

# **MANUFACTURING INDUSTRY**

**WESTERN  
AUSTRALIA**

EMBARGO: 11.30AM (CANBERRA TIME) WED 8 NOV 2000

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

## NOTES

ANNUAL MANUFACTURING INDUSTRY COLLECTION	<p>The 1998–99 collection was conducted as a sample survey of approximately 17,000 manufacturing establishments nationally, which were requested to provide data on employment, wages and salaries, turnover, purchases and whether their products were exported. A sub-sample of approximately 7,000 establishments was also asked to provide detailed structural and performance data, and value of sales for commodities produced.</p>
ABOUT THIS ISSUE	<p>For some time now, the ABS has been using Australian Taxation Office (ATO) information on group employer (GE) registrations to add new businesses to the ABS business register. After detailed investigation, it has now been decided to use GE information to delete from the business register those businesses which have ceased trading or are no longer employing staff. As a result, a large number of businesses have been removed from the ABS business register which has had a small impact on published aggregates. For more details, see paragraphs 11–13 of the Explanatory Notes.</p>
DATA REVISIONS	<p>The process of using GE information to delete businesses from the ABS business register has been introduced for the 1998–99 manufacturing survey. This has had an impact on previous years' data. Estimates in Table 1, for the previous three manufacturing collections (covering 1995–96 to 1997–98 inclusive) have been adjusted in such a way as to phase in the impact over this time.</p>
REGIONAL DATA	<p>For more information about the availability of sub-State estimates from the 1998–99 collection, see paragraph 26 of the Explanatory Notes.</p>
DATA TO BE RELEASED IN OTHER PUBLICATIONS	<p>Detailed manufacturing industry statistics for each State are being released progressively in a series of publications, <i>Manufacturing Industry, [State], 1998–99</i> (Cat. nos 8221.1–8221.6). The publication for New South Wales (Cat. no. 8221.1) also contains selected data for the Australian Capital Territory.</p> <p>Management unit data and a wide range of manufacturing related ABS data, as well as data from other sources, will be presented in the compendium publication <i>Manufacturing, Australia, 2000</i> (Cat. no. 8225.0) to be released in December 2000. Management unit data at the total manufacturing level are also included in <i>Business Operations and Industry Performance, Australia, Preliminary, 1998–99</i> (Cat. no. 8142.0).</p>

Colin Nagle  
Regional Director, Western Australia

## MAIN FEATURES

### OVERVIEW

Turnover for the year 1998–99 by manufacturing establishments operating in Western Australia was \$17,771m, which resulted in an industry value added (IVA) for the year of \$4,972m. For turnover, this represents a 1.6% increase in current price terms from the \$17,499m recorded for 1997–98. These manufacturing establishments employed 72,700 persons at the end of June 1999 and paid \$2,600m in wages and salaries in 1998–99.

The percentage of Australian manufacturing employment in Western Australia at the end of June 1999 was 7.9%, the same as that reported at the end of June 1998. The Western Australian industry subdivisions which made a significant contribution to national manufacturing employment at the end of June 1999 at the industry subdivision level were NON-METALLIC MINERAL PRODUCT MANUFACTURING (13.2%), METAL PRODUCT MANUFACTURING (11.1%) and OTHER MANUFACTURING (9.7%).

The percentage contribution by Western Australia to total Australian manufacturing turnover and IVA in 1998–99 was 8.0% and 7.2% respectively. For turnover, this represents a decrease of 0.2 percentage points on the contribution reported in 1997–98. The Western Australian industry subdivisions which made a significant contribution to national manufacturing turnover and IVA in 1998–99 at the industry subdivision level were METAL PRODUCT MANUFACTURING (13.0% and 10.1% respectively), NON-METALLIC MINERAL PRODUCT MANUFACTURING (12.0% and 13.0% respectively), PETROLEUM, COAL, CHEMICAL AND ASSOCIATED PRODUCT MANUFACTURING (10.0% and 7.8% respectively) and OTHER MANUFACTURING (8.9% and 10.0% respectively).

### INDUSTRY VALUE ADDED

IVA for 1998–99 was \$4,972m. The industry subdivisions with the largest contribution to total manufacturing IVA and the most notable industry classes (or groups) within those subdivisions (as a percentage of Western Australia's total manufacturing IVA) were:

- METAL PRODUCT MANUFACTURING (22.1%), where the industry class ALUMINA PRODUCTION (ANZSIC Class 2721 at 8.5%) was the most substantial. As well as contributing 8.5% of total Western Australian manufacturing IVA, this Western Australian industry accounted for 42.6% of the Australian industry. A significant contribution to the industry subdivision was also made by STRUCTURAL STEEL FABRICATING (ANZSIC Class 2741 at 4.0%). BASIC NON-FERROUS METAL MANUFACTURING N.E.C. (ANZSIC Class 2729 at 2.0%) was next and accounted for 83.0% of the Australian industry, which was the largest contribution of any industry class in Western Australia to an Australian industry.
- FOOD, BEVERAGE AND TOBACCO MANUFACTURING (16.9%), where the industry class MEAT PROCESSING (ANZSIC Class 2111 at 2.0%) was the most substantial.
- PETROLEUM, COAL, CHEMICAL AND ASSOCIATED PRODUCT MANUFACTURING (15.5%), where the industry classes INORGANIC INDUSTRIAL CHEMICAL MANUFACTURING N.E.C. (ANZSIC Class 2535 at 4.4%), PETROLEUM REFINING (ANZSIC Class 2510 at 2.4%) and FERTILIZER MANUFACTURING (ANZSIC Class 2531 at 2.0%) were the most substantial.
- MACHINERY AND EQUIPMENT MANUFACTURING (13.8%), where the industry class MINING AND CONSTRUCTION MACHINERY MANUFACTURING (ANZSIC Class 2862 at 2.9%) was the most substantial.

Industry classes making a notable contribution to industry value added and not included in the subdivisions listed above included NEWSPAPER PRINTING OR PUBLISHING (ANZSIC Class 2421 at 5.9%) and PRINTING (ANZSIC Class 2412 at 3.0%).

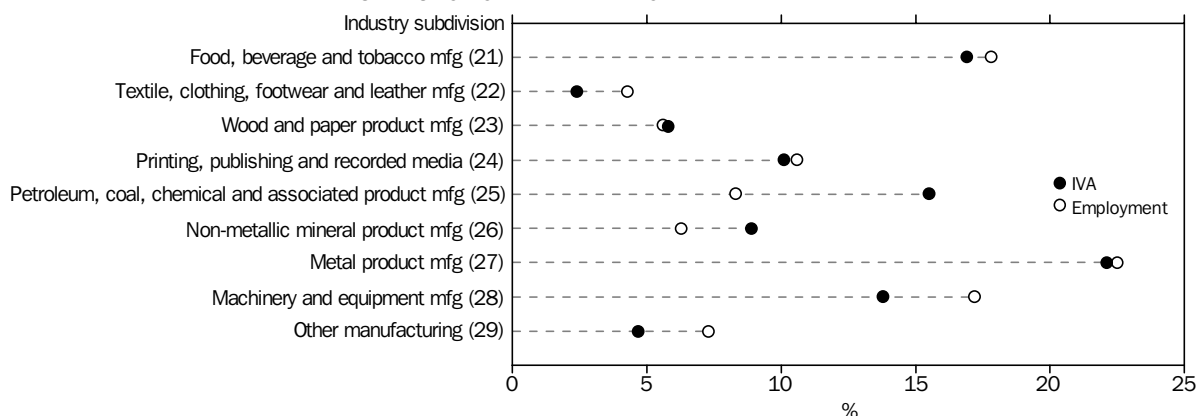
## MAIN FEATURES *continued*

### INDUSTRY VALUE ADDED

*continued*

The West Australian manufacturing industry subdivision in 1998–99 with the highest IVA per person employed was PETROLEUM, COAL, CHEMICAL AND ASSOCIATED PRODUCT MANUFACTURING at \$127,300 per person employed, followed by NON-METALLIC MINERAL PRODUCT MANUFACTURING at \$97,000 per person employed.

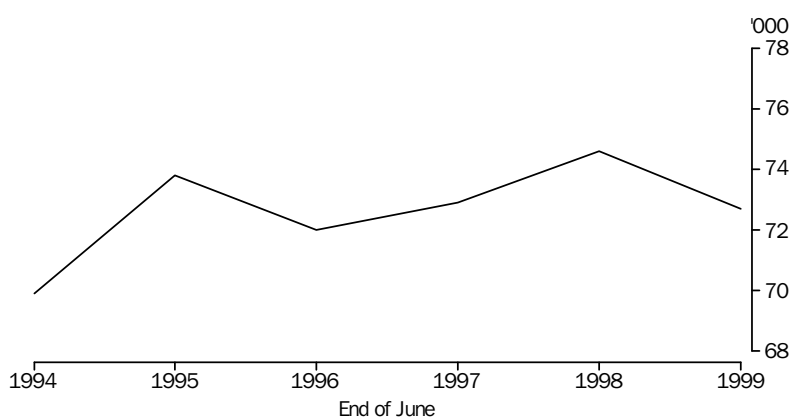
DISTRIBUTION OF IVA AND EMPLOYMENT



### EMPLOYMENT AND WAGES

The Western Australian manufacturing industry employed 72,700 persons at the end of June 1999 and paid \$2,600m in wages and salaries in 1998–99. This represents an average of \$35,800 paid in annual wages and salaries per person employed at the end of June 1999, an increase of 7.5% on the \$33,300 recorded twelve months earlier. (Readers should note that the employment figure in this average measures the number of persons employed at the end of June and includes working proprietors. The wages and salaries figure excludes the drawings of working proprietors).

#### EMPLOYMENT



Western Australian manufacturing employment increased from June 1994 (69,900 persons) to June 1995 (73,800 persons), after which it declined to 72,000 persons at the end of June 1996. Manufacturing employment in Western Australia recovered by June 1998 (74,600 persons) but then decreased by 2.5% or 1,800 persons between June 1998 and June 1999 (72,700 persons). Over the five years from June 1994 to June 1999, employment rose by 4.0% or 2,800 persons.

## MAIN FEATURES *continued*

### EMPLOYMENT AND WAGES *continued*

Between June 1998 and June 1999, employment decreased in seven of the nine manufacturing industry subdivisions and increased in two. The largest percentage and absolute decreases were recorded by WOOD AND PAPER PRODUCT MANUFACTURING (down 12.3% or 600 persons), PETROLEUM, COAL, CHEMICAL AND ASSOCIATED PRODUCT MANUFACTURING (down 6.3% or 400 persons), FOOD, BEVERAGE AND TOBACCO MANUFACTURING (down 5.6% or 800 persons), MACHINERY AND EQUIPMENT MANUFACTURING (down 5.1% or 700 persons) and OTHER MANUFACTURING (down 5.1% or 300 persons). The main increase was recorded by PRINTING, PUBLISHING AND RECORDED MEDIA (up 15.1% or 1,000 persons).

Average wages and salaries paid per person employed at the end of June increased in all nine industry subdivisions between 1997–98 and 1998–99.

The industry subdivisions to record the largest percentage increases in wages and salaries paid per person employed at the end of June were:

- WOOD AND PAPER PRODUCT MANUFACTURING (up 23.7%—\$27,000 to \$33,300), where eleven (out of twelve) industry classes recorded an increase with the largest (where publishable) being LOG SAWMILLING (ANZSIC Class 2311) (up 44.0%—\$22,700 to \$32,600). However, the main influence on the subdivision result was WOODEN STRUCTURAL COMPONENT MANUFACTURING (ANZSIC Class 2323) (up 19.7%—\$20,300 to \$24,300). For this class (which accounted for 26.7% of employment at the end of June 1999 and 19.5% of annual wages and salaries paid for the subdivision), employment decreased by 14.2% but wages and salaries increased by 8.4%.
- PETROLEUM, COAL, CHEMICAL AND ASSOCIATED PRODUCT MANUFACTURING (up 9.3%—\$43,200 to \$47,200), where nineteen (out of twenty three) industry classes recorded an increase with the largest being:
  - PLASTIC BLOW MOULDED PRODUCT MANUFACTURING (ANZSIC Class 2561) (up 60.1%—\$29,100 to \$46,500);
  - SOAP AND OTHER DETERGENT MANUFACTURING (ANZSIC Class 2545) (up 45.2%—\$22,600 to \$32,800); and
  - PAINT MANUFACTURING (ANZSIC Class 2542) (up 44.4%—\$26,700 to \$38,600).
- OTHER MANUFACTURING (up 9.3%—\$23,500 to \$25,600), where eight (out of nine) industry classes recorded an increase with TOY AND SPORTING GOOD MANUFACTURING (ANZSIC Class 2942) (up 36.8%—\$18,000 to \$24,700) having the largest increase. However, the main influence on the subdivision result was WOODEN FURNITURE AND UPHOLSTERED SEAT MANUFACTURING (ANZSIC Class 2921) (up 11.4%—\$21,300 to \$23,700). This industry class accounted for 49.0% of employment and 45.3% of wages and salaries paid by the industry subdivision.

Industry classes (where publishable) belonging to other industry subdivisions and which had the largest percentage increases between 1997–98 and 1998–99 in wages and salaries paid per person employed at the end of June were:

- BOOK AND OTHER PUBLISHING (ANZSIC Class 2423) (up 43.9%—\$20,300 to \$29,200);
- COMMERCIAL SPACE HEATING AND COOLING EQUIPMENT MANUFACTURING (ANZSIC Class 2867) (up 37.2%—\$27,500 to \$37,700); and
- OTHER PERIODICAL PUBLISHING (ANZSIC Class 2422) (up 36.1%—\$23,500 to \$32,000).

## MAIN FEATURES *continued*

### TURNOVER

Turnover rose, in current price terms, by \$271m to \$17,771m for 1998–99. This represents a 1.6% increase on the \$17,499m recorded for 1997–98.

Five of the nine manufacturing industry subdivisions recorded an increase in turnover between 1997–98 and 1998–99. The industry subdivisions with the largest percentage increases in 1998–99 were PRINTING, PUBLISHING AND RECORDED MEDIA (up 19.4% or \$167m), NON-METALLIC MINERAL PRODUCT MANUFACTURING (up 18.0% or \$180m) and WOOD AND PAPER PRODUCT MANUFACTURING (up 10.1% or \$72m). These three industry subdivisions also recorded the largest absolute increases in turnover, with NON-METALLIC MINERAL PRODUCT MANUFACTURING (up \$180m—from \$1,003m to \$1,183m) and PRINTING, PUBLISHING AND RECORDED MEDIA (up \$167m—from \$861m to \$1,028m) making the most significant contributions, by far, to the overall increase in total manufacturing turnover in Western Australia. METAL PRODUCT MANUFACTURING recorded the largest absolute decrease in turnover (down \$83m or 1.6%), but remained the largest contributor (with 28.5% or \$5,058m) to total Western Australian manufacturing in 1998–99. The industry subdivision OTHER MANUFACTURING had the largest percentage decrease in manufacturing turnover (down 7.2%—from \$643m to \$597m).

The industry classes (where publishable) with the largest percentage increases between 1997–98 and 1998–99 were:

- PUMP AND COMPRESSOR MANUFACTURING (ANZSIC Class 2866) (up 93.8% or \$21m);
- SPRING AND WIRE PRODUCT MANUFACTURING (ANZSIC Class 2762) (up 75.7% or \$21m);
- MACHINE TOOL AND PART MANUFACTURING (ANZSIC Class 2864) (up 67.4% or \$16m); and
- SOAP AND OTHER DETERGENT MANUFACTURING (ANZSIC Class 2545) (up 64.5% or \$14m).

The industry classes (where publishable) with the largest dollar increases between 1997–98 and 1998–99 were:

- INORGANIC INDUSTRIAL CHEMICAL MANUFACTURING N.E.C. (ANZSIC Class 2535) (up \$120m or 21.9%);
- PRINTING (ANZSIC Class 2412) (up \$101m or 34.8%); and
- CONCRETE SLURRY MANUFACTURING (ANZSIC Class 2633) (up \$74m or 40.6%).

The industry classes (where publishable) with the largest percentage decreases between 1997–98 and 1998–99 were:

- PETROLEUM AND COAL PRODUCT MANUFACTURING N.E.C. (ANZSIC Class 2520) (down 74.2% or \$75m);
- PREFABRICATED BUILDING MANUFACTURING N.E.C. (ANZSIC Class 2919) (down 60.4% or \$4m); and
- RUBBER TYRE MANUFACTURING (ANZSIC Class 2551) (down 55.3% or \$12m).

The industry classes (where publishable) with the largest dollar decreases between 1997–98 and 1998–99 were:

- MEAT PROCESSING (ANZSIC Class 2111) (down \$121m or 23.6%); and
- ALUMINA PRODUCTION (ANZSIC Class 2721) (down \$108m or 5.2%).

### EXPORTS

For 1998–99, Western Australian manufacturers directly exported \$4,220m of the goods that they produced. This represents a 1.3% decrease on the \$4,275m recorded for 1997–98. However, the percentage of total sales and transfers out of goods for sale produced that were exported has increased (from 24.4% for 1997–98 to 26.2% for 1998–99).

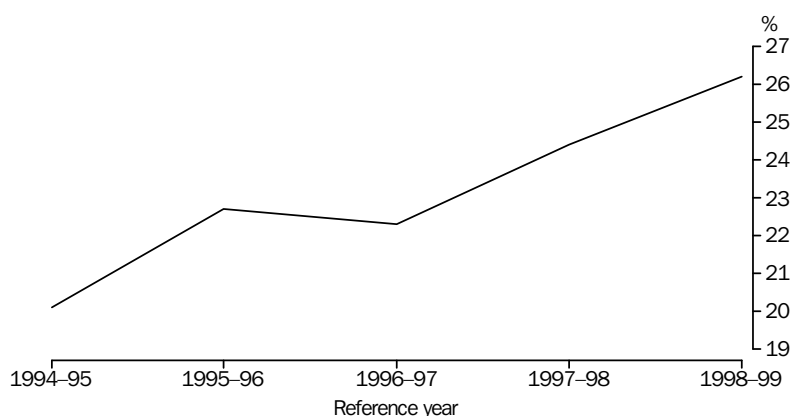
## MAIN FEATURES *continued*

### EXPORTS *continued*

Manufacturers' direct exports decreased in six out of the nine industry subdivisions between 1997–98 and 1998–99 and increased in three. The largest decrease in percentage terms was recorded by NON-METALLIC MINERAL PRODUCT MANUFACTURING (down 41.6%—from \$45m to \$26m), while the largest decrease in dollar terms was recorded by MACHINERY AND EQUIPMENT MANUFACTURING (down \$116m or 25.1%—from \$464m to \$348m). The largest increase in percentage terms was recorded by OTHER MANUFACTURING (up 62.0%—from \$12m to \$19m). However, the largest increase in dollar terms was recorded by PETROLEUM, COAL, CHEMICAL AND ASSOCIATED PRODUCT MANUFACTURING (up \$190m or 30.6%—from \$622m to \$812m).

Commencing with the 1994–95 manufacturing collection, data on exports have been consistently collected as part of the annual manufacturing collection. Exports as a proportion of sales and transfers out of goods for sale produced has increased from 20.1% for 1994–95 to 26.2% for 1998–99. The only year during this period in which this proportion did not rise was 1996–97, when there was a decrease of 0.4 percentage points between 1995–96 (22.7%) and 1996–97 (22.3%).

### EXPORTS AS A PROPORTION OF GOODS PRODUCED



## MANUFACTURING ESTABLISHMENTS(a)(b), Summary of Operations(c)

Reference year	Employment at end of June(d) '000	Wages and salaries(e)(f) \$m	Turnover(f) \$m	Industry gross product(f) \$m	Industry value added(f) \$m	Wages and salaries to turnover(f) ratio	Turnover per person employed (f)(g) \$'000	Industry value added per person employed (f)(h) \$'000
FOOD, BEVERAGE AND TOBACCO MANUFACTURING								
1998-99	12.9	422.9	3 215.9	..	837.7	0.13	248.9	64.8
1997-98	13.7	437.1	(i)3 260.9	(j)854.7	(j)878.9	0.13	238.2	64.2
1996-97	13.0	393.5	3 120.2	777.7	..	0.13	240.0	..
1995-96	13.3	(k)372.3	3 055.6	809.1	..	0.12	229.7	..
1994-95	12.6	345.8	2 845.4	..	..	0.12	226.4	..
1993-94	11.5	321.9	2 746.2	..	..	0.12	239.2	..
TEXTILE, CLOTHING, FOOTWEAR AND LEATHER MANUFACTURING								
1998-99	3.2	81.3	337.4	..	117.1	0.24	106.8	37.1
1997-98	3.3	80.6	(i)334.0	(j)114.8	(j)118.6	0.24	101.2	35.9
1996-97	3.2	87.1	358.1	145.8	..	0.24	111.4	..
1995-96	3.5	(k)77.6	336.1	112.5	..	0.23	96.0	..
1994-95	4.3	93.1	361.1	..	..	0.26	84.8	..
1993-94	3.7	83.0	312.6	..	..	0.27	83.6	..
WOOD AND PAPER PRODUCT MANUFACTURING								
1998-99	4.1	136.5	790.1	..	287.7	0.17	193.0	70.3
1997-98	4.7	125.9	(i)717.6	(j)257.0	(j)267.0	0.18	153.6	57.2
1996-97	4.3	126.5	659.8	227.7	..	0.19	152.6	..
1995-96	4.4	(k)123.3	703.0	238.7	..	0.18	160.8	..
1994-95	4.8	131.2	727.0	..	..	0.18	150.4	..
1993-94	4.8	131.9	716.7	..	..	0.18	149.0	..
PRINTING, PUBLISHING AND RECORDED MEDIA								
1998-99	7.7	253.5	1 027.7	..	503.9	0.25	133.0	65.2
1997-98	6.7	208.0	(i)860.9	(j)416.7	(j)426.5	0.24	128.2	63.5
1996-97	6.4	199.3	840.7	402.0	..	0.24	131.4	..
1995-96	6.3	(k)187.4	819.2	411.0	..	0.23	129.8	..
1994-95	6.5	186.1	763.7	..	..	0.24	117.8	..
1993-94	6.4	175.1	666.3	..	..	0.26	104.0	..
PETROLEUM, COAL, CHEMICAL AND ASSOCIATED PRODUCT MANUFACTURING								
1998-99	6.0	285.2	3 389.6	..	769.1	0.08	561.1	127.3
1997-98	6.4	278.4	(i)3 331.7	(j)789.9	(j)811.2	0.08	516.9	125.9
1996-97	6.5	271.1	3 079.0	746.7	..	0.09	473.8	..
1995-96	6.6	(k)245.1	2 842.2	684.1	..	0.09	430.0	..
1994-95	6.2	225.6	2 813.5	..	..	0.08	457.4	..
1993-94	5.6	201.1	2 779.7	..	..	0.07	498.6	..

.. not applicable

(a) See paragraph 5 of the Explanatory Notes.

(b) Group Employer information held by the Australian Taxation Office is now being used to delete those businesses which have ceased trading or are no longer employing staff. See paragraphs 11-13 of the Explanatory Notes.

(c) For factors affecting comparability of data over the time period shown, see paragraphs 14-20 of the Explanatory Notes.

(d) Includes working proprietors.

(e) Excludes the drawings of working proprietors.

(f) Value data are at current prices and therefore do not discount the impact of price changes.

(g) Turnover divided by the number of persons employed at the end of June.

(h) Industry value added divided by the number of persons employed at the end of June.

(i) From the 1997-98 manufacturing collection and onwards, new international standards apply to the calculation of turnover. For more details see paragraphs 14 and 15 of the Explanatory Notes.

(j) From the 1997-98 manufacturing collection and onwards, industry value added (IVA) replaces industry gross product (IGP) as the measure of an industry's contribution to gross domestic product. IGP has also been shown for 1997-98. For more details, see paragraphs 16 and 17 of the Explanatory Notes.

(k) For 1995-96, excludes provision expenses for employee entitlements. See paragraph 19 of the Explanatory Notes.



MANUFACTURING ESTABLISHMENTS(a)(b), Summary of Operations(c) *continued*

Reference year	Employment at end of June(d) '000	Wages and salaries(e)(f) \$m	Turnover(f) \$m	Industry gross product(f) \$m	Industry value added(f) \$m	Wages and salaries to turnover(f) ratio	Turnover per person employed (f)(g) \$'000	Industry value added per person employed (f)(h) \$'000
NON-METALLIC MINERAL PRODUCT MANUFACTURING								
1998-99	4.6	193.6	1 182.9	..	442.6	0.16	259.3	97.0
1997-98	4.7	186.9	(i)1 002.8	(j)350.4	(j)370.9	0.19	214.2	79.2
1996-97	4.9	180.7	1 020.1	347.1	..	0.18	206.2	..
1995-96	4.7	(k)154.6	966.5	371.7	..	0.16	206.9	..
1994-95	5.2	170.6	1 085.0	..	..	0.16	209.0	..
1993-94	4.9	156.0	997.2	..	..	0.16	202.3	..
METAL PRODUCT MANUFACTURING								
1998-99	16.4	656.2	5 058.0	..	1 097.5	0.13	308.8	67.0
1997-98	16.3	603.5	(i)5 141.4	(j)1 340.0	(j)1 384.0	0.12	316.3	85.1
1996-97	16.0	615.0	4 783.4	1 241.3	..	0.13	298.9	..
1995-96	16.0	(k)575.8	4 542.0	795.2	..	0.13	283.3	..
1994-95	15.2	535.2	4 288.1	..	..	0.12	282.8	..
1993-94	14.8	511.1	3 768.3	..	..	0.14	253.8	..
MACHINERY AND EQUIPMENT MANUFACTURING								
1998-99	12.5	434.6	2 172.4	..	683.8	0.20	173.8	54.7
1997-98	13.2	428.5	(i)2 206.9	(j)641.1	(j)670.8	0.19	167.5	50.9
1996-97	12.8	405.3	2 227.5	662.1	..	0.18	173.7	..
1995-96	11.5	(k)337.7	1 822.5	595.6	..	0.19	158.3	..
1994-95	12.9	360.3	1 707.2	..	..	0.21	132.8	..
1993-94	11.7	313.8	1 623.9	..	..	0.19	138.3	..
OTHER MANUFACTURING								
1998-99	5.3	136.7	596.7	..	232.4	0.23	111.9	43.6
1997-98	5.6	131.8	(i)643.0	(j)204.4	(j)211.4	0.20	114.5	37.6
1996-97	5.7	132.7	624.0	221.6	..	0.21	110.4	..
1995-96	5.7	(k)132.7	624.2	223.4	..	0.21	110.1	..
1994-95	6.3	136.8	655.1	..	..	0.21	103.3	..
1993-94	6.4	128.1	582.1	..	..	0.22	91.2	..
TOTAL MANUFACTURING								
1998-99	72.7	2 600.3	17 770.5	..	4 971.6	0.15	244.4	68.4
1997-98	74.6	2 480.7	(i)17 499.3	(j)4 969.0	(j)5 139.3	0.14	234.7	68.9
1996-97	72.9	2 411.1	16 712.7	4 772.0	..	0.14	229.4	..
1995-96	72.0	(k)2 206.6	15 711.3	4 241.3	..	0.14	218.3	..
1994-95	73.8	2 184.6	15 246.2	..	..	0.14	206.5	..
1993-94	69.9	2 021.9	14 192.9	..	..	0.14	203.0	..

.. not applicable

(a) See paragraph 5 of the Explanatory Notes.

(b) Group Employer information held by the Australian Taxation Office is now being used to delete those businesses which have ceased trading or are no longer employing staff. See paragraphs 11-13 of the Explanatory Notes.

(c) For factors affecting comparability of data over the time period shown, see paragraphs 14-20 of the Explanatory Notes.

(d) Includes working proprietors.

(e) Excludes the drawings of working proprietors.

(f) Value data are at current prices and therefore do not discount the impact of price changes.

(g) Turnover divided by the number of persons employed at the end of June.

(h) Industry value added divided by the number of persons employed at the end of June.

(i) From the 1997-98 manufacturing collection and onwards, new international standards apply to the calculation of turnover. For more details see paragraphs 14 and 15 of the Explanatory Notes.

(j) From the 1997-98 manufacturing collection and onwards, industry value added (IVA) replaces industry gross product (IGP) as the measure of an industry's contribution to gross domestic product. IGP has also been shown for 1997-98. For more details, see paragraphs 16 and 17 of the Explanatory Notes.

(k) For 1995-96, excludes provision expenses for employee entitlements. See paragraph 19 of the Explanatory Notes.

## MANUFACTURING ESTABLISHMENTS(a)(b), Industry Class

INDUSTRY CLASS ANZSIC		Employment at end of June (c)	Wages and salaries (d)	Turnover	Industry value added	Turnover per person employed (e)	Industry value added per person employed (f)
code	Description	no.	\$m	\$m	\$m	\$'000	\$'000
<b>FOOD, BEVERAGE AND TOBACCO MFG</b>							
<b>211</b>	<b>Meat and meat product mfg</b>						
2111	Meat processing	1 896	64.9	391.1	98.1	206.3	51.7
2112	Poultry processing	922	np	np	np	np	np
2113	Bacon, ham and smallgood mfg	840	np	np	np	np	np
	<i>Total</i>	3 658	118.0	734.6	195.2	200.8	53.4
<b>212</b>	<b>Dairy product mfg</b>						
2121	Milk and cream processing	np	np	np	np	np	np
2122	Ice cream mfg	386	np	np	np	np	np
2129	Dairy product mfg n.e.c.	np	np	np	np	np	np
	<i>Total</i>	1 271	56.6	434.5	109.4	341.9	86.0
<b>213</b>	<b>Fruit and vegetable processing</b>	687	19.2	148.9	33.3	216.9	48.5
<b>214</b>	<b>Oil and fat mfg</b>	202	5.8	79.7	21.1	393.9	104.3
<b>215</b>	<b>Flour mill and cereal food mfg</b>						
2151	Flour mill product mfg	np	np	np	np	np	np
2152	Cereal food and baking mix mfg	np	np	np	np	np	np
	<i>Total</i>	371	12.7	131.4	28.6	354.1	77.2
<b>216</b>	<b>Bakery product mfg</b>						
2161	Bread mfg	np	np	np	np	np	np
2162	Cake and pastry mfg	1 245	33.9	132.2	52.5	106.2	42.2
2163	Biscuit mfg	np	np	np	np	np	np
	<i>Total</i>	2 201	63.7	268.9	99.7	122.2	45.3
<b>217</b>	<b>Other food mfg</b>						
2171	Sugar mfg	np	np	np	np	np	np
2172	Confectionery mfg	np	np	np	np	np	np
2173	Seafood processing	850	23.0	347.3	53.9	408.5	63.3
2174	Prepared animal and bird feed mfg	496	14.7	219.3	34.9	442.3	70.4
2179	Food mfg n.e.c.	1 402	40.2	200.5	66.1	143.0	47.1
	<i>Total</i>	2 869	82.2	825.1	180.1	287.6	62.8
<b>218</b>	<b>Beverage and malt mfg</b>						
2181	Soft drink, cordial and syrup mfg	539	np	np	np	np	np
2182	Beer and malt mfg	342	15.1	222.6	62.7	650.0	183.0
2183	Wine mfg	np	np	np	np	np	np
2184	Spirit mfg	np	np	np	np	np	np
	<i>Total</i>	1 661	64.5	592.8	170.3	356.9	102.5
<b>219</b>	<b>Tobacco product mfg</b>	—	—	—	—	—	—
<b>21</b>	<b>Total food, beverage and tobacco mfg</b>	12 919	422.9	3 215.9	837.7	248.9	64.8

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INDUSTRY CLASS		Employment at end of June (c)	Wages and salaries (d)	Turnover	Industry value added	Turnover per person employed (e)	Industry value added per person employed (f)
ANZSIC code	Description	no.	\$m	\$m	\$m	\$'000	\$'000
<b>TEXTILE, CLOTHING, FOOTWEAR AND LEATHER MFG</b>							
<b>221</b>	<b>Textile fibre, yarn and woven fabric mfg</b>						
2211	Wool scouring	np	np	np	np	np	np
2212	Synthetic fibre textile mfg	np	np	np	np	np	np
2213	Cotton textile mfg	np	np	np	np	np	np
2214	Wool textile mfg	np	np	np	np	np	np
2215	Textile finishing	16	0.2	0.7	0.3	44.4	18.9
	<i>Total</i>	674	23.9	80.4	33.7	119.3	50.0
<b>222</b>	<b>Textile product mfg</b>						
2221	Made-up textile product mfg	727	18.2	73.0	22.6	100.4	31.0
2222	Textile floor covering mfg	np	np	np	np	np	np
2223	Rope, cordage and twine mfg	29	0.7	2.1	0.9	73.5	31.8
2229	Textile product mfg n.e.c.	np	np	np	np	np	np
	<i>Total</i>	1 027	26.5	107.1	35.9	104.2	35.0
<b>223</b>	<b>Knitting mills</b>						
2231	Hosiery mfg	np	np	np	np	np	np
2232	Cardigan and pullover mfg	150	2.6	11.5	4.4	76.8	29.4
2239	Knitting mill product mfg n.e.c.	np	np	np	np	np	np
	<i>Total</i>	192	3.2	14.8	5.8	77.0	30.1
<b>224</b>	<b>Clothing mfg</b>						
2241	Men's and boys' wear mfg	np	np	np	np	np	np
2242	Women's and girls' wear mfg	329	5.5	19.5	7.9	59.4	24.2
2243	Sleepwear, underwear and infant clothing mfg	np	np	np	np	np	np
2249	Clothing mfg n.e.c.	267	6.1	29.4	10.2	110.0	38.3
	<i>Total</i>	793	15.3	64.9	23.0	81.8	29.0
<b>225</b>	<b>Footwear mfg</b>	200	6.1	23.0	7.0	114.8	35.1
<b>226</b>	<b>Leather and leather product mfg</b>						
2261	Leather tanning and fur dressing	208	np	np	np	np	np
2262	Leather and leather substitute product mfg	63	np	np	np	np	np
	<i>Total</i>	270	6.3	47.2	11.7	174.6	43.2
<b>22</b>	<b>Total textile, clothing, footwear and leather mfg</b>	<b>3 157</b>	<b>81.3</b>	<b>337.4</b>	<b>117.1</b>	<b>106.8</b>	<b>37.1</b>
<b>WOOD AND PAPER PRODUCT MFG</b>							
<b>231</b>	<b>Log sawmilling and timber dressing</b>						
2311	Log sawmilling	690	22.5	111.2	50.4	161.3	73.1
2312	Wood chipping	np	np	np	np	np	np
2313	Timber resawing and dressing	np	np	np	np	np	np
	<i>Total</i>	np	np	np	np	np	np
<b>232</b>	<b>Other wood product mfg</b>						
2321	Plywood and veneer mfg	np	np	np	np	np	np
2322	Fabricated wood mfg	668	np	np	np	np	np
2323	Wooden structural component mfg	1 095	26.6	115.0	44.8	105.1	40.9
2329	Wood product mfg n.e.c.	np	np	np	np	np	np
	<i>Total</i>	2 233	60.3	330.7	92.2	148.1	41.3

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INDUSTRY CLASS ANZSIC code	Description	Employment at end of June (c) no.	Wages and salaries (d) \$m	Turnover \$m	Industry value added \$m	Turnover per person employed (e) \$'000	Industry value added per person employed (f) \$'000
<b>WOOD AND PAPER PRODUCT MFG</b> <i>cont.</i>							
<b>233</b>	<b>Paper and paper product mfg</b>						
2331	Pulp, paper and paperboard mfg	np	np	np	np	np	np
2332	Solid paperboard container mfg	np	np	np	np	np	np
2333	Corrugated paperboard container mfg	np	np	np	np	np	np
2334	Paper bag and sack mfg	np	np	np	np	np	np
2339	Paper product mfg n.e.c.	49	1.0	6.4	1.6	130.1	32.9
	<i>Total</i>	np	np	np	np	np	np
<b>23</b>	<b>Total wood and paper product mfg</b>	<b>4 094</b>	<b>136.5</b>	<b>790.1</b>	<b>287.7</b>	<b>193.0</b>	<b>70.3</b>
<b>PRINTING, PUBLISHING AND RECORDED MEDIA</b>							
<b>241</b>	<b>Printing and services to printing</b>						
2411	Paper stationery mfg	419	8.4	25.0	*11.8	59.6	**28.1
2412	Printing	3 514	97.9	392.8	151.2	111.8	43.0
2413	Services to printing	445	11.9	42.1	18.4	94.7	41.4
	<i>Total</i>	<i>4 378</i>	<i>118.2</i>	<i>459.9</i>	<i>181.4</i>	<i>105.1</i>	<i>41.4</i>
<b>242</b>	<b>Publishing</b>						
2421	Newspaper printing or publishing	2 882	118.7	488.4	291.6	169.5	101.2
2422	Other periodical publishing	300	9.6	29.7	8.2	99.1	27.3
2423	Book and other publishing	59	1.7	9.3	2.8	156.8	46.6
	<i>Total</i>	<i>3 241</i>	<i>130.1</i>	<i>527.4</i>	<i>302.5</i>	<i>162.7</i>	<i>93.3</i>
<b>243</b>	<b>Recorded media manufacturing and publishing</b>	<b>109</b>	<b>5.2</b>	<b>40.4</b>	<b>20.0</b>	<b>371.3</b>	<b>183.5</b>
<b>24</b>	<b>Total printing, publishing and recorded media</b>	<b>7 727</b>	<b>253.5</b>	<b>1 027.7</b>	<b>503.9</b>	<b>133.0</b>	<b>65.2</b>
<b>PETROLEUM, COAL, CHEMICAL AND ASSOCIATED PRODUCT MFG</b>							
<b>251</b>	<b>Petroleum refining</b>	<b>554</b>	<b>37.8</b>	<b>1 353.6</b>	<b>121.5</b>	<b>2 444.1</b>	<b>219.3</b>
<b>252</b>	<b>Petroleum and coal product mfg n.e.c.</b>	<b>52</b>	<b>2.3</b>	<b>26.0</b>	<b>4.6</b>	<b>497.9</b>	<b>88.9</b>
<b>253</b>	<b>Basic chemical mfg</b>						
2531	Fertiliser mfg	586	33.0	323.3	100.8	551.4	171.9
2532	Industrial gas mfg	np	np	np	np	np	np
2533	Synthetic resin mfg	99	np	np	np	np	np
2534	Organic industrial chemical mfg n.e.c.	np	np	np	np	np	np
2535	Inorganic industrial chemical mfg n.e.c.	1 046	63.3	668.0	219.4	638.4	209.7
	<i>Total</i>	<i>2 011</i>	<i>112.6</i>	<i>1 083.5</i>	<i>357.8</i>	<i>538.7</i>	<i>177.9</i>
<b>254</b>	<b>Other chemical product mfg</b>						
2541	Explosive mfg	148	np	np	np	np	np
2542	Paint mfg	251	9.7	87.0	27.9	346.7	111.1
2543	Medicinal and pharmaceutical product mfg	404	13.7	92.8	40.8	229.4	100.8
2544	Pesticide mfg	np	np	np	np	np	np
2545	Soap and other detergent mfg	214	7.0	36.3	13.2	169.7	61.9
2546	Cosmetic and toiletry preparation mfg	59	np	np	np	np	np
2547	Ink mfg	np	np	np	np	np	np
2549	Chemical product mfg n.e.c.	219	7.2	49.3	14.2	225.5	65.0
	<i>Total</i>	<i>1 452</i>	<i>62.8</i>	<i>541.5</i>	<i>157.5</i>	<i>372.9</i>	<i>108.4</i>

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INDUSTRY CLASS		Employment at end of June (c)	Wages and salaries (d)	Turnover	Industry value added	Turnover per person employed (e)	Industry value added per person employed (f)
ANZSIC code	Description	no.	\$m	\$m	\$m	\$'000	\$'000
<b>PETROLEUM, COAL, CHEMICAL AND ASSOCIATED PRODUCT MFG <i>cont.</i></b>							
<b>255</b>	<b>Rubber product mfg</b>						
2551	Rubber tyre mfg	46	1.3	10.0	3.0	216.4	64.5
2559	Rubber product mfg n.e.c.	245	10.6	67.5	32.6	275.1	132.7
	<i>Total</i>	291	12.0	77.5	35.5	265.8	121.9
<b>256</b>	<b>Plastic product mfg</b>						
2561	Plastic blow moulded product mfg	121	5.6	32.5	8.1	268.0	66.6
2562	Plastic extruded product mfg	*182	6.8	41.4	**1.3	227.2	*7.1
2563	Plastic bag and film mfg	np	np	np	np	np	np
2564	Plastic product rigid fibre reinforced mfg	416	12.3	66.2	22.2	159.2	53.4
2565	Plastic foam product mfg	np	np	np	np	np	np
2566	Plastic injection moulded product mfg	552	17.9	73.9	29.3	133.9	53.1
	<i>Total</i>	1 679	57.9	307.5	92.2	183.1	54.9
<b>25</b>	<b>Total petroleum, coal, chemical and associated product mfg</b>	<b>6 041</b>	<b>285.2</b>	<b>3 389.6</b>	<b>769.1</b>	<b>561.1</b>	<b>127.3</b>
<b>NON-METALLIC MINERAL PRODUCT MFG</b>							
<b>261</b>	<b>Glass and glass product mfg</b>	382	13.2	53.7	21.7	140.5	56.8
<b>262</b>	<b>Ceramic mfg</b>						
2621	Clay brick mfg	1 034	np	np	np	np	np
2622	Ceramic product mfg	np	np	np	np	np	np
2623	Ceramic tile and pipe mfg	np	np	np	np	np	np
2629	Ceramic product mfg n.e.c.	215	np	np	np	np	np
	<i>Total</i>	1 464	59.5	261.5	130.6	178.6	89.2
<b>263</b>	<b>Cement, lime, plaster and concrete product mfg</b>						
2631	Cement and lime mfg	425	24.6	237.5	71.4	558.4	167.9
2632	Plaster product mfg	210	np	np	np	np	np
2633	Concrete slurry mfg	483	23.6	257.0	64.4	531.9	133.3
2634	Concrete pipe and box culvert mfg	175	np	np	np	np	np
2635	Concrete product mfg n.e.c.	793	29.3	149.7	55.9	188.7	70.4
	<i>Total</i>	2 087	93.5	741.3	232.4	355.1	111.3
<b>264</b>	<b>Non-metallic mineral product mfg n.e.c.</b>	628	27.4	126.4	57.9	201.1	92.1
<b>26</b>	<b>Total non-metallic mineral product mfg</b>	<b>4 562</b>	<b>193.6</b>	<b>1 182.9</b>	<b>442.6</b>	<b>259.3</b>	<b>97.0</b>
<b>METAL PRODUCT MFG</b>							
<b>271</b>	<b>Iron and steel mfg</b>						
2711	Basic iron and steel mfg	721	np	np	np	np	np
2712	Iron and steel casting and forging	710	27.2	104.4	37.3	147.1	52.6
2713	Steel pipe and tube mfg	153	np	np	np	np	np
	<i>Total</i>	1 584	85.3	402.9	38.4	254.4	24.3

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MANUFACTURING ESTABLISHMENTS(a)(b), Industry Class *continued*

INDUSTRY CLASS ANZSIC code	Description	Employment at end of June (c) no.	Wages and salaries (d) \$m	Turnover \$m	Industry value added \$m	Turnover per person employed (e) \$'000	Industry value added per person employed (f) \$'000
<b>METAL PRODUCT MFG</b> <i>cont.</i>							
<b>272</b>	<b>Basic non-ferrous metal mfg</b>						
2721	Alumina production	3 796	182.9	1 971.4	423.4	519.3	111.5
2722	Aluminium smelting	—	—	—	—	—	—
2723	Copper, silver, lead and zinc smelting, refining	36	2.2	19.7	6.9	547.7	190.9
2729	Basic non-ferrous metal mfg n.e.c.	704	43.2	1 192.5	99.5	1 693.2	141.3
	<i>Total</i>	4 536	228.3	3 183.5	529.8	701.8	116.8
<b>273</b>	<b>Non-ferrous basic metal product mfg</b>						
2731	Aluminium rolling, drawing, extruding	*88	*3.5	31.0	*10.3	*352.2	117.0
2732	Non-ferrous metal rolling, drawing, extruding n.e.c.	np	np	np	np	np	np
2733	Non-ferrous metal casting	np	np	np	np	np	np
	<i>Total</i>	218	9.1	58.0	21.2	265.7	97.3
<b>274</b>	<b>Structural metal product mfg</b>						
2741	Structural steel fabricating	3 392	129.7	572.6	197.9	168.8	58.3
2742	Architectural aluminium product mfg	1 435	43.6	212.8	72.3	148.3	50.4
2749	Structural metal product mfg n.e.c.	447	10.6	65.1	15.3	145.7	34.3
	<i>Total</i>	5 274	183.9	850.5	285.5	161.2	54.1
<b>275</b>	<b>Sheet metal product mfg</b>						
2751	Metal container mfg	180	7.3	45.2	17.1	250.8	94.8
2759	Sheet metal product mfg n.e.c.	1 386	44.0	180.6	63.0	130.3	45.4
	<i>Total</i>	1 567	51.3	225.8	80.1	144.1	51.1
<b>276</b>	<b>Fabricated metal product mfg</b>						
2761	Hand tool and general hardware mfg	43	1.3	*3.7	*1.8	85.7	40.7
2762	Spring and wire product mfg	314	8.4	48.1	14.6	153.2	46.6
2763	Nut, bolt, screw and rivet mfg	66	np	np	np	np	np
2764	Metal coating and finishing	842	26.3	81.4	42.0	96.7	49.9
2765	Non-ferrous pipe fitting mfg	110	np	np	np	np	np
2769	Fabricated metal product mfg n.e.c.	1 822	56.9	182.5	77.6	100.2	42.6
	<i>Total</i>	3 198	98.3	337.4	142.4	105.5	44.5
<b>27</b>	<b>Total metal product mfg</b>	<b>16 377</b>	<b>656.2</b>	<b>5 058.0</b>	<b>1 097.5</b>	<b>308.8</b>	<b>67.0</b>
<b>MACHINERY AND EQUIPMENT MFG</b>							
<b>281</b>	<b>Motor vehicle and part mfg</b>						
2811	Motor vehicle mfg	12	np	np	np	np	np
2812	Motor vehicle body mfg	900	27.1	126.1	42.5	140.1	47.2
2813	Automotive electrical and instrument mfg	*13	np	np	np	np	np
2819	Automotive component mfg n.e.c.	707	np	np	np	np	np
	<i>Total</i>	1 633	47.9	223.9	79.8	137.1	48.9
<b>282</b>	<b>Other transport equipment mfg</b>						
2821	Shipbuilding	1 003	31.6	308.9	49.2	308.0	49.0
2822	Boatbuilding	426	10.4	60.2	13.4	141.2	31.5
2823	Railway equipment mfg	np	np	np	np	np	np
2824	Aircraft mfg	388	17.9	52.4	19.5	135.1	50.2
2829	Transport equipment mfg n.e.c.	np	np	np	np	np	np
	<i>Total</i>	2 143	np	np	np	np	np

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INDUSTRY CLASS . . . . .		Employment at end of June (c)	Wages and salaries (d)	Turnover	Industry value added	Turnover per person employed (e)	Industry value added per person employed (f)
ANZSIC code	Description	no.	\$m	\$m	\$m	\$'000	\$'000
<b>MACHINERY AND EQUIPMENT MFG <i>cont.</i></b>							
<b>283</b>	<b>Photographic and scientific equipment mfg</b>						
2831	Photographic and optical good mfg	57	1.5	3.4	2.0	58.9	34.4
2832	Medical and surgical equipment mfg	331	8.0	23.4	10.1	70.7	30.6
2839	Professional and scientific equipment mfg n.e.c.	106	np	np	np	np	np
	<i>Total</i>	495	np	np	np	np	np
<b>284</b>	<b>Electronic equipment mfg</b>						
2841	Computer and business machine mfg	**3	**0.1	**—	**—	**17.9	**9.4
2842	Telecommunication, broadcasting and transceiving equipment mfg	353	13.8	100.0	30.8	283.6	87.4
2849	Electronic equipment mfg n.e.c.	739	25.0	107.3	39.1	145.2	53.0
	<i>Total</i>	1 094	38.9	207.3	70.0	189.5	64.0
<b>285</b>	<b>Electrical equipment and appliance mfg</b>						
2851	Household appliance mfg	528	16.4	99.6	27.0	188.6	51.2
2852	Electric cable and wire mfg	np	np	np	np	np	np
2853	Battery mfg	—	—	—	—	—	—
2854	Electric light and sign mfg	np	np	np	np	np	np
2859	Electrical equipment mfg n.e.c.	674	28.1	100.2	40.0	148.7	59.5
	<i>Total</i>	1 377	49.9	223.3	77.4	162.1	56.2
<b>286</b>	<b>Industrial machinery and equipment mfg</b>						
2861	Agricultural machinery mfg	544	15.7	73.8	28.8	135.6	53.0
2862	Mining and construction machinery mfg	2 492	95.0	432.7	143.4	173.6	57.5
2863	Food processing machinery mfg	43	1.2	6.2	2.1	144.9	49.1
2864	Machine tool and part mfg	340	10.5	39.8	17.9	117.0	52.5
2865	Lifting and material handling equipment mfg	670	26.0	131.8	39.1	196.6	58.3
2866	Pump and compressor mfg	245	8.8	43.9	17.3	179.5	70.7
2867	Commercial space heating and cooling equipment mfg	361	13.6	70.8	25.0	196.2	69.4
2869	Industrial machinery and equipment mfg n.e.c.	1 065	39.5	157.1	63.3	147.5	59.4
	<i>Total</i>	5 760	210.3	956.1	336.9	166.0	58.5
<b>28</b>	<b>Total machinery and equipment mfg</b>	<b>12 502</b>	<b>434.6</b>	<b>2 172.4</b>	<b>683.8</b>	<b>173.8</b>	<b>54.7</b>
<b>OTHER MANUFACTURING</b>							
<b>291</b>	<b>Prefabricated building mfg</b>						
2911	Prefabricated metal building mfg	281	11.0	103.4	42.1	367.8	149.6
2919	Prefabricated building mfg n.e.c.	*20	*0.5	*2.9	*0.8	**144.8	**38.8
	<i>Total</i>	301	11.6	106.3	42.8	353.1	142.3
<b>292</b>	<b>Furniture mfg</b>						
2921	Wooden furniture and upholstered seat mfg	2 611	61.9	225.2	89.4	86.3	34.2
2922	Sheet metal furniture mfg	397	11.0	42.3	14.6	106.6	36.7
2923	Mattress mfg (except rubber)	273	7.2	43.9	15.2	160.5	55.7
2929	Furniture mfg n.e.c.	824	22.7	86.9	36.4	105.4	44.1
	<i>Total</i>	4 105	102.8	398.3	155.5	97.0	37.9

np not available for publication but included in totals where applicable, unless otherwise indicated

\*\* estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

\* estimate has a relative standard error of between 25% and 50% and should be used with caution

(a) See paragraph 5 of the Explanatory Notes.

(b) Group employer information held by the Australian Taxation Office is now being used to delete those businesses which have ceased trading or are no longer employing staff. See paragraphs 11–13 of the Explanatory Notes.

(c) Includes working proprietors.

(d) Excludes the drawings of working proprietors.

(e) Turnover divided by the number of persons employed at the end of June.

(f) Industry value added divided by the number of persons employed at the end of June.

MANUFACTURING ESTABLISHMENTS(a)(b), Industry Class *continued*

INDUSTRY CLASS . . . . .		Employment at end of June (c)	Wages and salaries (d)	Turnover	Industry value added	Turnover per person employed (e)	Industry value added per person employed (f)
ANZSIC code	Description	no.	\$m	\$m	\$m	\$'000	\$'000
<b>OTHER MANUFACTURING</b> <i>cont.</i>							
<b>294</b>	<b>Miscellaneous mfg</b>						
2941	Jewellery and silverware mfg	264	6.6	28.5	8.7	108.1	32.8
2942	Toy and sporting good mfg	197	4.9	29.1	10.8	147.4	54.7
2949	Manufacturing n.e.c.	465	10.9	34.6	14.6	74.5	31.5
	<i>Total</i>	925	22.3	92.1	34.1	99.6	36.8
<b>29</b>	<b>Total other manufacturing</b>	<b>5 331</b>	<b>136.7</b>	<b>596.7</b>	<b>232.4</b>	<b>111.9</b>	<b>43.6</b>
<b>21-29</b>	<b>TOTAL MANUFACTURING</b>	<b>72 710</b>	<b>2 600.3</b>	<b>17 770.5</b>	<b>4 971.6</b>	<b>244.4</b>	<b>68.4</b>

(a) See paragraph 5 of the Explanatory Notes.

(b) Group employer information held by the Australian Taxation Office is now being used to delete those businesses which have ceased trading or are no longer employing staff. See paragraphs 11-13 of the Explanatory Notes.

(c) Includes working proprietors.

(d) Excludes the drawings of working proprietors.

(e) Turnover divided by the number of persons employed at the end of June.

(f) Industry value added divided by the number of persons employed at the end of June.



## MANUFACTURING ESTABLISHMENTS(a)(b), Employment Size(c)

Employment size group	Employment at end of June(d)		Wages and salaries(e)(f)		Turnover(f)		Industry value added(f)	
	no.	%	\$m	%	\$m	%	\$m	%
FOOD, BEVERAGE AND TOBACCO MANUFACTURING								
0-4 persons	449	3.5	6.1	1.4	37.0	1.2	10.4	1.2
5-9 persons	503	3.9	9.7	2.3	97.8	3.0	20.1	2.4
10-19 persons	871	6.7	19.4	4.6	172.4	5.4	41.4	4.9
20-49 persons	2 176	16.8	64.2	15.2	574.9	17.9	152.3	18.2
50-99 persons	2 144	16.6	67.1	15.9	599.5	18.6	128.1	15.3
Total less than 100 persons	6 143	47.6	166.5	39.4	1 481.7	46.1	352.4	42.1
100-199 persons	1 860	14.4	66.8	15.8	477.2	14.8	139.4	16.6
200-499 persons	np	np	np	np	np	np	np	np
500-999 persons	np	np	np	np	np	np	np	np
1 000 or more persons	—	—	—	—	—	—	—	—
Total 100 or more persons	6 776	52.4	256.2	60.6	1 733.9	53.9	485.5	57.9
<b>Total</b>	<b>12 919</b>	<b>100.0</b>	<b>422.7</b>	<b>100.0</b>	<b>3 215.6</b>	<b>100.0</b>	<b>837.9</b>	<b>100.0</b>
TEXTILE, CLOTHING, FOOTWEAR AND LEATHER MANUFACTURING								
0-4 persons	358	11.3	5.6	6.9	31.2	9.3	11.1	9.5
5-9 persons	483	15.3	8.9	11.0	44.8	13.3	17.6	15.1
10-19 persons	408	12.9	8.7	10.7	30.5	9.0	11.3	9.7
20-49 persons	np	np	np	np	np	np	np	np
50-99 persons	np	np	np	np	np	np	np	np
Total less than 100 persons	1 904	60.3	43.5	53.5	186.8	55.4	68.0	58.0
100-199 persons	np	np	np	np	np	np	np	np
200-499 persons	np	np	np	np	np	np	np	np
500-999 persons	—	—	—	—	—	—	—	—
1 000 or more persons	—	—	—	—	—	—	—	—
Total 100 or more persons	1 253	39.7	37.7	46.5	150.3	44.6	49.2	42.0
<b>Total</b>	<b>3 157</b>	<b>100.0</b>	<b>81.2</b>	<b>100.0</b>	<b>337.2</b>	<b>100.0</b>	<b>117.1</b>	<b>100.0</b>
WOOD AND PAPER PRODUCT MANUFACTURING								
0-4 persons	583	14.2	11.3	8.5	45.7	5.9	17.6	6.2
5-9 persons	520	12.7	12.6	9.5	54.4	7.0	17.9	6.4
10-19 persons	554	13.5	14.9	11.2	62.2	8.0	24.5	8.7
20-49 persons	np	np	np	np	np	np	np	np
50-99 persons	np	np	np	np	np	np	np	np
Total less than 100 persons	2 539	62.0	69.9	52.8	387.1	49.8	144.8	51.5
100-199 persons	np	np	np	np	np	np	np	np
200-499 persons	np	np	np	np	np	np	np	np
500-999 persons	—	—	—	—	—	—	—	—
1 000 or more persons	—	—	—	—	—	—	—	—
Total 100 or more persons	1 554	38.0	62.6	47.2	390.4	50.2	136.6	48.5
<b>Total</b>	<b>4 094</b>	<b>100.0</b>	<b>132.5</b>	<b>100.0</b>	<b>777.5</b>	<b>100.0</b>	<b>281.4</b>	<b>100.0</b>

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— nil or rounded to zero (including null cells)

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(c) Data in this table reflect the size of individual manufacturing establishments. These data do not necessarily reflect the size of the business which owns and operates the establishment. For a further example (relating to unincorporated joint ventures) of why caution should be used in interpreting these data, see paragraph 22 of the Explanatory Notes.

(d) Includes working proprietors.

(e) Excludes the drawings of working proprietors.

(f) Figures may differ slightly from those presented in other tables because they exclude those manufacturing establishments which operated during 1998-99 but were not operating at 30 June 1999. See paragraph 21 of the Explanatory Notes.

MANUFACTURING ESTABLISHMENTS(a)(b), Employment Size(c) *continued*

Employment size group	Employment at end of June(d)		Wages and salaries(e)(f)		Turnover(f)		Industry value added(f)	
	no.	%	\$m	%	\$m	%	\$m	%
PRINTING, PUBLISHING AND RECORDED MEDIA								
0-4 persons	473	6.1	10.1	4.0	34.1	3.3	16.4	3.3
5-9 persons	1 571	20.3	38.3	15.1	152.9	14.9	66.9	13.3
10-19 persons	711	9.2	18.3	7.2	69.2	6.7	29.0	5.8
20-49 persons	2 083	27.0	65.5	25.8	246.8	24.0	101.1	20.1
50-99 persons	259	3.4	9.2	3.6	35.0	3.4	12.8	2.5
Total less than 100 persons	5 097	66.0	141.5	55.8	538.0	52.4	226.1	44.9
100-199 persons	np	np	np	np	np	np	np	np
200-499 persons	np	np	np	np	np	np	np	np
500-999 persons	np	np	np	np	np	np	np	np
1 000 or more persons	np	np	np	np	np	np	np	np
Total 100 or more persons	2 630	34.0	112.0	44.2	489.7	47.6	277.8	55.1
<b>Total</b>	<b>7 727</b>	<b>100.0</b>	<b>253.5</b>	<b>100.0</b>	<b>1 027.7</b>	<b>100.0</b>	<b>503.9</b>	<b>100.0</b>
PETROLEUM, COAL, CHEMICAL AND ASSOCIATED PRODUCT MANUFACTURING								
0-4 persons	327	5.4	9.0	3.2	267.2	7.9	160.3	20.8
5-9 persons	470	7.8	13.6	4.8	85.8	2.5	25.8	3.3
10-19 persons	733	12.1	25.3	8.9	168.4	5.0	44.7	5.8
20-49 persons	870	14.4	35.0	12.3	308.0	9.1	105.6	13.7
50-99 persons	734	12.2	34.6	12.1	320.5	9.5	88.2	11.5
Total less than 100 persons	3 135	51.9	117.5	41.3	1 149.9	33.9	424.5	55.2
100-199 persons	714	11.8	38.8	13.6	299.3	8.8	90.6	11.8
200-499 persons	np	np	np	np	np	np	np	np
500-999 persons	np	np	np	np	np	np	np	np
1 000 or more persons	—	—	—	—	—	—	—	—
Total 100 or more persons	2 906	48.1	167.3	58.7	2 238.8	66.1	344.3	44.8
<b>Total</b>	<b>6 041</b>	<b>100.0</b>	<b>284.8</b>	<b>100.0</b>	<b>3 388.8</b>	<b>100.0</b>	<b>768.7</b>	<b>100.0</b>
NON-METALLIC MINERAL PRODUCT MANUFACTURING								
0-4 persons	206	4.5	3.7	1.9	20.8	1.8	8.6	1.9
5-9 persons	290	6.4	5.3	2.8	23.5	2.0	10.9	2.5
10-19 persons	487	10.7	15.0	7.8	72.3	6.1	29.4	6.6
20-49 persons	750	16.4	35.0	18.1	288.2	24.4	74.8	16.9
50-99 persons	665	14.6	32.7	17.0	232.1	19.6	75.9	17.1
Total less than 100 persons	2 397	52.5	91.8	47.6	636.9	53.9	199.6	45.1
100-199 persons	np	np	np	np	np	np	np	np
200-499 persons	np	np	np	np	np	np	np	np
500-999 persons	np	np	np	np	np	np	np	np
1 000 or more persons	—	—	—	—	—	—	—	—
Total 100 or more persons	2 165	47.5	101.0	52.4	545.2	46.1	243.3	54.9
<b>Total</b>	<b>4 562</b>	<b>100.0</b>	<b>192.9</b>	<b>100.0</b>	<b>1 182.2</b>	<b>100.0</b>	<b>442.9</b>	<b>100.0</b>

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— nil or rounded to zero (including null cells)

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(b) Group employer information held by the Australian Taxation Office is now being used to delete those businesses which have ceased trading or are no longer employing staff. See paragraphs 11-13 of the Explanatory Notes.

(c) Data in this table reflect the size of individual manufacturing establishments. These data do not necessarily reflect the size of the business which owns and operates the establishment. For a further example (relating to unincorporated joint ventures) of why caution should be used in interpreting these data, see paragraph 22 of the Explanatory Notes.

(d) Includes working proprietors.

(e) Excludes the drawings of working proprietors.

(f) Figures may differ slightly from those presented in other tables because they exclude those manufacturing establishments which operated during 1998-99 but were not operating at 30 June 1999. See paragraph 21 of the Explanatory Notes.

MANUFACTURING ESTABLISHMENTS(a)(b), Employment Size(c) *continued*

Employment size group	Employment at end of June(d) .		Wages and salaries(e)(f) . . .		Turnover(f) . . . . .		Industry value added(f) . . . . .	
	no.	%	\$m	%	\$m	%	\$m	%
<b>METAL PRODUCT MANUFACTURING</b>								
0-4 persons	940	5.7	23.6	3.6	587.7	11.6	452.3	..
5-9 persons	1 962	12.0	51.1	7.8	215.7	4.3	85.0	..
10-19 persons	1 452	8.9	44.6	6.8	185.1	3.7	71.0	..
20-49 persons	2 617	16.0	94.1	14.4	637.4	12.6	236.3	..
50-99 persons	2 167	13.2	84.0	12.9	421.3	8.4	130.6	..
<i>Total less than 100 persons</i>	<i>9 139</i>	<i>55.8</i>	<i>297.3</i>	<i>45.5</i>	<i>2 047.2</i>	<i>40.6</i>	<i>975.1</i>	<i>..</i>
100-199 persons	1 472	9.0	52.5	8.0	326.4	6.5	103.3	..
200-499 persons	np	np	np	np	np	np	np	..
500-999 persons	np	np	np	np	np	np	np	..
1 000 or more persons	np	np	np	np	np	np	np	..
<i>Total 100 or more persons</i>	<i>7 238</i>	<i>44.2</i>	<i>355.7</i>	<i>54.5</i>	<i>2 998.6</i>	<i>59.4</i>	<i>118.4</i>	<i>..</i>
<b>Total</b>	<b>16 377</b>	<b>100.0</b>	<b>653.0</b>	<b>100.0</b>	<b>5 045.8</b>	<b>100.0</b>	<b>1 093.5</b>	<b>100.0</b>

<b>MACHINERY AND EQUIPMENT MANUFACTURING</b>								
0-4 persons	1 193	9.5	28.1	6.5	112.4	5.2	45.6	6.6
5-9 persons	1 382	11.1	40.5	9.3	179.2	8.3	75.1	10.9
10-19 persons	1 710	13.7	66.5	15.3	290.4	13.4	98.7	14.4
20-49 persons	3 029	24.2	105.8	24.4	455.4	21.0	157.9	23.0
50-99 persons	2 336	18.7	95.4	22.0	490.7	22.6	148.1	21.6
<i>Total less than 100 persons</i>	<i>9 650</i>	<i>77.2</i>	<i>336.3</i>	<i>77.6</i>	<i>1 528.0</i>	<i>70.5</i>	<i>525.3</i>	<i>76.5</i>
100-199 persons	np	np	np	np	np	np	np	np
200-499 persons	np	np	np	np	np	np	np	np
500-999 persons	—	—	—	—	—	—	—	—
1 000 or more persons	—	—	—	—	—	—	—	—
<i>Total 100 or more persons</i>	<i>2 852</i>	<i>22.8</i>	<i>97.2</i>	<i>22.4</i>	<i>639.1</i>	<i>29.5</i>	<i>161.2</i>	<i>23.5</i>
<b>Total</b>	<b>12 502</b>	<b>100.0</b>	<b>433.5</b>	<b>100.0</b>	<b>2 167.2</b>	<b>100.0</b>	<b>686.5</b>	<b>100.0</b>

.. not applicable

np not available for publication but included in totals where applicable, unless otherwise indicated

— nil or rounded to zero (including null cells)

(a) See paragraph 5 of the Explanatory Notes.

(b) Group employer information held by the Australian Taxation Office is now being used to delete those businesses which have ceased trading or are no longer employing staff. See paragraphs 11-13 of the Explanatory Notes.

(c) Data in this table reflect the size of individual manufacturing establishments. These data do not necessarily reflect the size of the business which owns and operates the establishment. For a further example (relating to unincorporated joint ventures) of why caution should be used in interpreting these data, see paragraph 22 of the Explanatory Notes.

(d) Includes working proprietors.

(e) Excludes the drawings of working proprietors.

(f) Figures may differ slightly from those presented in other tables because they exclude those manufacturing establishments which operated during 1998-99 but were not operating at 30 June 1999. See paragraph 21 of the Explanatory Notes.

MANUFACTURING ESTABLISHMENTS(a)(b), Employment Size(c) *continued*

Employment size group	Employment at end of June(d) .		Wages and salaries(e)(f) . . .		Turnover(f) . . . . .		Industry value added(f) . . . . .	
	no.	%	\$m	%	\$m	%	\$m	%
OTHER MANUFACTURING								
0-4 persons	1 042	19.5	20.8	15.2	74.0	12.4	32.9	14.1
5-9 persons	1 198	22.5	27.8	20.4	98.0	16.4	40.0	17.2
10-19 persons	1 206	22.6	30.1	22.0	132.6	22.2	44.8	19.3
20-49 persons	945	17.7	28.8	21.1	126.0	21.1	45.2	19.4
50-99 persons	940	17.6	29.1	21.3	166.1	27.8	69.7	30.0
<i>Total less than 100 persons</i>	<i>5 331</i>	<i>100.0</i>	<i>136.7</i>	<i>100.0</i>	<i>596.7</i>	<i>100.0</i>	<i>232.4</i>	<i>100.0</i>
100-199 persons	—	—	—	—	—	—	—	—
200-499 persons	—	—	—	—	—	—	—	—
500-999 persons	—	—	—	—	—	—	—	—
1 000 or more persons	—	—	—	—	—	—	—	—
<i>Total 100 or more persons</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>
<b>Total</b>	<b>5 331</b>	<b>100.0</b>	<b>136.7</b>	<b>100.0</b>	<b>596.7</b>	<b>100.0</b>	<b>232.4</b>	<b>100.0</b>
TOTAL MANUFACTURING								
0-4 persons	5 570	7.7	118.2	4.6	1 210.1	6.8	755.0	15.2
5-9 persons	8 380	11.5	207.9	8.0	952.3	5.4	359.2	7.2
10-19 persons	8 132	11.2	242.9	9.4	1 183.1	6.7	394.8	8.0
20-49 persons	13 525	18.6	460.8	17.8	2 780.1	15.7	922.2	18.6
50-99 persons	9 729	13.4	371.0	14.3	2 426.9	13.7	716.9	14.4
<i>Total less than 100 persons</i>	<i>45 336</i>	<i>62.4</i>	<i>1 401.0</i>	<i>54.1</i>	<i>8 552.4</i>	<i>48.2</i>	<i>3 148.1</i>	<i>63.4</i>
100-199 persons	8 791	12.1	339.6	13.1	2 082.0	11.7	693.4	14.0
200-499 persons	11 582	15.9	521.3	20.1	4 734.7	26.7	712.7	14.4
500-999 persons	np	np	np	np	np	np	np	np
1 000 or more persons	np	np	np	np	np	np	np	np
<i>Total 100 or more persons</i>	<i>27 374</i>	<i>37.6</i>	<i>1 189.8</i>	<i>45.9</i>	<i>9 186.2</i>	<i>51.8</i>	<i>1 816.1</i>	<i>36.6</i>
<b>Total</b>	<b>72 710</b>	<b>100.0</b>	<b>2 590.8</b>	<b>100.0</b>	<b>17 738.5</b>	<b>100.0</b>	<b>4 964.3</b>	<b>100.0</b>

— nil or rounded to zero (including null cells)

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(a) See paragraph 5 of the Explanatory Notes.

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(c) Data in this table reflect the size of individual manufacturing establishments. These data do not necessarily reflect the size of the business which owns and operates the establishment. For a further example (relating to unincorporated joint ventures) of why caution should be used in interpreting these data, see paragraph 22 of the Explanatory Notes.

(d) Includes working proprietors.

(e) Excludes the drawings of working proprietors.

(f) Figures may differ slightly from those presented in other tables because they exclude those manufacturing establishments which operated during 1998-99 but were not operating at 30 June 1999. See paragraph 21 of the Explanatory Notes.

## MANUFACTURING ESTABLISHMENTS(a)(b), Exported Production(c)—Employment Size(d)

INDUSTRY SUBDIVISION . . . . .		Sales and transfers out of goods produced	Amount exported by this business or its agent	Exports as a proportion of sales and transfers out of goods produced
ANZSIC code	Description	\$m	\$m	%
0–49 PERSONS				
21	Food, beverage and tobacco mfg	832.9	212.8	25.5
22	Textile, clothing, footwear and leather mfg	np	np	np
23	Wood and paper product mfg	np	np	np
24	Printing, publishing and recorded media	425.2	4.9	1.2
25	Petroleum, coal, chemical and associated product mfg	789.7	258.4	32.7
26	Non-metallic mineral product mfg	362.0	np	np
27	Metal product mfg	1 538.7	576.0	37.4
28	Machinery and equipment mfg	848.4	np	np
29	Other manufacturing	394.3	5.5	1.4
21–29	Total manufacturing	5 578.5	1 152.3	20.7
50–99 PERSONS				
21	Food, beverage and tobacco mfg	573.6	109.8	19.1
22	Textile, clothing, footwear and leather mfg	np	np	np
23	Wood and paper product mfg	np	np	np
24	Printing, publishing and recorded media	26.5	—	—
25	Petroleum, coal, chemical and associated product mfg	311.6	np	np
26	Non-metallic mineral product mfg	210.6	np	np
27	Metal product mfg	398.3	np	np
28	Machinery and equipment mfg	412.3	np	np
29	Other manufacturing	133.5	13.8	10.4
21–29	Total manufacturing	2 220.1	316.3	14.2
100 OR MORE PERSONS				
21	Food, beverage and tobacco mfg	1 669.3	202.6	12.1
22	Textile, clothing, footwear and leather mfg	145.8	35.8	24.5
23	Wood and paper product mfg	372.2	45.0	12.1
24	Printing, publishing and recorded media	153.5	—	—
25	Petroleum, coal, chemical and associated product mfg	2 218.1	np	np
26	Non-metallic mineral product mfg	500.2	np	np
27	Metal product mfg	2 636.6	np	np
28	Machinery and equipment mfg	602.4	196.7	32.6
29	Other manufacturing	—	—	—
21–29	Total manufacturing	8 298.2	2 751.8	33.2
TOTAL				
21	Food, beverage and tobacco mfg	3 075.8	525.2	17.1
22	Textile, clothing, footwear and leather mfg	311.4	46.7	15.0
23	Wood and paper product mfg	747.6	117.6	15.7
24	Printing, publishing and recorded media	605.2	4.9	0.8
25	Petroleum, coal, chemical and associated product mfg	3 319.4	812.0	24.5
26	Non-metallic mineral product mfg	1 072.8	26.3	2.4
27	Metal product mfg	4 573.6	2 320.4	50.7
28	Machinery and equipment mfg	1 863.1	347.9	18.7
29	Other manufacturing	527.8	19.4	3.7
21–29	Total manufacturing	16 096.8	4 220.4	26.2

np not available for publication but included in totals where applicable, unless otherwise indicated

— nil or rounded to zero (including null cells)

(a) See paragraph 5 of the Explanatory Notes.

(b) Group employer information held by the Australian Taxation Office is now being used to delete those businesses which have ceased trading or are no longer employing staff. See paragraphs 11–13 of the Explanatory Notes.

(c) See paragraphs 23–25 of the Explanatory Notes.

(d) Data in this table reflect the size of individual manufacturing establishments. These data do not necessarily reflect the size of the business which owns and operates the establishment. For a further example (relating to unincorporated joint ventures) of why caution should be used in interpreting these data, see paragraph 22 of the Explanatory Notes. Also, this table excludes those manufacturing establishments which operated during 1998–99 but were not operating at 30 June 1999. See paragraph 21 of the Explanatory Notes.

## MANUFACTURING ESTABLISHMENTS(a), Summary Data—Proportion of Exports(b)

INDUSTRY SUBDIVISION		Employment at end of June(c)	Wages and salaries(d)	Turnover	Industry value added
ANZSIC code	Description	%	%	%	%
DO NOT EXPORT					
21	Food, beverage and tobacco mfg	61.6	57.7	57.8	59.2
22	Textile, clothing, footwear and leather mfg	43.5	31.9	34.6	37.9
23	Wood and paper product mfg	63.8	58.6	43.5	45.9
24	Printing, publishing and recorded media	94.8	94.6	94.8	96.0
25	Petroleum, coal, chemical and associated product mfg	49.2	43.2	27.8	40.1
26	Non-metallic mineral product mfg	56.2	55.2	65.5	56.7
27	Metal product mfg	55.8	45.8	26.5	43.7
28	Machinery and equipment mfg	59.3	56.2	46.3	52.2
29	Other manufacturing	83.9	82.5	80.6	83.0
21–29	<b>Total manufacturing</b>	<b>63.0</b>	<b>56.8</b>	<b>44.1</b>	<b>55.2</b>
EXPORTS UP TO AND INCLUDING 50% OF SALES OF GOODS THAT THEY PRODUCED					
21	Food, beverage and tobacco mfg	26.1	28.9	28.2	28.5
22	Textile, clothing, footwear and leather mfg	47.0	58.3	51.8	49.5
23	Wood and paper product mfg	np	np	np	np
24	Printing, publishing and recorded media	np	np	np	np
25	Petroleum, coal, chemical and associated product mfg	33.4	36.2	54.1	33.2
26	Non-metallic mineral product mfg	np	np	np	np
27	Metal product mfg	16.4	16.5	22.2	16.4
28	Machinery and equipment mfg	34.5	38.4	42.1	40.6
29	Other manufacturing	14.0	14.9	16.7	14.0
21–29	<b>Total manufacturing</b>	<b>25.2</b>	<b>27.7</b>	<b>33.1</b>	<b>27.9</b>
EXPORTS MORE THAN 50% OF SALES OF GOODS THAT THEY PRODUCED					
21	Food, beverage and tobacco mfg	12.3	13.3	14.1	12.3
22	Textile, clothing, footwear and leather mfg	9.4	9.8	13.6	12.7
23	Wood and paper product mfg	np	np	np	np
24	Printing, publishing and recorded media	np	np	np	np
25	Petroleum, coal, chemical and associated product mfg	17.5	20.5	18.1	26.7
26	Non-metallic mineral product mfg	np	np	np	np
27	Metal product mfg	27.7	37.6	51.2	39.9
28	Machinery and equipment mfg	6.2	5.4	11.6	7.2
29	Other manufacturing	2.1	2.5	2.7	3.0
21–29	<b>Total manufacturing</b>	<b>11.8</b>	<b>15.5</b>	<b>22.8</b>	<b>16.9</b>

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) See paragraph 5 of the Explanatory Notes.

(b) See paragraphs 23–25 of the Explanatory Notes.

(c) Includes working proprietors.

(d) Excludes the drawings of working proprietors.

## EXPLANATORY NOTES

### INTRODUCTION

- 1** This publication presents final statistics for Western Australia compiled from a survey of manufacturing establishments for 1998–99, with some comparative statistics relating to preceding years. The emphasis of this publication is on the release of statistics for the main data items included in the survey.
- 2** Manufacturing, as specified in Division C of the Australian and New Zealand Standard Industrial Classification (ANZSIC), broadly relates to the physical or chemical transformation of materials or components into new products, whether the work is performed by power-driven machines or by hand.
- 3** The manufacturing collection is conducted on an annual basis. For the 1998–99 collection, a sample of approximately 17,000 establishments nationally were asked to provide data on employment, wages and salaries, turnover, purchases and whether their products were exported. Data on IVA are also available from this collection. In addition, a variety of samples was selected to produce data on a range of other variables. The next manufacturing census will be conducted in respect of 2001–02, with sample surveys conducted for the next two years.
- 4** Estimates of IVA were compiled using data from the 17,000 sample population and a sub-sample of approximately 7,000 establishments which were asked to provide detailed structural and performance data. These 7,000 establishments were also asked to supply value of sales for commodities produced. The availability of this fine level commodity/activity data for these units has enabled better identification of inscope establishments as well as providing a basis for an objective industry code to be allocated to responding units. A sample of approximately 5,200 manufacturing management units was asked the detailed information required to derive operating profit before tax. Selected data from the annual manufacturing collection and data from other collections are included in the compendium publication *Manufacturing, Australia, 2000* (Cat. no. 8225.0).

### SCOPE AND COVERAGE

- 5** The business unit for which statistics are presented in this publication is the establishment. A manufacturing establishment is one predominantly engaged in manufacturing activities, but the data collected for it cover all activities of the establishment (including non-manufacturing activities). Conversely, there are some establishments predominantly engaged in non-manufacturing activities which also undertake limited manufacturing activities; these are excluded from the collection.
- 6** A small number of manufacturing establishments engage, in a significant way, in a variety of activities which are normally carried out by different industries. For example, a predominantly manufacturing establishment may also undertake significant amounts of wholesaling. Similarly, a manufacturing establishment may produce significant volumes of a variety of goods which are normally produced in different manufacturing industries. In such cases, the original establishment is 'split' into a separate establishment for each significant activity which belongs to a separate industry. For the 1998–99 manufacturing collection, 'significant' was defined as turnover of \$7.3 million or more.
- 7** The statistics in this publication exclude some very small manufacturers. Those excluded are manufacturers not employing staff at 30 June of the reference year (such as sole proprietorships or family partnerships) which had not registered as group employers (GE) with the Australian Taxation Office (ATO). Though a substantial number, these businesses would contribute only marginally to aggregate data were they to be included. In addition, the ABS

## EXPLANATORY NOTES *continued*

### SCOPE AND COVERAGE

*continued*

attempts to obtain data for those businesses which ceased operation during the year, but it is not possible to obtain data for all of them.

### STANDARD UNITS

**8** For the definition of the standard business units now in use, see the Glossary.

### RELIABILITY OF ESTIMATES

**9** For information on this subject, see Technical Note 1.

### DATA ADJUSTED

**10** Data in this issue continue to be adjusted to allow for lags in processing new businesses to the ABS business register, i.e. adjustments have been made to allow for new businesses which had commenced operations but for which details had not been processed to the ABS business register in time for inclusion in the annual manufacturing industry collection. Adjustments of this type will continue to be applied in future periods. The majority of businesses affected by these lags are small in size. The effect of these adjustments on 1998–99 Western Australian employment is an increase of 1.1% while the effect on turnover is an increase of 0.4%. All industry subdivisions were affected to a similar degree.

**11** For some time now, the ABS has been using ATO information on GE registrations to add new businesses to the ABS business register. After detailed investigation, it has now been decided to use GE information to delete from the business register those businesses which have ceased trading or are no longer employing staff.

**12** The process of using GE information to delete businesses from the ABS business register has been introduced for the 1998–99 manufacturing survey. The result is that a large number of businesses were removed from the business register and, therefore, from the population for the 1998–99 manufacturing survey. This process will now also be ongoing, but the number of businesses removed in future years will be relatively small.

**13** The use of GE information to delete businesses from the ABS business register has also impacted on previous years' data. Estimates for the previous three manufacturing surveys (covering 1995–96 to 1997–98 inclusive) have been adjusted in such a way as to phase in the impact over this time. The impact on survey results has been to reduce estimates slightly. For example, total Western Australian manufacturing employment for 1997–98 was reduced by 1.5% and turnover by 0.9%. For periods before 1995–96, the impact is estimated to have been negligible. The impacts of the ongoing process are also expected to be negligible.

### COMPARABILITY WITH PREVIOUS STATISTICS

**14** Commencing with estimates for 1997–98, the definition of turnover has changed in line with new international standards for measuring economic variables. The composition of turnover estimates under the new standards is as follows:

Turnover (as previously defined)  
plus Income from intellectual property royalties  
equals Turnover (new standards)

**15** Conceptually, some further differences exist between turnover on the old and new bases (particularly in relation to own account production of computer software, own account mineral exploration, and own account production of literary, entertainment or artistic originals). However, as these activities are relatively unimportant for manufacturing industries, no attempt has been made to measure them.



## EXPLANATORY NOTES *continued*

### COMPARABILITY WITH PREVIOUS STATISTICS *continued*

**16** Commencing with estimates for 1997–98, under new international standards, contribution to gross domestic product (GDP) by manufacturing industries will be measured by the variable 'Industry value added' (IVA). Estimates for IVA measure the value added by an industry to the intermediate inputs used by that industry. Previously, the corresponding contribution to GDP was measured by the variable 'Industry gross product' (IGP). It should also be noted that IVA is not the same variable as 'Value added' which was published for manufacturing establishments until 1992–93.

**17** Composition of IVA estimates and their relationship to IGP estimates are:

	Turnover (new standards)
plus	Closing inventories
less	Opening inventories
less	Intermediate input expenses (see the operating expenses entry in the Glossary)
equals	IVA
	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

**18** Commencing with the 1994–95 manufacturing collection, multi-establishment management units have been 'collapsed' for reporting purposes into single establishment management units, unless they had significant activity in more than one industry and/or State or Territory. The effect of this process is that most manufacturing businesses which previously reported for more than one establishment were asked to combine operations by those establishments into a single reporting unit. The effect of this on manufacturing statistics as contained in this publication has been minimal.

**19** For the 1995–96 collection only, provision expenses for employee entitlements were excluded from wages and salaries. For all other years, these provision expenses are included in wages and salaries.

**20** Periodic collections of the Retail and Wholesale Divisions of ANZSIC, conducted on the 1998–99 reference year, identified a number of businesses which were predominantly manufacturers. A small number of these cases were determined to be significant in some manufacturing industries and have therefore been added into the manufacturing collection for 1998–99. The effect of these additional units on published aggregates have been calculated as adding 0.3% to employment and 0.2% to turnover for Western Australia.

### EMPLOYMENT SIZE DATA

**21** Summary of operations data at the industry subdivision level classified by the employment size of individual manufacturing establishments (see the Glossary for its definition) are presented in table 3. Similarly, exports of goods produced data at the industry subdivision level classified by the broad employment size of individual manufacturing establishments are presented in table 4. The statistics in these two tables relate only to those manufacturing establishments operating at 30 June 1999. As such, the figures presented represent a slightly different population from those presented in the other tables from the manufacturing collection. These other tables include data for those manufacturing establishments which operated at any time during 1998–99.

## EXPLANATORY NOTES *continued*

### EMPLOYMENT SIZE DATA

*continued*

**22** The treatment of unincorporated joint ventures according to the ABS's standard units definitions has an effect on the data when the data are classified by employment size. This is because joint venture participants report details of turnover, but often have few or no employees or operating expenses. The labour for such operations is usually employed and paid for by the joint venture operator. Similarly, the operating expenses are usually reported by the joint venture operator. On the other hand, the operator does not report any details of turnover (unless it also happens to be a participant). If each of these joint venture operations were to be treated as a single business unit in the statistics, it is highly probable that the METAL PRODUCT MANUFACTURING industry and to a lesser extent the PETROLEUM, COAL, CHEMICAL AND ASSOCIATED PRODUCT MANUFACTURING industry would reflect a similar dominance pattern to the other manufacturing industries. In other words, in the statistics in tables 3 and 4, the participants in unincorporated joint ventures are recorded in the 0–4 persons employment size category, whereas the operators of the unincorporated joint ventures are recorded in larger employment size categories. This treatment affects the relative contribution of the various employment size categories for these two industries.

### EXPORTS BY MANUFACTURERS

**23** All establishments included in the manufacturing collection were asked whether they exported and, if so, what percentage of their sales of goods produced plus transfers out of goods produced by the establishment for sale were exported by their business or an agent on their behalf. The data presented in table 4 are derived by applying the percentage of exports reported for each exporting unit and then aggregating that figure. The data in table 4 exclude those manufacturing establishments which operated during 1998–99 but were not operating at 30 June 1999.

**24** The statistics presented in table 4 for the value of exports by manufacturers or their agents are not intended to be the same as the value of exports classified by manufacturing industry of origin as published by the ABS in international trade statistics. These latter statistics are intended to measure total exports regardless of which business or organisation does the exporting (and to identify the probable industry from which the goods originated), whereas the statistics in tables 4 and 5 only include exports directly undertaken by the manufacturer or by its agent.

**25** The data in table 4 showing exports by manufacturers or their agents can be expected to show a much lower value than the exports data from the international trade series. The main reason is that for many exports of goods manufactured in Australia, the actual exporting activity is undertaken by a business other than the manufacturer. Also, the value of goods produced on a commission or fee basis for non-manufacturing businesses and which are then exported is not included in the data in tables 4 and 5. Examples of relevant commission work are the 'slaughtering fee' charged by an abattoir for processing livestock owned by a meat exporter and the 'tolling fee' charged by an aluminium smelter to process ores owned by other (e.g. mining) businesses. Also excluded from tables 4 and 5 are any exports by manufacturers of goods which were not produced by that manufacturer. These and other goods exported (e.g. re-exports) are included in the international trade data. Finally, differences in valuation of exports arise because the value of exports in the international trade series would include the value to the manufacturer plus profit margins for the exporter and for any intermediaries between the manufacturer and the exporter.

### REGIONAL DATA

**26** Current investigations carried out by the ABS have shown that it is possible to produce some sub-State estimates in survey collection years. The ABS

## EXPLANATORY NOTES *continued*

### REGIONAL DATA *continued*

proposes to make sub-State data available later this year, after the release of the *Manufacturing Industry, [State], 1998–99* publication series. For further information about the availability of sub-State data, please contact John Ridley on 02 9268 4541.

**27** Sub-State data in census years will continue to be published in the *Manufacturing Industry, [State]* series or will be available as unpublished data.

### ACKNOWLEDGEMENT

**28** ABS publications draw extensively on information provided freely by individuals, businesses, governments and other organisations. Their continued cooperation is very much appreciated: without it, the wide range of statistics published by the ABS would not be available. Information received by the ABS is treated in strict confidence as required by the *Census and Statistics Act 1905*.

### INFORMATION PAPER

**29** The *Information Paper: Availability of Statistics Related to Manufacturing* (Cat. no. 8205.0) outlines the vast amount of published and unpublished data available from the annual manufacturing industry collection, as well as data from other ABS collections.

### RELATED PUBLICATIONS

**30** A series of publications *Manufacturing Industry, [State], 1998–99* (Cat. nos 8221.1–8221.6) will be produced for each State. The publication for New South Wales (Cat. no. 8221.1) also contains data for the Australian Capital Territory. These publications are being released progressively.

**31** Users may also wish to refer to the following publications:

- *Business Operations and Industry Performance, Australia, 1998–99* (Cat. no. 8140.0), to be released in December 2000—Annual publication
- *Business Operations and Industry Performance, Australia, Preliminary, 1998–99* (Cat. no. 8142.0), released on 12 May 2000—Annual publication
- *Environment Protection Expenditure, Australia, 1995–96 and 1996–97* (Cat. no. 4603.0), released on 2 July 1999—Biennial publication
- *Information Paper: Availability of Statistics Related to Manufacturing, 1996* (Cat. no. 8205.0), released on 21 March 1996—Irregular publication
- *Information Paper: Availability of Statistics Related to Manufacturing, 1997* (Cat. no. 8205.0), released on 16 January 1998—Irregular publication
- *Information Paper: Improvements to ABS Economic Statistics, 1997* (Cat. no. 1357.0), released on 22 August 1997—Irregular publication
- *Inventories and Sales, Selected Industries, Australia* (Cat. no. 5629.0)—Quarterly publication
- *Labour Force, Australia* (Cat. no. 6203.0)—Monthly publication
- *Manufacturing, Australia, 2000* (Cat. no. 8225.0), to be released in December 2000—Annual publication
- *Manufacturing Industry, Australia, Preliminary, 1999–2000* (Cat. no. 8201.0), to be released in March 2001—Annual publication

### BACK DATA AND UNPUBLISHED STATISTICS

**32** A range of manufacturing industry statistics publications is available for previous years. As well, a considerable amount of data from the annual manufacturing collection exists in unpublished form. More detailed information to satisfy individual user requirements may be available on request. In general, unpublished data consist of finer industry dissections of the published data. Other more detailed data may also be available. A charge is made for providing unpublished information. The information paper (Cat. no. 8205.0) referred to in paragraphs 29 and 31 also provides more details.

### ROUNDING

**33** Where figures have been rounded, discrepancies may occur between totals and the sums of the component items. Due to data being adjusted for lags in

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**EXPLANATORY NOTES** *continued*

**ROUNDING** *continued*

processing new businesses to the ABS business register (see paragraph 10), this 'rounding rule' also applies to employment counts.

**34** Proportions, ratios and other calculated figures shown in this publication have been calculated using unrounded estimates and may be different from, but are more accurate than, calculations based on the rounded estimates.

**ABBREVIATIONS**

ABS	Australian Bureau of Statistics
ANZSIC	Australian and New Zealand Standard Industrial Classification
ATO	Australian Taxation Office
f.o.b.	free on board
GDP	gross domestic product
GE	group employer
IGP	industry gross product
IVA	industry value added
mfg	manufacturing
n.e.c.	not elsewhere classified

## TECHNICAL NOTE 1 DATA RELIABILITY

### SAMPLE ERROR

**1** The 1998–99 manufacturing survey was designed primarily to deliver industry class estimates for Australia and States for the data items employment, wages and salaries, turnover and IVA. For the two Territories, the sample was designed to deliver industry subdivision data only.

**2** All 1998–99 (and 1994–95, 1995–96 and 1997–98) data contained in this publication have been obtained from samples of manufacturers. As such, these data are subject to sampling variability; that is, they may differ from the figures that would have been produced if the data had been obtained from all manufacturers in the population. The measure of the likely difference as used by the ABS is given by the standard error, which indicates the extent to which an estimate might have varied by chance because the data were obtained from only a sample of units. There are about 2 chances in 3 that a sample estimate will differ by less than one standard error from the figure that would have been obtained if the data had been obtained from all units, and about 19 chances in 20 that the difference will be less than two standard errors.

**3** The standard error can also be expressed as a percentage of the estimate, and this is known as the relative standard error. The relative standard errors for the 1998–99 employment, wages and salaries, turnover and IVA data for Western Australia presented in this publication are nearly all 4% or less for industry subdivisions (see Technical Note 2) and are also 4% or less for most industry classes.

**4** Relative standard errors at the industry subdivision level for Western Australia for selected data items representing the full range of data contained in this publication are shown in Technical Note 2. Detailed relative standard errors can be made available on request.

### NON SAMPLE ERROR

**5** The imprecision due to sampling variability, which is measured by the standard error, should not be confused with inaccuracies that may occur because of inadequacies in available sources from which the population frame was compiled, imperfections in reporting by providers, errors made in collection such as in recording and coding data, and errors made in processing data. Inaccuracies of this kind are referred to collectively as non-sampling error and they may occur in any enumeration, whether it be a full census or a sample.

**6** While it is not possible to quantify non-sampling error, every effort is made to reduce it to a minimum. Collection forms are designed to be easy to complete and assist businesses to report accurately. Efficient and effective operating procedures and systems are used to compile the statistics.

## TECHNICAL NOTE 2 STANDARD ERRORS

### SELECTED DATA ITEMS

INDUSTRY SUBDIVISION . . . . .		Employment at end of June(a)	Wages and salaries(b)	Turnover	Industry value added	Amount exported by this business or its agent
ANZSIC code	Description	%	%	%	%	%
21	Food, beverage and tobacco mfg	1.9	1.2	1.0	1.2	2.4
22	Textile, clothing, footwear and leather mfg	3.1	3.2	2.4	3.0	2.9
23	Wood and paper product mfg	3.6	3.1	1.7	2.0	0.5
24	Printing, publishing and recorded media	6.8	5.7	4.8	3.2	38.0
25	Petroleum, coal, chemical and associated product mfg	1.4	0.8	0.3	0.4	0.2
26	Non-metallic mineral product mfg	2.6	1.3	0.7	1.0	3.3
27	Metal product mfg	2.1	1.6	1.0	1.7	0.7
28	Machinery and equipment mfg	2.5	1.9	2.1	2.0	3.2
29	Other manufacturing	5.5	4.3	3.7	4.3	16.2
<b>21-29</b>	<b>Total manufacturing</b>	<b>1.1</b>	<b>0.8</b>	<b>0.5</b>	<b>0.7</b>	<b>0.6</b>

(a) Includes working proprietors.

(b) Excludes the drawings of working proprietors.

## GLOSSARY

<b>ABS</b>	Australian Bureau of Statistics
<b>Amount exported by this business unit or its agent</b>	This represents the sales value of goods produced by an establishment (or for it on commission), including the value of manufactured goods transferred to other establishments of the business unit for sale, that are exported (or are intended for export) outside Australia by the business unit or by its agent.
<b>ANZSIC</b>	Australian and New Zealand Standard Industrial Classification
<b>Capitalised work done for own use</b>	<p>Capitalised work done by the employees or proprietors of an establishment for use by the business unit 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.</p> <p>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.</p>
<b>Change in inventories</b>	The value of total closing inventories minus total opening inventories.
<b>Closing inventories</b>	The value of all inventories of finished goods, work-in-progress, raw materials, fuels, containers and packaging as at the end of the reference period.
<b>Commission manufacturing</b>	<p>Significant amounts of manufacturing are undertaken on a commission basis by one manufacturer on behalf of another manufacturer or by a manufacturer on behalf of a non-manufacturer. Typically, a commission manufacturing transaction will involve a client commissioning the production of goods by a producing establishment from materials provided by the client. Ownership of those materials remains with the client. Similarly, the goods made from those materials are owned by the client.</p> <p>For the purposes of the estimates in this publication, the producing establishment reports the commission fee as service income along with wages and salaries and any other expenses incurred.</p> <p>If the client is a manufacturing establishment, then in addition to data for their own manufacturing operations, the client reports the sales and stocks of the commissioned goods, the cost of the materials provided to the producing establishment, the commission fee paid and the value of any other intermediate inputs related to the commission transaction. If the client is not a manufacturing establishment, no data are reported by the client.</p>
<b>Employment at end of June</b>	The number of working proprietors, working partners, permanent, part-time, temporary and casual employees, and managerial and executive employees working for an establishment during the last pay period ending in June each year. 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, contractors and persons paid solely by commission without a retainer, and volunteer workers are excluded.
<b>Enterprise group</b>	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 <i>Corporations Legislation Amendment Act 1991</i> ). These may be legal entities such as trusts and partnerships as well as companies. Majority ownership is not required for control to be exercised.
<b>Establishment</b>	The establishment is the smallest accounting unit of a business, within a State or Territory, controlling its productive activities and maintaining a specified range of

## GLOSSARY *continued*

<b>Establishment <i>continued</i></b>	detailed data i.e. the data needed to compile turnover, opening and closing inventories, purchases and transfers in, motor vehicle running expenses, freight and cartage expenses, commission expenses, rent, leasing and hiring expenses, and repair and maintenance expenses. In general, an establishment covers all operations at a physical location, but may consist of groups of locations provided they are within the same State or Territory. The majority of establishments operate at one location only.
<b>Establishments that do not export</b>	Establishments that reported no exports (either by their business unit or for them by an agent) of goods that they produced.
<b>Establishments with exports of more than 50% of sales</b>	Establishments that reported exports (either by their business unit or for them by an agent) of more than 50% of sales and transfers out of goods for sale that they produced.
<b>Establishments with exports up to and including 50% of sales</b>	Establishments that reported exports (either by their business unit or for them by an agent) of up to and including 50% of sales and transfers out of goods for sale that they produced.
<b>Exports as a proportion of sales and transfers out of goods produced (table 4)</b>	For an individual establishment, this represents the percentage of the total sales and transfers out of goods for sale produced by the establishment (or for it on commission) which are exported (or are intended for export) outside Australia by the business unit or by its agent. In table 4, the ratio is calculated by dividing the total value of goods exported by the total value of sales and transfers out of goods for sale produced by all establishments, not just the aggregated value for those units which exported.
<b>Funding by Federal, State or Local Governments for operational costs</b>	Funding by Federal, State or Local Governments for operational costs (e.g. wages and salaries, rent). Included are bounties, subsidies, export grants and apprenticeship schemes.
<b>Industry class</b>	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. Usually, an activity is primarily confined to one class. However, some activities may be primary to more than one class.
<b>Industry gross product (IGP)</b>	<p>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.</p> <p>The relationship between IVA estimates and IGP estimates is:</p> <div style="margin-left: 40px;">             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           </div>
<b>Industry group</b>	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.
<b>Industry subdivision</b>	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



## GLOSSARY *continued*

<b>Industry subdivision <i>continued</i></b>	<p>WOOD AND PAPER PRODUCT MANUFACTURING. Industry subdivisions are built up from industry groups which, in turn, are built up from industry classes. The following list gives the manufacturing industry subdivision codes and their descriptions:</p> <ul style="list-style-type: none"> <li>21 Food, beverage and tobacco mfg</li> <li>22 Textile, clothing, footwear and leather mfg</li> <li>23 Wood and paper product mfg</li> <li>24 Printing, publishing and recorded media</li> <li>25 Petroleum, coal, chemical and associated product mfg</li> <li>26 Non-metallic mineral product mfg</li> <li>27 Metal product mfg</li> <li>28 Machinery and equipment mfg</li> <li>29 Other manufacturing</li> </ul>										
<b>Industry value added (IVA)</b>	<p>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.</p> <p>The derivation of IVA is as follows:</p> <table style="margin-left: 40px; border-collapse: collapse;"> <tr> <td></td><td>Turnover (new standards)</td></tr> <tr> <td>plus</td><td>Closing inventories</td></tr> <tr> <td>less</td><td>Opening inventories</td></tr> <tr> <td>less</td><td>Intermediate input expenses (for details, see the entry for operating expenses)</td></tr> <tr> <td>equals</td><td>IVA</td></tr> </table> <p>However, it should be noted 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).</p>		Turnover (new standards)	plus	Closing inventories	less	Opening inventories	less	Intermediate input expenses (for details, see the entry for operating expenses)	equals	IVA
	Turnover (new standards)										
plus	Closing inventories										
less	Opening inventories										
less	Intermediate input expenses (for details, see the entry for operating expenses)										
equals	IVA										
<b>Industry value added (IVA) per person employed</b>	IVA of manufacturing establishments which operated during the year ended 30 June divided by employment at the end of June in the same year.										
<b>Intermediate inputs</b>	<p>Intermediate inputs consist of materials and certain services which are used up in the production process. Definitions of relevant component items are also included in this Glossary. It is calculated as:</p> <table style="margin-left: 40px; border-collapse: collapse;"> <tr> <td></td><td>Intermediate input expenses (for details, see the entry for operating expenses)</td></tr> <tr> <td>plus</td><td>Opening inventories</td></tr> <tr> <td>less</td><td>Closing inventories</td></tr> </table>		Intermediate input expenses (for details, see the entry for operating expenses)	plus	Opening inventories	less	Closing inventories				
	Intermediate input expenses (for details, see the entry for operating expenses)										
plus	Opening inventories										
less	Closing inventories										
<b>Location</b>	A location is a physical unit of the establishment. It consists usually of an unbroken physical area or site, occupied by an establishment, at which, or from which, the establishment engages in productive activity on a relatively permanent basis. An establishment can consist of one or more locations. In specified circumstances, non-contiguous sites occupied by the same establishment can be combined to form a location.										
<b>Management unit</b>	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, it coincides with the legal entity owning the business (that is, company, partnership, trust, sole operator, etc.). In the case of large diversified businesses, however, there may be more than one management unit, each coinciding with a										

## GLOSSARY *continued*

<b>Management unit</b> <i>continued</i>	'division' or 'line of business'. A division or line of business is recognised where separate and comprehensive accounts are compiled for it.
<b>Manufacturing establishment</b>	An establishment predominantly engaged in manufacturing activities. The data collected for such establishments cover all activities of the establishment (including non-manufacturing activities). Conversely, there are some establishments predominantly engaged in non-manufacturing activities which also undertake limited manufacturing activities and which are excluded.
<b>Manufacturing management unit</b>	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 establishments engaged in manufacturing activities and which are excluded.
<b>Opening inventories</b>	The value of all inventories of finished goods, work-in-progress, raw materials, fuels, containers and packaging as at the beginning of the reference period.
<b>Operating expenses</b>	<p>For the purposes of calculating economic and accounting variables for manufacturing industries, operating expenses incurred by businesses are divided into several categories. However, some expenses are excluded entirely from all such calculations. These expenses are extraordinary expenses, capitalised expenses, income tax and other direct taxes, sales taxes and excise payable to Governments, capital repayments or losses on asset sales, dividends, donations or foreign exchange losses.</p> <p>Remaining expenses are categorised as follows:</p> <p><i>Intermediate input expenses</i></p> <p>Intermediate input expenses cover the major expenses incurred by manufacturers in producing and distributing goods and services produced (except labour costs), namely:</p> <ul style="list-style-type: none"> <li>■ purchases and transfers in of materials, components, containers and packaging materials, electricity, fuels and water, and purchases of goods for resale</li> <li>■ motor vehicle running expenses, freight and cartage expenses, repair and maintenance expenses</li> <li>■ rent, leasing and hiring expenses (except for finance lease payments)</li> <li>■ contract, subcontract and commission expenses</li> </ul> <p>Also included in the calculation of intermediate inputs are 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, staff training expenses, and travelling, accommodation and entertainment expenses.</p> <p>Excluded from this category are selected labour costs and other operating expenses as defined below:</p> <p><i>Selected labour costs</i></p> <p>Wages and salaries including provision expenses for employee entitlements</p> <p>Employer contributions to superannuation funds</p> <p>Workers' compensation costs</p> <p>Payroll tax and Fringe benefits tax</p> <p><i>Other operating expenses</i></p> <p>This group of expenses is not included in the calculation of the above economic variables but is included in the calculation of the accounting variable operating profit before tax. Included in this group of expenses are bad and doubtful debts,</p>

## GLOSSARY *continued*

<b>Operating expenses <i>continued</i></b>	computer software expenses not capitalised by businesses, depreciation and amortisation, insurance premiums (except workers' compensation and compulsory third party motor vehicle insurance premiums), interest expenses, land rates and taxes, mineral/petroleum expenses not capitalised by businesses, and natural resource royalties expenses.
<b>Own account capital work</b>	<p>Capitalised work done by the employees or proprietors of an establishment for use by the business unit 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.</p> <p>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.</p>
<b>Purchases</b>	Purchases of materials, components, containers and packaging materials, electricity, fuels and water, and of goods for resale. The purchase of parts and fuel for motor vehicles is excluded.
<b>Purchases and transfers in</b>	Purchases of materials, components, containers and packaging materials, electricity, fuels and water, and of goods for resale, plus transfers in of goods from other establishments of the same business for further processing, assembly, installation or for sale or resale. Transfers in are valued, for statistical purposes, at prices commensurate with the prices which would have been paid if the establishments concerned had been under separate ownership, i.e. at commercial selling price. The purchase of parts and fuel for motor vehicles is excluded.
<b>Reference period</b>	<p>Businesses are asked to report data for the financial year ended 30 June. However, if a business has a different financial year, it is asked to report for the 12-month period which ends between 1 October of the previous year and 30 September of the current year. This period is then used as a substitute for the financial year ended 30 June. For example, for the 1998–99 collection, a business may have reported data for the year ended 31 December 1998.</p>
<b>Sales and transfers out of goods</b>	Includes sales of goods whether or not produced by the business and sales of goods produced for the business on a commission basis (see the entry for commission manufacturing). Also includes transfers of goods to other establishments of the same business or to related businesses and installation and delivery charges not separately invoiced to customers. Progress payments relating to long term contracts are included if they are billed in the period. Sales are valued net of discounts given and exclusive of excise, sales tax and duties receivable on behalf of the Government. Exports are valued f.o.b. (export freight charges are excluded). Transfers to other establishments of the same business are valued, for statistical purposes, at commercial value (i.e. the value which would have applied had the establishments concerned been under separate ownership).
<b>Sales and transfers out of goods produced (table 4)</b>	Sales as defined in sales and transfers out of goods, plus transfers out of goods produced by this establishment for sale. Transfers to other establishments of the same business are valued, for statistical purposes, at commercial value (i.e. the value which would have applied had the establishments concerned been under separate ownership).
<b>Service income</b>	Income received from service activities. Included are income from work done or sales made on a commission basis, 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

## GLOSSARY *continued*

<b>Service income <i>continued</i></b>	<p>businesses. Service income is valued net of discounts given. For periods commencing with 1997–98, under new international standards, income from intellectual property royalties and rent, leasing and hiring income (except from finance leases) have also been classified as service income. Rent, leasing and hiring income is income derived from the ownership of land, buildings, vehicles, machinery or equipment, excluding any income from finance leases.</p> <p>For further explanation on the treatment of commission manufacturing activities, see the entry for commission manufacturing.</p>
<b>Turnover</b>	<p>Turnover comprises sales (exclusive of excise and sales tax) of goods whether or not produced by the establishment and transfers of goods to other establishments of the same business, plus service income, funding by Federal, State or Local Governments for operational costs, and own account capital work. Definitions of the various component items appear in this Glossary.</p> <p>Excluded from turnover are interest income, income from natural resource royalties, funding by Federal, State or Local Governments for specific capital items, dividends, and receipts from the sale of fixed tangible assets.</p> <p>There are some conceptual differences between turnover as estimated in this publication and turnover as defined by the new international standards. These differences are explained as part of the definition of the component item own account capital work. Full compliance with the new standards would make very little difference to estimates of turnover.</p> <p>Note (a): The above definition of turnover is used in calculating the variable industry value added. A slightly different definition of turnover was used prior to 1997–98 to calculate the now superseded variable industry gross product. This earlier definition excluded income from intellectual property royalties and the value of computer software developed in-house for use by the business or for rental or lease to other businesses.</p> <p>Note (b): Transfers to other establishments of the same business referred to in the definition of turnover are valued, for statistical purposes, at prices commensurate with the prices which would have been received if the establishments concerned had been under separate ownership, i.e. at commercial selling price. A significant proportion of the commodities manufactured by some industries is manufactured on commission for non-manufacturing businesses from materials owned and supplied by those businesses. As a consequence, the turnover figures do not reflect the gross value of those commodities but only the commission earned relating to them.</p>
<b>Turnover per person employed</b>	Turnover of manufacturing establishments which operated during the year ended 30 June divided by employment at the end of June in the same year.
<b>Wages and salaries</b>	The gross wages and salaries (including capitalised wages and salaries) of all employees of the establishment. The item includes severance, termination and redundancy payments, but excludes reimbursements or allowances to employees for travel, entertainment, etc. For the 1995–96 collection only, provision expenses 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.
<b>Wages and salaries to turnover ratio</b>	The wages and salaries paid by manufacturing establishments which operated during the year ended 30 June as a proportion of the turnover of manufacturing establishments which operated during the same year.







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