8159.0

Australian Bureau of Statistics

Information Paper

Experimental Estimates for the Manufacturing Industry

Australia

2008–09

www.abs.gov.au

Information Paper

Experimental Estimates for the Manufacturing Industry

Australia

2008–09

Ian Ewing
Acting Australian Statistician

AUSTRALIAN BUREAU OF STATISTICS

EMBARGO: 11.30AM (CANBERRA TIME) THURS 16 DEC 2010

ABS Catalogue No. 8159.0

Produced by the Australian Bureau of Statistics

INQUIRIES

- For further information about these and related statistics, contact the National Information and Referral Service on 1300 135 070.

CONTENTS

ABBREVIATIONS

$b	billion (thousand million) dollars
$m	million dollars
ABN	Australian Business Number
ABR	Australian Business Register
ABS	Australian Bureau of Statistics
ABSBR	Australian Bureau of Statistics Business Register
ABSMP	Australian Bureau of Statistics maintained population
ANZSIC	Australian and New Zealand Standard Industrial Classification
ATO	Australian Taxation Office
ATOMP	Australian Taxation Office maintained population
BAS	Business Activity Statement
cat. no.	Catalogue number
EAS	Economic Activity Survey
IVA	industry value added
mfg	manufacturing
n.e.c.	not elsewhere classified
no.	number
RSE	relative standard error
SESCA	Standard Economic Sector Classification of Australia
SISCA	Standard Institutional Sector Classification of Australia

CHAPTER 1 INTRODUCTION

INTRODUCTION

This information paper contains experimental estimates for the Australian manufacturing industry for the 2008–09 reference period.

Historically, the Australian Bureau of Statistics (ABS) collected manufacturing data at the class level of the *Australian and New Zealand Standard Industrial Classification 2006* (ANZSIC), using survey methodology based on direct collection of data. The latest estimates produced by this methodology are published in *Manufacturing Industry, Australia, 2006–07* (cat. no. 8221.0).

This issue presents the second release of manufacturing estimates using experimental methodology not based predominantly on survey data. These experimental estimates should be of substantial benefit to analysts and decision makers (including businesses themselves) who require finer levels of detail regarding industry classification than is released in *Australian Industry, 2008–09* (cat. no. 8155.0).

The experimental estimates use a combination of data directly collected in ABS surveys and Business Activity Statement (BAS) data sourced from the Australian Taxation Office (ATO). Modelling techniques are applied to combine these two data sources in order to produce experimental estimates at the national ANZSIC class and state/territory ANZSIC subdivision levels. The methodology used to compile these statistics is described in Chapter 2.

Experimental estimates presented in this paper are produced for a select number of data items where ABS data and BAS data are well correlated. In the 2006–07 and 2007–08 issue of *Experimental Estimates for the Manufacturing Industry, Australia* (cat. no. 8159.0), these data items included wages and salaries, sales and service income and industry value added (IVA). For the first time, the 2008–09 issue includes experimental estimates for employment together with the data items previously published. In addition, a state and territory breakdown by ANZSIC subdivision is provided for the first time for wages and salaries, sales and service income and employment.

Chapter 3 presents a summary of data from analysis of the tables of experimental estimates contained in the Appendix. The estimates in this publication are considered experimental and should be used with caution. Care should be taken when using these experimental estimates as the modelling used to compile the estimates may introduce non-sampling error. This is further described in Chapter 4.

The methodology used to compile these experimental estimates is subject to continued evaluation and possible further change. The latest official ANZSIC class estimates for manufacturing are those published in *Manufacturing Industry, Australia, 2006–07* (cat. no. 8221.0).

FUTURE PLANS

The ABS intends to release modelled, national ANZSIC class and state/territory ANZSIC subdivision level estimates for the manufacturing industry on an annual basis, in the absence of directly collected data. The next edition of this publication will be released after *Australian Industry, 2009–10* (cat. no. 8155.0) is published.

The ABS is currently evaluating this methodology with the aim of developing methodologies that can be extended to satisfy other areas of unmet demand. The following areas are being considered, subject to rigorous evaluation:

- national ANZSIC class and state/territory ANZSIC subdivision level estimates for other industries
- additional data items such as profit measures.

USER COMMENTS AND FURTHER INFORMATION

Both the methodology used to compile the experimental estimates in this information paper and the plans for extending the use the ABS makes of ATO BAS data are subject to further evaluation. The ABS is very interested in feedback from users of these statistics. Users are invited to provide comments to the ABS on any aspect of this release, including particular experimental estimates contained within. Please contact Annual Integrated Collections on (02) 9268 4785 or client.services@abs.gov.au to provide feedback or seek further information about the methodology used in these experimental estimates.

ABS DATA AVAILABLE ON REQUEST

There are no further experimental estimates, based on this alternative methodology, available for the manufacturing industry for the 2006–07, 2007–08 and 2008–09 or earlier years.

RELATED PUBLICATIONS

Other ABS publications and products which may be of interest are listed below. These publications are available free of charge from the ABS web site <www.abs.gov.au>.

- *Australian Industry, 2008–09* (cat no. 8155.0), issued annually
- *Experimental Estimates for the Manufacturing Industry, Australia, 2006–07 and 2007–08* (cat. no. 8159.0)
- *Manufacturing Industry, Australia, 2006–07* (cat. no. 8221.0)

ACKNOWLEDGEMENT

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*.

USE OF ATO DATA IN THIS PUBLICATION

The result of these studies are based, in part, on tax data supplied by the ATO to the ABS under the *Income Tax Assessment Act 1936*, which requires that such data are only used for statistical purposes. No individual information collected under the *Census and Statistics Act 1905* is provided back to the ATO for administrative or regulatory purposes. Any discussion of data limitations or weaknesses is in the context of using the data for statistical purposes, and is not related to the ability of the data to support the ATO's core operational requirements.

USE OF ATO DATA IN THIS PUBLICATION *continued*

Legislative requirements to ensure privacy and secrecy of these data have been followed. Only people authorised under the *Australian Bureau of Statistics Act 1975* have been allowed to view data about any particular organisation and/or person in conducting these analyses. No information about individual taxpayers (persons) has been released to the ABS. Aggregated personal income tax data are confidentialised by the ATO before release to the ABS. In accordance with the *Census and Statistics Act 1905*, results have been confidentialised to ensure that they are not likely to enable identification of a particular person or organisation.

CHAPTER 2 CONCEPTS AND METHODS

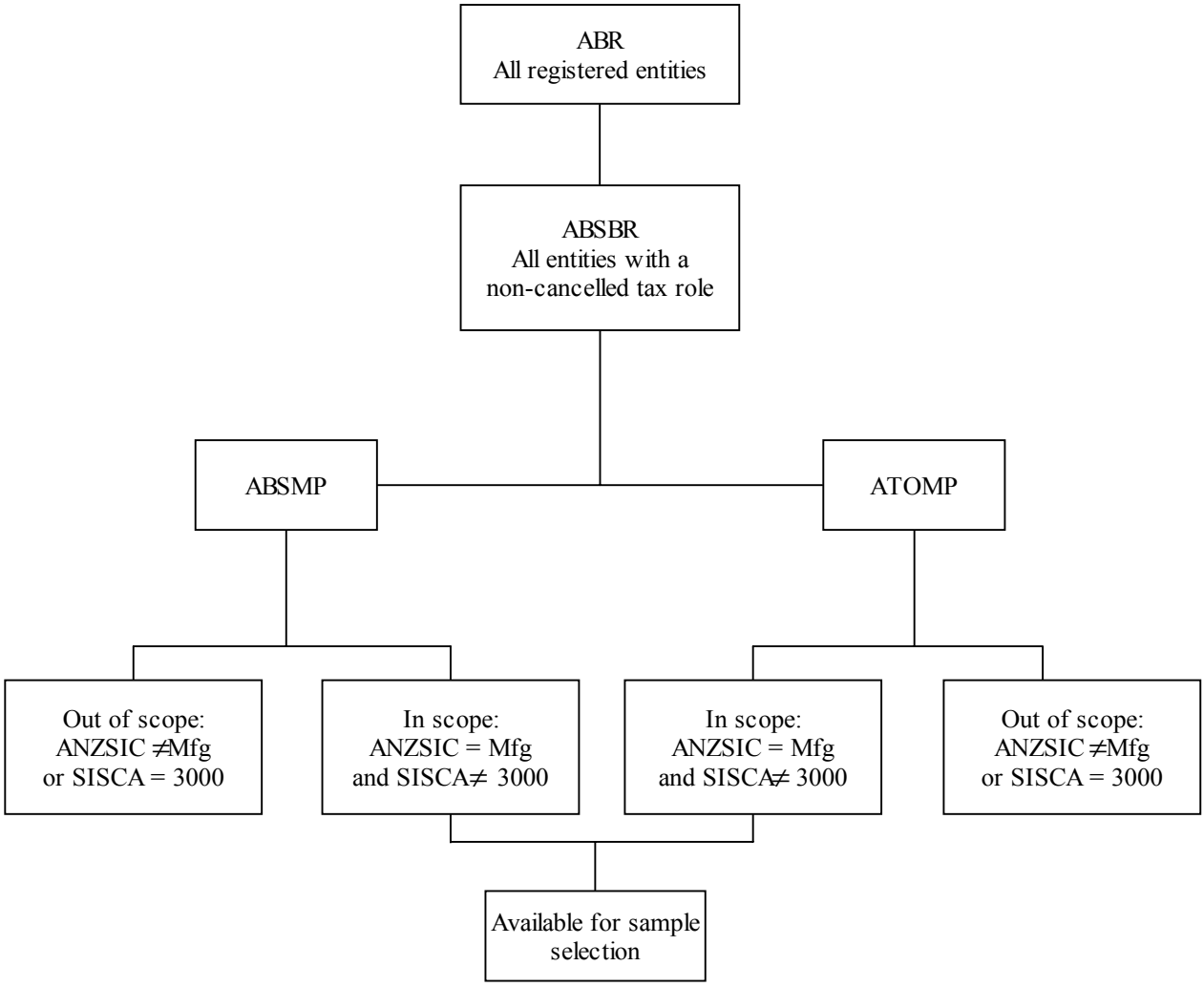
SCOPE AND POPULATION

The experimental estimates in this publication are classified by industry, in accordance with the 2006 edition of the *Australian and New Zealand Standard Industrial Classification (ANZSIC)* (cat. no. 1292.0) and by institutional sector, in accordance with the Standard Institutional Sector Classification of Australia (SISCA), which is detailed in *Standard Economic Sector Classifications of Australia (SESCA)* (cat.no. 1218.0).

The scope of the experimental estimates in this publication is based on the scope used for *Australian Industry, 2008–09* (cat. no. 8155.0). It includes all business entities in the Australian economy which are classified, on the ABS Business Register (ABSBR), to ANZSIC Division C Manufacturing and excludes any entities classified to SISCA Sector 3 General Government. Note that government-owned or controlled Public Trading Enterprises are included.

STATISTICAL UNITS DEFINED ON THE ABSBR

The experimental estimates in this publication have been created from businesses recorded on the ABSBR. The economic statistics units model used by the ABS allocates businesses on the ABSBR to one of two sub-populations. The vast majority of businesses are in what is called the ATO maintained population (ATOMP), while the remaining businesses are in the ABS maintained population (ABSMP).



ATOMP

Most businesses and organisations in Australia need to obtain an Australian Business Number (ABN). They are then included on the whole-of-government register of businesses, the Australian Business Register (ABR), which is maintained by the ATO.

The ATOMP is composed of those businesses on the ABR with simple structures (i.e. primarily comprised of a single ABN), and the ABN unit is used as the statistical unit for all ABS economic collections (in this case, the ABS has aligned its statistical units structure with the ABN unit).

ABSMP

For the population of businesses where the ABN unit is not suitable for ABS statistical requirements, the ABS maintains its own units structure through direct contact with the business. These businesses constitute the ABSMP. This population consists typically of large, complex and diverse businesses.

METHODOLOGY

The experimental estimates in this release were produced using a combination of Economic Activity Survey (EAS) data collected directly by the ABS and BAS data obtained from the ATO. The methodology used was essentially the same as in the previous release (i.e. 2006–07 and 2007–08), with extension to provide (a) national experimental estimates at ANZSIC class level for employment and (b) state and territory experimental estimates at ANZSIC subdivision level for wages and salaries, sales and service income and employment.

EAS Collection Design

In order to decrease the statistical reporting load placed on providers, the collection strategy for the EAS is to use directly collected data from a sample of businesses, in combination with BAS data sourced from the ATO.

Businesses in the ABSMP which have employment of 300 or more, or are deemed to be 'significant', are completely enumerated via directly collected survey data.

Other businesses are available for random sample selection only if their business is identified as being an employing business (based on ATO records) or their turnover exceeds a threshold level. Turnover thresholds are set for each ANZSIC class so that the contribution of surveyed businesses accounts for approximately 97.5% of total industry class turnover as determined by BAS data. Data for businesses selected from this part of the sample are obtained via direct collection.

Businesses which meet neither of these criteria are referred to as 'micro non-employing businesses' and are not eligible for selection in the EAS sample. For these units, BAS data are obtained and added to the directly collected estimates (with little or no modelling applied).

More detailed information about the EAS collection design can be found in *Australian Industry, 2008–09* (cat. no. 8155.0), Explanatory Notes paragraphs 36–38.

The Experimental Manufacturing Estimates Model

The estimation method used to create the experimental estimates makes use of observed linear relationships between data collected from businesses in the EAS and auxiliary information available from BAS data. Where the auxiliary information is strongly correlated with data items collected in the EAS, this information has been used to create predicted values for ATOMP businesses that were not selected in the survey. The auxiliary variables used to create predicted values were:

- BAS total sales (to model sales and service income)
- BAS wages and salaries (to model wages and salaries, industry value added and employment).

Modelling was used on the BAS data rather than substituting it directly as the BAS data items did not map directly to their corresponding EAS data item definitions.

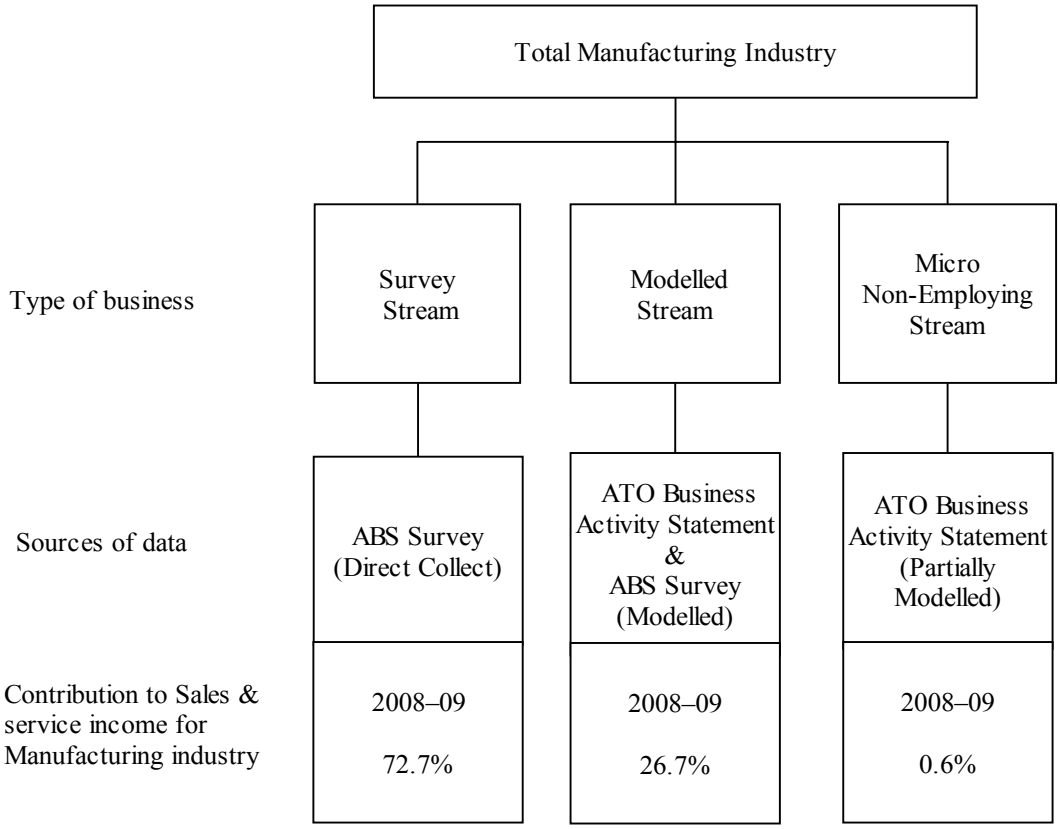
The ANZSIC class experimental estimates for 2008–09 were created subject to the constraint of being additive to national ANZSIC subdivision estimates, as published in the 2008–09 issue of *Australian Industry* (cat. no. 8155.0). This is also true for state/territory experimental estimates: the state/territory estimates within an ANZSIC subdivision were constrained to sum to the *Australian Industry* subdivision estimate. This means that the aggregate of state/territory experimental estimates for a given subdivision aligns with the national subdivision estimate published in *Australian Industry*. However, individual

The Experimental Manufacturing Estimates Model continued

state/territory by ANZSIC subdivision experimental estimates were not constrained to add to the state/territory by ANZSIC division level estimates published in *Australian Industry*. Consequently, for each state and territory, there are minor differences between the division level experimental estimates and those published in *Australian Industry*.

For the purpose of compiling experimental ANZSIC class estimates, for Division C MANUFACTURING in this publication, data for businesses are sourced via one of three categories (or 'streams') in accordance with significance and collection-related characteristics. The diagram below illustrates the ways in which the data streams contribute to the experimental estimates for the manufacturing industry.

SUMMARY OF DATA STREAMS



The Survey Stream

The survey stream consists of businesses with directly collected EAS data. These are the completely enumerated ABSMP businesses (those with employment of at least 300) and randomly sampled employing businesses exceeding a turnover threshold level from both the ABSMP and ATOMP. Directly collected EAS data were used for these units.

The Modelled Stream

The modelled stream includes employing businesses, not in the survey stream, whose turnover was higher than the threshold set for their ANZSIC class (where the threshold was set so that the contribution of surveyed businesses would account for approximately 97.5% of total industry class turnover).

The Modelled Stream continued

ATOMP UNITS

Most businesses in the modelled stream are ATOMP units. Modelled data were created through the use of robust, trimmed regression estimators, which used survey data regressed against BAS data. The BAS data were found to have a high correlation with corresponding data from the EAS.

The regression factors were obtained by utilising ATOMP sampled units from the survey stream and comparing their reported survey data with their matching BAS data. These regression factors were created at the ANZSIC subdivision level. Sales and service income was modelled using BAS total sales as the auxiliary variable; wages and salaries, employment and IVA were modelled using BAS wages and salaries. Modelling of employment also took into account the business type (i.e. type of legal organisation) using a factor created at the ANZSIC division level.

Modelled data for ATOMP units in the modelled stream were created by multiplying their BAS data by the calculated regression factors.

ABSMP UNITS

For ABSMP businesses not directly surveyed with employment of 20 or more, their data was modelled from data collected from ABSMP units in the survey stream.

Micro Non-Employing Stream

This stream includes ATOMP units which are non-employing businesses operating in only a single state or territory and whose turnover for each ANZSIC class was below the turnover threshold. For these businesses sales and service income and wages and salaries use BAS data directly, simple modelling of BAS data creates industry value added and employment is based on the business type of (legal) structure, e.g. a sole proprietor or partnership.

PRODUCING THE MANUFACTURING EXPERIMENTAL ESTIMATES

Initial national ANZSIC class and state/territory ANZSIC subdivision experimental estimates for the manufacturing industry were produced by aggregating the contributing data streams, with additional rules being applied to produce state/territory ANZSIC subdivision experimental estimates:

- for businesses (from any stream) operating in only a single state or territory, their initial estimates contributed to the relevant state or territory and ANZSIC subdivision estimates
- for businesses, from the survey stream, operating in more than one state or territory, their initial estimates (i.e. directly collected EAS data) contributed to the states and territories of operation as recorded on their EAS form
- for businesses, from the modelled stream, operating in more than one state or territory, their initial estimates were prorated across the states and territories in which they operated, based on a factor calculated at the ANZSIC division level from surveyed units of similar size which operated in more than one state or territory. These modelled multi-state businesses accounted for only a small proportion of the estimates.

As explained earlier in this chapter initial experimental estimates at the national ANZSIC subdivision level were then adjusted to reflect estimates published in the 2008–09 issue of *Australian Industry* (cat. no. 8155.0). This adjustment removed some of the non-sampling error introduced through the regression modelling (see Chapter 4 for

PRODUCING THE MANUFACTURING EXPERIMENTAL ESTIMATES *continued*

discussion of modelling bias). This adjustment was obtained by first calculating the difference between the *Australian Industry* national ANZSIC subdivision estimates and the initial experimental ANZSIC subdivision estimates and then prorating the difference across the classes and states/territories within the ANZSIC subdivision. Proration only applied to the modelled stream, thus the level of proration for each class or state/territory was determined by the size of the modelled stream. Therefore, proration had a stronger impact on those classes and states/territories with a larger modelled stream.

ASSUMPTIONS IN THE MODEL

The modelling methodology used to create the experimental estimates presented in this publication is based on the following assumptions:

- the national ANZSIC subdivision estimates and state/territory division estimates published in *Australian Industry* were of sufficient quality to warrant disaggregation, respectively, at ANZSIC class level and ANZSIC subdivision level
- it was valid to distribute the difference between *Australian Industry* national subdivision estimates and the initial experimental subdivision estimates, based on the size of the modelled stream
- the relationship between the EAS data items and the BAS data items is meaningful and consistent. Analysis supports this assumption, with the correlation being of consistent quality to produce reliable estimates
- the auxiliary (BAS) data was of high quality
- the industry coding was accurate on both the ATO maintained ABR and the ABSBR.

COMPARISON WITH AUSTRALIAN INDUSTRY, 2008–09 (CAT. NO. 8155.0)

The national subdivision estimates presented in this publication align with those in the 2008–09 issue of *Australian Industry* (cat. no. 8155.0). The state and territory division estimates presented in this publication, however, do not exactly align with those released in *Australian Industry* because the methodology did not constrain them to add to the state/territory by ANZSIC division level estimates published in *Australian Industry*.

CHAPTER 3 SUMMARY OF DATA

NATIONAL INDUSTRY RESULTS

The Australian manufacturing industry produced $105.2b of IVA in 2008–09. The Food Product Manufacturing subdivision (11) contributed the most significant amount with $16.5b, followed by Primary Metal and Metal Product Manufacturing (21) with $14.0b and Machinery and Equipment Manufacturing (24) with $11.8b.

In Australia, the manufacturing industry produced $420.9b sales and service income in 2008–09 with the Food Product Manufacturing (11) ($72.1b) and Primary Metal and Metal Product Manufacturing (21) ($71.3b) subdivisions being the highest contributors.

The Australian manufacturing industry outlaid $53.2b in wages and salaries during 2008–09. The Food Product Manufacturing subdivision (11) accounted for $9.7b, followed by the Machinery and Equipment Manufacturing subdivision (24) with $6.5b and Fabricated Metal Product Manufacturing (22) with $5.8b.

The manufacturing industry in Australia employed 1,007,800 persons in 2008–09 with the Food Product Manufacturing (11), Fabricated Metal Product Manufacturing (22) and Machinery and Equipment Manufacturing (24) subdivisions being the highest contributors (213,400 persons, 134,800 persons and 119,200 persons, respectively).

ANZSIC Classes

From a finer ANZSIC class level perspective, Iron Smelting and Steel Manufacturing (2110) contributed the most to IVA with $5.2b followed by Printing (1611) at $4.0b and Structural Steel Fabricating (2221) with $2.6b.

The largest contributors to sales and service income at the finer class level were Petroleum Refinery and Petroleum Fuel Manufacturing (1701) ($46.6b), Iron Smelting and Steel Manufacturing (2110) ($18.6b) and Motor Vehicle Manufacturing (2311) ($12.4b).

The largest industries (at ANZSIC class level) contributing to wages and salaries were Printing (1611) with $2.3b and Iron Smelting and Steel Manufacturing (2110) with $1.8b, followed by Motor Vehicle Manufacturing (2311) and Structural Steel Fabricating (2221), both with $1.5b.

The largest contributors to employment at the finer ANZSIC class level were Printing (1611) with 44,800 persons, Bakery Product Manufacturing (Non-Factory Based) (1174) with 37,400 persons and Meat Processing (1111) with 31,600 persons.

STATES AND TERRITORIES

State/territory contribution to sales and service income was the largest for New South Wales with $125.0b, followed by Victoria ($109.2b) and Queensland ($77.4b). New South Wales was the largest state/territory contributor to wages and salaries with $16.0b, followed by Victoria ($15.8b) and Queensland ($9.4b). State/territory contribution to employment was largest for New South Wales with 303,900 persons, followed by Victoria (293,400 persons) and Queensland (191,300 persons).

Subdivision Contribution to States

For New South Wales, Victoria and Queensland, the largest manufacturing subdivision was Food Product Manufacturing (11), accounting for approximately 18% to 25% of wages and salaries, sales and service income and employment.

In South Australia, Food Product Manufacturing (11) was also the largest contributor to employment (17.7%) and sales and service income (15.2%), with Machinery and Equipment Manufacturing (24) contributing the most to wages and salaries (17.9%).

In Western Australia, Primary Metal and Metal Product Manufacturing (21) was the largest contributor to sales and service income (45.0%) and wages and salaries (19.7%) and Fabricated Metal Product Manufacturing (22) contributed the most to employment (19.7%).

In Tasmania, Food Product Manufacturing accounted for 30.3% of the state's employment at end June.

State Contribution to ANZSIC Subdivisions

For most subdivisions, the largest contributors were New South Wales, Victoria and Queensland, accounting collectively for approximately 75% to 87% of wages and salaries, sales and service income and employment. Exceptions were Beverage and Tobacco Product Manufacturing (12) and Pulp, Paper and Converted Paper Product Manufacturing (15), where South Australia featured, and Primary Metal and Metal Product Manufacturing (21) and Basic Chemical and Chemical Product Manufacturing (18), where Western Australia featured.

CHAPTER 4 RELIABILITY OF THE EXPERIMENTAL ESTIMATES

DATA QUALITY

When interpreting the experimental estimates it is important to take into account factors that may affect the reliability of the experimental estimates.

The quality of the experimental estimates is limited by two issues:

- the validity of the assumptions underpinning the modelling
- the accuracy of the data used in the production of the experimental estimates.

The assumptions used in the production of the experimental estimates were outlined in Chapter 2. Users should consider the suitability of these assumptions when interpreting the experimental estimates.

Examination of the following quality indicators will also assist users in determining fitness for purpose of the experimental estimates of the manufacturing industry.

DATA USED IN THE CALCULATION OF THE EXPERIMENTAL ESTIMATES

The experimental estimates presented in this publication were obtained using a combination of data directly collected in the EAS and BAS data. Modelling techniques were applied to combine these two data sources in order to produce the experimental estimates, as described in Chapter 2.

The EAS uses a sample of businesses, rather than full enumeration (i.e. a census) and is subject to sampling error. The resultant estimates obtained from the regression model may be different if survey information were available for all businesses. The experimental estimates presented in this paper therefore have an associated sampling error.

The experimental estimates also have additional associated sampling error as a result of constraining them to aggregate to national ANZSIC subdivision estimates obtained from the EAS and published in *Australian Industry, 2008–09* (cat. no. 8155.0).

SAMPLING ERROR

One measure of sampling variability is given by the standard error which indicates the extent to which an estimate might have varied by chance because only a sample of businesses was included. There are about two chances in three that a sample estimate will differ by less than one standard error from the figure that would have been obtained if a census were conducted, and about 19 chances in 20 that the difference will be less than two standard errors.

Sampling variability can also be measured by the relative standard error (RSE) which is obtained by expressing the standard error as a percentage of the estimate to which it refers. The RSE is a useful measure in that it provides an indication of the sampling error in percentage terms, and this avoids the need to refer also to the size of the estimate.

Approximate RSEs for the manufacturing industry experimental estimates have been created using a replicate method. This method uses replicate final estimates created using sub-samples of reported data to estimate the variance of the estimate.

Distribution of RSEs

An indication of the size of RSEs is set out below for both the national ANZSIC class and state/territory ANZSIC subdivision experimental estimates. Individual experimental estimates with RSEs of 10% or more are annotated in the tables in Appendix: Experimental Estimates.

NATIONAL ANZSIC CLASS EXPERIMENTAL ESTIMATES

Below is a table which shows the distribution of RSEs for national ANZSIC class experimental estimates for the manufacturing industry for 2008–09. The majority of the national ANZSIC class RSEs were less than 15%, with the exception being IVA (one ANZSIC class with RSE in the 15–25% range). No ANZSIC class had RSEs greater than 25%.

	Relative Standard Error							Total number of ANZSIC classes
	<1%	1% to <2%	2% to < 5%	5% to <10%	10% to < 15%	15% to <25%	25% or more	
2008–09								
Wages experimental estimates	42	27	65	9	0	0	0	143
Sales experimental estimates	34	34	56	19	0	0	0	143
IVA experimental estimates	21	23	48	40	10	1	0	143
Employment experimental estimates	12	26	74	30	1	0	0	143

Distribution of RSEs continued

STATE/TERRITORY ANZSIC SUBDIVISION EXPERIMENTAL ESTIMATES

The table below shows the distribution of RSEs for state/territory ANZSIC subdivision experimental estimates for the manufacturing industry for 2008–09. The majority of the state/territory ANZSIC subdivision RSEs were less than 10%, with the exceptions being wages and salaries and employment, both of which had one state/territory ANZSIC subdivision with RSE in the 10–15% range. No state/territory ANZSIC subdivision had RSEs greater than 15%.

	Relative Standard Error							Number of state ANZSIC subdivisions
	<1%	1% to <2%	2% to <5%	5% to <10%	10% to <15%	15% to <25%	25% or more	
2008–09								
Wages experimental estimates	24	40	60	10	1	0	0	135
Sales experimental estimates	28	29	71	7	0	0	0	135
Employment experimental estimates	4	9	92	29	1	0	0	135

NON-SAMPLING ERROR

There are a range of other potential errors that are not caused by sampling and can occur in any statistical collection, whether it is based on full enumeration, a sample, or modelling. Non-sampling error may be due to inadequacies in available sources from which the population frame was compiled, imperfections in reporting by providers, errors made in collections such as recording and coding data, and errors made in processing data.

Although 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. The ABS compares data from different ABS (and non-ABS) sources relating to the one industry, to ensure consistency and coherence.

If non-sampling error is systematic (i.e. not random) then the estimates will be distorted in one direction and therefore will be unrepresentative of the target population. Systematic error results in bias.

MODEL BIAS

As noted in the previous issue of this publication, *Experimental Estimates for the Manufacturing Industry, Australia, 2006–07 and 2007–08* (cat. no. 8159.0), use of a regression model may introduce bias. While it is not possible to calculate the size of the modelling bias, a comparison of 2006–07 experimental ANZSIC class estimates with the official ANZSIC class estimates published in *Manufacturing Industry, Australia, 2006–07* (cat. no. 8221.0) did not indicate obvious systematic error or bias.

VALIDITY OF THE METHODOLOGY

The previous issue of this publication noted that, for the 2006–07 EAS, the sample size was increased to enable ANZSIC class data to be published in *Manufacturing Industry, Australia, 2006–07* (cat. no. 8221.0). In order to test the validity of the experimental estimates methodology, ANZSIC class level experimental estimates for 2006–07 were produced from what would have been the usual EAS sample size. These experimental estimates compared favourably with the official estimates published in *Manufacturing Industry, Australia, 2006–07*, lending support to the validity of the experimental estimates methodology.

REFERENCE PERIOD

The financial experimental estimates in this publication relate to manufacturing businesses in Australia during the year ended 30 June 2009. Financial experimental estimates included the activity of any business that ceased or commenced operations during the year. Where businesses were unable to supply information via the EAS on this basis, an alternative accounting period was used for which financial data could be provided. Such businesses made a substantial contribution to some of the experimental estimates presented in this publication. As a result, the experimental estimates can reflect trading conditions that prevailed in periods outside the twelve months ended 30 June. This had the most impact on the manufacturing ANZSIC subdivision 17 Petroleum and Coal Product Manufacturing.

Although financial experimental estimates relate to the full twelve months, employment experimental estimates in this publication relate to the last pay period ending in June 2009. As a result, estimates of wages and salaries per person employed may be affected by any fluctuations in employment during the reference period.

EFFECTS OF ROUNDING

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

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.

A1.1 MANUFACTURING INDUSTRY BY ANZSIC CLASS, 2008–09

	Wages and salaries	*Sales and service income*	*Industry value added*	*Employment at end June*
	$m	$m	$m	no.
Manufacturing	53 158	420 921	105 154	1 007 751
11 Food product manufacturing	9 664	72 124	16 549	213 423
111 Meat and meat product manufacturing	2 820	20 111	4 359	60 559
1111 Meat processing	1 345	12 041	2 282	31 584
1112 Poultry processing	993	4 881	1 362	18 699
1113 Cured meat and smallgoods manufacturing	482	3 189	714	10 276
112 Seafood processing	127	1 386	234	3 567
1120 Seafood processing	127	1 386	234	3 567
113 Dairy product manufacturing	1 178	12 522	2 039	21 239
1131 Milk and cream processing	156	1 385	np	2 615
1132 Ice cream manufacturing	73	501	np	1 846
1133 Cheese and other dairy product manufacturing	949	10 635	1 594	16 778
114 Fruit and vegetable processing	639	5 168	1 301	12 547
1140 Fruit and vegetable processing	639	5 168	1 301	12 547
115 Oil and fat manufacturing	116	3 314	333	1 773
1150 Oil and fat manufacturing	116	3 314	333	1 773
116 Grain mill and cereal product manufacturing	486	5 301	954	9 082
1161 Grain mill product manufacturing	187	3 080	376	3 077
1162 Cereal, pasta and baking mix manufacturing	299	2 221	577	6 005
117 Bakery product manufacturing	2 071	7 684	3 323	61 120
1171 Bread manufacturing (factory based)	535	2 345	820	10 958
1172 Cake and pastry manufacturing (factory based)	316	1 324	524	8 563
1173 Biscuit manufacturing (factory based)	211	921	451	4 196
1174 Bakery product manufacturing (non-factory based)	1 008	3 093	1 527	37 402
118 Sugar and confectionery manufacturing	1 088	7 221	2 238	20 378
1181 Sugar manufacturing	312	1 882	586	5 087
1182 Confectionery manufacturing	776	5 339	1 652	15 291
119 Other food product manufacturing	1 138	9 417	1 769	23 160
1191 Potato, corn and other crisp manufacturing	np	np	np	np
1192 Prepared animal and bird feed manufacturing	np	np	np	np
1199 Other food product manufacturing n.e.c.	659	4 450	956	15 078
12 Beverage and tobacco product manufacturing	1 956	16 878	5 961	29 949
121 Beverage manufacturing	np	np	np	np
1211 Soft drink, cordial and syrup manufacturing	513	4 423	1 617	7 806
1212 Beer manufacturing	316	4 199	1 863	4 085
1213 Spirit manufacturing	np	np	np	np
1214 Wine and other alcoholic beverage manufacturing	849	5 725	^ 1 136	15 499
122 Cigarette and tobacco product manufacturing	np	np	np	np
1220 Cigarette and tobacco product manufacturing	np	np	np	np
13 Textile, leather, clothing and footwear manufacturing	1 783	9 590	2 850	47 399
131 Textile manufacturing	97	685	148	2 155
1311 Wool scouring	11	139	22	223
1312 Natural textile manufacturing	49	225	70	1 099
1313 Synthetic textile manufacturing	36	321	57	833

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

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

A1.1 MANUFACTURING INDUSTRY BY ANZSIC CLASS, 2008–09 *continued*

	Wages and salaries	*Sales and service income*	*Industry value added*	*Employment at end June*
	$m	$m	$m	no.
Manufacturing *cont.*	53 158	420 921	105 154	1 007 751
13 Textile, leather, clothing and footwear manufacturing *cont.*	1 783	9 590	2 850	47 399
132 Leather tanning, fur dressing and leather product manufacturing	99	608	173	2 857
1320 Leather tanning, fur dressing and leather product manufacturing	99	608	173	2 857
133 Textile product manufacturing	751	3 894	1 182	17 794
1331 Textile floor covering manufacturing	141	924	241	2 241
1332 Rope, cordage and twine manufacturing	23	194	33	564
1333 Cut and sewn textile product manufacturing	430	2 078	668	11 172
1334 Textile finishing and other textile product manufacturing	157	699	240	3 817
134 Knitted product manufacturing	74	263	88	1 512
1340 Knitted product manufacturing	74	263	88	1 512
135 Clothing and footwear manufacturing	761	4 140	1 259	23 081
1351 Clothing manufacturing	682	3 626	1 120	20 870
1352 Footwear manufacturing	80	514	139	2 212
14 Wood product manufacturing	2 137	12 498	4 212	48 716
141 Log sawmilling and timber dressing	659	4 794	1 472	14 098
1411 Log sawmilling	258	1 441	494	6 260
1412 Wood chipping	72	875	276	1 332
1413 Timber resawing and dressing	328	2 479	701	6 506
149 Other wood product manufacturing	1 478	7 704	2 740	34 618
1491 Prefabricated wooden building manufacturing	24	166	48	581
1492 Wooden structural fitting and component manufacturing	1 015	5 124	1 898	24 846
1493 Veneer and plywood manufacturing	63	442	118	1 139
1494 Reconstituted wood product manufacturing	194	1 085	321	3 119
1499 Other wood product manufacturing n.e.c.	182	888	355	4 933
15 Pulp, paper and converted paper product manufacturing	1 446	9 542	2 842	20 821
151 Pulp, paper and paperboard manufacturing	317	2 584	538	4 786
1510 Pulp, paper and paperboard manufacturing	317	2 584	538	4 786
152 Converted paper product manufacturing	1 129	6 957	2 304	16 036
1521 Corrugated paperboard and paperboard container manufacturing	510	3 033	924	5 938
1522 Paper bag manufacturing	47	228	85	829
1523 Paper stationery manufacturing	162	682	^ 283	3 458
1524 Sanitary paper product manufacturing	276	2 235	761	3 341
1529 Other converted paper product manufacturing	135	779	^ 251	2 470
16 Printing (including the reproduction of recorded media)	2 554	9 876	4 407	49 770
161 Printing and printing support services	2 424	9 334	4 173	47 385
1611 Printing	2 319	9 008	3 992	44 780
1612 Printing support services	105	327	181	2 605
162 Reproduction of recorded media	130	542	234	2 385
1620 Reproduction of recorded media	130	542	234	2 385
17 Petroleum and coal product manufacturing	783	48 407	1 150	7 413
170 Petroleum and coal product manufacturing	783	48 407	1 150	7 413
1701 Petroleum refining and petroleum fuel manufacturing	635	46 625	829	5 324
1709 Other petroleum and coal product manufacturing	147	1 782	322	2 089
18 Basic chemical and chemical product manufacturing	3 307	29 128	8 029	44 525
181 Basic chemical manufacturing	710	7 778	1 956	9 126
1811 Industrial gas manufacturing	243	3 469	983	3 127
1812 Basic organic chemical manufacturing	128	1 163	216	1 861
1813 Basic inorganic chemical manufacturing	339	3 146	756	4 138
182 Basic polymer manufacturing	355	3 196	np	4 504
1821 Synthetic resin and synthetic rubber manufacturing	337	3 057	690	4 154
1829 Other basic polymer manufacturing	18	139	np	350

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

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

A1.1 MANUFACTURING INDUSTRY BY ANZSIC CLASS, 2008–09 *continued*

	Wages and salaries	*Sales and service income*	*Industry value added*	*Employment at end June*
	$m	$m	$m	no.
Manufacturing *cont.*	53 158	420 921	105 154	1 007 751
18 Basic chemical and chemical product manufacturing *cont.*	3 307	29 128	8 029	44 525
183 Fertiliser and pesticide manufacturing	370	4 677	1 098	5 381
1831 Fertiliser manufacturing	264	3 676	963	3 705
1832 Pesticide manufacturing	106	1 001	135	1 676
184 Pharmaceutical and medicinal product manufacturing	1 158	8 668	2 528	14 970
1841 Human pharmaceutical and medicinal product manufacturing	1 100	8 223	2 386	14 042
1842 Veterinary pharmaceutical and medicinal product manufacturing	58	446	142	928
185 Cleaning compound and toiletry preparation manufacturing	436	3 087	1 006	7 823
1851 Cleaning compound manufacturing	293	2 337	769	4 713
1852 Cosmetic and toiletry preparation manufacturing	144	750	237	3 110
189 Other basic chemical product manufacturing	277	1 721	np	2 722
1891 Photographic chemical product manufacturing	np	np	np	np
1892 Explosive manufacturing	261	1 602	np	2 319
1899 Other basic chemical product manufacturing n.e.c.	np	np	np	np
19 Polymer product and rubber product manufacturing	2 749	15 861	5 215	51 130
191 Polymer product manufacturing	2 605	15 160	4 946	48 693
1911 Polymer film and sheet packaging material manufacturing	408	2 438	845	6 697
1912 Rigid and semi-rigid polymer product manufacturing	967	5 887	1 844	18 990
1913 Polymer foam product manufacturing	118	656	223	2 405
1914 Tyre manufacturing	41	212	75	927
1915 Adhesive manufacturing	101	668	163	1 529
1916 Paint and coatings manufacturing	564	3 194	1 061	9 247
1919 Other polymer product manufacturing	405	2 104	734	8 898
192 Natural rubber product manufacturing	144	701	269	2 437
1920 Natural rubber product manufacturing	144	701	269	2 437
20 Non-metallic mineral product manufacturing	2 765	17 492	5 806	42 462
201 Glass and glass product manufacturing	695	3 634	1 574	8 345
2010 Glass and glass product manufacturing	695	3 634	1 574	8 345
202 Ceramic product manufacturing	358	1 576	673	5 406
2021 Clay brick manufacturing	187	908	407	2 537
2029 Other ceramic product manufacturing	171	668	266	2 869
203 Cement, lime, plaster and concrete product manufacturing	1 355	10 438	2 823	21 779
2031 Cement and lime manufacturing	241	2 027	776	2 953
2032 Plaster product manufacturing	97	670	179	1 607
2033 Ready-mixed concrete manufacturing	533	5 053	991	8 333
2034 Concrete product manufacturing	485	2 688	877	8 885
209 Other non-metallic mineral product manufacturing	357	1 845	736	6 932
2090 Other non-metallic mineral product manufacturing	357	1 845	736	6 932
21 Primary metal and metal product manufacturing	4 723	71 289	14 045	59 594
211 Basic ferrous metal manufacturing	1 762	18 565	5 209	23 767
2110 Iron smelting and steel manufacturing	1 762	18 565	5 209	23 767
212 Basic ferrous metal product manufacturing	610	4 221	1 795	10 018
2121 Iron and steel casting	428	2 648	1 242	7 065
2122 Steel pipe and tube manufacturing	182	1 573	553	2 953
213 Basic non-ferrous metal manufacturing	2 124	44 903	6 413	21 083
2131 Alumina production	1 052	8 281	np	9 100
2132 Aluminium smelting	528	8 828	2 238	6 289
2133 Copper, silver, lead and zinc smelting and refining	205	np	np	2 652
2139 Other basic non-ferrous metal manufacturing	339	np	np	3 042
214 Basic non-ferrous metal product manufacturing	227	3 600	628	4 725
2141 Non-ferrous metal casting	31	187	151	656
2142 Aluminium rolling, drawing, extruding	110	1 602	239	2 640
2149 Other basic non-ferrous metal product manufacturing	86	1 811	238	1 428

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

A1.1 MANUFACTURING INDUSTRY BY ANZSIC CLASS, 2008–09 *continued*

	Wages and salaries	*Sales and service income*	*Industry value added*	*Employment at end June*
	$m	$m	$m	no.
Manufacturing *cont.*	53 158	420 921	105 154	1 007 751
22 Fabricated metal product manufacturing	5 807	30 520	10 485	134 810
221 Iron and steel forging	110	810	221	1 794
2210 Iron and steel forging	110	810	221	1 794
222 Structural metal product manufacturing	3 136	17 053	5 369	66 668
2221 Structural steel fabricating	1 505	8 113	2 576	29 063
2222 Prefabricated metal building manufacturing	235	1 960	530	5 542
2223 Architectural aluminium product manufacturing	832	3 896	1 316	18 611
2224 Metal roof and guttering manufacturing (except aluminium)	113	770	155	1 914
2229 Other structural metal product manufacturing	451	2 314	792	11 538
223 Metal container manufacturing	415	2 387	944	11 479
2231 Boiler, tank and other heavy gauge metal container manufacturing	225	965	^ 401	7 825
2239 Other metal container manufacturing	191	1 422	543	3 653
224 Sheet metal product manufacturing (except metal structural and container products)	457	2 057	811	11 580
2240 Sheet metal product manufacturing (except metal structural and container products)	457	2 057	811	11 580
229 Other fabricated metal product manufacturing	1 688	8 212	3 139	43 290
2291 Spring and wire product manufacturing	200	1 277	317	4 322
2292 Nut, bolt, screw and rivet manufacturing	116	691	228	2 476
2293 Metal coating and finishing	451	1 669	766	12 062
2299 Other fabricated metal product manufacturing n.e.c.	922	4 576	1 828	24 429
23 Transport equipment manufacturing	5 629	33 049	9 094	96 698
231 Motor vehicle and motor vehicle part manufacturing	3 326	22 490	5 173	57 618
2311 Motor vehicle manufacturing	1 523	12 441	2 171	20 189
2312 Motor vehicle body and trailer manufacturing	629	3 575	1 116	15 539
2313 Automotive electrical component manufacturing	212	1 346	349	3 613
2319 Other motor vehicle parts manufacturing	962	5 128	1 537	18 278
239 Other transport equipment manufacturing	2 303	10 560	3 922	39 079
2391 Shipbuilding and repair services	514	1 839	np	8 179
2392 Boatbuilding and repair services	310	1 640	^ 510	9 343
2393 Railway rolling stock manufacturing and repair services	500	3 157	961	6 357
2394 Aircraft manufacturing and repair services	966	3 853	1 557	14 521
2399 Other transport equipment manufacturing n.e.c.	12	70	np	^ 678
24 Machinery and equipment manufacturing	6 477	37 070	11 840	119 205
241 Professional and scientific equipment manufacturing	1 179	5 848	2 407	21 804
2411 Photographic, optical and ophthalmic equipment manufacturing	73	381	^ 126	1 513
2412 Medical and surgical equipment manufacturing	534	3 102	1 357	10 965
2419 Other professional and scientific equipment manufacturing	572	2 365	924	9 327
242 Computer and electronic equipment manufacturing	966	4 899	1 641	16 854
2421 Computer and electronic office equipment manufacturing	194	1 028	301	3 703
2422 Communication equipment manufacturing	296	1 577	468	5 301
2429 Other electronic equipment manufacturing	476	2 294	872	7 850
243 Electrical equipment manufacturing	1 075	7 110	1 717	19 746
2431 Electric cable and wire manufacturing	174	1 689	335	2 984
2432 Electric lighting equipment manufacturing	233	1 279	400	4 643
2439 Other electrical equipment manufacturing	667	4 142	982	12 120
244 Domestic appliance manufacturing	370	2 582	772	6 614
2441 Whiteware appliance manufacturing	194	1 283	355	3 127
2449 Other domestic appliance manufacturing	176	1 299	416	3 486
245 Pump, compressor, heating and ventilation equipment manufacturing	529	3 005	986	9 875
2451 Pump and compressor manufacturing	232	1 261	462	4 338
2452 Fixed space heating, cooling and ventilation equipment manufacturing	297	1 743	^ 525	5 537

A1.1 MANUFACTURING INDUSTRY BY ANZSIC CLASS, 2008–09 *continued*

	Wages and salaries	*Sales and service income*	*Industry value added*	*Employment at end June*
	$m	$m	$m	no.
Manufacturing *cont.*	53 158	420 921	105 154	1 007 751
24 Machinery and equipment manufacturing *cont.*	6 477	37 070	11 840	119 205
246 Specialised machinery and equipment manufacturing	1 546	9 206	2 878	29 149
2461 Agricultural machinery and equipment manufacturing	347	2 527	^ 626	7 223
2462 Mining and construction machinery manufacturing	669	4 147	1 243	10 450
2463 Machine tool and parts manufacturing	258	1 103	516	5 793
2469 Other specialised machinery and equipment manufacturing	273	1 429	^ 492	5 683
249 Other machinery and equipment manufacturing	813	4 419	1 439	15 162
2491 Lifting and material handling equipment manufacturing	446	2 231	771	7 253
2499 Other machinery and equipment manufacturing n.e.c.	367	2 188	^ 668	7 909
25 Furniture and other manufacturing	1 378	7 597	2 670	41 836
251 Furniture manufacturing	np	4 756	1 731	26 114
2511 Wooden furniture and upholstered seat manufacturing	np	np	np	np
2512 Metal furniture manufacturing	np	906	335	4 318
2513 Mattress manufacturing	np	571	160	1 871
2519 Other furniture manufacturing	np	np	np	np
259 Other manufacturing	np	2 841	939	15 722
2591 Jewellery and silverware manufacturing	np	np	np	np
2592 Toy, sporting and recreational product manufacturing	np	437	151	2 940
2599 Other manufacturing n.e.c.	np	np	np	np

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

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

A1.2 MANUFACTURING INDUSTRY BY STATES AND TERRITORIES BY ANZSIC SUBDIVISION, 2008–09

	Wages and salaries	*Sales and service income*	*Employment at end June*
	$m	$m	no.
NEW SOUTH WALES			
Manufacturing	15 997	125 005	303 856
11 Food product manufacturing	3 075	21 860	66 201
12 Beverage and tobacco product manufacturing	601	4 996	9 933
13 Textile, leather, clothing and footwear manufacturing	571	3 025	14 819
14 Wood product manufacturing	616	3 590	14 203
15 Pulp, paper and converted paper product manufacturing	399	2 744	5 992
16 Printing (including the reproduction of recorded media)	1 001	3 706	18 597
17 Petroleum and coal product manufacturing	201	np	2 080
18 Basic chemical and chemical product manufacturing	1 173	10 197	15 615
19 Polymer product and rubber product manufacturing	823	4 143	15 178
20 Non-metallic mineral product manufacturing	808	4 909	12 299
21 Primary metal and metal product manufacturing	1 244	15 677	17 482
22 Fabricated metal product manufacturing	1 588	8 360	36 746
23 Transport equipment manufacturing	1 287	6 787	22 537
24 Machinery and equipment manufacturing	2 188	12 953	39 426
25 Furniture and other manufacturing	423	np	12 746
VICTORIA			
Manufacturing	15 837	109 219	293 417
11 Food product manufacturing	2 882	24 973	62 186
12 Beverage and tobacco product manufacturing	484	5 181	6 609
13 Textile, leather, clothing and footwear manufacturing	755	4 050	18 668
14 Wood product manufacturing	551	3 201	12 517
15 Pulp, paper and converted paper product manufacturing	603	4 442	8 584
16 Printing (including the reproduction of recorded media)	850	3 433	16 455
17 Petroleum and coal product manufacturing	312	np	2 691
18 Basic chemical and chemical product manufacturing	1 131	8 975	14 823
19 Polymer product and rubber product manufacturing	1 014	5 856	18 025
20 Non-metallic mineral product manufacturing	794	3 720	10 923
21 Primary metal and metal product manufacturing	654	7 473	9 593
22 Fabricated metal product manufacturing	1 402	7 226	32 974
23 Transport equipment manufacturing	2 414	14 228	36 184
24 Machinery and equipment manufacturing	1 540	8 703	30 549
25 Furniture and other manufacturing	450	np	12 635
QUEENSLAND			
Manufacturing	9 360	77 412	191 254
11 Food product manufacturing	2 062	14 130	46 958
12 Beverage and tobacco product manufacturing	171	1 823	1 904
13 Textile, leather, clothing and footwear manufacturing	219	1 167	6 670
14 Wood product manufacturing	464	2 768	10 859
15 Pulp, paper and converted paper product manufacturing	133	917	1 970
16 Printing (including the reproduction of recorded media)	299	1 366	6 764
17 Petroleum and coal product manufacturing	138	np	1 446
18 Basic chemical and chemical product manufacturing	405	3 125	5 595
19 Polymer product and rubber product manufacturing	406	2 944	8 102
20 Non-metallic mineral product manufacturing	559	4 124	9 201
21 Primary metal and metal product manufacturing	1 006	12 815	13 886
22 Fabricated metal product manufacturing	1 332	7 174	31 731
23 Transport equipment manufacturing	786	4 907	17 993
24 Machinery and equipment manufacturing	1 160	6 815	20 688
25 Furniture and other manufacturing	220	np	7 487

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

A1.2 MANUFACTURING INDUSTRY BY STATES AND TERRITORIES BY ANZSIC SUBDIVISION, 2008–09 *continued*

	Wages and salaries	*Sales and service income*	*Employment at end June*
	$m	$m	no.
SOUTH AUSTRALIA			
Manufacturing	4 669	31 103	88 542
11 Food product manufacturing	653	4 723	15 669
12 Beverage and tobacco product manufacturing	536	3 553	8 232
13 Textile, leather, clothing and footwear manufacturing	81	np	2 556
14 Wood product manufacturing	211	1 048	4 642
15 Pulp, paper and converted paper product manufacturing	178	662	2 271
16 Printing (including the reproduction of recorded media)	170	572	2 956
17 Petroleum and coal product manufacturing	19	np	103
18 Basic chemical and chemical product manufacturing	151	1 188	2 550
19 Polymer product and rubber product manufacturing	242	1 434	4 605
20 Non-metallic mineral product manufacturing	177	1 916	3 171
21 Primary metal and metal product manufacturing	354	3 550	4 564
22 Fabricated metal product manufacturing	407	2 059	9 693
23 Transport equipment manufacturing	563	4 712	10 041
24 Machinery and equipment manufacturing	834	3 902	14 530
25 Furniture and other manufacturing	91	505	2 959
WESTERN AUSTRALIA			
Manufacturing	5 681	63 502	100 963
11 Food product manufacturing	665	4 643	14 952
12 Beverage and tobacco product manufacturing	142	1 160	2 818
13 Textile, leather, clothing and footwear manufacturing	114	678	3 345
14 Wood product manufacturing	198	1 054	4 112
15 Pulp, paper and converted paper product manufacturing	51	np	958
16 Printing (including the reproduction of recorded media)	160	531	3 513
17 Petroleum and coal product manufacturing	107	np	991
18 Basic chemical and chemical product manufacturing	373	3 199	5 017
19 Polymer product and rubber product manufacturing	223	1 291	4 301
20 Non-metallic mineral product manufacturing	363	1 961	5 683
21 Primary metal and metal product manufacturing	1 118	28 582	11 123
22 Fabricated metal product manufacturing	933	4 943	19 907
23 Transport equipment manufacturing	476	1 975	7 946
24 Machinery and equipment manufacturing	600	3 788	11 502
25 Furniture and other manufacturing	158	798	4 796
TASMANIA			
Manufacturing	1 105	8 279	19 319
11 Food product manufacturing	283	1 545	5 844
12 Beverage and tobacco product manufacturing	19	143	384
13 Textile, leather, clothing and footwear manufacturing	33	162	963
14 Wood product manufacturing	72	684	1 777
15 Pulp, paper and converted paper product manufacturing	75	398	np
16 Printing (including the reproduction of recorded media)	24	70	526
17 Petroleum and coal product manufacturing	np	np	^ 66
18 Basic chemical and chemical product manufacturing	43	np	621
19 Polymer product and rubber product manufacturing	32	142	686
20 Non-metallic mineral product manufacturing	38	604	708
21 Primary metal and metal product manufacturing	np	np	np
22 Fabricated metal product manufacturing	68	324	1 697
23 Transport equipment manufacturing	71	274	1 177
24 Machinery and equipment manufacturing	94	663	1 503
25 Furniture and other manufacturing	14	86	598

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

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

A1.2 MANUFACTURING INDUSTRY BY STATES AND TERRITORIES BY ANZSIC SUBDIVISION, 2008–09 *continued*

	Wages and salaries	*Sales and service income*	*Employment at end June*
	$m	$m	no.
NORTHERN TERRITORY			
Manufacturing	290	5 189	5 265
11 Food product manufacturing	22	160	759
12 Beverage and tobacco product manufacturing	1	7	np
13 Textile, leather, clothing and footwear manufacturing	np	np	155
14 Wood product manufacturing	12	50	269
15 Pulp, paper and converted paper product manufacturing	np	np	np
16 Printing (including the reproduction of recorded media)	7	23	150
17 Petroleum and coal product manufacturing	np	np	np
18 Basic chemical and chemical product manufacturing	21	np	178
19 Polymer product and rubber product manufacturing	np	36	119
20 Non-metallic mineral product manufacturing	16	148	288
21 Primary metal and metal product manufacturing	np	np	np
22 Fabricated metal product manufacturing	50	264	1 327
23 Transport equipment manufacturing	20	95	515
24 Machinery and equipment manufacturing	15	97	283
25 Furniture and other manufacturing	4	16	140
AUSTRALIAN CAPITAL TERRITORY			
Manufacturing	220	1 210	5 135
11 Food product manufacturing	21	90	855
12 Beverage and tobacco product manufacturing	2	15	np
13 Textile, leather, clothing and footwear manufacturing	np	28	222
14 Wood product manufacturing	13	103	337
15 Pulp, paper and converted paper product manufacturing	np	np	np
16 Printing (including the reproduction of recorded media)	43	176	810
17 Petroleum and coal product manufacturing	np	np	np
18 Basic chemical and chemical product manufacturing	9	14	126
19 Polymer product and rubber product manufacturing	np	15	113
20 Non-metallic mineral product manufacturing	9	109	190
21 Primary metal and metal product manufacturing	1	7	28
22 Fabricated metal product manufacturing	28	169	735
23 Transport equipment manufacturing	12	72	305
24 Machinery and equipment manufacturing	47	150	723
25 Furniture and other manufacturing	20	114	473
AUSTRALIA			
Manufacturing	53 158	420 921	1 007 751
11 Food product manufacturing	9 664	72 124	213 423
12 Beverage and tobacco product manufacturing	1 956	16 878	29 949
13 Textile, leather, clothing and footwear manufacturing	1 783	9 590	47 399
14 Wood product manufacturing	2 137	12 498	48 716
15 Pulp, paper and converted paper product manufacturing	1 446	9 542	20 821
16 Printing (including the reproduction of recorded media)	2 554	9 876	49 770
17 Petroleum and coal product manufacturing	783	48 407	7 413
18 Basic chemical and chemical product manufacturing	3 307	29 128	44 525
19 Polymer product and rubber product manufacturing	2 749	15 861	51 130
20 Non-metallic mineral product manufacturing	2 765	17 492	42 462
21 Primary metal and metal product manufacturing	4 723	71 289	59 594
22 Fabricated metal product manufacturing	5 807	30 520	134 810
23 Transport equipment manufacturing	5 629	33 049	96 698
24 Machinery and equipment manufacturing	6 477	37 070	119 205
25 Furniture and other manufacturing	1 378	7 597	41 836

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

GLOSSARY

Data presented in this publication have been compiled from the standard financial accounts of businesses, therefore, the definition of each reported item aligns closely with that adopted in standard business accounting practice.

Australian Business Number (ABN) unit The statistical unit used by the ABS to represent businesses, and for which statistics are reported, in most cases. The ABN unit is the business unit which has registered for an ABN, and thus appears on the ATO administered Australian Business Register. In most cases, the ABN unit represents the legal entity. This unit is suitable for ABS statistical needs when the business is simple in structure. For more significant and diverse businesses where the ABN unit is not suitable for ABS statistical needs, the statistical unit used is the Type of Activity Unit.

Billion One thousand million.

Business A business is generally considered to be a person, partnership or corporation engaged in business or commerce. For details of statistical units used in this publication to represent businesses, refer to Chapter 2.

Business Activity Statement (BAS) total sales Represented by the form item G1 Total sales on businesses' BAS, supplied by them to the ATO. This item comprises all payments and other considerations (including goods and services tax) received during the nominated tax period for supplies made in the course of business.

Business Activity Statement (BAS) wages and salaries Represented by the form item W1 Total salary, wages and other payments on businesses' BAS, supplied by them to the ATO. This item comprises all total gross payments from which a business is required to withhold amounts during the nominated tax period.

Employment at end June Refers to the number of persons working for businesses during the last pay period ending in June 2009. Includes working proprietors and partners, employees absent on paid or prepaid leave, employees on workers' compensation who continue to be paid through the payroll, and contract workers paid through the payroll. Excludes persons paid by commission only, non-salaried directors, volunteers and self-employed persons such as consultants and contractors.

Industry class The structure of the ANZSIC classification comprises a hierarchy of four levels, ranging from industry division (broadest level) to industry class (finest level). Activities are narrowly defined within the industry class level, which is identified by a four-digit code, e.g. Class 1351 Clothing Manufacturing. Usually, an activity is primarily defined to one class. However, some activities may be primary to more than one class.

Industry division The structure comprises four levels, ranging from industry division (broadest level) to the industry class (finest level). The main purpose of the industry division level is to provide a limited number of categories which give a broad overall picture of the economy. There are 19 divisions within ANZSIC, each identified by an alphabetical letter, that is, 'A' for Agriculture, forestry and fishing, 'B' for Mining, 'C' for Manufacturing, etc.

Industry group This is the intermediate level within each industry division of ANZSIC and is identified by a three-digit code, e.g. Group 135 Clothing and footwear manufacturing. It gives more detail than the industry subdivision, and is created in a way that groups like industry classes together.

Industry subdivision

This is the broadest level category within each industry division of ANZSIC and is identified by a two-digit code, e.g. SUBDIVISION 13 TEXTILE, LEATHER, CLOTHING AND FOOTWEAR MANUFACTURING. Industry subdivisions are built up from industry groups which, in turn, are built up from industry classes.

Industry value added (IVA)

IVA represents the value added by an industry to the intermediate inputs used by the industry. IVA is the measure of the contribution by businesses in the selected industry, to gross domestic product.

The derivation of IVA for market producers is as follows:

	Sales and service income
plus	Funding from federal, state and/or local government for operational costs
plus	Capital work done for own use
plus	Closing inventories
less	Opening inventories
less	Purchases of goods and materials
less	Other intermediate input expenses (for details, see the entry for total expenses)
equals	IVA

However, it should be noted that IVA is a measure of economic activity and is not equivalent to operating profit before tax. Wages and salary expenses and most other labour costs are not taken into account in its calculation for market producers, and nor are most insurance premiums, interest expenses or depreciation and a number of lesser expenses. On the income side, OPBT includes total income, whereas IVA only includes sales and service income.

IVA is related to, but different from, the national accounting variable gross value added. For national accounts purposes, gross value added is calculated by adjusting IVA to include GENERAL GOVERNMENT units and to also account for some other effects.

Sales and service income

This item includes:

Sales of goods:

- whether or not produced by the business (including goods produced for the business on a commission basis). Includes export sales, sales or transfers to related businesses or to overseas branches of the business, progress payments relating to long term contracts if they are billed in the period, delivery charges not separately invoiced to customers, sales of goods produced by the business from crude materials purchased, and income from 'specific' rates (e.g. water, sewerage, irrigation and drainage rates). Excludes excise and duties received on behalf of the government, sales of assets, natural resource royalties income, interest income and delivery charges separately invoiced to customers. Exports are valued free on board, i.e. export freight charges are excluded.

Income from services

- including income from consulting services, repair, maintenance and service income and fees, contract, subcontract and commission income, management fees/charges from related and unrelated businesses, installation charges, delivery charges separately invoiced to customers, royalties from intellectual property (e.g. patents and copyrights) and natural resource royalties income. Excludes interest income, and delivery charges not separately invoiced to customers.

Rent, leasing and hiring income

- derived from the ownership of land, dwellings, buildings and other structures, motor vehicles, plant, machinery and other equipment. Excludes royalties from mineral leases, income from finance leases and payments received under hire purchase arrangements.

These component items are valued net of discounts given and exclude goods and services tax. Extraordinary items are also excluded.

Standard Institutional Sector Classification of Australia (SISCA)

The SISCA is the central classification among ABS Standard Economic Sector Classifications. It is based on the System of National Accounts 2008 institutional sector classification, and comprises the sectors: Non-Financial Corporations, Financial Corporations, General Government, Households, Not-for-profit Institutions Serving Households, and Rest of the World (which includes only non-resident units, these being excluded from all other sectors). For more information, please refer to the *Standard Economic Sector Classifications of Australia (SESCA)* (cat. no. 1218.0).

Type of Legal Organisation

Type of Legal Organisation is a classification applied to all legal entities on the ABS Business Register. It indicates the type of legal entity of the business/organisation, e.g. sole proprietor, partnership, trust, incorporated company, incorporated association, government body, etc. For a full description of the classification and its categories, refer to *Standard Economic Sector Classifications of Australia (SESCA)* (cat. no. 1218.0).

Wages and salaries

The gross wages and salaries (including capitalised wages and salaries) of all employees of the business. The item includes severance, termination and redundancy payments, salaries and fees of directors and executives, retainers and commissions of persons who received a retainer, bonuses, and annual and other types of leave. 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 also included, as are salary sacrificed earnings and remuneration of employees in the form of share based payments and stock options.

Payments related to self-employed persons such as consultants, contractors and persons paid solely by commission without a retainer are excluded. The drawings of working proprietors and partners are also excluded.

FOR MORE INFORMATION . . .

INTERNET **www.abs.gov.au** the ABS website is the best place for data from our publications and information about the ABS.

INFORMATION AND REFERRAL SERVICE

Our consultants can help you access the full range of information published by the ABS that is available free of charge from our website. Information tailored to your needs can also be requested as a 'user pays' service. Specialists are on hand to help you with analytical or methodological advice.

PHONE 1300 135 070

EMAIL client.services@abs.gov.au

FAX 1300 135 211

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

FREE ACCESS TO STATISTICS

All statistics on the ABS website can be downloaded free of charge.

WEB ADDRESS www.abs.gov.au