacturing workforce according to whether born in Australia or overseas. In August 2002 just under half (46.9%) of the people employed in the Textile, clothing, footwear and leather manufacturing industry were born outside Australia (41.6% of males in the industry and 50.3% of females), and that just under one-third (30.0%) of all employment in this industry was made up of female workers born outside Australia. Of the total employed in each manufacturing industry, Textile, clothing, footwear and leather manufacturing 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 (40.9%). Proportions of those born outside Australia for the Other manufacturing industries were substantially lower, ranging from 27.1% for Wood and paper product manufacturing to 37.3% for Petroleum, coal, chemical and associated product manufacturing.

1.28 EMPLOYED PERSONS, BY BIRTHPLACE—AUGUST 2002

	Proportion of total persons employed					
	Born in Australia			*Born outside Australia*		
	Males	Females	Persons	Males	Females	Persons
Industry	%	%	%	%	%	%
Food, beverage and tobacco mfg	47.9	22.1	70.0	19.4	10.6	30.0
Textile, clothing, footwear and leather mfg	23.4	29.7	53.1	16.8	30.0	46.9
Wood and paper product mfg	59.2	13.7	72.9	22.5	4.5	27.1
Printing, publishing and recorded media	39.7	25.8	65.7	24.3	10.1	34.3
Petroleum, coal, chemical and associated product mfg	44.7	18.0	62.7	24.9	12.4	37.3
Non-metallic mineral product mfg	57.1	13.4	70.6	23.7	5.5	29.2
Metal product mfg	60.4	9.6	70.0	26.7	3.4	30.0
Machinery and equipment mfg	54.7	11.5	66.2	27.4	6.4	33.8
Other mfg	56.7	11.0	67.7	23.5	8.7	32.3
Total mfg	**50.1**	**16.7**	**66.8**	**23.8**	**9.4**	**33.2**
All industries	41.6	34.0	75.5	14.1	10.4	24.5

Source: ABS data on request, Labour Force Survey, August 2002.

PERSONS PREVIOUSLY EMPLOYED

The August 2002 Labour force survey estimated that there were 346,400 people who were unemployed at the time but who had been employed at some time during the previous two years. Table 1.29 shows that of these 346,400 people, 48,400 (14%) had last been employed in the manufacturing industry. This was the second largest number for a single industry, behind Retail trade (20%).

For male ex-workers, manufacturing with 36,900 people represented the largest number for a single industry while for female ex-workers, manufacturing with 11,500 was smaller in this regard than Retail trade, Accommodation, cafes and restaurants, and Property and business services.

1.29 UNEMPLOYED PERSONS(a), PREVIOUS INDUSTRY(b)—AUGUST 2002

	Males	*Females*	*Persons*
Industry	*'000*	*'000*	*'000*
Agriculture, forestry and fishing	13.3	7.0	20.3
Manufacturing	**36.9**	**11.5**	**48.4**
Construction	23.5	*2.1	25.6
Retail trade	34.5	35.7	70.2
Accommodation, cafes and restaurants	14.4	17.2	31.7
Property and business services	28.3	16.1	44.4
Other services industries	16.1	18.9	35.0
Other industries	44.5	26.2	70.7
All industries	211.6	134.8	346.4

(a) Persons aged 15 or over who were in the workforce in August 2002 but were not employed during the survey week.

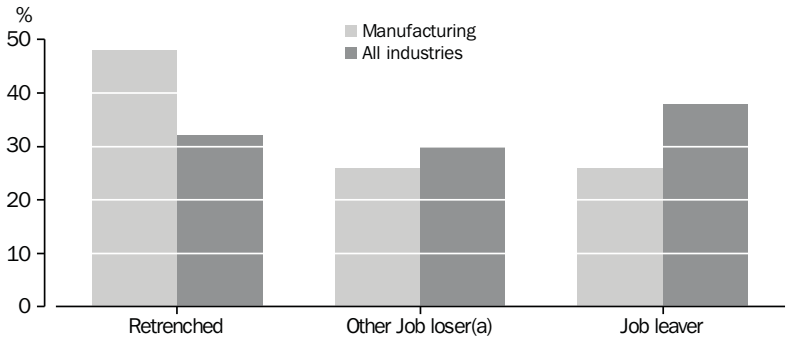
(b) Industry of last job.

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

Source: Labour Force, Australia, August 2002 (cat. no. 6203.0).

Graph 1.30 shows the relative proportions of unemployed workers classified according to the reason for ceasing employment.

1.30 EX-FULL-TIME EMPLOYEES—August 2002



(a) Left job involuntarily for reasons other than retrenchment (for example, bad health).

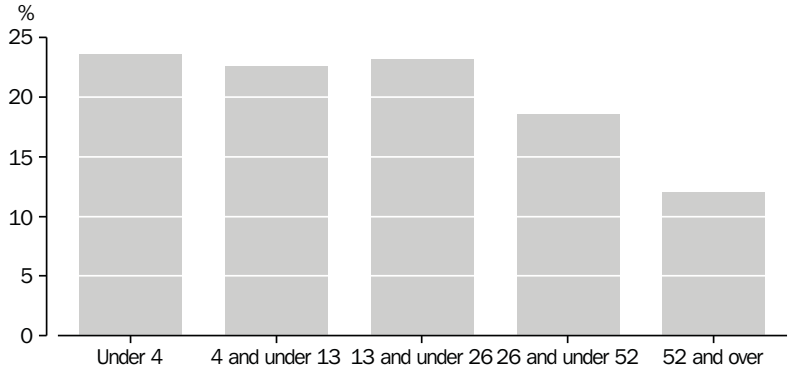
Source: Labour force, Australia, August 2002 (cat. no. 6203.0).

Manufacturing had a higher proportion of ex-workers who had been retrenched (48%) than any other industry and the corresponding all industries proportion (32%). Construction had the next highest proportion of retrenched ex-workers at 45%. For manufacturing, 53% of male ex-workers had been retrenched, a higher proportion than for female ex-workers (32%).

Twenty-six per cent of ex-manufacturing workers were classified as job leavers, i.e. they had chosen to leave their employment. Thirty-six per cent of female ex-manufacturing workers were job leavers, compared to 23% of male workers who had left the same industry.

Graph 1.31 shows the duration of unemployment for ex-manufacturing workers.

1.31 EX-MANUFACTURING WORKERS, Weeks Unemployed—August 2002



Source: Labour Force, Australia, August 2002 (cat. no. 6203.0).

Just over half of ex-manufacturing workers had been unemployed for 13 weeks or more at the time of the August 2002 survey including 19% who had been unemployed for between 26 weeks and less than 52 weeks, and 12% who had been unemployed for 52 weeks or more.

INDUSTRIAL DISPUTES

Note: The proportion of industrial disputes by industry is only indicative of the industry's contribution to the total number of disputes. This is because 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.

Manufacturing compared with other industries

The number of industrial disputes in Australia decreased in the year ended June 2002. There were 684 industrial disputes recorded in this period, compared to 697 recorded in the year ended June 2001.

In the year ended June 2002, the number of disputes in the Manufacturing industry fell by 12.7% while the number in the Construction industry increased by 6.7%. As a consequence, the latter overtook Manufacturing as the industry which contributed the most to the number of disputes and the number of employees involved. In the year ended June 2002, the Construction industry accounted for 35.1% of the disputes and 40.7% of the employees involved as compared with 31.1% and 28.2% for the Manufacturing industry which continues to account for the most number of working days lost. For all other industries, the numbers of disputes, employees involved and working days lost have remained significantly lower than that for the Manufacturing or Construction industries.

The Manufacturing industry lost 153 working days per thousand employees, which was more than three times the rate for the total of all industries. The average number of working days lost per employee involved was 3.1, compared to the next highest industry, Education (2.0).

1.32 INDUSTRIAL DISPUTES—2002

Industry	Disputes no.	Employees involved '000	Working days lost '000	Working days lost per employee involved no.	Working days lost per thousand employees no.
Mining and services to mining	38	3.7	5.7	1.5	73
Manufacturing	213	50.1	156.4	3.1	153
Electricity, gas and water supply	18	4.3	6.8	1.6	102
Construction	240	72.4	106.6	1.5	234
Wholesale trade; retail trade; accommodation, cafes and restaurants	28	5.3	5.3	1.0	6
Transport and storage	57	14.2	21.9	1.5	63
Communication services	9	0.9	0.6	0.7	4
Finance and insurance; property and business services	31	6.5	7.1	1.1	6
Government administration and defence	12	5.2	5.6	1.1	15
Education	3	0.1	0.2	2.0	0
Health and community services	24	11.0	8.1	0.7	9
Other services	25	2.9	3.8	1.3	8
Total mfg	**(a)684**	**177.8**	**329.3**	**1.9**	**41**

(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 2002 (cat. no. 6321.0) and ABS data on request, Industrial Disputes Collection.

Manufacturing industries

Table 1.33 shows that, of the disputes which occurred in the Manufacturing industry in the year ending June 2002, the majority were recorded in Metal product manufacturing (71), Machinery and equipment manufacturing (56) and Petroleum, coal, chemical and associated product manufacturing (26). These three industries accounted for 75.4% of manufacturing employees involved in disputes and 56.1% of the working days lost. Wood and paper product manufacturing recorded the highest working days lost per thousand employees in manufacturing (307), followed by Textile, clothing, footwear and leather manufacturing (248).

1.33 INDUSTRIAL DISPUTES, 2002

Industry	Disputes no.	Employees involved '000	Working days lost '000	Working days lost per employee involved no.	Working days lost per thousand employees no.
Food, beverage and tobacco mfg	18	5.6	25.2	4.5	139
Textile, clothing, footwear and leather mfg	4	1.2	16.5	14.0	248
Wood and paper product mfg	21	2.9	20.3	7.1	307
Printing, publishing and recorded media	5	1.3	3.7	2.8	36
Petroleum, coal, chemical and associated product mfg	26	4.0	14.5	3.6	135
Metal product mfg	71	17.4	29.5	1.7	191
Machinery and equipment mfg	56	16.4	43.7	2.7	185
Non-metallic mineral product mfg; Other mfg	16	1.3	2.9	2.3	27
Total mfg	**(a)213**	**50.1**	**156.4**	**3.1**	**153**

(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 2002 (cat. no. 6321.0); and ABS data on request, Industrial Disputes Collection.

Cause of disputes

In the Manufacturing industry, the main cause recorded for disputes, as measured by working days lost, was managerial policy (90.4%). For all industries, managerial policy and physical working conditions, 71.5% and 10.9% of the total respectively, were the main causes of disputes.

Change from 2001 to 2002

The number of disputes decreased in all industries (except for Wood and paper products manufacturing) for the year ended June 2002. All manufacturing industries also recorded a decrease in employees involved.

Food, beverage and tobacco manufacturing recorded large decreases in the number of disputes (61.7%), employees involved (53.6%) and working days lost (21.7%). The decrease in the number of disputes for the year ended 2002 was the largest in percentage terms compared to other industries.

In the Metal products manufacturing industry, the number of disputes fell by 9.0% accompanied by a decrease in the number of employees involved (51.0%) and the number of working days lost (38.9%). This industry recorded the largest decrease of employees involved in disputes (18,100).

A decrease in the number of disputes (11.1%), employees involved (30.7%) and working days (20.5%) was also recorded in the Machinery and equipment manufacturing industry.

Wood and paper product manufacturing was the only manufacturing industry to report an increase in both the number of disputes and working days lost. A significant increase in working days lost was recorded for Textile, clothing, footwear and leather manufacturing (363.7%) and Petroleum, coal, chemical and associated product manufacturing (560.2%).

Longer term comparison

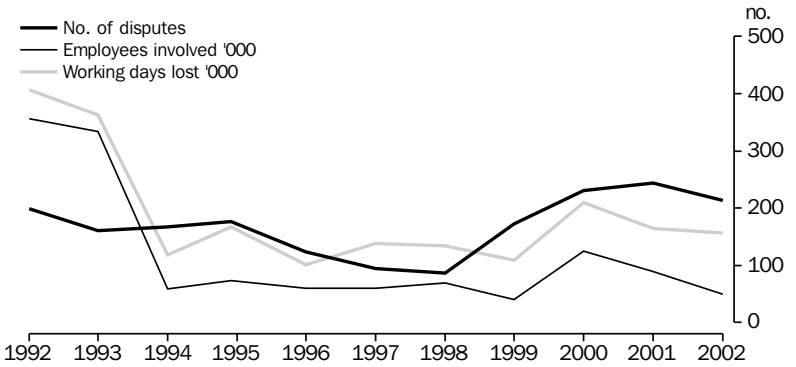
Compared with 1992, the figures for 2002 show a large increase in the number of disputes in Construction (445%), and Finance, insurance, property and business services (210%), and a decrease for most of the other industries. Construction industry recorded an increase in the number of disputes from 44 in 1992 to 240 in 2002. Manufacturing also recorded a small increase of 7.0% (14 disputes). The largest decrease in the number of disputes was for Mining which fell from a high of 332 (the highest of all industries in 1992) to 38 in 2002. Overall, the total number of disputes in all industries decreased by 22.6% from 884 to 684.

In 1992, Manufacturing contributed 34.4% of the number of employees involved compared to 7.5% for the Construction industry. In 2002, Manufacturing's contribution decreased to 28.2% while that for Construction increased to 40.7%. The Manufacturing industry continued to be a significant contributor to working days lost, increasing its proportion from 34.8% to 47.5%.

Longer term comparison *continued*

Graph 1.34 shows the trends in industrial disputes recorded in the Manufacturing industry over the ten-year period 1992–2002. As can be seen, fluctuations have occurred over this period with the number of employees involved and working days lost falling dramatically from 1993. The number of disputes was generally more stable and varies from 86 in 1998 to 244 in 2001.

1.34 INDUSTRIAL DISPUTES IN MANUFACTURING



Source: Industrial Disputes, Australia, June 2002 (cat. no. 6321.0).

TRADE UNION MEMBERSHIP

Manufacturing compared to other industries

In August 2001, 310,800 employees in the Manufacturing industry (30% 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, 1996 to 2001 in the Manufacturing industry, the proportion of trade union members has fallen 8.3 percentage points, which is a larger decrease than the 6.6 percentage points decrease recorded for industry overall.

1.35 TRADE UNION MEMBERSHIP—AUGUST 2001

	Trade union members			Trade union members as a proportion of all employees		
	Males	Females	Persons	Males	Females	Persons
Industry	'000	'000	'000	%	%	%
Agriculture, forestry and fishing	9	*3	12	6.1	5.2	5.9
Mining	23	**1	23	33.2	8.3	30.8
Manufacturing	**255**	**56**	**311**	**33.8**	**20.9**	**30.4**
Electricity, gas and water supply	30	*3	33	56.3	18.3	48.3
Construction	106	*1	107	27.6	2.1	24.5
Wholesale trade	31	*5	35	11.1	4.1	9.1
Retail trade	77	126	204	14.1	19.8	17.2
Accommodation, cafes and restaurants	19	32	51	11.4	13.6	12.7
Transport and storage	116	18	134	44.7	20.4	38.6
Communication services	44	16	60	41.3	34.7	39.3
Finance and insurance	23	52	75	16.4	26.5	22.3
Property and business services	45	24	69	9.8	5.9	8.0
Government administration and defence	96	57	153	46.8	33.9	41.0
Education	94	187	282	43.6	43.6	43.6
Health and community services	49	192	242	29.7	29.0	29.2
Cultural and recreational services	18	15	32	18.3	17.3	17.8
Personal and other services	55	27	82	38.6	20.7	30.0
Total	**1089**	**814**	**1903**	**26.0**	**22.7**	**24.5**

Source: Employee Earnings, Benefits and Trade Union Membership, Australia, August 2001 (cat. no. 6310.0).

Manufacturing industry — profile of trade union members

Gender

At August 2001, of all manufacturing trade union members, 82% were male and 18% were female. This largely reflects the higher proportion of males employed in this industry. Of all manufacturing employees, 255,000 males (34%) and 55,800 females (21%) were union members. For males, this is a higher proportion than industry overall (26%), while for females it is a lower proportion (23% overall).

Work status

Thirty-three per cent of full-time manufacturing employees were trade union members in August 2001. Only 13% of part-time employees were members. The proportion of full-time male employees who were trade union members (35%) was substantially higher than that of full-time female employees (25%), whereas the membership rates for male and female part-time employees were 18% and 10% respectively.

Within manufacturing

In August 2001, the manufacturing subdivision with the highest proportion of female trade union members was Textile, clothing, footwear and leather manufacturing, where 49% of union members were female. The Textile, clothing, footwear and leather manufacturing industry reflected the second highest rate of union membership per female worker (23% of all female workers were union members). The industry with the greatest proportion of both female and male workers who were union members was in Food, beverage and tobacco manufacturing (34% of female and 41% of male employees).

1.36 TRADE UNION MEMBERSHIP—AUGUST 2001

	Trade union members			Trade union members as a proportion of all employees		
	Males	*Females*	*Persons*	*Males*	*Females*	*Persons*
Industry	*'000*	*'000*	*'000*	*%*	*%*	*%*
Food, beverage and tobacco mfg	50.2	19.7	69.9	40.9	33.7	38.6
Textile, clothing, footwear and leather mfg	8.8	8.5	17.3	27.0	22.8	24.8
Wood and paper product mfg	21.2	*2.2	23.5	37.8	20.2	35.1
Printing, publishing and recorded media	14.8	9.1	24.0	27.6	18.6	23.5
Petroleum, coal, chemical and associated product mfg	24.7	*2.8	27.6	33.2	8.6	25.8
Non-metallic mineral product mfg	13.0	**0.4	13.4	37.0	7.4	33.0
Metal product mfg	45.5	*3.3	48.8	35.4	18.2	33.2
Machinery and equipment mfg	66.2	7.9	74.2	32.8	19.2	30.5
Other mfg	10.4	*1.8	12.2	21.1	12.9	19.2
Total mfg	**255.0**	**55.8**	**310.8**	**33.8**	**20.9**	**30.4**

Source: Employee Earnings, Benefits and Trade Union Membership, Australia, August 2001 (cat. no. 6310.0).

ENVIRONMENT PROTECTION EXPENDITURE

The ABS continues to collect and present comprehensive estimates of environment protection expenditure and income for a number of reasons:

- they are indicative of the response of various sectors to environment protection regulations and policies
- they provide some indication of the demand for goods and services provided by the 'environment management' industry
- they form part of environment 'satellite' accounts designed to augment the core system of national accounts
- they provide estimates of expenditure on environment protection, by sector and environmental domain.

For the periods shown in table 1.37, the Australian manufacturing industry has maintained a fairly high level of expenditure to protect the Australian environment. The manufacturers of metal products have generally been the largest contributors each year to environment protection. In 1992–93, they injected the largest expenditure on environment protection of all Australian manufacturers. However, its dominance in the expenditure on environment protection has abated and in 2000–01 its expenditure is on a par with that of the Food, beverage and tobacco manufacturing and the Petroleum, coal, chemical and associated product manufacturing.

1.37 MANUFACTURING ENVIRONMENT PROTECTION EXPENDITURE

Industry	1992–93 $m	1993–94 $m	1994–95 $m	1995–96 $m	1996–97 $m	2000–01 $m
Food, beverage and tobacco mfg	117.0	124.4	110.4	140.0	204.9	265.2
Textile, clothing, footwear and leather mfg	29.3	18.5	6.2	32.5	54.2	41.1
Wood and paper product mfg	74.2	61.0	25.8	114.6	76.8	109.5
Printing, publishing and recorded media	12.2	12.1	12.0	22.8	19.0	18.2
Petroleum, coal, chemical & associated product mfg	203.7	139.8	83.2	114.6	151.1	220.7
Non-metallic mineral product mfg	43.5	34.9	20.1	43.5	58.0	74.0
Metal product mfg	449.3	245.4	230.6	174.4	244.0	*264.4
Machinery and equipment mfg	57.9	59.4	22.5	153.8	71.4	91.0
Other mfg	8.6	6.2	2.6	29.7	17.0	*22.4
Total mfg	**995.7**	**701.5**	**513.4**	**825.9**	**896.3**	**1106.6**

Source: Environment Protection, Manufacturing and Mining Industries, Australia (cat. no. 4603.0).

Current expenditure

For the purposes of this report, current expenditure on environment protection for manufacturing businesses covers amounts paid to private as well as government organisations for services. In 2000–01, manufacturing businesses spent $668m in current environment protection, or less than 0.5% of total manufacturing expenses. Seventy per cent of manufacturing businesses were estimated to have environment protection expenditure.

Combined solid waste and liquid waste management expenditure for manufacturing accounted for $467m, representing 70% of the total environment protection expenditure. The major contributors to this were Food, beverage and tobacco manufacturing and Metal product manufacturing. Expenditure on air emissions was mostly contributed to by Metal product manufacturing, while the next largest contributor was Wood and paper product manufacturing. Metal product manufacturing as a group spent 60% of its environment budget on waste management. Overall Food, beverage and tobacco manufacturing accounted for the highest level of current expenditure ($164m).

1.38 MANUFACTURING CURRENT ENVIRONMENT PROTECTION EXPENDITURE — 2000–01

Industry	Solid Waste $'000	Liquid waste(a) $'000	Air emissions $'000	Other $'000	Administration $'000	Total $'000
Food, beverage and tobacco mfg	68 489	57 348	3 015	4 985	30 603	164 440
Textile, clothing, footwear and leather mfg	15 710	17 537	608	404	3 547	37 806
Wood and paper product mfg	35 482	15 209	6 154	2 566	7 553	66 964
Printing, publishing and recorded media	8 951	3 189	351	288	2 605	15 385
Petroleum, coal, chemical & associated product mfg	36 706	37 741	4 223	7 452	24 890	111 012
Non-metallic mineral product mfg	22 828	6 305	5 102	6 986	6 679	47 900
Metal product mfg	56 944	25 595	12 451	*6348	35 217	136 555
Machinery and equipment mfg	25 688	19 336	1 966	3 346	20 522	70 859
Other mfg	13 226	1 209	*583	*334	2 178	17 531
Total mfg	**284 025**	**183 470**	**34 452**	**32 707**	**133 795**	**668 450**

(a) Includes waste water.

Source: Environment Protection, Manufacturing and Mining Industries, Australia (cat. no. 4603.0).

Capital expenditure

Capital expenditure on environment protection relates to acquisition of plant, machinery, equipment and land, construction and installation of facilities; and capitalised wages and salaries. Excluded from capital expenditure are those purchases which are only partly used for environment protection.

Environment protection capital expenditure accounted for nearly 4% ($438m) of the total capital expenditure for the manufacturing industry in 2000–01. Over 17% of businesses in manufacturing were estimated to have some capital expenditure on environment protection.

Approximately 61% ($266m) of capital expenditure on environment protection was recorded on waste management, of which liquid waste management contributed 66% ($176m). Expenditure on air emissions management accounted for $124m. Of the industry subdivisions, Metal product manufacturing had the highest capital environment protection expenditure ($128m). Of this, management of air emissions accounted for $52m and solid waste management accounted for $34m. Petroleum, coal, chemical and associated product manufacturing had the highest capital expenditure on liquid waste management ($58m).

1.39 MANUFACTURING CAPITAL ENVIRONMENT PROTECTION EXPENDITURE — 2000–01

Industry	*Solid waste* *$'000*	*Liquid waste(a)* *$'000*	*Air emissions* *$'000*	*Other* *$'000*	*Total* *$'000*
Food, beverage and tobacco mfg	14 674	45 994	24 567	15 495	100 731
Textile, clothing, footwear and leather mfg	1 182	1 302	*490	292	3 266
Wood and paper product mfg	9 237	21 569	8 456	3 293	42 556
Printing, publishing and recorded media	1 408	827	304	305	2 844
Petroleum, coal, chemical and associated product mfg	13 842	57 822	26 223	11 764	109 650
Non-metallic mineral product mfg	9 174	7 411	7 389	2 128	26 102
Metal product mfg	33 922	32 785	51 750	9 416	127 874
Machinery and equipment mfg	*4709	*7761	3 318	4 390	20 177
Other mfg	2 167	*608	*1498	*638	4 911
Total mfg	**90 315**	**176 079**	**123 994**	**47 721**	**438 109**

(a) Includes waste water.

Source: Environment Protection, Mining and Manufacturing Industries, Australia (cat. no. 4603.0).

Environment plans

The future of environment protection depends on adequate forward work plans and these are defined as either a written environment policy or plan, a public environment report, a voluntary environment management system or code of practice, and a certified environment management system. A small component (13%) of manufacturers advised they had some sort of environment plan, the vast majority of these were in the form of written policies or plans (52%) or through voluntary environment management systems (48%).

DEGREE OF TRANSFORMATION BY MANUFACTURERS

This article presents statistics for manufactured goods classified by degree of transformation.

For 1998–99 and 1999–2000, the data used in this section was collected from manufacturing establishments. From 2000–01, data was collected from manufacturing businesses (which comprise of one or more establishments). Prior to 2000–01, data on sales of goods produced and value of goods transferred between establishments of the same business was collected and included in the analysis of degree of transformation. From 2000–01, the sales of goods produced data was collected from the business and included in this analysis. Thus, the small degree of double counting, due to transfers between establishments of the same business, has been eliminated.

The basic premise of the classification of goods by degree of transformation is that each manufactured product reaching the point of sale 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.

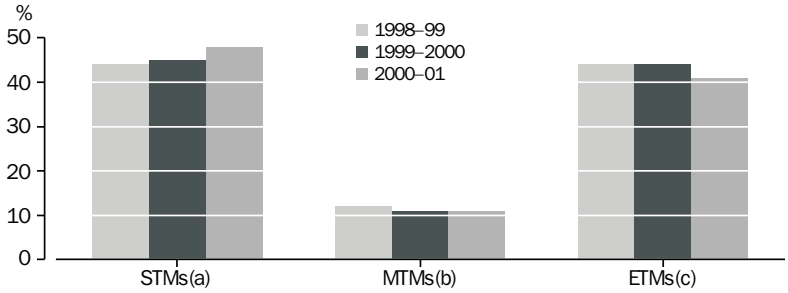
The concept of degree of transformation is also related to the concept of value adding. The amount and complexity of transformation strongly influence the amount of value added by manufacturing processes. However, in making the connection between degree of transformation and value adding, it should be 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 1.40 shows that the proportions of simply transformed, moderately transformed and elaborately transformed manufactures have remained at similar levels for the last three years.

1.40 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 1.41 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.

1.41 DEGREE OF TRANSFORMATION—2000–01

Industry	*Simply transformed manufactures(a)* $b	*Moderately transformed manufactures* $b	*Elaborately transformed manufactures* $b
Food, beverage and tobacco mfg	53.2	—	—
Textile, clothing, footwear and leather mfg	1.5	2.4	3.8
Wood and paper product mfg	6.0	4.9	3.1
Printing, publishing and recorded media	—	—	10.6
Petroleum, coal, chemical and associated product mfg	21.8	6.2	14.5
Non-metallic mineral product mfg	7.2	0.9	0.8
Metal product mfg	15.1	9.1	12.2
Machinery and equipment mfg	0.1	—	39.5
Other mfg	—	—	6.4
Total mfg	**104.9**	**23.5**	**91.0**

(a) Also includes products classified to the 'Primary products' and 'Primary product manufactures' categories.

Source: ABS data available on request, Annual Manufacturing Survey, 2000–01.

Exports

Data in this section about exports by degree of transformation have been taken from *Exports of primary and manufactured products, Australia, 2001* 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 10.4% over the ten years to 2000–01.

Exports *continued*

Exports of Australian produce in 2001 comprised:

- Unprocessed primary products and minerals $46.6b (40.4%)
- Processed primary products and minerals $25.5b (22.1%)
- Simply transformed manufactures $12.0b (10.4%)
- Elaborately transformed manufactures $21.1b (18.3%)
- Other (mainly non monetary gold) $10.2b (8.8%)

Average annual growth over ten years 1991 to 2001 was:

- Unprocessed primary products and minerals 7.2%
- Processed primary products and minerals 7.0%
- Simply transformed manufactures 8.3%
- Elaborately transformed manufactures 10.4%
- Other (mainly non monetary gold) 6.9%

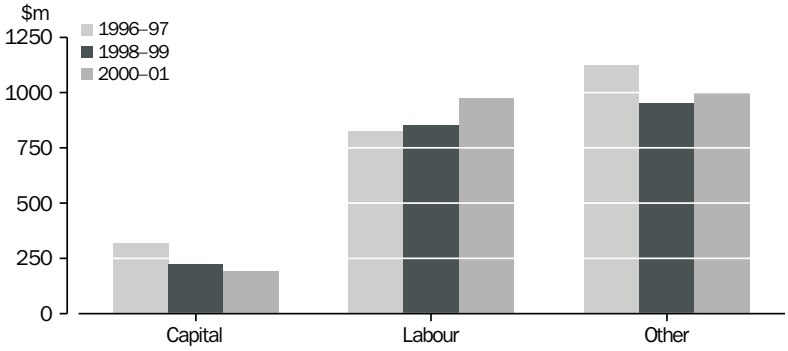
RESEARCH AND DEVELOPMENT EXPENDITURE

Research and experimental development expenditure

In 2000–01 total expenditure by all industries in the Australian economy on research and experimental development (R&D) was $4.8b, 18.1% higher than 1999–2000 expenditure. The 2000–01 estimate was the first increase after four consecutive decreases. Expenditure on R&D by the manufacturing industry has followed a similar trend in recent years. After remaining stable from 1998–1999 to 1999–2000, the expenditure of this industry increased by 8.4% in 2000–01. Manufacturing's contribution to the All industries total has remained consistent at slightly less than half (45% in 2000–01).

As graph 1.42 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, 2000–01 R&D expenditure consisted of 91.1% current expenditure and 8.9% capital expenditure, proportions which were similar to those for the total of All industries. Between 1999–2000 and 2000–01, capital expenditure on R&D by manufacturers continued to fall (down 0.3%), while current expenditure increased (up 9.3%). Of the total current expenditure for the manufacturing industry, approximately half (49.3%) related to labour costs which increased over this period (up 7.9%).

1.42 R&D EXPENDITURE BY MANUFACTURERS



Source: Research and Experimental Development, Businesses, Australia, 2000–01 (cat. no. 8104.0).

Manufacturing subdivisions

In 2000–01 expenditure on R&D increased, from the previous year, mostly driven by Machinery and equipment manufacturing and Food, beverage and tobacco manufacturing. Expenditure by the Machinery and equipment manufacturing industry rose by 16.5%, after a marginal increase in 1999–2000. Metal product manufacturing continued to decrease recording a 12.3% fall for the year 2000–01, about half the decline of 23.3% the previous year.

With $1,178m of R&D expenditure in 2000–01, Machinery and equipment manufacturing had by far the largest expenditure of the manufacturing subdivisions. This industry contributed a quarter (24.4%) of expenditure by all businesses in the economy and 54.3% of the total spent by manufacturers. In 2000–01, R&D expenditure by this industry was principally current expenditure (92.6%) of which 51.8% was labour costs. 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 1999–2000 to 2000–01 (up 2.1%), after an increase the previous year of 16.4%. Its primary spending in 2000–01 (48.1%) was on other current expenditure.

1.43 EXPENDITURE ON RESEARCH AND DEVELOPMENT

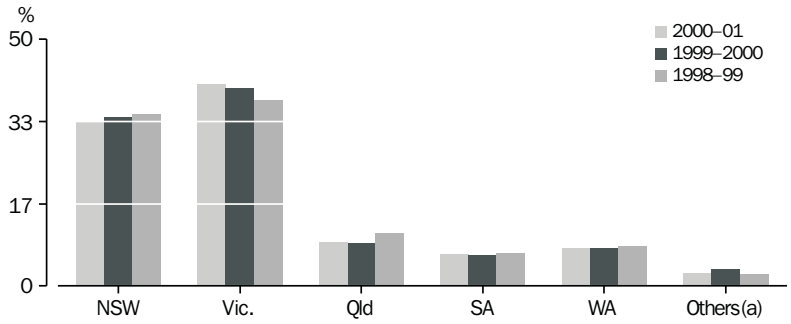
	1998–99	*1999–2000*				*2000–01*
	Total expenditure	*Total expenditure*	*Capital expenditure*	*Labour costs*	*Other current expenditure*	*Total expenditure*
Industry	*$m*	*$m*	*$m*	*$m*	*$m*	*$m*
Food, beverage and tobacco mfg	r209	r184	28	91	87	205
Textile, clothing, footwear and leather mfg	r21	r18	3	13	11	27
Wood and paper product mfg	r84	r102	7	26	67	100
Printing, publishing and recorded media	20	15	1	7	5	13
Petroleum, coal, chemical and associated product mfg	r324	r377	29	171	185	385
Non-metallic mineral product mfg	53	r47	4	15	21	41
Metal product mfg	296	227	31	75	93	199
Machinery and equipment mfg	1 001	1 011	87	565	526	1 178
Other mfg	19	20	3	13	7	23
Total mfg	**r2027**	**r2002**	**193**	**975**	**1002**	**2 170**

Source: Research and Experimental Development, Businesses, Australia, 2000–2001 (cat. no. 8104.0).

Expenditure by state and territories

Less than 1% of R&D expenditure by Australian manufacturers was spent overseas. Of the expenditure which took place in Australia, state and territory shares were Victoria (41%), New South Wales (34%), Queensland (9%), Western Australia (8%), South Australia (6%) and Tasmania and the Territories (2% in combination).

1.44 STATE AND TERRITORY PROPORTIONS OF R&D SPENDING



(a) Tasmania, the two territories and overseas.

Source: Research and Experimental Development, Businesses, Australia, 2000–01 (cat. no. 8104.0).

In 2000–01, Machinery and equipment manufacturing was by far the largest manufacturing industry in terms of R&D expenditure in all states — Victoria (57.9% of total manufacturing), New South Wales (53.6%), Western Australia (52.6%) and South Australia (62.1%).

R&D funding by source

The primary source of funding for manufacturing R&D in 2000–01 was Own funds (93.9%), a slightly higher proportion than for industry overall (89.9%). Other minor sources for funding in manufacturing include Other businesses, the Competitive grants scheme, and other government funding. Overseas sources constituted 2.8% of R&D funding in Manufacturing (4.3% for industry overall).

CHAPTER 2 PERFORMANCE OF THE MANUFACTURING INDUSTRY

INTRODUCTION

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 contact John Ridley in the NSW Office of the ABS, on Canberra (02) 9268 4541 — also see the Explanatory Notes section 'ABS data available on request'. To assist readers to identify the finer level industries, a full list of manufacturing industries is contained in the Appendix, following the Glossary.

Manufacturing management unit statistics about industry composition are presented in this Chapter. They show the industry classes within the subdivision, their level of production and how that production is distributed across states and territories. Since 1997–98, 'industry value added' (IVA) 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).

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 12.2% of industry profits, manufacturing had the third largest share in 2000–01 behind only Finance and insurance and Mining (35.0% and 12.6% of industry profits respectively). However, in terms of profit margins (operating profit before tax as a percentage of operating income), manufacturing ranked ninth of the fourteen industries. At 6.1%, the manufacturing profit margin was less than one quarter of the highest industry margin (28.4% for Finance and insurance) and well below the margin for All industries (9.2%). In terms of return on assets (pre-tax profits as a percentage of the total value of assets) manufacturing ranked eighth of the fourteen industries with 6.6%, well above that of the total of all industries (4.2%).

2.1 PERFORMANCE RATIOS—2000–01

Industry	*Share of profits* %	*Profit margin* %	*Return on assets* %	*Interest coverage* times	*Investment rate* %
Agriculture, forestry and fishing(a)	n.a.	n.a.	n.a.	n.a.	n.a.
Mining	12.6	27.8	15.4	8.8	27.3
Manufacturing	**12.2**	**6.1**	**6.6**	**4.4**	**15.3**
Electricity, gas and water supply	3.6	12.0	3.3	2.1	32.3
Construction	2.9	4.8	8.6	6.5	8.8
Wholesale trade	4.9	2.7	6.1	4.3	10.8
Retail trade	4.3	2.7	9.6	2.1	10.1
Accommodation, cafes and restaurants	1.1	4.0	4.8	2.5	20.1
Transport and storage	1.9	3.7	3.1	2.1	24.0
Communication services	5.1	18.0	11.5	8.5	79.6
Finance and insurance	35.0	28.4	2.4	1.9	n.a.
Property and business services	10.0	9.5	5.9	2.2	13.5
Private community services(b)	3.5	9.8	10.8	8.7	11.0
Cultural and recreational services	2.0	9.7	7.4	6.9	22.7
Personal and other services	0.9	8.0	7.6	6.6	15.9
All industries(a)(c)	100.0	9.2	4.2	2.5	19.3

(a) The Agriculture, forestry and fishing industry was excluded from the All industries series in this table. Data for this industry will be reintroduced for the 2001–02 reference year.

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

(c) For the investment rate, the estimate for All industries also excludes the Finance and insurance industry.

Source: Business Operations and Industry Performance, 2000–2001 (cat. no. 8140.0).

Changes in performance by the manufacturing industry

Excluding very small businesses (see the introduction to this Chapter), it is estimated that approximately 49,000 manufacturing businesses were in operation at 30 June 2001 and that these businesses employed 945,900 people, a decrease of 0.9% from the previous year. During 2000–01 manufacturing businesses generated sales of almost $252b, an increase of 4.8% on 1999–2000 sales. In 1999–2000, sales values and prices increased at virtually identical rates (4.6% and 4.4% respectively), but in 2000–01 prices have increased at a faster rate compared to sales values (6.6% and 4.8% respectively). As a result, the volume of goods and services provided by manufacturing businesses is estimated to have decreased slightly from 1999–2000 to 2000–01.

Operating profits before tax decreased by 2.3% to $15.5b between 1999–2000 and 2000–01. Operating profit per person employed decreased by 1.4% from $16,600 to $16,400.

The balance sheet for the manufacturing industry shows an increase in net worth of $7.4b (8.8%). Capital outlays on fixed tangible assets decreased by 1.7% between 1999–2000 to 2000–01. Expenditure on plant, machinery and equipment (including motor vehicles) continues to dominate in 2000–01 by accounting for $8.0b (72.3%) of the total capital expenditure on fixed tangible assets by manufacturing businesses.

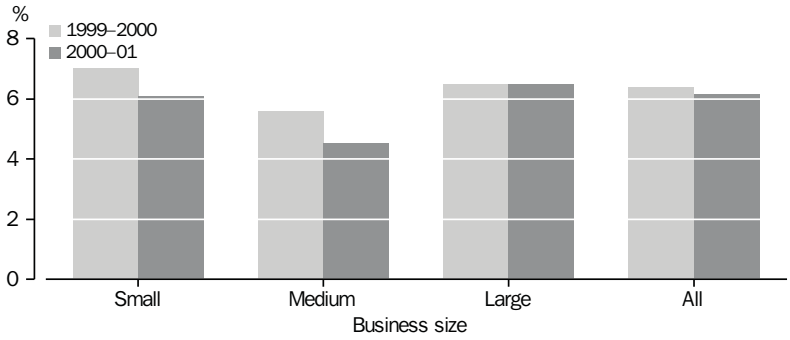
2.2 INCOME STATEMENT AND BALANCE SHEET

	1999–2000	*2000–01*	*Change*
	$m	*$m*	*%*
Income statement			
Sales and service income	240 145	251 759	4.8
Cost of sales	172 460	183 349	6.3
Trading profit	*67 686*	*68 410*	*1.1*
Interest income	1 189	1 325	11.5
Other operating income	2 581	2 938	13.8
Selected labour costs	41 734	42 920	2.8
Depreciation and amortisation	7 808	8 161	4.5
Other expenses	1 626	1 586	–2.5
Earnings before interest and tax	*20 287*	*20 006*	*–1.4*
Interest expenses	4 419	4 497	1.8
Operating profit before tax	**15 869**	**15 509**	**–2.3**
Balance sheet			
Current assets	85 445	96 246	12.6
Non-current assets	130 410	140 515	7.7
Total assets	*215 854*	*236 761*	*9.7*
Current liabilities	73 381	80 521	9.7
Non-current liabilities	58 538	64 899	10.9
Total liabilities	*131 919*	*145 421*	*10.2*
Net worth	**83 936**	**91 340**	**8.8**
Capital outlays			
Acquisition of fixed tangible assets(a)	9 875	9 711	–1.7

(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 decreased between 1999–2000 and 2000–01 (from $66 to $62 of operating profit before tax per $1,000 of operating income) with 70% of manufacturers recording an operating profit before tax for 2000–01. Just over 32% 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 76% of medium manufacturers made a profit with the corresponding rates for large sized manufacturers and small manufacturers being 75% and 69% respectively. Further information by size of business appears under 'Analysis by size of business' in Chapter 1.

Over the period from 1995–96 to 2000–01, most 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*	*2000 –01*
Profit margin	%	6.5	6.1	5.6	5.9	6.6	6.2
Return on assets	%	7.5	7.1	6.5	6.5	7.4	6.6
Long-term debt to equity	%	43	56	61	73	70	71
Current ratio	times	1.3	1.3	1.3	1.1	1.2	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 0.9% between June 2000 and June 2001, continuing the trend which has seen employment in the industry fall from just over one million in June 1996 to 946,000 in June 2001. Between 2000 and 2001, the number employed fell in four manufacturing subdivisions and rose in the other five. The largest relative falls were in the Textile, clothing, footwear and leather manufacturing industry (down 9.6%) and Printing, publishing and recorded media (down 9.0%) respectively; whilst the largest relative increases were in the Metal product manufacturing industry (up 3.0%) and Food, beverage and tobacco manufacturing (up 2.2%).

Income

In 2000–01, manufacturing businesses generated $256b of operating income of which almost $252b (98%) was sales of goods and services. This represented an increase of 5% in operating income compared to the previous year. Five manufacturing industries increased their income between 1999–2000 and 2000–01 and the other four decreased. Largest increases were by Petroleum, coal, chemical and associated product manufacturers (up 18.4%) and Machinery and equipment manufacturers (up 7.9%); whilst the largest decreases in income were recorded by Non-metallic mineral product manufacturers (down 11.3%) and Printing, publishing and recorded media manufacturers (down 8.6%).

Operating income per person employed increased between 1999–2000 and 2000–01 for manufacturing as a whole (up 5.9%) and for seven of the nine manufacturing subdivisions. The largest relative increases per person employed were recorded by Petroleum, coal, chemical and associated product manufacturers (up 19.9%) and Textile, clothing, footwear and leather manufacturers (up 8.3%); whilst Non-metallic mineral product manufacturers (down 6.6%) and Wood and paper product manufacturers (down 3.3%) were the only two manufacturing subdivisions to record decreases in operating income per person employed.

Expenses

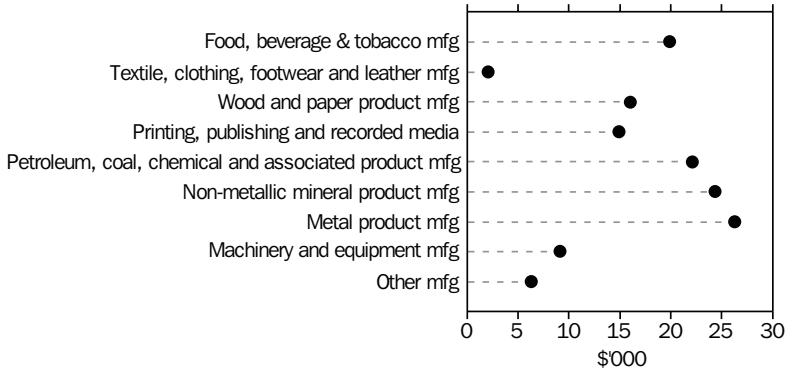
Operating expenses for manufacturing businesses totalled $241b in 2000–01. Of these expenses, cost of sales made up 76% and labour costs made up 18%. This represented an increase of 5.5% in operating expenses between 1999–2000 and 2000–01. Operating expenses rose between 1999–2000 and 2000–01 in five manufacturing subdivisions and fell in the other four. The largest increases in operating expenses were recorded by Petroleum, coal, chemical and associated product manufacturers (up 20.4%) and Machinery and equipment manufacturers (up 8.4%); whilst the largest decreases in expenses were recorded by Non-metallic mineral product manufacturers (down 10.3%) and Printing, publishing and recorded media manufacturers (down 5.5%), the same directions and order as recorded for income.

Profits

In 2000–01, manufacturing businesses generated $15.5b of operating profits before tax (OPBT). This represented a decrease of 2.3% in OPBT compared to the previous year. Seven manufacturing subdivisions decreased their OPBT between 1999–2000 and 2000–01 while OPBT increased in two. The largest decreases in OPBT were recorded by Textile, clothing, footwear and leather manufacturers (down 56.9%) and Printing, publishing and recorded media manufacturers (down 32.7%); whilst the only two manufacturing subdivisions to record increases in OPBT were Metal product manufacturers (up 35.9%) and Food, beverage and tobacco manufacturers (up 8.1%).

OPBT per person employed decreased between 1999–2000 and 2000–01 for manufacturing as a whole (down 1.4%) and for seven of the nine manufacturing subdivisions. As graph 2.5 shows, OPBT per person employed presented a variety of results for manufacturing subdivisions in 2000–01, ranging from $2,100 per person employed by Textile, clothing, footwear and leather manufacturers to $26,300 per person employed by Metal product manufacturers.

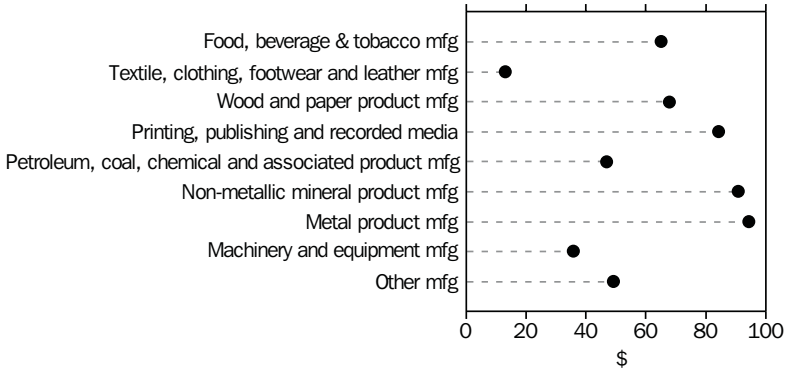
2.5 OPBT PER PERSON EMPLOYED—2000–01



Source: ABS data available on request, Annual Manufacturing Survey, 2000–01.

Similarly a variety of results were recorded for 2000–01 for OPBT generated per thousand dollars of operating income (graph 2.6). Results ranged from $13 of OPBT per thousand dollars of operating income for Textile, clothing, footwear and leather manufacturers to $94 of OPBT per thousand dollars of operating income for the Metal product manufacturing industry.

2.6 OPBT PER $'000 OF INCOME—2000–01



Source: ABS data available on request, Annual Manufacturing Survey, 2000–01.

Seven manufacturing subdivisions decreased their OPBT per thousand dollars of operating income between 1999–2000 and 2000–01. The largest decreases were:

- Textile, clothing, footwear and leather manufacturing (from $29 to $13)
- Printing, publishing and recorded media (from $114 to $84)
- Petroleum, coal, chemical and associated product manufacturing (from $63 to $47).

The only two manufacturing subdivisions to record increases in their OPBT per thousand dollars of operating income between 1999–2000 and 2000–01 were:

- Metal product manufacturing (from $73 to $94)
- Food, beverage and tobacco manufacturing (from $63 to $65).

Assets and liabilities

At the end of 2000–01, manufacturers held nearly $237b in assets, of which 59% were non-current assets. For manufacturers as a whole, the value of assets at the end of 2000–01 was 9.7% higher than a year earlier. All industry subdivisions experienced a rise in the value of assets during 2000–01 except for Textile, clothing, footwear and leather manufacturing (down 1.7%). The largest rises were by Wood and paper product manufacturing (up 18.8%), Machinery and equipment manufacturing (up 18.3%) and Petroleum, coal, chemical and associated product manufacturing (up 13.0%).

At the end of 2000–01, total liabilities for manufacturers were over $145b. All industry subdivisions experienced a rise in the value of liabilities during 2000–01 except for Printing, publishing and recorded media which was down slightly by 0.6%. The largest rises were by Machinery and equipment manufacturing (up 19.8%), Wood and paper product manufacturing (up 18.5%), Non-metallic mineral product manufacturing and Food, beverage and tobacco manufacturing (up 13.3% and 12.9% respectively).

Assets and liabilities *continued*

Long-term debt to equity has generally risen over the period 1995–96 to 2000–01 although a small decrease was recorded between 1989–99 and 1999–2000. Over the five years, all manufacturing subdivisions experienced a rise except Other 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 over 120% in 2000–01.

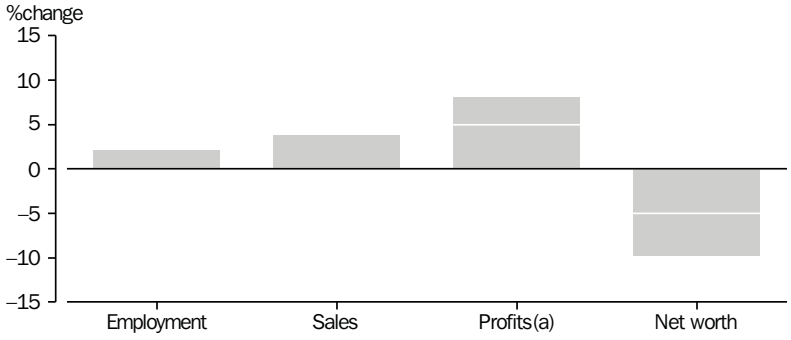
Capital expenditure

In 2000–01, manufacturers undertook capital expenditure on fixed tangible assets of over $9.7b but this was 1.7% less than the previous year's expenditure. Of this 2000–01 expenditure, nearly $8b (72.3%) was on plant, machinery and equipment (including motor vehicles). Of the five industry subdivisions which recorded falls in capital expenditure on tangible assets, the largest relative falls were recorded for Wood and paper product manufacturing (down 39%) and Other manufacturing (down 32%). Capital expenditure on tangible assets increased in four industry subdivisions including Machinery and equipment manufacturing (up 20%) and a 14% increase for Textile, clothing, footwear and leather manufacturing.

FOOD, BEVERAGE AND TOBACCO MANUFACTURING

Food, beverage and tobacco manufacturing businesses

2.7 CHANGE FROM 1999–2000 TO 2000–01



(a) Operating profit before tax.

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

In June 2001, Food, beverage and tobacco manufacturers employed 189,600 people, an increase of 2.2% over the previous year. In 2000–01, these manufacturers generated almost $57b in sales and service income and nearly $3.8b in pre-tax profits. In terms of ANZSIC subdivisions within manufacturing this industry is one of the largest.

The industry balance sheet below shows that the net worth of the industry decreased by around $2.1b (down 10%) during 2000–01. The industry experienced increases in both current and non-current assets resulting in overall growth of $3.5b in the value of assets. Both current and non-current liabilities increased in value resulting in an increase of $5.6b (13%) in the value of liabilities. Capital expenditure on tangible assets at $2.3b was the largest value for any manufacturing subdivision. The largest component of capital expenditure was outlays on plant, machinery and equipment (including motor vehicles) which amounted to $1.9b, 74% of total capital outlays (including intangibles).

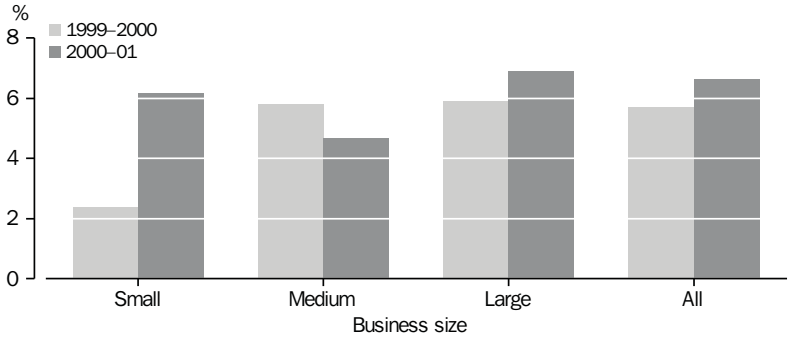
2.8 INCOME STATEMENT AND BALANCE SHEET

	1999–2000	*2000–01*	*Change*
	$m	*$m*	*%*
INCOME STATEMENT			
Sales and service income	54 562	56 626	3.8
Cost of sales	40 515	42 667	5.3
Trading profit	*14 047*	*13 959*	*–0.6*
Interest income	649	622	–4.2
Other operating income	504	885	75.7
Selected labour costs	8 253	8 173	–1.0
Depreciation and amortisation	1 590	1 683	5.8
Other expenses	208	209	0.8
Earnings before interest and tax	*5 149*	*5 401*	*4.9*
Interest expenses	1 652	1 621	–1.9
Operating profit before tax	**3 497**	**3 780**	**8.1**
BALANCE SHEET			
Current assets	21 705	24 953	15.0
Non-current assets	42 699	42 946	0.6
Total assets	*64 405*	*67 899*	*5.4*
Current liabilities	20 950	25 769	23.0
Non-current liabilities	22 267	23 025	3.4
Total liabilities	*43 217*	*48 795*	*12.9*
Net worth	**21 187**	**19 104**	**–9.8**
CAPITAL OUTLAYS			
Acquisition of fixed tangible assets(a)	2 219	2 330	5.0

Source: Annual Manufacturing Survey.

Performance indicators

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 2000–01, the industry profit margin was 6.8% (i.e. $68 of pre-tax profits per $1,000 of operating income) an increase on the 1999–2000 result. Pre-tax profits were recorded in 2000–01 by 71% of Food, beverage and tobacco manufacturers (75% of large businesses, 73% of medium sized businesses and 70% 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 2000–01 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*	*2000–01*
Profit margin	%	5.1	5.4	5.6	5.8	6.4	6.7
Return on assets	%	6.4	5.8	5.7	5.2	5.4	5.6
Long-term debt to equity	%	34	58	68	108	105	121
Current ratio	times	1.0	1.1	1.2	1.1	1.0	1.0

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. Meat processing continues to be the largest industry class by far in terms of employment, sales and service income and industry value added.

2.11 INDUSTRY COMPOSITION—2000–01

	Employment at end of June(a)	*Sales and service income*	*Industry value added (production)*
	no.	*$m*	*$m*
Meat processing	27 926	8 378	1 641
Poultry processing	16 245	2 903	793
Bacon, ham and smallgood mfg	8 381	1 758	395
Milk and cream processing	5 155	2 062	447
Ice-cream mfg	2 150	573	114
Dairy product mfg n.e.c.	12 094	5 823	1 068
Fruit and vegetable processing	15 613	4 484	1 102
Oil and fat mfg	4 228	2 088	465
Flour mill product mfg	3 151	1 514	348
Cereal food and baking mix mfg	7 049	2 223	619
Bread mfg	11 830	1 503	684
Cake and pastry mfg	9 338	877	328
Biscuit mfg	6 635	1 086	398
Sugar mfg	5 670	1 688	253
Confectionery mfg	6 288	1 487	626
Seafood processing	4 074	1 168	185
Prepared animal and bird feed mfg	4 048	1 886	330
Food mfg n.e.c.	15 093	4 038	1 230
Soft drink, cordial and syrup mfg	5 881	2 505	808
Beer and malt mfg	3 639	3 066	1 082
Wine mfg	12 337	n.p.	n.p.
Spirit mfg	473	n.p.	n.p.
Tobacco product mfg	2 305	1 335	498
Total Food, beverage and tobacco mfg	**189 603**	**56 626**	**14 709**

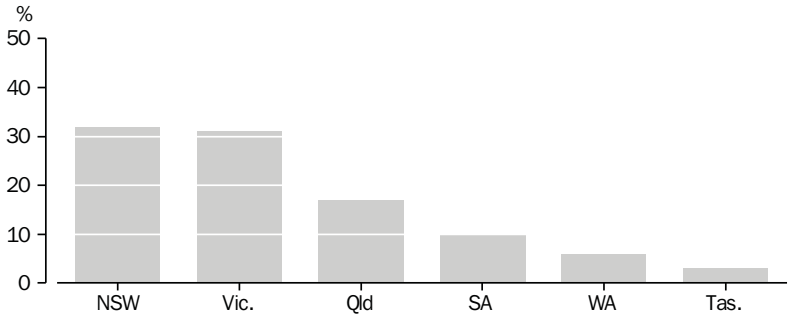
(a) Includes working proprietors.

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

State and territory distribution of 2000–01 production

Graph 2.12 shows how production in Food, beverage and tobacco manufacturing 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)—2000–01



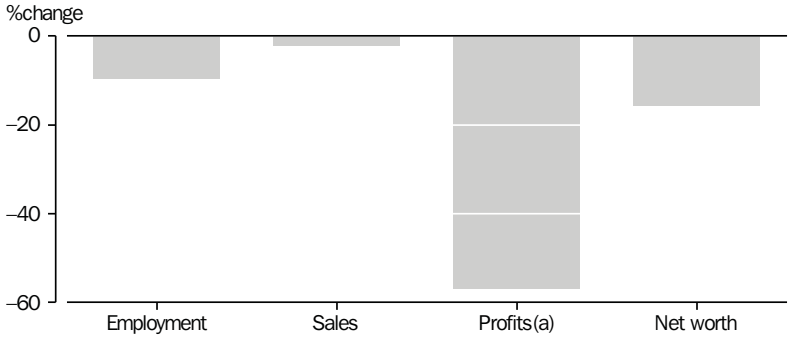
(a) NT and ACT each contributed less than 0.5% of production for this industry.

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

TEXTILE, CLOTHING, FOOTWEAR AND LEATHER MANUFACTURING

Textile, clothing, footwear and leather manufacturing businesses

2.13 CHANGE FROM 1999–2000 TO 2000–01



(a) Operating profit before tax.

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

In June 2001, Textile, clothing, footwear and leather manufacturers employed 57,800 people, a decrease of 9.6% from the previous year. In 2000–01, these manufacturers generated $9.1b in sales and service income (down 2%) and $0.1b in pre-tax profits (down 57%). In terms of ANZSIC subdivisions within manufacturing this industry is relatively small.

The industry balance sheet below shows that the net worth of the industry decreased by $0.3b (down 16%) during 2000–01. The industry experienced a decrease in the value of assets (down 2%) while the value of liabilities rose by 6%. Capital expenditure on tangible assets increased by 15% to $0.3b. The largest component of capital expenditure was outlays on plant, machinery and equipment (including motor vehicles) which amounted to $0.2b, 79% of total capital outlays (including intangibles).

2.14 INCOME STATEMENT AND BALANCE SHEET

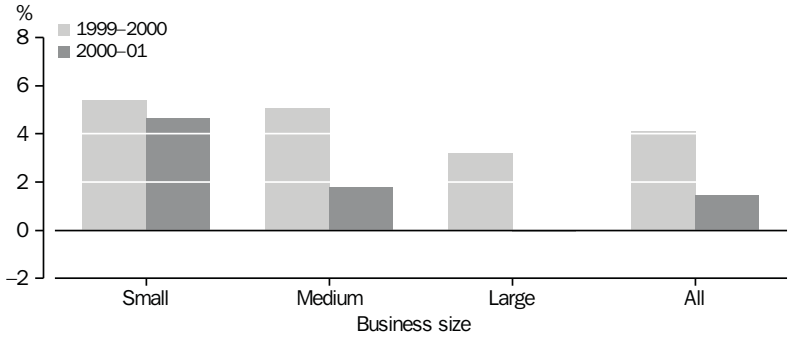
	1999–2000	*2000–01*	*Change*
	$m	*$m*	*%*
INCOME STATEMENT			
Sales and service income	9 299	9 111	–2.0
Cost of sales	6 646	6 682	0.5
Trading profit	*2 652*	*2 429*	*–8.4*
Interest income	17	18	1.4
Other operating income	69	58	–15.7
Selected labour costs	2 041	1 951	–4.4
Depreciation and amortisation	242	230	–4.8
Other expenses	62	71	14.2
Earnings before interest and tax	*393*	*252*	*–35.9*
Interest expenses	118	133	13.2
Operating profit before tax	**276**	**119**	**–56.8**
BALANCE SHEET			
Current assets	3 344	3 241	–3.1
Non-current assets	2 284	2 289	0.2
Total assets	*5 628*	*5 530*	*–1.7*
Current liabilities	2 128	2 112	–0.7
Non-current liabilities	1 419	1 664	17.3
Total liabilities	*3 547*	*3 776*	*6.5*
Net worth	**2 081**	**1 754**	**–15.7**
CAPITAL OUTLAYS			
Acquisition of fixed tangible assets(a)	235	269	14.5

(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

2.15 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 2000–01, the industry profit margin was 1.5% (i.e. $15 of pre-tax profits per $1,000 of operating income) a decrease on the 1999–200 result and the lowest of all the subdivisions. Pre-tax profits were recorded in 2000–01 by 66% of Textile, clothing, footwear and leather manufacturers (66% of small businesses and 65% of both medium and large sized 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 2000–01 except for the long-term debt to equity ratio which, in a saw-tooth pattern, has risen sharply in 2000–01 following a substantial rise in 1998–99 and a sharp decrease in 1999–2000.

2.16 INDUSTRY PERFORMANCE

Selected performance measures	*Units*	*1995 –96*	*1996 –97*	*1997 –98*	*1998 –99*	*1999 –2000*	*2000 –01*
Profit margin	%	4.3	4.1	3.2	3.6	3.0	1.3
Return on assets	%	7.1	6.3	4.8	6.0	4.9	2.2
Long-term debt to equity	%	49	57	56	86	68	95
Current ratio	times	1.4	1.5	1.5	1.5	1.6	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. Within this fairly small subdivision, the clothing and textile product manufacturing industries are the largest industry classes.

2.17 INDUSTRY COMPOSITION—2000–01

	Employment at end of June(a)	*Sales and service income*	*Industry value added (production)*
	no.	*$m*	*$m*
Wool scouring	1 792	746	172
Synthetic fibre textile mfg	2 960	602	191
Cotton textile mfg	2 172	359	112
Wool textile mfg	1 628	188	82
Textile finishing	1 215	169	73
Made-up textile product mfg	8 447	1 018	321
Textile floor covering mfg	3 307	823	227
Rope, cordage and twine mfg	407	92	*27
Textile product mfg n.e.c.	2 003	214	78
Hosiery mfg	2 121	277	48
Cardigan and pullover mfg	1 126	151	39
Knitting mill product mfg n.e.c.	2 246	422	124
Men's and boys' wear mfg	5 970	729	225
Women's and girls' wear mfg	7 780	1 033	251
Sleepwear, underwear and infant clothing mfg	1 384	268	74
Clothing mfg n.e.c.	5 797	581	191
Footwear mfg	4 223	558	182
Leather tanning and fur dressing	2 787	843	156
Leather and leather substitute product mfg	399	39	12
Total Textile, clothing, footwear and leather mfg	**57 764**	**9 111**	**2 583**

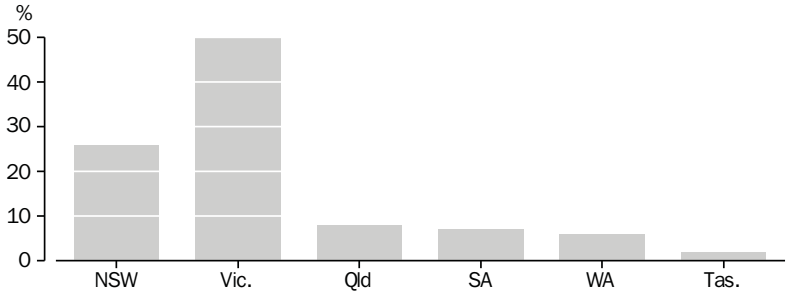
(a) Includes working proprietors.

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

State and territory distribution of 2000–01 production

Graph 2.18 shows how production in Textile, clothing, footwear and leather manufacturing 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)—2000–01



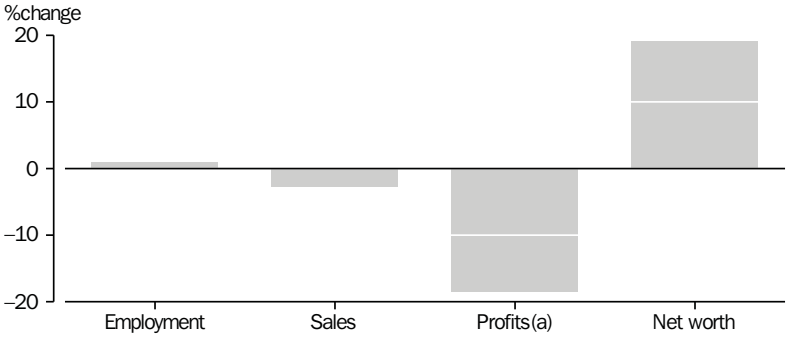
(a) Data for NT and ACT is not for publication but in total, the territories contributed less than 0.2% of production for this industry.

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

WOOD AND PAPER PRODUCT MANUFACTURING

Wood and paper product manufacturing businesses

2.19 CHANGE FROM 1999–2000 TO 2000–01



(a) Operating profit before tax.

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

In June 2001, Wood and paper product manufacturers employed 65,000 people, an increase of 0.9% from the previous year. In 2000–01, these manufacturers generated $15.1b in sales and service income (down 3%) and $1.0b in pre-tax profits (down 18%). In terms of ANZSIC subdivisions within manufacturing this industry is medium sized.

The industry balance sheet below shows that the net worth of the industry increased by $0.9b (up 19%) during 2000–01. The industry experienced increases in both the value of assets and the value of liabilities (both up 19%).

Capital expenditure on tangible assets in 2000–01 decreased by $0.3b (down 39% to $0.5b). The largest component of 2000–01 capital expenditure was outlays on plant, machinery and equipment (including motor vehicles) which amounted to $0.5b, 82% of total capital outlays (including intangibles).

2.20 INCOME STATEMENT AND BALANCE SHEET

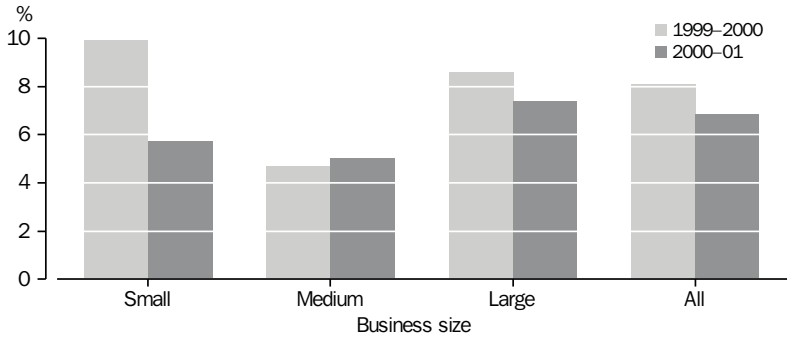
	1999–2000	*2000–01*	*Change*
	$m	*$m*	*%*
Income statement			
Sales and service income	15 490	15 077	–2.7
Cost of sales	10 492	10 336	–1.5
Trading profit	*4 998*	*4 741*	*–5.1*
Interest income	35	45	27.6
Other operating income	114	133	16.0
Selected labour costs	2 714	2 751	1.4
Depreciation and amortisation	512	567	10.7
Other expenses	405	270	–33.4
Earnings before interest and tax	*1 516*	*1 331*	*–12.2*
Interest expenses	244	294	20.4
Operating profit before tax	**1 272**	**1 037**	**–18.5**
Balance sheet			
Current assets	4 830	4 972	2.9
Non-current assets	6 856	8 906	29.9
Total assets	*11 686*	*13 878*	*18.8*
Current liabilities	3 745	4 279	14.2
Non-current liabilities	2 997	3 713	23.9
Total liabilities	*6 743*	*7 991*	*18.5*
Net worth	**4 943**	**5 887**	**19.1**
Capital outlays			
Acquisition of fixed tangible assets (a)	880	536	–39.1

(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 2000–01, the industry profit margin was 6.9% (i.e. $69 of pre-tax profits per $1,000 of operating income) a decrease on the 1999–2000 result. Pre-tax profits were recorded in 2000–01 by 72% of Wood and paper product manufacturers (77% of both large and 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 indicators *continued*

Performance measures for this industry indicate generally improving performance over the period from 1996–97 to 2000–01. After increasing from 1997–98 to 1999–2000, the profit margin was stable, while the return on assets has decreased after a peak in 1999–2000.

2.22 INDUSTRY PERFORMANCE

Selected performance measures	*Units*	*1995 –96*	*1996 –97*	*1997 –98*	*1998 –99*	*1999 –2000*	*2000 –01*
Profit margin	%	7.3	6.8	6.4	7.5	8.2	6.9
Return on assets	%	7.9	6.6	6.4	8.0	10.9	7.5
Long-term debt to equity	%	52	76	78	68	61	63
Current ratio	times	1.1	1.6	1.4	1.0	1.3	1.2

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. In terms of industry value added, Wooden structural component manufacturing continues to be the largest industry class followed by Pulp and paperboard manufacturing and Corrugated paperboard container manufacturing.

2.23 INDUSTRY COMPOSITION—2000–01

	Employment at end of June(a)	*Sales and service income*	*Industry value added (production)*
	no.	*$m*	*$m*
Log sawmilling	5 334	694	276
Wood chipping	622	243	71
Timber resawing and dressing	7 909	1 663	614
Plywood and veneer mfg	971	158	66
Fabricated wood mfg	4 538	1 158	346
Wooden structural component mfg	20 216	2 624	873
Wood product mfg n.e.c.	5 701	617	218
Pulp, paper and paperboard mfg	5 050	2 663	828
Solid paperboard container mfg	2 887	714	270
Corrugated paperboard container mfg	5 852	2 629	767
Paper bag and sack mfg	1 345	261	76
Paper product mfg n.e.c.	4 582	1 686	524
Total Wood and paper product mfg	**65 008**	**15 077**	**4 929**

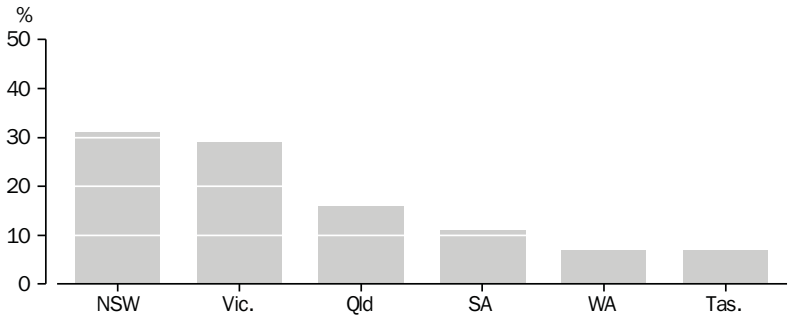
(a) Includes working proprietors.

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

State and territory distribution of 2000–01 production

Graph 2.24 shows how production in Wood and paper product manufacturing 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)—2000–01



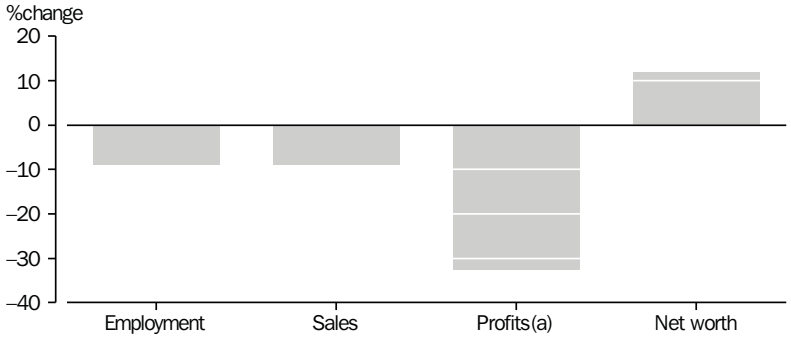
(a) NT and ACT each contributed less than 0.5% of production for this industry.

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

PRINTING, PUBLISHING AND RECORDED MEDIA

Printing, publishing and recorded media businesses

2.25 CHANGE FROM 1999–2000 TO 2000–01



(a) Operating profit before tax.

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

In June 2001, the Printing, publishing and recorded media industry employed 91,600 people, a decrease of 8.9% from the previous year. In 2000–01, this industry generated $15.9b of sales and service income (down 9%) and $1.4b in pre-tax profits, a decrease on the previous year (down 33%). In terms of the ANZSIC subdivisions within manufacturing this industry is medium sized.

The industry balance sheet below shows that the net worth of the industry increased by $1.1b (12%) during 2000–01. The industry experienced an increase of $1.0b to the value of assets (up 5%), while the value of liabilities decreased slightly by $0.1b (down 1%). Capital expenditure on tangible assets decreased by 5% to $0.8b. The largest component of capital expenditure was outlays on plant, machinery and equipment (including motor vehicles) which amounted to $0.6b, 66% of total capital outlays (including intangibles).

2.26 INCOME STATEMENT AND BALANCE SHEET

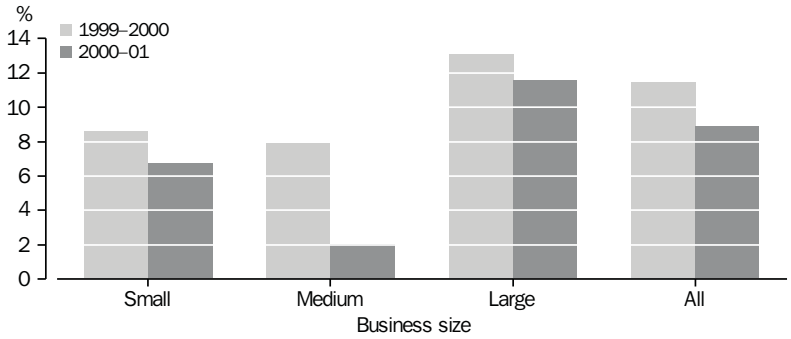
	1999–2000	*2000–01*	*Change*
	$m	*$m*	*%*
INCOME STATEMENT			
Sales and service income	17 508	15 929	–9.0
Cost of sales	10 268	9 651	–6.0
Trading profit	*7 240*	*6 277*	*–13.3*
Interest income	34	48	39.4
Other operating income	199	241	21.1
Selected labour costs	4 280	4 213	–1.6
Depreciation and amortisation	696	574	–17.5
Other expenses	145	126	–13.1
Earnings before interest and tax	*2 352*	*1 653*	*–29.7*
Interest expenses	325	288	–11.3
Operating profit before tax	**2 027**	**1 365**	**–32.7**
BALANCE SHEET			
Current assets	5 244	6 239	19.0
Non-current assets	15 612	15 626	0.1
Total assets	*20 856*	*21 865*	*4.8*
Current liabilities	5 280	5 506	4.3
Non-current liabilities	6 411	6 112	–4.7
Total liabilities	*11 691*	*11 617*	*–0.6*
Net worth	**9 165**	**10 247**	**11.8**
CAPITAL OUTLAYS			
Acquisition of fixed tangible assets(a)	796	757	–4.9

(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

2.27 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 2000–01, the industry profit margin was 9.1% (i.e. $91 of pre-tax profits per $1,000 of operating income) a decrease on the 1999–2000 result. Pre-tax profits were recorded in 2000–01 by 79% of Printing, publishing and recorded media businesses (80% of medium sized businesses and 79% of both small and large sized 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 2000–01. The slight decrease in non-current liabilities is reflected in the decrease of long-term debt to equity between 1999–2000 and 2000–01.

2.28 INDUSTRY PERFORMANCE

Selected performance measures	*Units*	*1995 –96*	*1996 –97*	*1997 –98*	*1998 –99*	*1999 –2000*	*2000 –01*
Profit margin	%	9.3	7.8	5.1	9.7	11.6	8.6
Return on assets	%	5.9	5.3	3.8	8.1	9.7	6.2
Long-term debt to equity	%	57	55	39	45	70	60
Current ratio	times	1.3	1.5	1.5	0.9	1.0	1.1

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 printing related industries continue to be by far the largest industry classes in this subdivision.

2.29 INDUSTRY COMPOSITION—2000–01

	Employment at end of June(a)	*Sales and service income*	*Industry value added (production)*
	no.	*$m*	*$m*
Paper stationery mfg	9 759	1 579	557
Printing	33 594	5 376	1 985
Services to printing	6 012	575	250
Newspaper printing or publishing	28 761	5 650	2 904
Other periodical publishing	6 396	1 242	355
Book and other publishing	3 727	859	294
Recorded media manufacturing and publishing	3 381	648	254
Total Printing, publishing and recorded media	**91 630**	**15 929**	**6 559**

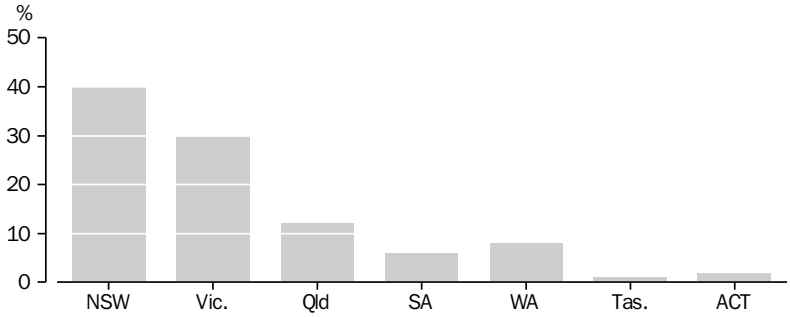
(a) Includes working proprietors.

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

State and territory distribution of 2000–01 production

Graph 2.30 shows how production in Printing, publishing and recorded media 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)—2000–01



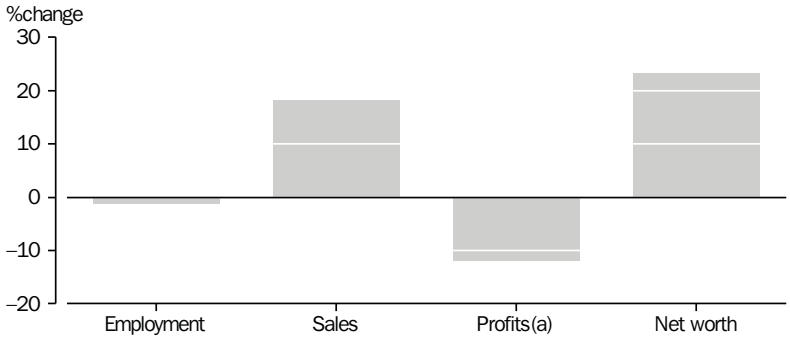
(a) The Northern Territory contributed less than 0.5% of production for this industry.

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

PETROLEUM, COAL, CHEMICAL AND ASSOCIATED PRODUCT MANUFACTURING

Petroleum, coal, chemical and associated product manufacturing

2.31 CHANGE FROM 1999–2000 TO 2000–01



(a) Operating profit before tax.

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

In June 2001, Petroleum, coal, chemical and associated product manufacturers employed 101,300 people, a decrease from the previous year (down 1.3%). In 2000–01, these manufacturers generated over $47.1b in sales and service income (up 18%) and $2.2b in pre-tax profits, a decrease from the previous year (down 12%). In terms of ANZSIC subdivisions within manufacturing this industry is one of the largest.

The industry balance sheet below shows that the net worth of the industry rose by $3.1b (23%) during 2000–01. The industry experienced increases in both the value of assets (up 13%) and the value of liabilities (up 6%). Capital expenditure on tangible assets decreased by 13% to $1.7b. The largest component of capital expenditure was outlays on plant, machinery and equipment (including motor vehicles) which amounted to $1.5b, 67% of total capital outlays (including intangibles).

2.32 INCOME STATEMENT AND BALANCE SHEET

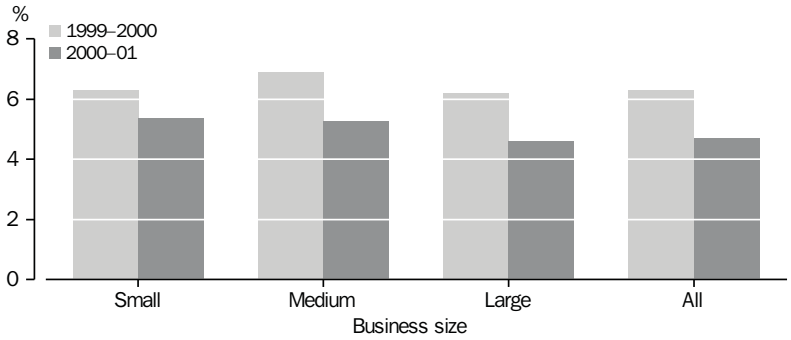
	1999–2000	*2000–01*	*Relative change*
	$m	*$m*	*%*
INCOME STATEMENT			
Sales and service income	39 816	47 115	18.3
Cost of sales	30 495	37 781	23.9
Trading profit	*9 320*	*9 334*	*0.1*
Interest income	92	129	40.5
Other operating income	415	492	18.6
Selected labour costs	5 183	5 537	6.8
Depreciation and amortisation	1 363	1 342	–1.6
Other expenses	206	217	5.4
Earnings before interest and tax	*3 075*	*2 858*	*–7.0*
Interest expenses	527	617	17.0
Operating profit before tax	**2 548**	**2 241**	**–12.0**
BALANCE SHEET			
Current assets	14 324	16 506	15.2
Non-current assets	17 470	19 426	11.2
Total assets	*31 794*	*35 932*	*13.0*
Current liabilities	11 775	11 505	–2.3
Non-current liabilities	6 687	7 975	19.3
Total liabilities	*18 462*	*19 480*	*5.5*
Net worth	**13 332**	**16 451**	**23.4**
CAPITAL OUTLAYS			
Acquisition of fixed tangible assets(a)	2 004	1 738	–13.3

(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.

For 2000–01, the industry profit margin was 4.8% (i.e. $48 of pre-tax profits per $1,000 of operating income) a decrease on the 1999–2000 result. Pre-tax profits were recorded in 2000–01 by 69% of Petroleum, coal, chemical and associated product manufacturers (77% of large businesses, 74% of medium sized businesses and 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 indicate fairly stable levels of performance over the period from 1995–96 to 2000–01. The decrease of 12% in operating profit before tax is reflected in the decrease of the profit margin between 1999–2000 and 2000–01.

2.34 INDUSTRY PERFORMANCE

Selected performance measures	*Units*	*1995 –96*	*1996 –97*	*1997 –98*	*1998 –99*	*1999 –2000*	*2000 –01*
Profit margin	%	6.0	6.3	5.0	5.2	6.4	4.8
Return on assets	%	8.1	8.5	6.9	6.6	8.1	6.2
Long-term debt to equity	%	46	36	47	46	50	49
Current ratio	times	1.3	1.3	1.2	1.2	1.2	1.4

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. In terms of employment and production, Medicinal and pharmaceutical product manufacturing remains the largest industry class within the subdivision. In 2000–01, Petroleum refining was the largest industry class in terms of sales and service income.

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

2.35 INDUSTRY COMPOSITION—2000–01

	Employment at end of June(a)	*Sales and service income*	*Industry value added (production)*
	no.	*$m*	*$m*
Petroleum refining	4 547	16 016	1 331
Petroleum and coal product mfg n.e.c.	335	182	58
Fertiliser mfg	2 807	n.p.	n.p.
Industrial gas mfg	2 075	n.p.	n.p.
Synthetic resin mfg	4 771	2 489	483
Organic industrial chemical mfg n.e.c.	1 687	849	163
Inorganic industrial chemical mfg n.e.c.	3 868	2 437	*875
Explosive mfg	980	n.p.	n.p.
Paint mfg	6 774	1 753	531
Medicinal and pharmaceutical product mfg	15 072	6 288	1 682
Pesticide mfg	1 454	1 224	189
Soap and other detergent mfg	4 307	1 614	412
Cosmetic and toiletry preparation mfg	3 991	859	243
Ink mfg	690	n.p.	n.p.
Chemical product mfg n.e.c.	3 726	1 115	329
Rubber tyre mfg	3 404	836	234
Rubber product mfg n.e.c.	4 714	791	273
Plastic blow moulded product mfg	3 783	719	281
Plastic extruded product mfg	4 120	1 007	306
Plastic bag and film mfg	5 980	1 646	509
Plastic product rigid fibre reinforced mfg	3 716	611	181
Plastic foam product mfg	3 728	694	228
Plastic injection moulded product mfg	14 727	2 234	803
Total Petroleum, coal, chemical and associated product mfg	**101 256**	**47 115**	**9 960**

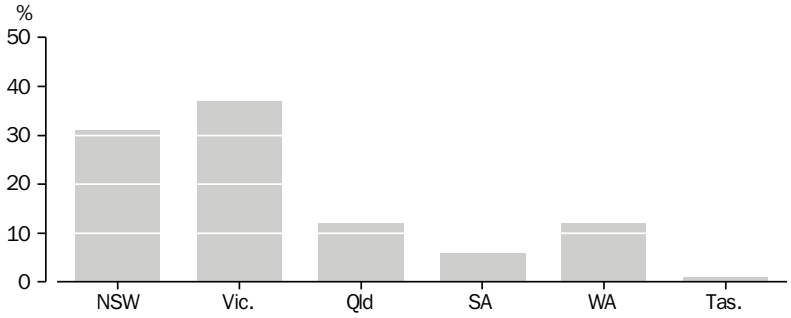
(a) Includes working proprietors.

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

State and territory distribution of 2000–01 production

Graph 2.36 shows how production in Petroleum, coal, chemical and associated product manufacturing 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)—2000–01

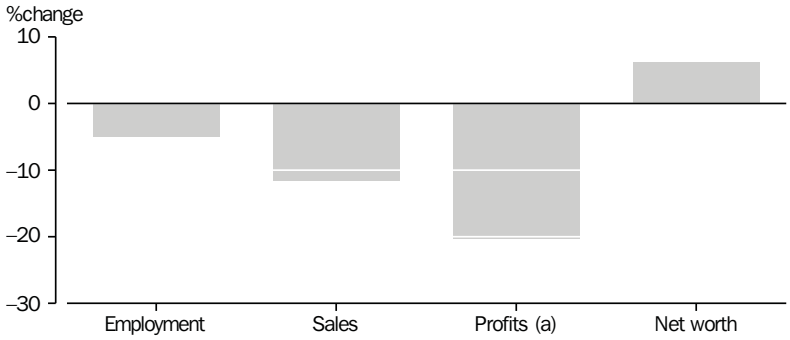


(a) NT and ACT each contributed less than 0.5% of production for this industry.

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

Non-metallic mineral product manufacturing businesses

2.37 CHANGE FROM 1999–2000 TO 2000–01



(a) Operating profit before tax.

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

In June 2001, Non-metallic mineral product manufacturers employed 37,200 people, a decrease from the previous year (down 5.0%). In 2000–01, these manufacturers generated $9.8b in sales and service income (down 12%) and $0.9b in pre-tax profits (down 20%). 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 $0.4b (6%) during 2000–01. The industry experienced an increase in both the value of assets (up 10%) and the value of liabilities (up 13%). Capital expenditure on tangible assets decreased by 7% to $0.5b. The largest component of capital expenditure was outlays on plant, machinery and equipment (including motor vehicles) which amounted to $0.4b, 70% of total capital outlays (including intangibles).

2.38 INCOME STATEMENT AND BALANCE SHEET

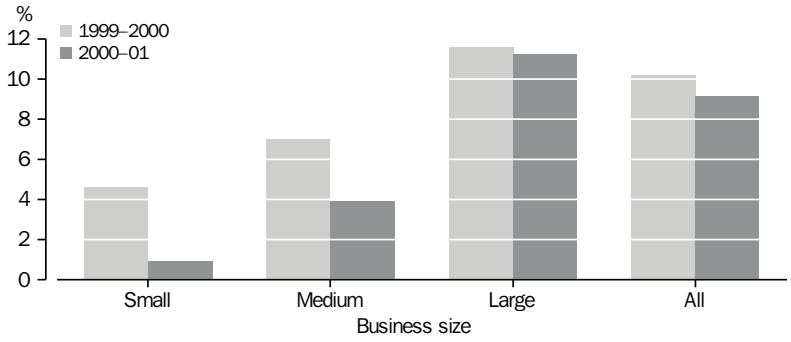
	1999–2000	*2000–01*	*Relative change*
	$m	*$m*	*%*
	INCOME STATEMENT		
Sales and service income	11 075	9 777	–11.7
Cost of sales	7 230	6 342	–12.3
Trading profit	*3 845*	*3 434*	*–10.7*
Interest income	21	44	103.7
Other operating income	112	122	9.5
Selected labour costs	1 955	1 903	–2.7
Depreciation and amortisation	548	530	–3.2
Other expenses	96	85	–10.9
Earnings before interest and tax	*1 379*	*1 082*	*–21.5*
Interest expenses	246	179	–27.5
Operating profit before tax	**1 133**	**903**	**–20.2**
	BALANCE SHEET		
Current assets	4 432	4 682	5.6
Non-current assets	8 599	9 657	12.3
Total assets	*13 031*	*14 340*	*10.0*
Current liabilities	4 063	3 903	–3.9
Non-current liabilities	2 910	3 995	37.3
Total liabilities	*6 973*	*7 898*	*13.3*
Net worth	**6 058**	**6 442**	**6.3**
	CAPITAL OUTLAYS		
Acquisition of fixed tangible assets(a)	583	545	–6.6

(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

2.39 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 2000–01, the industry profit margin was 9.4% (i.e. $94 of pre-tax profits per $1,000 of operating income) a decrease on the 1999–2000 result. Pre-tax profits were recorded in 2000–01 by 63% of Non-metallic mineral product manufacturers (77% of large businesses, 68% of medium sized businesses and 64% 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 1996–97 to 2000–01 apart from a sharp increase in long-term debt to equity after a steady decline from 1996–97 to 1999–2000.

2.40 INDUSTRY PERFORMANCE

Selected performance measures	*Units*	*1995 –96*	*1996 –97*	*1997 –98*	*1998 –99*	*1999 –2000*	*2000 –01*
Profit margin	%	9.5	8.2	7.5	8.5	10.3	9.2
Return on assets	%	7.4	7.4	6.7	7.7	8.7	6.3
Long-term debt to equity	%	51	92	63	52	48	62
Current ratio	times	1.2	1.2	0.9	0.9	1.1	1.2

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

Industry composition

Table 2.41 contains data for the 11 industry classes which make up the Non-metallic mineral product manufacturing subdivision of the manufacturing industry. Concrete slurry (ready mixed concrete) manufacturing is the largest industry class in terms of employment and sales and service income within the subdivision. In terms of production, Glass and glass product manufacturing is the largest class closely followed by Concrete slurry manufacturing.

2.41 INDUSTRY COMPOSITION—2000–01

	Employment at end of June(a)	*Sales and service income*	*Industry Value Added (production)*
	no.	*$m*	*$m*
Glass and glass product mfg	6 376	1 494	663
Clay brick mfg	3 284	666	350
Ceramic product mfg	776	199	63
Ceramic tile and pipe mfg	528	64	35
Ceramic product mfg n.e.c.	1 747	243	126
Cement and lime mfg	2 780	1 402	513
Plaster product mfg	3 041	1 143	493
Concrete slurry mfg(b)	7 874	2 492	652
Concrete pipe and box culvert mfg	852	130	46
Concrete product mfg n.e.c.	5 521	1 026	350
Non-metallic mineral product mfg n.e.c.	4 387	919	317
Total Non-metallic mineral product mfg	**37 166**	**9 777**	**3 606**

(a) Includes working proprietors.

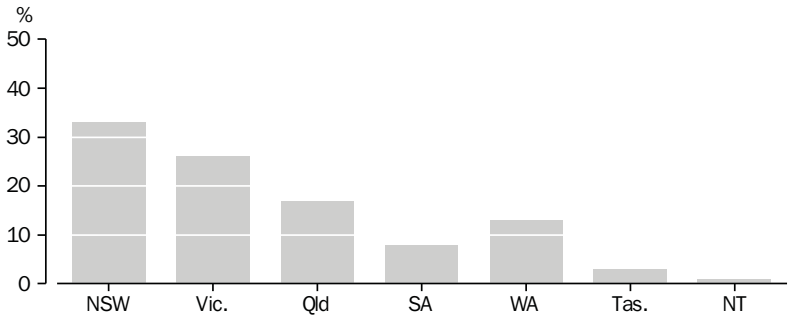
(b) Principally ready mixed concrete manufacturing.

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

State and territory distribution of 2000–01 production

Graph 2.42 shows how production in Non-metallic mineral product manufacturing 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)—2000–01



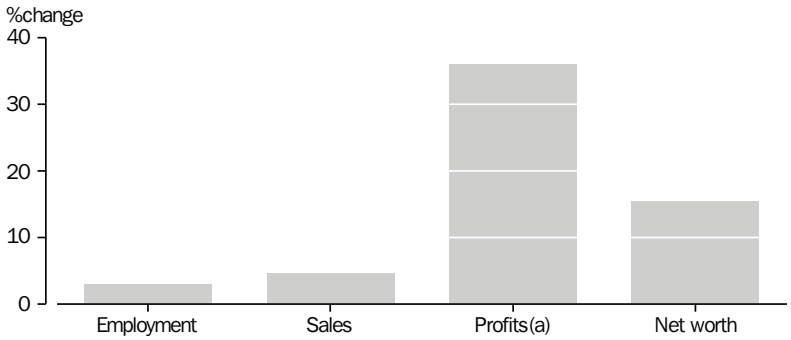
(a) The ACT contributed 0.7% of production for this industry.

Source: ABS, Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

METAL PRODUCT MANUFACTURING

Metal product manufacturing businesses

2.43 CHANGE FROM 1999–2000 TO 2000–01



(a) Operating profit before tax.

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

In June 2001, Metal product manufacturers employed 147,000 people, an increase of 3.0% over the previous year. During 2000–01, these manufacturers generated $40.5b in sales and service income and almost $3.9b in operating profit before tax. Among the manufacturing subdivisions, Metal product manufacturing is one of the largest industries.

The industry balance sheet below shows that the net worth of the industry rose by $2.4b (15%) from 1999–2000 to 2000–01. The industry experienced an increase in both the value of assets (up 9%) and the value of liabilities (up 5%). Capital expenditure on tangible assets increased by 12% to $1.9b. The largest component of capital expenditure in 2000–01 was outlays on plant, machinery and equipment (including motor vehicles) which amounted to $1.7b, 86% of total capital outlays (including intangibles).

2.44 INCOME STATEMENT AND BALANCE SHEET

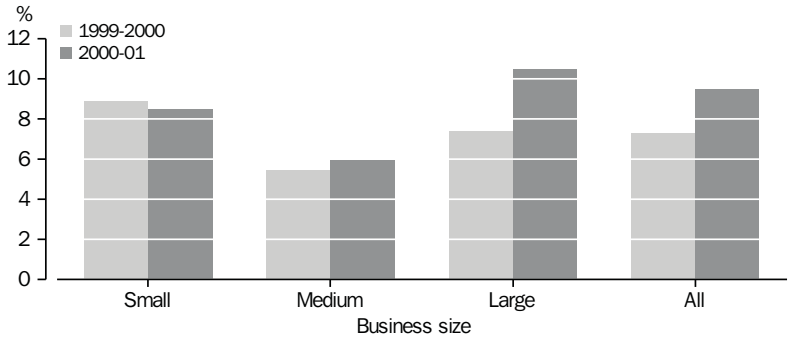
	1999–2000	*2000–01*	*Change*
	$m	*$m*	*%*
INCOME STATEMENT			
Sales and service income	38 718	40 517	4.6
Cost of sales	27 530	27 360	–0.6
Trading profit	*11 188*	*13 157*	*17.6*
Interest income	194	250	29.3
Other operating income	349	287	–17.7
Selected labour costs	6 513	6 999	7.5
Depreciation and amortisation	1 362	1 719	26.2
Other expenses	205	269	31.6
Earnings before interest and tax	*3 650*	*4 707*	*29.0*
Interest expenses	799	833	4.3
Operating profit before tax	**2 851**	**3 874**	**35.9**
BALANCE SHEET			
Current assets	13 348	15 208	13.9
Non-current assets	24 352	26 014	6.8
Total assets	*37 700*	*41 222*	*9.3*
Current liabilities	12 297	12 530	1.9
Non-current liabilities	9 897	10 783	9.0
Total liabilities	*22 194*	*23 313*	*5.0*
Net worth	**15 507**	**17 909**	**15.5**
CAPITAL OUTLAYS			
Acquisition of fixed tangible assets(a)	1 743	1 944	11.5

(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

2.45 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 2000–01, the industry profit margin was 9.6% (i.e. $96 of pre-tax profits per $1,000 of operating income) an increase on the 1999–2000 result. Pre-tax profits were recorded in 2000–01 by 73% of Metal product manufacturers (76% of medium businesses, 73% of small sized businesses and 71% of large 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 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. The profit margin and return on assets experienced relatively sharp increases from 1999–2000 to 2000–01, a second consecutive upward movement after several years of up and down movements.

2.46 INDUSTRY PERFORMANCE

Selected performance measures	*Units*	*1995 –96*	*1996 –97*	*1997 –98*	*1998 –99*	*1999 –2000*	*2000 –01*
Profit margin	%	7.5	6.6	7.8	6.4	7.4	9.6
Return on assets	%	7.6	7.2	8.3	6.2	7.6	9.4
Long-term debt to equity	%	34	57	80	91	64	60
Current ratio	times	1.6	1.3	1.3	1.0	1.1	1.2

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. Fabricated metal product manufacturing n.e.c. is the largest industry class within the subdivision, measured by employment, Basic iron and steel is the largest, measured by sales and service income and Alumina production is the largest measured by production.

2.47 INDUSTRY COMPOSITION—2000–01

	Employment at end of June(a)	*Sales and service income*	*Industry value added (production)*
	no.	*$m*	*$m*
Basic iron and steel mfg	19 123	8 134	1 874
Iron and steel casting and forging	5 326	1 018	400
Steel pipe and tube mfg	4 133	1 231	300
Alumina production	7 844	5 287	2 800
Aluminium smelting	4 885	5 306	1 863
Copper, silver, lead and zinc smelting, refining	2 712	1 583	355
Basic non-ferrous metal mfg n.e.c.	1 019	630	140
Aluminium rolling, drawing, extruding	3 048	1 311	272
Non-ferrous metal rolling, drawing, extruding n.e.c.	1 632	909	157
Non-ferrous metal casting	1 931	251	92
Structural steel fabricating	17 295	2 885	935
Architectural aluminium product mfg	13 871	2 098	651
Structural metal product mfg n.e.c.	5 683	870	305
Metal container mfg	4 563	1 360	468
Sheet metal product mfg n.e.c.	13 599	1 878	766
Hand tool and general hardware mfg	1 900	219	93
Spring and wire product mfg	4 418	1 021	300
Nut, bolt, screw and rivet mfg	2 420	431	167
Metal coating and finishing	8 795	847	416
Non-ferrous pipe fitting mfg	2 570	411	163
Fabricated metal product mfg n.e.c.	20 275	2 837	1 138
Total Metal product mfg	**147 045**	**40 517**	**13 655**

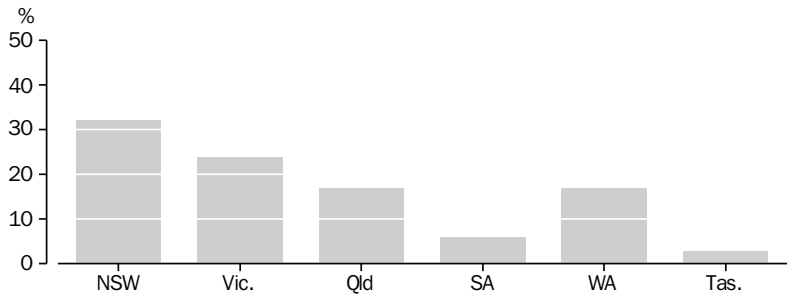
(a) Includes working proprietors.

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

State and territory distribution of 2000–01 production

Graph 2.48 shows how production in Metal product manufacturing 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)—2000–01



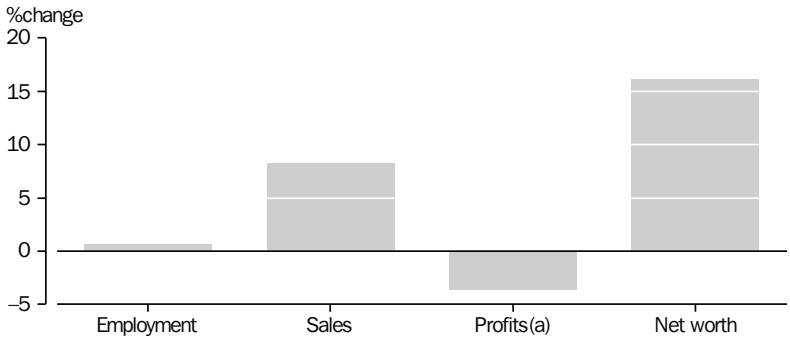
(a) Data for NT and ACT is not for publication but in total, the territories contributed 1.3% of production for this industry.

Source: Manufacturing Industry, Australia, 2000–2001 (cat. no. 8221.0).

MACHINERY AND EQUIPMENT MANUFACTURING

Machinery and equipment manufacturing businesses

2.49 CHANGE FROM 1999–2000 TO 2000–01



(a) Operating profit before tax.

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

In June 2001, Machinery and equipment manufacturers employed 202,200 people, an increase of 0.6% over the previous year. This is the largest employment of any manufacturing subdivision. During 2000–01, this industry generated $50.6b in sales and service income and $1.8b in operating profit before tax. Among the manufacturing subdivisions, Metal product manufacturing is one of the largest industries.

The industry balance sheet below shows that the net worth of the industry rose by $1.7b (16%) from 1999–2000 to 2000–01. The industry experienced increases in both the value of assets (up 18%) and the value of liabilities (up 20%). Capital expenditure on tangible assets increased by 20% to $1.5b. The largest component of capital expenditure in 2000–01 was outlays on plant, machinery and equipment (including motor vehicles) which amounted to $1.1b, 61% of total capital outlays (including intangibles).

2.50 INCOME STATEMENT AND BALANCE SHEET

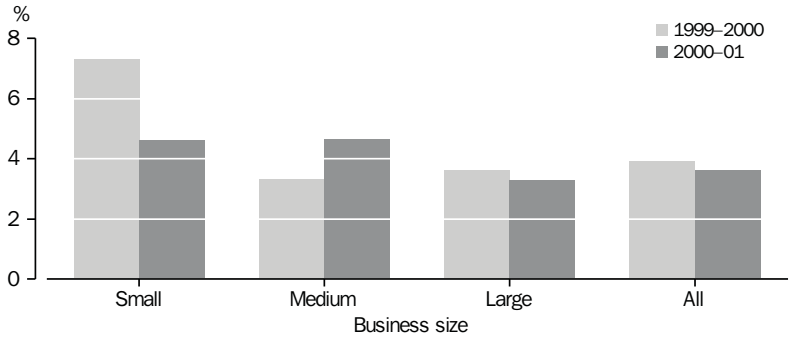
	1999–2000	*2000–01*	*Change*
	$m	*$m*	*%*
INCOME STATEMENT			
Sales and service income	46 825	50 645	8.2
Cost of sales	34 554	37 883	9.6
Trading profit	*12 270*	*12 761*	*4.0*
Interest income	135	152	13.0
Other operating income	764	688	–9.9
Selected labour costs	9 201	9 621	4.6
Depreciation and amortisation	1 384	1 393	0.7
Other expenses	230	274	19.5
Earnings before interest and tax	*2 355*	*2 313*	*–1.8*
Interest expenses	440	467	6.0
Operating profit before tax	**1 914**	**1 846**	**–3.6**
BALANCE SHEET			
Current assets	16 599	18 758	13.0
Non-current assets	11 309	14 271	26.2
Total assets	*27 908*	*33 029*	*18.4*
Current liabilities	11 938	13 703	14.8
Non-current liabilities	5 301	6 942	31.0
Total liabilities	*17 239*	*20 645*	*19.8*
Net worth	**10 669**	**12 384**	**16.1**
CAPITAL OUTLAYS			
Acquisition of fixed tangible assets(a)	1 212	1 453	19.8

(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

2.51 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 2000–01, the industry profit margin was 3.7% (i.e. $37 of pre-tax profits per $1,000 of operating income) a decrease from the 1999–2000 result. Pre-tax profits were recorded in 2000–01 by 65% of Machinery and equipment manufacturers (78% of medium businesses, 76% of large sized businesses but only 63% 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 2000–01, the ratios of pre-tax profits to income and return on assets have fallen markedly over the period. The profit margin has continued to decrease.

2.52 INDUSTRY PERFORMANCE

Selected performance measures	*Units*	*1995 –96*	*1996 –97*	*1997 –98*	*1998 –99*	*1999 –2000*	*2000 –01*
Profit margin	%	6.3	5.9	4.6	4.2	4.1	3.7
Return on assets	%	9.2	9.2	7.0	6.8	6.9	5.6
Long-term debt to equity	%	43	50	57	57	50	56
Current ratio	times	1.5	1.5	1.4	1.3	1.4	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. Motor vehicle manufacturing and associated manufacturing industries continue to be the largest industry classes within the subdivision.

2.53 INDUSTRY COMPOSITION—2000–01

	Employment at end of June(a)	*Sales and service income*	*Industry value added (production)*
	no.	*$m*	*$m*
Motor vehicle mfg	23 243	16 323	2 174
Motor vehicle body mfg	9 908	1 434	444
Automotive electrical and instrument mfg	5 085	1 613	357
Automotive component mfg n.e.c.	24 424	4 395	1 681
Shipbuilding	6 079	1 410	524
Boatbuilding	4 326	585	202
Railway equipment mfg	5 873	1 054	299
Aircraft mfg	5 849	951	394
Transport equipment mfg n.e.c.	337	43	16
Photographic and optical good mfg	3 368	1 268	360
Medical and surgical equipment mfg	6 653	739	333
Professional and scientific equipment mfg n.e.c.	4 548	836	346
Computer and business machine mfg	4 091	1 245	230
Telecommunication, broadcasting and transceiving equipment mfg	9 114	2 471	739
Electronic equipment mfg n.e.c.	8 928	1 603	589
Household appliance mfg	9 765	2 086	671
Electric cable and wire mfg	2 979	1 136	266
Battery mfg	910	203	70
Electric light and sign mfg	4 098	609	194
Electrical equipment mfg n.e.c.	12 646	2 231	607
Agricultural machinery mfg	5 331	901	238
Mining and construction machinery mfg	8 789	1 597	532
Food processing machinery mfg	2 748	598	172
Machine tool and part mfg	6 344	768	335
Lifting and material handling equipment mfg	8 512	1 705	636
Pump and compressor mfg	3 449	676	243
Commercial space heating and cooling equipment mfg	2 548	443	156
Industrial machinery and equipment mfg n.e.c.	12 223	1 725	677
Total Machinery and equipment mfg	**202 170**	**50 645**	**13 487**

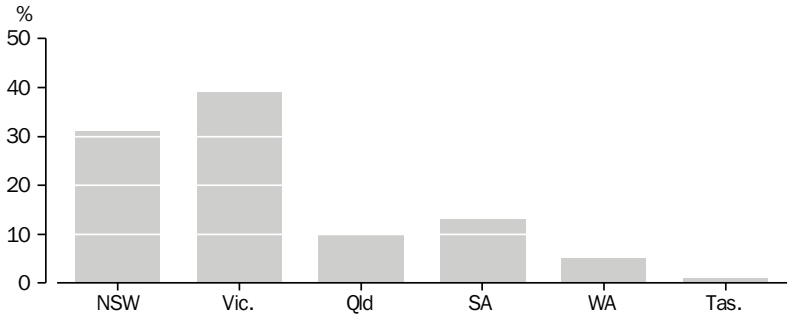
(a) Includes working proprietors.

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

State and territory distribution of 2000–01 production

Graph 2.54 shows how production in Machinery and equipment manufacturing 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)—2000–01



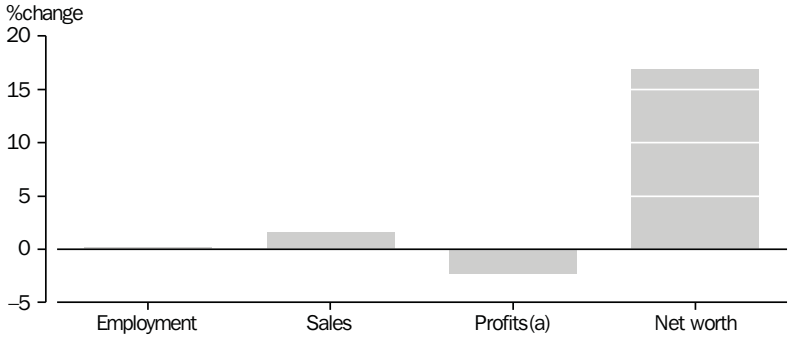
(a) NT and ACT each contributed less than 0.4% of production for this industry.

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

OTHER MANUFACTURING

Other manufacturing

2.55 CHANGE FROM 1999–2000 TO 2000–01



(a) Operating profit before tax.

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

In June 2001, businesses in the Other manufacturing subdivision employed 54,200 people, a small increase of 0.2% over the previous year. During 2000–01, this industry generated almost $7b in sales and service income and $0.3b 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 increased by $0.2b (17%) during 2000–01. The industry experienced increases in both assets (up 8%) and liabilities (up 3%). Capital expenditure on tangible assets fell by 32% to $0.1b. The largest component of capital expenditure in 2000–01 was outlays on plant, machinery and equipment (including motor vehicles) which amounted to $0.1b, 61% of total capital outlays (including intangibles).

2.56 INCOME STATEMENT AND BALANCE SHEET

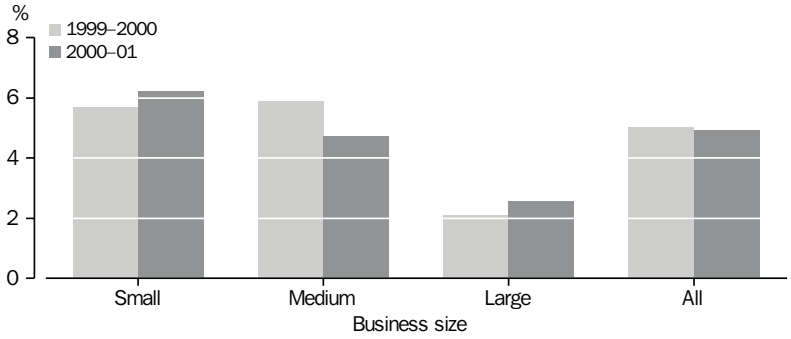
	1999–2000	*2000–01*	*Change*
	$m	*$m*	*%*
INCOME STATEMENT			
Sales and service income	6 853	6 963	1.6
Cost of sales	4 729	4 646	–1.8
Trading profit	*2 124*	*2 317*	*9.1*
Interest income	12	18	53.6
Other operating income	55	32	–42.2
Selected labour costs	1 592	1 772	11.3
Depreciation and amortisation	110	123	11.4
Other expenses	70	63	–10.0
Earnings before interest and tax	*418*	*409*	*–2.2*
Interest expenses	67	65	–2.6
Operating profit before tax	**352**	**344**	**–2.1**
BALANCE SHEET			
Current assets	1 619	1 687	4.3
Non-current assets	1 229	1 380	12.3
Total assets	*2 847*	*3 067*	*7.7*
Current liabilities	1 204	1 214	0.8
Non-current liabilities	649	690	6.4
Total liabilities	*1 853*	*1 904*	*2.8*
Net worth	**994**	**1 163**	**16.9**
CAPITAL OUTLAYS			
Acquisition of fixed tangible assets(a)	203	139	–31.6

(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 2000–01, the industry profit margin was 5.0% (i.e. $50 of pre-tax profits per $1,000 of operating income) a slight decrease from the 1999–2000 result. Pre-tax profits were recorded in 2000–01 by 67% of businesses in the Other manufacturing subdivision (75% of medium businesses, 66% of small sized businesses and 64% of large businesses). Further information by size of business is under 'Analysis by size of business' in Chapter 1.

Performance indicators *continued*

Table 2.58 shows that in terms of the measures shown, this industry has recorded quite consistent performance levels over the period 1996–97 to 2000–01.

2.58 INDUSTRY PERFORMANCE

Selected performance measures	*Units*	*1995 –96*	*1996 –97*	*1997 –98*	*1998 –99*	*1999 –2000*	*2000 –01*
Profit margin	%	5.8	4.6	5.1	5.0	5.2	5.0
Return on assets	%	10.9	8.7	11.2	10.0	12.3	11.2
Long-term debt to equity	%	64	61	56	58	65	59
Current ratio	times	1.4	1.3	1.5	1.6	1.3	1.4

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 largest industry class by far in this subdivision is Wooden furniture and upholstered seat manufacturing.

2.59 INDUSTRY COMPOSITION—2000–01

	Employment at end of June(a)	*Sales and service income*	*Industry value added (production)*
	no.	*$m*	*$m*
Prefabricated metal building mfg	2 295	618	158
Prefabricated building mfg n.e.c.	667	114	33
Wooden furniture and upholstered seat mfg	28 520	2 908	1 102
Sheet metal furniture mfg	3 109	459	155
Mattress mfg (except rubber)	2 487	443	141
Furniture mfg n.e.c.	7 015	1 085	363
Jewellery and silverware mfg	2 658	426	124
Toy and sporting good mfg	2 386	303	112
Manufacturing n.e.c.	5 104	607	229
Total Other mfg	**54 241**	**6 963**	**2 417**

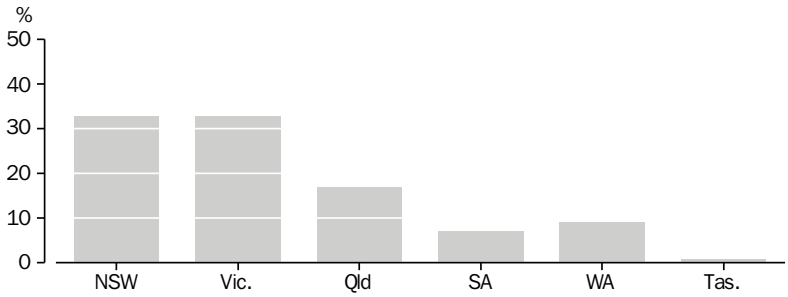
(a) Includes working proprietors.

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

State and territory distribution of 2000–01 production

Graph 2.60 shows how production in Other manufacturing 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)—2000–01



(a) Data for NT and ACT is not for publication but in total, the territories contributed 0.6% of production for this industry.

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

CHAPTER 3 LATEST INDICATORS

INTRODUCTION

Chapter 3 provides indicative information about the manufacturing industry from a number of quarterly and monthly 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 with the annual manufacturing surveys, 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 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, estimates for Company profits only include private incorporated businesses (companies) employing 20 or more persons.

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 2000–01 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 4.4% from 2000–01 to 2001–02 measured in current price values and by 2.7% in volume terms. This result implies an average price increase for manufactured goods of around 1.7% between the two years. As would be expected in periods of relatively small price movements, changes from 2000–01 to 2001–02 tended to be in the same direction for both the value of sales and volume measures of sales. The largest increases in current price sales were recorded by Other manufacturing, (up 19.2%), Wood and paper product manufacturing (up 11.7%) and Metal product manufacturing (up 7.4%). The same industries also recorded the greatest increases in the volume of sales.

Sales of goods and implied price changes *continued*

The largest decrease in current price sales was recorded by Textile, clothing, footwear and leather manufacturing (down 14.6%). Non-metallic mineral product manufacturing also recorded a decrease (down 2.2%). 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 2001–02 current price sales by 2001–02 volume of sales. Taking Food, beverage and tobacco manufacturing as an example gives 62,609/59,084 = 1.060 implying that average price levels for that industry for 2001–02 were 6.0% higher than average price levels for 2000–01. On this basis, most industry subdivisions experienced increases in the average level of prices with Food, beverage and tobacco recording the largest increase followed by Printing, publishing and recorded media (up 2.9%). Petroleum, coal, chemical and associated products and Metal product manufacturing recorded decreases in the average level of prices (down 2.3% and 1.7% respectively).

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

	Current prices			*Chain volume measures(a)*		
Industry	*2000–01* $m	*2001–02* $m	*Change* %	*2000–01* $m	*2001–02* $m	*Change* %
Food, beverage and tobacco mfg	59 597	62 609	5.1	59 595	59 084	–0.9
Textile, clothing, footwear and leather mfg	10 871	9 283	–14.6	10 872	9 111	–16.2
Wood and paper product mfg	16 330	18 243	11.7	16 327	18 027	10.4
Printing, publishing and recorded media	16 397	17 034	3.9	16 397	16 555	1.0
Petroleum, coal, chemical and associated product mfg	45 541	46 254	1.6	45 542	47 349	4.0
Non-metallic mineral product mfg	10 428	10 197	–2.2	10 428	10 094	–3.2
Metal product mfg	35 343	37 946	7.4	35 345	38 618	9.3
Machinery and equipment mfg	51 922	54 703	5.4	51 923	53 216	2.5
Other mfg	7 162	8 536	19.2	7 162	8 438	17.8
Total mfg	**253 592**	**264 805**	**4.4**	**253 592**	**260 495**	**2.7**

(a) Reference year for chain volume measures is 2000–01 and thus, values for that year are the same under chain volume measures and current prices.

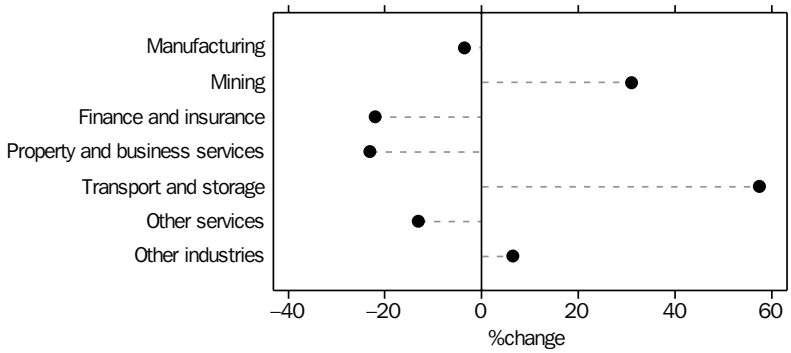
Source: Business Indicators, Australia, June quarter 2002 (cat. no. 5676.0).

CAPITAL EXPENDITURE

This article relates to private sector new capital expenditure for most industries. Excluded is all capital expenditure by governments and all private expenditure in the Agriculture, forestry and fishing (ANZSIC division A), Superannuation (ANZSIC Class 7412), Education (ANZSIC division N), Health and community services (ANZSIC division O) and Other services (ANZSIC subdivision 96) industries.

For the industries covered, the manufacturing industry was responsible for 20% of 2001–02 capital expenditure by private sector businesses in Australia, a decrease from 21% the year before. Capital expenditure by the manufacturing industry decreased by $305m (down 3.6%) between 2000–01 and 2001–02.

3.2 CHANGE FROM 2000–01 TO 2001–02



Source: Private New Capital Expenditure and Expected Expenditure, Australia, June quarter 2002 (cat. no. 5625.0).

In comparison, total private sector capital expenditure increased by 1.0% (to $39,716m) from 2000–01 to 2001–02. Substantial rises in Transport and storage (up 57.5%) and Mining (up 31.0%) were offset by substantial falls in Property and business services (down 23.1%), Finance and insurance (down 22.1%) and Other services (down 13.1%).

In 2001–02, the industries within manufacturing which undertook the most capital expenditure were Food, beverage and tobacco manufacturing (24.3% of total manufacturing) and Machinery and equipment manufacturing (20.3% of the total).

3.3 PRIVATE NEW CAPITAL EXPENDITURE

Industry	2000–01 $m	2001–02 $m	Change %
Food, beverage and tobacco mfg	2 033	1 962	–3.5
Textile, clothing, footwear and leather mfg	232	181	–22.0
Wood and paper product mfg	580	514	–11.4
Printing, publishing and recorded media	677	565	–16.5
Petroleum, coal, chemical and associated product mfg	1 377	1 162	–15.6
Non-metallic mineral product mfg	512	512	—
Metal product mfg	1 099	1 324	20.5
Machinery and equipment mfg	1 701	1 637	–3.8
Other mfg	180	227	26.1
Total mfg	**8 387**	**8 082**	**–3.6**
Of which			
Buildings and structures	1 228	799	–34.9
Equipment, plant and machinery	7 160	7 283	1.7

Source: Private New Capital Expenditure and Expected Expenditure, Australia, June quarter 2002.

COMPANY PROFITS

This article presents data for company profits. Not all businesses are represented. The information has been compiled from the ABS *Quarterly Economic Activity Survey* which covers only private incorporated companies with 20 or more employees (i.e. the survey does not measure profits for private companies employing less than 20 people or for unincorporated businesses regardless of size). Companies in ANZSIC groups 733 (Other Financiers) or 734 (Financial Asset Investors) classified to the Corporate Financial sector of the Standard Institutional Sector Classification of Australia (SISCA) are also excluded.

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. For this purpose, estimates of Company gross operating profits have been used. This measure of profits excludes interest income and expenses; depreciation and amortisation; and selected items which do not involve the production of goods and services such as net foreign exchange gains/losses, gains/losses arising from the sale of non-current assets, and net unrealised gains/losses from the revaluation of current or non-current assets.

The survey results show that manufacturing industry profits increased by $291m, or 1.3% between 2000–01 and 2001–02.

3.4 COMPANY GROSS OPERATING PROFITS

	2000–01	*2001–02*	*Change*
	$m	*$m*	*%*
Mining	22 464	21 239	–5.5
Manufacturing	**22 702**	**22 993**	**1.3**
Construction	1 677	1 714	2.2
Wholesale trade	5 298	6 437	21.5
Retail trade	3 411	4 145	21.5
Transport & storage	4 469	4 596	2.8
Property & business services	4 507	4 335	–3.8
Other selected industries	10 979	10 879	–0.9
Total	**75 497**	**76 338**	**1.1**

Source: Business Indicators, Australia, June quarter 2002 (cat. no. 5676.0).

Most manufacturing industries experienced increases in pre-tax profits, the most notable increases being for the Food, beverage and tobacco manufacturing industry (up 17.3%), Other manufacturing industry (up 13.3%) and Petroleum, coal, chemical and associated product manufacturing (up 10.5%). The two industries experiencing decreases in pre-tax profits were Metal product manufacturing (down 24.1%) and Printing, publishing and recorded media (down 4.5%).

3.5 COMPANY GROSS OPERATING PROFITS IN MANUFACTURING INDUSTRIES

	2000–01	*2001–02*	*Change*
	$m	*$m*	*%*
Food, beverage and tobacco mfg	5 541	6 502	17.3
Textile, clothing, footwear and leather mfg	438	471	7.5
Wood and paper product mfg	1 718	1 783	3.8
Printing, publishing and recorded media	1 980	1 890	–4.5
Petroleum, coal, chemical and associated product mfg	3 533	3 904	10.5
Non-metallic mineral product mfg	1 406	1 438	2.3
Metal product mfg	4 774	3 624	–24.1
Machinery and equipment mfg	3 167	3 219	1.6
Other mfg	143	162	13.3
Total mfg	**22 702**	**22 993**	**1.3**

Source: Business Indicators, Australia, June quarter 2002 (cat. no. 5676.0).

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 November 2000 and November 2001. The Manufacturing industry recorded a decrease of 18,200 paid employees between the two periods (down 2.1%). This fall resulted from a 1.9% fall in full-time employees and a 3.3% fall in part-time employees.

The decrease in overall numbers of employees in Manufacturing between these years was in contrast to the economy overall, where the total number of paid employees increased by 3.4%. Part-time employees rose 7.9%, bringing their share up to 34% of all the industries workforce. The largest decrease in the number of paid employees among the industries was recorded by Communication services (down 5.3%). In contrast, the industry which recorded the most growth over the same period was Property and business services (up 10.5%).

The proportion of manufacturing employees who were full-time increased marginally between the year ended November 2000 and the year ended November 2001 (from 88.3% to 88.5%). The proportion for all industries fell from 67.6% to 66.2%. Government administration and defence experienced the greatest decrease in full-time employment, falling from 81.0% to 75.3% of total employees with part-time employment rising from 19.0% to 24.7%.

3.6 WAGE AND SALARY EARNERS—AVERAGE OVER YEAR

	Manufacturing	*Total of all industries(a)*
Year ended November 2000	'000	'000
Full-time	777.1	4941.9
Part-time	102.9	2369.4
Total	880.0	7311.3
Year ended November 2001		
Full-time	762.3	5001.4
Part-time	99.5	2557.3
Total	861.8	7558.7
Change	%	%
Full-time	–1.9	1.2
Part-time	–3.3	7.9
Total	–2.1	3.4

(a) Excludes Agriculture, forestry and fishing.

Source: Wage and Salary Earners, Australia, December quarter 2001 (cat. no. 6248.0).

While the average numbers of employees in the Manufacturing industry in Australia fell between the year ended November 2000 and the year ended November 2001, the states and territories experienced a variety of change patterns in their average numbers of employees. As table 3.7 shows, six states recorded a decrease in the number of employees. This contrasts with industry overall which recorded increases for all jurisdictions. In both periods, New South Wales, Victoria and Queensland accounted for 80% of the total number of employees in the Manufacturing industry.

3.7 WAGE AND SALARY EARNERS

	Manufacturing (average over year)			Manufacturing share of all industries	
	Average to November 2000	Average to November 2001	Change	Average to November 2000	Average to November 2001
	'000	'000	%	%	%
New South Wales	269.3	263.6	–1.9	11.2	10.8
Victoria	295.3	285.6	–3.3	15.5	14.3
Queensland	143.3	143.2	–0.1	10.8	10.4
South Australia	78.3	77.5	–0.9	14.6	14.1
Western Australia	67.8	65.8	–3.0	9.0	8.4
Tasmania	20.0	18.9	–5.4	12.6	11.4
Northern Territory	2.9	3.3	15.8	3.7	4.2
Australian Capital Territory	3.5	4.0	15.2	2.2	2.5
Australia	**880.0**	**861.8**	**–2.1**	**12.0**	**11.4**

Source: Wage and Salary Earners, Australia, December quarter 2001 (cat. no. 6248.0).

Over the last ten years, the change in numbers of paid employees has been more pronounced. Between the year ended November 1991 and the year ended November 2001 the average number of paid employees in Manufacturing fell 11.6% from 975,300 to 861,800. This contrasts markedly to the increase in the total for all industries of 19.7% over the same period. The proportion of all paid employees in the Manufacturing industry fell from 15.4% to 11.4% over this period.

Average weekly earnings of employees

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 2002 for full-time adult employees. At that time, average earnings for full-time adult Manufacturing employees at $873, was lower than the all industries' full-time adult average of $906. Twelve of the sixteen industries recorded higher average full-time adult earning rates than the Manufacturing industry.

3.8 AVERAGE WEEKLY EARNINGS(a)—JUNE QUARTER 2002

Industry	*Full-time adult males* $	*Full-time adult females* $	*Full-time adult persons* $
Mining	1 594	1 089	1 546
Manufacturing	**923**	**695**	**873**
Electricity, gas and water supply	1 207	951	1 168
Construction	912	619	879
Wholesale trade	899	746	857
Retail trade	681	621	660
Accommodation, cafes and restaurants	717	620	679
Transport and storage	975	727	920
Communication services	1 096	925	1 047
Finance and insurance	1 287	841	1 061
Property and business services	1 105	798	978
Government administration and defence	1 003	875	949
Education	1 056	921	975
Health and community services	1 021	826	892
Cultural and recreational services	949	795	892
Personal and other services	991	774	915
All industries(b)	972	788	906

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

(b) Excluding Agriculture, forestry and fishing.

Source: Average Weekly Earnings, States and Australia, June quarter 2002 (cat. no. 6302.0).

Table 3.9 presents data for change in average weekly earnings. Average weekly earnings for full-time adult employees in Manufacturing grew by 7.2% from June quarter 2001 to June quarter 2002. Full-time adult males in Manufacturing experienced an increase of 7.9% which is above the all industries average (up 5.3%). Full-time adult female employees recorded an increase of 3.6% in average weekly earnings, below the all industries average of 5.0%.

In comparison, the average weekly earnings for full-time adult persons for all industries increased by 5.2%. If industries are ranked from the highest increase (Construction — up 11.8%) to the lowest (Transport — up 0.7%), Manufacturing ranks second of the sixteen industries together with Property and business services.

3.9 CHANGE IN AVERAGE EARNINGS(a)—2001–02

Industry	Full-time adult males %	Full-time adult females %	Full-time adult persons %
Mining	6.3	9.6	6.7
Manufacturing	**7.9**	**3.6**	**7.2**
Electricity, gas and water supply	5.7	4.6	5.2
Construction	11.7	6.9	11.8
Wholesale trade	3.4	3.1	3.7
Retail trade	0.4	4.9	1.7
Accommodation, cafes and restaurants	4.7	1.9	3.3
Transport and storage	0.6	0.7	0.7
Communication services	6.9	6.7	7.1
Finance and insurance	4.8	5.6	5.9
Property and business services	6.9	9.0	7.2
Government administration and defence	3.6	5.3	4.1
Education	2.6	4.0	3.3
Health and community services	1.6	3.4	2.9
Cultural and recreational services	8.1	4.9	6.9
Personal and other services	4.9	9.4	6.0
All industries(b)	5.3	5.0	5.2

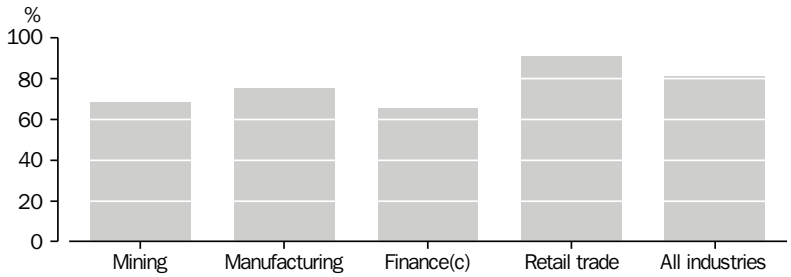
(a) Change from June quarter 2001 to June quarter 2002 in average ordinary time earnings.

(b) Excluding Agriculture, forestry and fishing.

Source: Average Weekly Earnings, States and Australia, June quarter 2002 (cat. no. 6302.0).

Graph 3.10 shows average weekly earnings of adult full-time female employees as a percentage of corresponding adult male full-time earnings. In terms of this percentage, Manufacturing at 75% is slightly lower than the all industries average of 81%. Percentages range from 65% for the Finance and insurance industry to 91% for Retail trade.

3.10 FEMALE/MALE AVERAGE WEEKLY EARNINGS(a) RATIO(b)



(a) Average gross earnings before tax (including overtime).
(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 1999–2000, 2000–01 and 2001–02.

Changes in production levels of the selected commodities show half reflecting lower levels of production and half reflecting higher levels of production for 2001–02 than for 2000–01. The greatest relative decreases in production between the two years occurred for Hardwood woodchips (down 7.6%) and Wood pulp (down 5.8%). Of those commodities that experienced increases in production levels, the largest were recorded in Ready mixed concrete (up 12.7%) and Chicken meat (up 7.4%).

3.11 PRODUCTION OF SELECTED MANUFACTURED COMMODITIES

Commodity	*Unit of quantity*	*1999–2000*	*2000–01*	*2001–02*
Red meat	'000 t	3 031	r3 200	3 075
Chicken meat	'000 t	r597	r620	666
Beer	million L	1 768	1 745	1 744
Tobacco and cigarettes	t	20 688	r19 124	18 367
Newsprint	'000 t	381	r391	398
Wood pulp	'000 t	861	895	843
Hardwood woodchips	'000 t	6 164	r6 401	5 912
Cement, Portland	'000 t	7 937	r6 821	7 236
Clay bricks	million	r1 735	1 448	1 514
Ready mixed concrete	'000 m^3	r20 633	r17 251	19 447
Electricity	million kWh	184 790	188 546	185 853
Gas	PJ	726	768	770

Source: Manufacturing Production, Australia (cat. no. 8301.0).

PRICES CHANGES 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.

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 by the very large increase recorded for the Petroleum and coal products industry (up 38.3 %). No manufacturing industries recorded a decrease in the price of articles produced between 1999–2000 and 2000–01.

Between 2000–01 and 2001–02 the price of articles produced by the manufacturing industry increased by 0.2%. Twelve manufacturing industries recorded increases, the largest being for Food, beverages and tobacco (up 6.5%). Of the three manufacturing industries that recorded falls, Petroleum and coal products was the most significant (down 16.7%).

3.12 PRICE CHANGES OF ARTICLES PRODUCED BY MANUFACTURERS

Industry	*Change from 1999–2000 to 2000–01* %	*Change from 2000–01 to 2001–02* %
Food, beverage and tobacco	5.0	6.5
Textiles and textile products	4.7	3.0
Knitting mills, clothing, footwear and leather	1.0	1.3
Log sawmilling and other wood products	3.7	1.3
Paper and paper product	3.2	0.8
Printing, publishing and recorded media	2.4	2.0
Petroleum and coal products	38.3	–16.7
Chemicals	3.7	–1.6
Rubber and plastics	3.7	4.1
Non-metallic mineral product	0.3	0.8
Basic metal products	10.1	–6.5
Fabricated metal products	1.3	1.6
Transport equipment and parts	3.7	3.5
Electronic equipment and other machinery	2.1	1.7
Other mfg	4.0	1.7
Total mfg	6.6	0.2

Source: Producer Price Indexes, Australia, June 2002 (cat. no. 6427.0).

Changes in prices of materials used

Between 1999–2000 and 2000–01 manufacturing recorded a price increase of 14.3% for materials used. All of the industries listed in table 3.13 recorded an increase in the price of materials used between 1999–2000 and 2000–01. Petroleum and coal products recorded the greatest increase (up 38%). The next greatest increase, for Footwear, was significantly lower at 12%.

Between 2000–01 and 2001–02 manufacturing overall recorded no change in prices for materials used. Of the 17 industries, eight recorded price increases and nine recorded price decreases. Food, beverages and tobacco recorded the largest increase (up 13.9%) and Footwear recorded the next largest increase (up 8.3%). Petroleum and coal products recorded the greatest decrease (down 19.2%). The next largest decrease was recorded for both Leather and leather products and Chemicals (down 4.1%).

3.13 PRICE CHANGES IN MATERIALS USED BY MANUFACTURERS

Industry	*Change from 1999–2000 to 2000–01* %	*Change from 2000–01 to 2001–02* %
Food, beverage and tobacco	9.2	13.9
Textiles and textile products	11.6	4.5
Knitting mills and clothing	3.8	2.5
Footwear	12.0	8.3
Leather and leather products	9.6	–4.1
Sawmilling and timber products	7.9	2.5
Paper and paper product	10.3	–0.3
Printing, publishing and recorded media	8.2	2.4
Petroleum and coal product	38.0	–19.2
Chemicals	10.8	–4.1
Rubber and plastics	11.8	–1.8
Non-metallic mineral product	0.7	3.5
Basic metal products	10.0	4.3
Fabricated metal products	5.2	–1.0
Transport equipment and parts	3.9	–0.5
Electronic equipment and other machinery	4.4	–0.8
Other mfg	5.7	–1.0
Total mfg	**14.3**	**—**

Source: Producer Price Indexes, Australia, June 2002 (cat. no. 6427.0).

CHAPTER 4 INTERNATIONAL TRADE

BENEFITS FROM EXPORTING

This Chapter deals with international trade aspects of the Australian manufacturing industry.

The article relating to benefits from exporting was mainly written by Tim Harcourt, the Chief Economist for the Australian Trade Commission (Austrade) in 2000. It follows on from the work presented in the joint ABS/Austrade publication *A Portrait of Australian Exporters* (cat. no. 8154.0). The article that comes after this further explores this aspect by bringing in data from the latest Manufacturing Survey.

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?

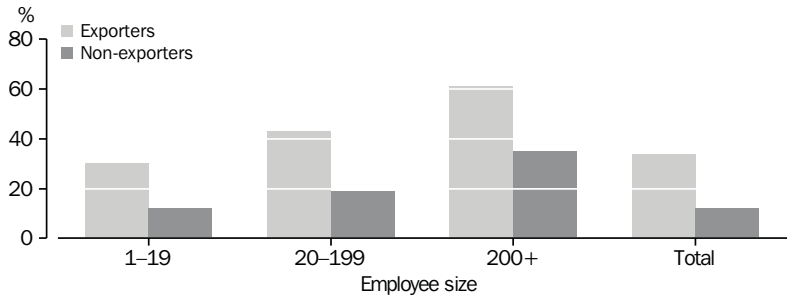
A report from Austrade and the Centre for Applied Economic Research at the University of New South Wales focused particularly on the benefits to the workforce. The report made extensive use of an ABS/Austrade publication, *A Portrait of Australian Exporters* (cat. no. 8154.0) which was based on the ABS 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 proportion of full-time employment provided. 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.

Benefits from exporting *continued*

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, graph 4.1 shows that on average, exporters pay better than non-exporters regardless of business size.

4.1 WAGES AND SALARIES PAID BY EXPORTERS AND NON-EXPORTERS—1997–98, Proportion paying greater than average weekly earnings



Source: 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.

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 in the following 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)—2000–01

	Exporters	*Non-exporters*
Commodity	*$'000*	*$'000*
Food, beverage and tobacco mfg	44.0	33.0
Textile, clothing, footwear and leather mfg	37.0	28.1
Wood and paper product mfg	47.7	34.8
Printing, publishing and recorded media	44.3	42.6
Petroleum, coal, chemical and associated product mfg	54.7	43.7
Non-metallic mineral product mfg	54.7	42.0
Metal product mfg	51.7	36.6
Machinery and equipment mfg	46.5	40.9
Other mfg	35.0	30.3
Total mfg	47.2	37.3

(a) Wages and salaries paid during 2000–01 divided by the number of employees at 30 June 2001.

Source: ABS data available on request, Annual Manufacturing Survey 2000–01.

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 a 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

Industry/period	Income from sales(a) $b	Exports by industry of origin(b) $b	Imports by industry of origin(b) $b	Total Australian market(c) $b	Estimated import penetration(d) %
Food, beverage and tobacco mfg					
2000–01	59.6	16.6	5.1	48.0	11
2001–02	62.6	17.5	5.4	50.5	11
Textile, clothing, footwear and leather mfg					
2000–01	10.9	2.9	7.4	15.4	48
2001–02	9.3	2.7	7.4	14.0	53
Wood and paper product mfg					
2000–01	16.3	1.6	3.6	18.2	20
2001–02	18.2	1.8	3.5	19.9	18
Printing, publishing and recorded media					
2000–01	16.4	0.5	1.9	17.8	11
2001–02	17.0	0.6	2.0	18.4	11
Petroleum, coal, chemical and associated product mfg					
2000–01	45.5	8.9	19.3	55.9	35
2001–02	46.3	8.3	20.1	58.1	35
Non-metallic mineral product mfg					
2000–01	10.4	0.4	1.4	11.4	12
2001–02	10.2	0.3	1.5	11.3	13
Metal product mfg					
2000–01	35.3	21.0	7.4	21.7	34
2001–02	37.9	20.3	8.4	26.0	32
Machinery and equipment mfg					
2000–01	51.9	16.2	58.7	94.4	62
2001–02	54.7	16.7	59.2	97.2	61
Other mfg					
2000–01	7.2	0.9	3.5	9.8	36
2001–02	8.5	0.9	3.8	11.3	33
Total mfg					
2000–01	**253.6**	**69.1**	**108.3**	**292.8**	**37**
2001–02	**264.8**	**69.1**	**111.2**	**306.8**	**36**

(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); Business Indicators, Australia (cat. no. 5676.0).

Exports by industry of origin

Total exports for the Australian manufacturing industry of origin in 2001–02 were estimated to be $69.1b which was the same level estimated for 2000–01. Although the manufacturing market overall remained constant there were some movements within the individual manufacturing industries. Export increases were estimated for Printing, publishing and recorded media with the largest percentage increase, up 20%. Other increases were for Wood and paper product manufacturing (up 13%), Food, beverage and tobacco manufacturing (up 5%) and Machinery and equipment manufacturing (up 3%).

The Metal product manufacturing industry continued to have the highest value of exports with $20.3b worth of goods being sold overseas, accounting for around 29% of all manufacturing exports. Other manufacturing industries to have exports valued at over $10b were Food, beverage and tobacco manufacturing ($17.5b) and Machinery and equipment manufacturing ($16.7b).

Imports by industry of origin

Imports increased marginally between 2000–01 and 2001–02 by a little under 3%. This resulted in Australian manufactured goods experiencing a trade deficit against the rest of the world of $42.1b in 2001–02, up 7% on the $39.2b experienced in 2000–01.

At $59.2b in value, goods classified to the Machinery and equipment manufacturing industry accounted for around 53% of manufacturing imports. Petroleum, coal, chemical and associated product manufacturing was the next largest with its $20.1b accounting for just over 18% of imports of manufactured goods. The only manufacturing subdivision to record a fall in the level of imports by industry of origin was Wood and paper product manufacturing (down 3%).

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 2000–01 and 2001–02. Under this method the estimate for the Australian domestic market for manufactured goods in 2001–02 was $306.8b, an increase of $14b (4.8%) on the previous year. The estimated market for manufactured goods was approximately $16,171 per head of resident Australian population in 2001–02.

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 2001–02 market size of $97.2b. The other major contributors were Petroleum, coal, chemical and associated product manufacturing estimated at $58.1b, and Food, beverage and tobacco manufacturing estimated at $50.5b.

The market for goods grew in seven of the nine manufacturing subdivisions between 2000–01 and 2001–02. The largest relative growth occurred in Metal product manufacturing (up 19.8%), closely followed by Other manufacturing (up 15.3%), while the largest relative fall was by Textile, clothing, footwear and leather manufacturing (down 9.1%).

Import penetration

Import penetration estimates provide an insight into the level of imported goods which make their way into the Australian market. In 2001–02, imports were estimated to satisfy 36% of the Australian market for all manufactured goods.

The greatest level of import penetration for an industry (of origin) in 2001–02 was for Machinery and equipment manufacturing where an estimated 61% 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 53% of the Australian market being satisfied by overseas products.

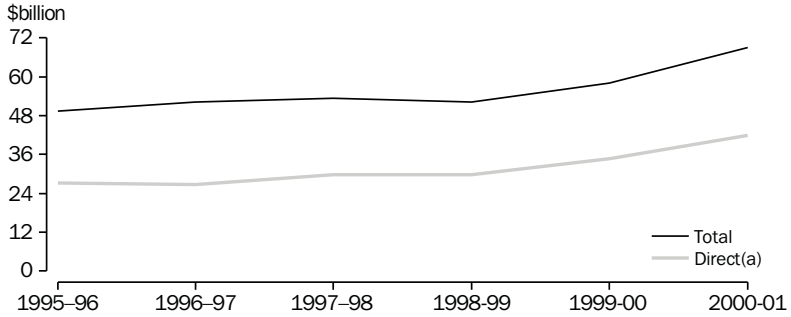
Markets (industry of origin) dominated by domestic goods in 2001–02 were again the Food, beverage and tobacco manufacturing (89% of demand satisfied by domestic products), Printing, publishing and recorded media (also 89%) and Non-metallic mineral product manufacturing (87%).

MANUFACTURERS WHO EXPORT

This article presents a range of statistics about manufacturing management units. 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. After a fall from 1995–96 to 1996–97, the proportion of exports of manufactured goods undertaken by manufacturers has grown steadily from 1996–97 when it was 51% to 2000–01 when it reached 61%.

4.4 EXPORTS OF MANUFACTURED GOODS



(a) Exports by manufacturers or their agents.

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

Exports as a proportion of goods manufactured

For 2000–01, Australian manufacturers directly exported $41,871m of the goods that they produced. Exports as a percentage of the total sales of goods produced was 19.2% for 2000–01. Exports as a percentage of sales of goods produced for management units employing; 0–49 persons was 15.2%, 50–99 persons was 14.7% and 100 or more persons was 20.7%.

Excluding Metal product manufacturing, (see the Unincorporated joint ventures entry in the Glossary), the industry subdivisions with the largest dollar contribution to direct exports, in all three employment size ranges (i.e. 0–49 persons, 50–99 persons and 100 or more persons) were Food, beverage and tobacco manufacturing, Machinery and equipment manufacturing and Petroleum, coal, chemical and associated product manufacturing.

The industry subdivisions with the highest proportion of exports compared to sales of goods produced, were Metal product manufacturing (at 34.2%), Food, beverage and tobacco manufacturing (at 23.4%) and Textile, clothing, footwear and leather manufacturing (at 20.3%).

4.5 EXPORT PERCENTAGE(a) OF MANUFACTURING ESTABLISHMENTS BY EMPLOYMENT SIZE—2000–01

	Employment size			
	Under 50	*50 but under 100*	*100 or more*	*Total*
Industry	*%*	*%*	*%*	*%*
Food, beverage and tobacco mfg	16.3	26.3	24.1	23.4
Textile, clothing, footwear and leather mfg	10.1	15.5	28.7	20.3
Wood and paper product mfg	1.6	12.3	7.8	6.5
Printing, publishing and recorded media	0.8	4.8	2.4	2.1
Petroleum, coal, chemical and associated product mfg	15.2	13.1	13.5	13.7
Non-metallic mineral product mfg	1.9	3.8	4.7	4.1
Metal product mfg(b)	33.2	8.0	37.1	34.2
Machinery and equipment mfg	11.2	17.4	22.5	19.9
Other mfg	2.1	10.4	4.7	3.9
Total mfg	**15.2**	**14.7**	**20.7**	**19.2**

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

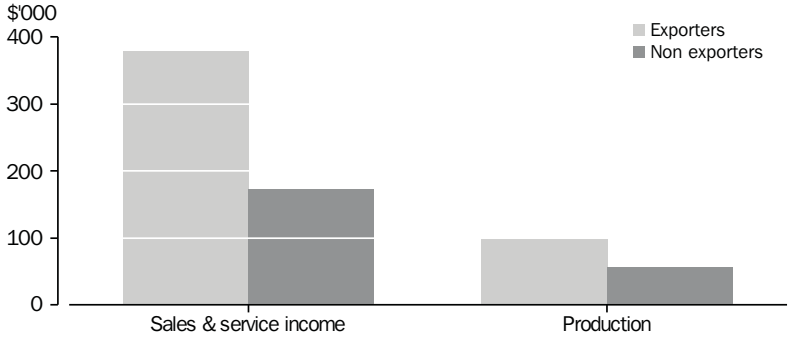
(b) Statistics classified by employment size for this industry can be misleading because of the influence of unincorporated joint venture businesses. For further information, refer to the note immediately preceding table 1.22 and to the Glossary.

Source: Manufacturing Industry, Australia, 2000–01 (cat. no. 8221.0).

Performance measures

Graph 4.6 and table 4.7 show that in total, manufacturing management units which undertook export activity in 2000–01 averaged 119% more sales and service income per person employed and 78% more production (industry value added) per person employed than those which undertook none.

4.6 PERFORMANCE PER PERSON EMPLOYED(a)—2000–01



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

Source: ABS data available on request, Annual Manufacturing Survey, 2000-01.

In 2000–01, in all industry subdivisions, direct exporters recorded higher averages per person employed for both performance measures shown in table 4.7 than for non-exporters with the exception being industry value added per person employed in Printing, publishing and recorded media.

4.7 PERFORMANCE OF EXPORTING MANUFACTURERS—2000–01

	Sales and service income per person employed		*Industry value added per person employed*	
	Direct exporters	*Non-exporters*	*Direct exporters*	*Non-exporters*
Industry	*$'000*	*$'000*	*$'000*	*$'000*
Food, beverage and tobacco mfg	367	205	90	60
Textile, clothing, footwear and leather mfg	220	114	55	38
Wood and paper product mfg	339	175	105	61
Printing, publishing and recorded media	215	163	68	73
Petroleum, coal, chemical and associated product mfg	588	259	113	74
Non-metallic mineral product mfg	297	243	130	78
Metal product mfg	463	139	168	38
Machinery and equipment mfg	318	176	77	55
Other mfg	172	117	57	41
Total mfg	**378**	**173**	**100**	**56**

Source: ABS data available on request, Annual Manufacturing Survey 2000–01.

This section shows 2001–02 levels of imports and exports for major manufactured commodity items.

Table 4.8 shows 2001–02 exports of manufactured products valued at $700m or more.

Comparisons of 2001–02 value of exports for manufactured goods with data from 2000–01 shows that the overall value of exports of manufactured goods has increased only marginally (1.4%) compared to the previous year's increase of 22.8%. There are a variety of movements of the commodities from a substantial decrease to a substantial increase in the value of exports. Petroleum products has traditionally shown strong growth but in the 2001–02 year they have recorded a 23% decline, (a similar pattern has appeared for imports of Petroleum products (down 14.2%)). Telecommunications and sound equipment were the other products to report a large decline (down 25.7%).

Offsetting the decline in the export of Petroleum products (mentioned above) were the increases in the export of transport equipment (up 54.8% or $656m), road vehicles (up 11.9% or $458m) and meat and meat preparations (up 7.5% or $432m).

4.8 EXPORTS OF SELECTED MANUFACTURED COMMODITIES—2001–02

Commodity	*$m*
Non-ferrous metals	8 843
Petroleum, petroleum products and related materials	8 376
Meat and meat preparations	6 228
Cereals and cereal preparations(a)	5 897
Gold, non-monetary (excluding gold ores and concentrates)	5 129
Textile fibres and their wastes (not manufactured into yarn or fabric)(a)	4 978
Road vehicles (including air-cushion vehicles)	4 298
Dairy products, and birds' eggs	3 151
Medicinal and pharmaceutical products(a)	2 334
Beverages	2 282
Transport equipment (excluding road vehicles)	1 858
Electrical machinery, apparatus, appliances, parts (including non-electrical counterparts)	1 669
Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	1 660
Office machines and automatic data processing machines	1 657
Machinery specialised for particular industries	1 390
Professional, scientific and controlling instruments and apparatus, n.e.s.	1 336
General industrial machinery and equipment, n.e.s. and machine parts, n.e.s.(a)	1 286
Telecommunications and sound recording and reproducing apparatus and equipment	1 080
Non-metallic mineral manfactures, n.e.s.(a)	968
Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks	933

(a) Excludes export commodities subject to a confidentiality restriction.

Source: International Merchandise Trade, Australia, June quarter 2002 (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 2001–02 imports of manufactured products with imports valued at $600m or more in that year.

Comparing 2001–02 data with that of 2000–01 shows that the overall value of imports of manufactured goods has increased marginally by 1.2%. The majority of the commodities show increased value of imports, the largest being for Medicinal and pharmaceutical products ($639m or 14.9%), Road vehicles ($557m or 3.9%), Gold, non-monetary ($530m or 31.4%) and for General industrial machinery and equipment, n.e.s. and machine parts, n.e.s. ($496m or 8.7%). The largest decreases were recorded by Petroleum ($1,474m or 14.2%) and Telecommunication and recording equipment ($1,068m or 13.5%).

4.9 IMPORTS OF MAJOR MANUFACTURED COMMODITIES —2001–02

	$m
Road vehicles (including air-cushion vehicles)	14 903
Petroleum, petroleum products and related materials	8 895
Office machines and automatic data processing machines	7 968
Telecommunication and sound recording and reproducing apparatus and equipment	6 862
Electrical machinery, apparatus, appliances, parts (including non-electrical counterparts)	6 630
General industrial machinery and equipment, n.e.s. and machine parts, n.e.s.	6 222
Medicinal and pharmaceutical products	5 009
Machinery specialised for particular industries	4 052
Transport equipment (excluding road vehicles)	3 468
Articles of apparel and clothing accessories	3 215
Power generating machinery and equipment	3 037
Professional, scientific and controlling instruments and apparatus, n.e.s..	3 215
Manufactures of metals, n.e.s.(a)	2 791
Textile yarn, fabrics, made-up articles, n.e.s., and related products	2 563
Organic chemicals	2 502
Paper and paperboard and articles of paper pulp, of paper or of paperboard(a)	2 363
Gold, non-monetary (excluding gold ores and concentrates)	2 218
Plastics in primary and non-primary form	2 179
Non-metallic mineral manufactures, n.e.s.	1 970
Iron and steel(a)	1 764
Rubber manufactures, n.e.s.(a)	1 608
Chemical materials and products n.e.s.(a)	1 486
Furniture, parts thereof; bedding, mattresses, mattress supports and similar stuffed furnishings(a)	1 194

(a) Excludes commodities subject to a confidentiality restriction.

Source: International Merchandise Trade, Australia, June quarter 2002 (cat. no. 5422.0).

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 of this publication).

Statistical business units

2 Data in this publication relate to manufacturing management units. The technical definition of 'Management unit' appears 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, the establishment data included in previous issues of this publication focus more on the production and distribution processes. These previous establishment statistics were therefore more about the operations of factories.

Scope of management unit statistics

5 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.

Coverage of the statistics

6 The business surveys for which information are presented in this publication only cover employing businesses. Though non-employing businesses are fairly numerous and generally very small, 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%.

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

Sampling error

8 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

9 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). The ANZSIC also provides the structure for presenting breakdowns of the manufacturing industry.

10 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

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

ANZSIC divisions

12 Manufacturing as a whole comprises one of the 17 ANZSIC divisions covering the Australian economy. Examples of other ANZSIC divisions are Mining, Retail trade, Health and community services, and Construction.

ANZSIC subdivisions

13 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

14 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

15 The 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.

16 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 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
- wherever possible align with the corresponding international classification.

REVISED INTERNATIONAL STANDARDS FOR MEASURING ACTIVITY

17 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.

CHAIN VOLUME MEASURES

18 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.

19 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.

CHAIN VOLUME MEASURES
continued

20 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.

21 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.

22 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.

23 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 *Information paper: Introduction of Chain Volume Measures in the Australian National Accounts* (cat. no. 5248.0).

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

25 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.

CHAIN VOLUME MEASURES *continued*

26 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 assured. 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

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

28 Current publications and other products released by the ABS are listed in the *Catalogue of Publications and Products* (cat. no. 1101.0). The Catalogue is available from any ABS office or the ABS web site <http://www.abs.gov.au>. The ABS also issues a daily Release Advice on the web site which details products to be released in the week ahead.

ABS DATA AVAILABLE ON REQUEST

29 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.

30 For further information about data relating to the manufacturing industry or to manufacturing activities which have not been previously published, readers should consult John Ridley in the ABS Sydney Office on (02) 9268 4541 or <john.ridley@abs.gov.au>.

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.

	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.

	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

	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.

	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

Acquisition of fixed tangible assets Capital expenditure on plant, machinery and equipment, dwellings, other buildings and structures, land, computer software.

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 businesses which have zero employment and have sales between $10m and $50m.
- Large businesses are those which employ 100 or more people, plus any businesses which have zero employment and have sales of $50m or more.

Business size data relate only to those businesses operating at 30 June. As such, the figures presented represent a slightly different population from those tables not presented by business size. These other tables include data for businesses which operated at any time during the year.

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 a 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.

Business size *continued*

Non-employing businesses are different from the zero employment cases included in the above definitions. The zero employment cases are almost without exception either incorporated businesses which have their workforce provided by another business or which are participants in unincorporated joint ventures (see entry for Unincorporated Joint Ventures). 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/capital outlays

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 utilising 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 business reports the commission fee as service income along with wages and salaries and any other expenses incurred.

If the client is a manufacturing business, 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 business, the commission fee paid and the value of any other intermediate inputs related to the commission transaction. If the client is not a manufacturing business, no data are reported by the client.

Cost of sales

Cost of sales is calculated as opening inventories less closing inventories plus payroll tax and fringe benefits tax, land rates and taxes and computer software expenses and 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 and 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

As manufacturing relates to the physical or chemical transformation of materials or components into new products, the number and complexity of these processes form the basis for the classification of these products by degree of transformation. Degree of transformation is a classification variable within the Trade Export Classification (TREC) developed by the Department of Foreign Affairs and Trade (DFAT). ABS classification is based on TREC. The three categories for which data are released in this publication are:

- Simply transformed manufacturers — commodities in which a singular raw material or a small number of raw materials in combination, have undergone a single or multiple number of basic refining or manufacturing processes, in order to change the physical or chemical characteristics of those raw material/s. There is usually only a small number of processes involved, and the processes themselves are generally quite simple. An example is textile yarn.
- Moderately transformed manufacturers — commodities which by a single or sequence of manufacturing processes have changed the physical or chemical characteristics of a refined and processed raw material into a distinctive and recognisable product. Examples are bar or rod of metal, or carpets.
- Elaborately transformed manufacturers — commodities which have undergone a number and/or complex process to arrive as end use products. Examples are tableware of ceramics, motor vehicle or photocopier.

Depreciation and amortisation

Includes depreciation allowed on buildings and other fixed tangible assets.

Dividends received

Payments received from related and unrelated businesses.

Earnings before interest and tax

Trading profit plus interest income, other operating income less selected labour costs, depreciation and amortisation and other expenses.

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)
- worked for one hour or more without pay in a family business or on a farm (i.e. contributing family workers)
- 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
- 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.

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 Used in one of the four national accounting approaches for measuring production for the economy as a whole. It is the incomes for the factors of production which equals compensation of employees plus gross operating surplus plus gross mixed income. The sum of factors incomes and net taxes on production and imports equal Gross Domestic Product (GDP). This measure is used to measure states' contribution to GDP.

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. See 'industry value added'.

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 Gross value added at basic prices is one of the four national accounting measures of production. It is the unduplicated value of goods and services produced in any given period and is equal to output less intermediate consumption. Gross value added is similar to industry value added except it includes adjustments such as for valuation of changes in inventories to reflect the national accounting concept of production. The sum of the gross value added of all resident producers equals Gross Domestic Product (GDP).

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.

The manufacturing industry subdivisions and their numeric codes are:

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:

	Sales and service income
plus	Funding by federal, state or local governments for operational costs
plus	Own account capital work
plus	Closing inventories
less	Opening inventories
less	Intermediate input expenses
equals	IVA

Industry value added (IVA) *continued*

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

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.

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.

Intermediate inputs

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:

	Intermediate input expenses
plus	Opening inventories
less	Closing inventories

Investment rate

The proportion of industry value added used to acquire capital, i.e. capital expenditure divided by IVA multiplied by 100.

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 $50 million or more. See the entry for business size for further explanation.

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 (i.e. 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 Manufacturing is defined by the Australia and New Zealand Industrial Classification (ANZSIC) as the physical or chemical transformation of materials or components into new products, whether the work is performed by machinery or by hand.

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 one to nine, then the median value would be the number five 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.

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.

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. Excluded are 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.

Operating profit before tax (OPBT)

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

For the purposes of this publication, this item 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.

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.

Other operating income

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 write-downs are included, it is feasible for negative values to exceed positive values and thus for other operating income to be negative.

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.

Own account capital work

Capitalised work done by the employees or proprietors of a business 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 (PJ) Physical measure of energy use. Equals 1,015 joules.

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. Excludes businesses which operated during the year but which were not operating at the end of the year.

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 (R&D) activity 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.

Research and development (R&D) 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.

Return on assets Operating profit before tax (OPBT) 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 (OPBT) 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 and service income Includes sales of goods whether or not manufactured by the business plus service income.

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.

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.

Selected labour costs Comprise employer contributions into superannuation, workers' compensation premium/costs, fringe benefits costs and payroll tax.

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 $10 million). Excludes non-employing unincorporated businesses. See the entry for business size for further explanation.

Trading profit A measure of profit directly attributable to trading in goods and services. It is derived by deducting the cost of sales and service income.

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) is 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. As the manager and all participants in any single venture 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

Persons aged 15 and over who were not employed during the reference week, and:

- 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 business. 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 business which operated during the year ended 30 June as a proportion of the turnover of manufacturing business 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 2002, cat. no. 5206.0.

Australian National Accounts, State Accounts, 2000–01, cat. no. 5220.0.

Average Weekly Earnings, States and Australia, June quarter 2002, cat no. 6302.0.

Business Operations and Industry Performance, Preliminary, 1998–99, cat. no. 8142.0.

Business Indicators, Australia, June quarter 2002, cat. no. 5676.0.

Employee Earnings, Benefits and Trade Union Membership, Australia , August 2001, cat. no. 6310.0.

Environment Protection Expenditure, Australia, 1994–95 and 1995–96, cat. no. 4603.0.

Environment Protection Expenditure, Australia, 1995–96 and 1996–97, cat. no. 4603.0.

Environment Protection, Manufacturing and Mining Industries, Australia, 2000–2001, cat. no. 4603.0.

Industrial Disputes, Australia, June 2002, cat. no. 6321.0.

International Merchandise Trade, Australia, June quarter 2002, cat. no. 5422.0.

Labour Force, Australia, August 2002, cat. no. 6203.0.

Manufacturing Production, Australia, June quarter 2002, cat. no. 8301.0.

Manufacturing Industry, Australia, 2000–01, cat. no. 8221.0.

Private New Capital Expenditure and Expected Expenditure, Australia, June quarter 2002, cat. no. 5625.0.

Producer Price Indexes, Australia, June quarter 2002, 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, 2000–01, cat. no. 8104.0.

Wage and Salary Earners, Australia, December quarter 2002, cat. no. 6248.0.

ABS DATA AVAILABLE ON REQUEST

Industrial Disputes Collection, various years.

Labour Force Survey, August 2002.

Manufacturing Survey, 2000–01.

EXTERNAL REFERENCES

Department of Foreign Affairs and Trade, *Exports of primary and manufactured products, Australia 2001*, DFAT Trade Development Branch.

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.

INDEX

I

J

L

M

N

O

P

Q

R

S

T

U

V

W

FOR MORE INFORMATION...

INTERNET **www.abs.gov.au** the ABS web site is the best place to start for access to summary data from our latest publications, information about the ABS, advice about upcoming releases, our catalogue, and Australia Now—a statistical profile.

LIBRARY A range of ABS publications is available from public and tertiary libraries Australia-wide. Contact your nearest library to determine whether it has the ABS statistics you require, or visit our web site for a list of libraries.

CPI INFOLINE For current and historical Consumer Price Index data, call 1902 981 074 (call cost 77c per minute).

DIAL-A-STATISTIC For the latest figures for National Accounts, Balance of Payments, Labour Force, Average Weekly Earnings, Estimated Resident Population and the Consumer Price Index call 1900 986 400 (call cost 77c per minute).

INFORMATION SERVICE

Data which have been published and can be provided within five minutes are free of charge. Our information consultants can also help you to access the full range of ABS information—ABS user-pays services can be tailored to your needs, time frame and budget. Publications may be purchased. Specialists are on hand to help you with analytical or methodological advice.

PHONE **1300 135 070**

EMAIL **client.services@abs.gov.au**

FAX 1300 135 211

POST Client Services, ABS, GPO Box 796, Sydney 2001

WHY NOT SUBSCRIBE?

ABS subscription services provide regular, convenient and prompt deliveries of ABS publications and products as they are released. Email delivery of monthly and quarterly publications is available.

PHONE 1300 366 323

EMAIL subscriptions@abs.gov.au

FAX 03 9615 7848

POST Subscription Services, ABS, GPO Box 2796Y, Melbourne 3001

2822500001022
ISSN 1329-4741

RRP $35.00

© Commonwealth of Australia 2003

Produced by the Australian Bureau of Statistics