



Information Paper

Experimental Estimates for the Manufacturing Industry

Australia

2009–10

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AUSTRALIAN BUREAU OF STATISTICS

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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
ANZSIC	Australian and New Zealand Standard Industrial Classification
ATO	Australian Taxation Office
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
TAU	type of activity unit

INTRODUCTION

This information paper contains experimental estimates for the Australian manufacturing industry for the 2009–10 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 third 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, 2009–10* (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). The 2008–09 issue included experimental estimates for employment together with the data items previously published. In addition, a state and territory breakdown by ANZSIC subdivision was provided for the first time for wages and salaries, sales and service income and employment. The 2009–10 issue continues with those data items published in 2008–09.

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.

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. This will likely be the last edition of this publication with modelled manufacturing estimates expected to be released with the *Australian Industry, 2010–11* (cat. no. 8155.0) publication.

The ABS is currently evaluating this methodology to see if it 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 australian.industry.statistics@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 to 2009–10 reference periods 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, 2009–10* (cat no. 8155.0), issued annually
- *Experimental Estimates for Australian Industry adjusted for Off-June Year Reporting, 2008–09 and 2009–10* (cat. no. 8169.0)
- *Experimental Estimates for the Manufacturing Industry, Australia, 2008–09* (cat. no. 8159.0)
- *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

USE OF ATO DATA IN THIS
PUBLICATION *continued*

statistical purposes, and is not related to the ability of the data to support the ATO's core operational requirements.

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.

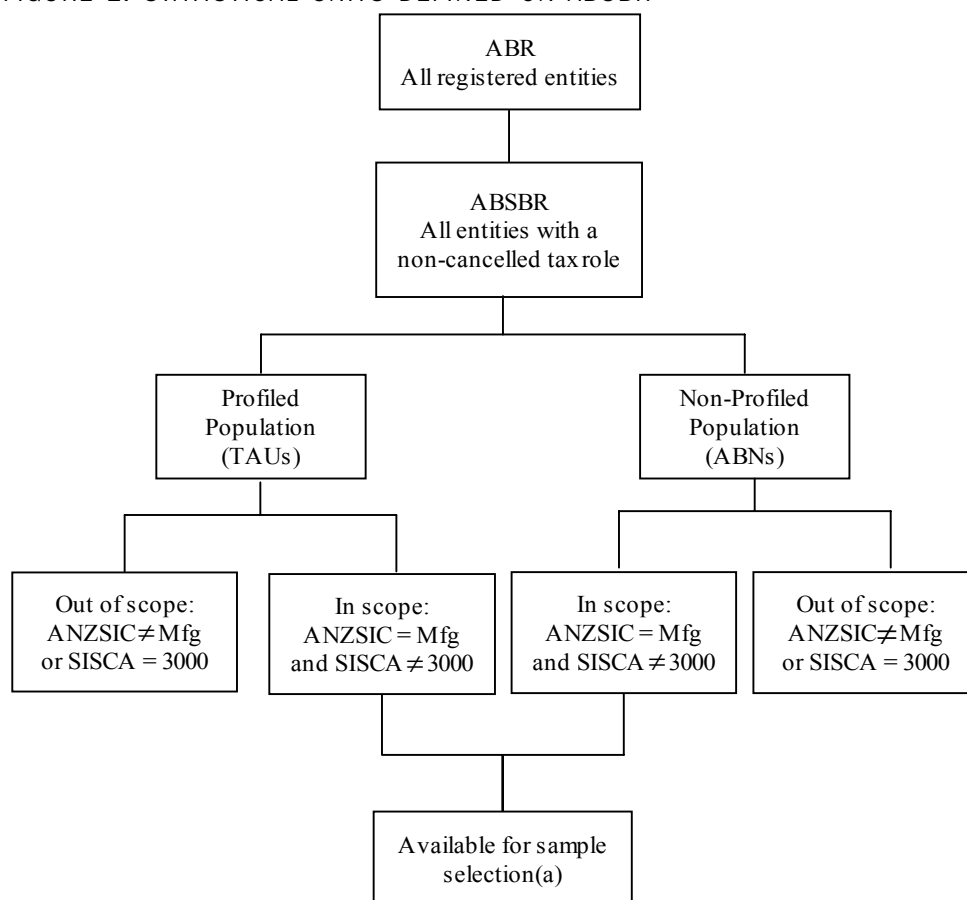
SCOPE AND POPULATION

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, 2009–10* (cat. no. 8155.0). It includes all business entities in the Australian economy which are classified, on the ABS Business Register (ABSR), to ANZSIC Division C MANUFACTURING but excludes any entities classified to SISCA Sector 3 GENERAL GOVERNMENT. Note that government-owned or controlled Public non-financial corporations are included.

The following diagram illustrates the scope of the manufacturing experimental estimates.

FIGURE 1. STATISTICAL UNITS DEFINED ON ABSR



(a) Excludes micro non-employing businesses.

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.

Non-Profiled Population

The majority of businesses included on the ABSBR are in the Non-profiled population. Most of these businesses are understood to have simple structures. For these businesses, the ABS is able to use the ABN as the basis for a statistical unit. One ABN equates to one statistical unit.

Profiled Population

For a small number of businesses, the ABN unit is not suitable for ABS economic statistics purposes and the ABS maintains its own units structure through direct contact with businesses. These businesses constitute the Profiled population. This population consists typically of large or complex groups of businesses. The economic statistics unit model below caters for such businesses:

- Enterprise group: This is 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 such as companies, trusts and partnerships which are related in terms of the current Corporations Law (*Corporations Act 2001*). Majority ownership is not required for control to be exercised.
- Enterprise: The enterprise is an institutional unit comprising a single legal entity, or a grouping of legal entities, within an enterprise group, classified to the same Standard Industrial Sector Classification of Australia (SISCA) class.
- Type of activity unit (TAU): The TAU is comprised of one or more business entities, sub-entities or branches of a business entity within an enterprise group that can report production and employment data for similar economic activities. When a minimum set of data items is available, a TAU is created which covers all the operations within an industry subdivision. Where a business cannot supply adequate information for each industry, a TAU is formed which contains activity in more than one industry subdivision. These TAUs are classified according to the industry subdivision of the main activity. TAUs may have operations in one or more states/territories.

CONTRIBUTION OF STATISTICAL UNITS TO THE ESTIMATES

The following paragraphs outline the way in which categories of statistical units contribute to the estimates of financial and economic variables presented in this publication.

TAUs

All units in the Profiled population (i.e. TAUs) were eligible to be selected for direct collection.

ABN units

All units on the ABSBR not classified as TAUs were ABN units from the Non-profiled population.

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 previous releases (i.e. 2006–07, 2007–08, and 2008–09).

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 Profiled and Non-profiled populations 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 population 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 minimal modelling applied).

More detailed information about the EAS collection design can be found in *Australian Industry, 2009–10* (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 non-profiled businesses and small profiled 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.

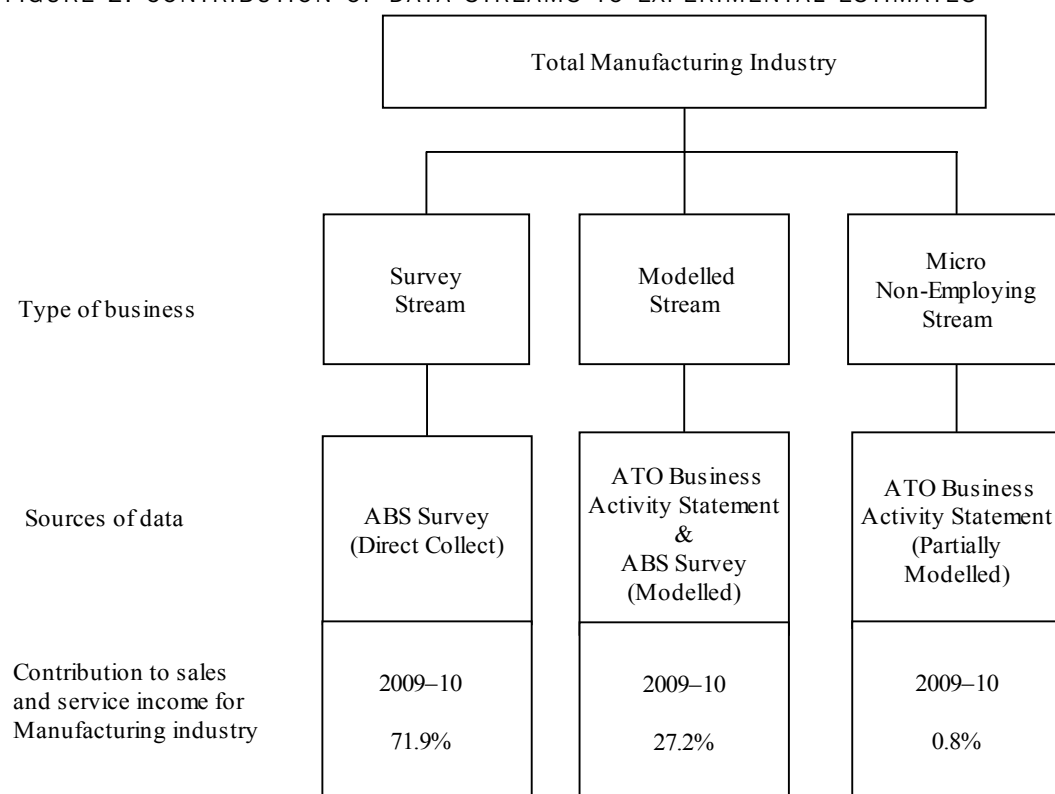
The ANZSIC class experimental estimates for 2009–10 were created subject to the constraint of being additive to national ANZSIC subdivision estimates, as published in the 2009–10 issue of *Australian Industry* (cat. no. 8155.0). This is also true for state/territory experimental estimates: the state/territory 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 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*.

*The Experimental
Manufacturing Estimates
Model continued*

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

FIGURE 2. CONTRIBUTION OF DATA STREAMS TO EXPERIMENTAL ESTIMATES



The Survey Stream

The survey stream consists of businesses with directly collected EAS data. These are the completely enumerated businesses (those with employment of at least 300); and randomly sampled employing businesses, with employment less than 300 and exceeding a turnover threshold level from both the ABSBR Profiled and Non-profiled populations. Directly collected EAS data were used for these units.

The Micro Non-Employing Stream

This stream includes units from the Non-profiled population 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.

The Modelled Stream

The modelled stream includes all businesses not selected in EAS (the survey stream), or not in the micro non-employed stream as defined above (in EAS collection design).

UNITS FROM NON-PROFILED POPULATION

Most businesses in the modelled stream are units from the Non-profiled population. 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 sampled units from the Non-profiled population that are in 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 units, from the Non-profiled population, in the modelled stream were created by multiplying their BAS data by the calculated regression factors.

UNITS FROM PROFILED POPULATION

For businesses in the Profiled population not directly surveyed with employment of 20 or more, data were modelled from data collected from Profiled population units in the survey stream.

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 equal estimates published in the 2009–10 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 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

PRODUCING THE
MANUFACTURING
EXPERIMENTAL
ESTIMATES *continued*

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 state/territory 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,
2009–10 (CAT. NO.
8155.0)

The national subdivision estimates presented in this publication align with those in the 2009-10 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 \$96.8b of IVA in 2009–10. The FOOD PRODUCT MANUFACTURING subdivision (11) contributed the most significant amount with \$16.8b, followed by MACHINERY AND EQUIPMENT MANUFACTURING (24) with \$10.6b and FABRICATED METAL PRODUCT MANUFACTURING (22) with \$10.5b.

In Australia, the manufacturing industry produced \$381.2b sales and service income in 2009–10 with the FOOD PRODUCT MANUFACTURING (11) (\$74.1b) and PRIMARY METAL AND METAL PRODUCT MANUFACTURING (21) (\$59.2b) subdivisions being the highest contributors.

The Australian manufacturing industry outlaid \$51.9b in wages and salaries during 2009–10. The FOOD PRODUCT MANUFACTURING subdivision (11) accounted for \$9.2b, followed by the MACHINERY AND EQUIPMENT MANUFACTURING subdivision (24) with \$6.3b and FABRICATED METAL PRODUCT MANUFACTURING (22) with \$5.8b.

The manufacturing industry in Australia employed 955,000 persons in 2009–10 with the FOOD PRODUCT MANUFACTURING (11), FABRICATED METAL PRODUCT MANUFACTURING (22) and MACHINERY AND EQUIPMENT MANUFACTURING (24) subdivisions being the highest contributors (209,800 persons, 117,800 persons and 112,300 persons, respectively).

ANZSIC Classes

From a finer ANZSIC class level perspective, PRINTING (1611) contributed the most to IVA with \$3.6b followed by IRON SMELTING AND STEEL MANUFACTURING (2110) and HUMAN PHARMACEUTICAL AND MEDICINAL PRODUCT MANUFACTURING (1841) with \$2.7b.

The largest contributors to sales and service income at the finer class level were PETROLEUM REFINERY AND PETROLEUM FUEL MANUFACTURING (1701) (\$23.8b) and OTHER BASIC NON-FERROUS METAL MANUFACTURING (2139) (\$22.7b).

The largest industries (at ANZSIC class level) contributing to wages and salaries were PRINTING (1611) with \$2.0b and IRON SMELTING AND STEEL MANUFACTURING (2110) with \$1.6b, followed by STRUCTURAL STEEL FABRICATING (2221), both with \$1.4b.

The largest contributors to employment at the finer ANZSIC class level were PRINTING (1611) with 45,300 persons, BAKERY PRODUCT MANUFACTURING (MON-FACTORY BASED) (1174) with 37,100 persons and MEAT PROCESSING (1111) with 32,000 persons.

STATES AND TERRITORIES

State/territory contribution to sales and service income was the largest for NEW SOUTH WALES with \$114.1b, followed by VICTORIA (\$103.3b) and QUEENSLAND (\$67.6b). NEW SOUTH WALES was the largest state/territory contributor to wages and salaries with \$16.0b, followed by VICTORIA (\$15.2b) and QUEENSLAND (\$9.1b). State/territory contribution to employment was largest for NEW SOUTH WALES with 287,600 persons, followed by VICTORIA (277,800 persons) and QUEENSLAND (181,000 persons).

*Subdivision Contribution
to States*

For NEW SOUTH WALES, VICTORIA and QUEENSLAND, the largest manufacturing subdivision was FOOD PRODUCT MANUFACTURING (11), accounting for approximately 17.2% to 23.0% of wages and salaries, sales and service income and employment.

In SOUTH AUSTRALIA, FOOD PRODUCT MANUFACTURING (11) was also the largest contributor to employment (20.2%) and sales and service income (19.5%), with TRANSPORT EQUIPMENT MANUFACTURING (23) contributing the most to wages and salaries (15.7%).

In WESTERN AUSTRALIA, PRIMARY METAL AND METAL PRODUCT MANUFACTURING (21) was the largest contributor to sales and service income (43.5%) and wages and salaries (19.3%) and FABRICATED METAL PRODUCT MANUFACTURING (22) contributed the most to employment (18.9%).

In TASMANIA, FOOD PRODUCT MANUFACTURING (11) accounted for 34.9% 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 72.5% to 87.2% 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.

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, 2009–10* (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. As there were no individual experimental estimates with RSEs of 10% or more, no RSE annotations appear 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 2009–10. All national ANZSIC class RSEs were less than 10%.

	Relative Standard Error						Total number of ANZSIC classes
	<1 %	1% to <2%	2% to <5%	5% to <10%	10% to <25%	25% or more	
2009-10							
Wages experimental estimates	33	35	65	0	0	0	143
Sales experimental estimates	40	32	71	0	0	0	143
IVA experimental estimates	2	25	79	37	0	0	143
Employment experimental estimates	1	27	96	19	0	0	143

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 2009–10. No state/territory ANZSIC subdivisions had RSEs of 10% or greater.

	Relative Standard Error						Number of state ANZSIC subdivisions
	<1%	1% to <2%	2% to <5%	5% to <10%	10% to <25%	25% or more	
2009-10							
Wages experimental estimates	21	37	74	3	0	0	135
Sales experimental estimates	38	24	73	0	0	0	135
Employment experimental estimates	3	17	94	21	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, 2008–09* (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

Previous issues 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 2010. 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 2010. 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, 2009-10

	<i>Wages and salaries</i>	<i>Sales and service income</i>	<i>Industry value added</i>	<i>Employment at end June</i>
	\$m	\$m	\$m	no.
Manufacturing	51 853	381 165	96 809	955 047
11 Food product manufacturing	9 183	74 128	16 832	209 771
111 Meat and meat product manufacturing	2 612	19 922	4 240	59 088
1111 Meat processing	1 336	11 572	2 126	32 018
1112 Poultry processing	849	5 181	1 442	17 539
1113 Cured meat and smallgoods manufacturing	427	3 169	671	9 531
112 Seafood processing	109	1 407	305	3 339
1120 Seafood processing	109	1 407	305	3 339
113 Dairy product manufacturing	1 287	13 011	2 328	20 020
1131 Milk and cream processing	177	1 773	354	2 872
1132 Ice cream manufacturing	80	570	170	2 011
1133 Cheese and other dairy product manufacturing	1 030	10 668	1 804	15 136
114 Fruit and vegetable processing	663	5 485	1 239	12 568
1140 Fruit and vegetable processing	663	5 485	1 239	12 568
115 Oil and fat manufacturing	114	2 716	174	1 625
1150 Oil and fat manufacturing	114	2 716	174	1 625
116 Grain mill and cereal product manufacturing	630	6 451	1 170	9 605
1161 Grain mill product manufacturing	332	4 170	593	3 311
1162 Cereal, pasta and baking mix manufacturing	298	2 281	578	6 294
117 Bakery product manufacturing	1 726	8 126	3 319	61 683
1171 Bread manufacturing (factory based)	407	2 658	785	11 784
1172 Cake and pastry manufacturing (factory based)	283	1 440	550	8 535
1173 Biscuit manufacturing (factory based)	211	1 024	472	4 308
1174 Bakery product manufacturing (non-factory based)	825	3 005	1 513	37 055
118 Sugar and confectionery manufacturing	1 033	7 489	1 873	18 515
1181 Sugar manufacturing	318	2 267	624	4 880
1182 Confectionery manufacturing	715	5 222	1 249	13 634
119 Other food product manufacturing	1 009	9 519	2 183	23 330
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.	626	4 596	1 078	15 213
12 Beverage and tobacco product manufacturing	1 942	17 770	6 609	30 906
121 Beverage manufacturing	np	np	np	np
1211 Soft drink, cordial and syrup manufacturing	511	4 966	1 791	7 961
1212 Beer manufacturing	303	np	np	3 604
1213 Spirit manufacturing	np	np	np	np
1214 Wine and other alcoholic beverage manufacturing	830	5 779	1 395	16 707
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	1 595	9 162	2 839	44 404
131 Textile manufacturing	90	619	149	1 737
1311 Wool scouring	15	103	20	233
1312 Natural textile manufacturing	23	136	38	460
1313 Synthetic textile manufacturing	52	380	91	1 044

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

A1.1 MANUFACTURING INDUSTRY BY ANZSIC CLASS, 2009-10 *continued*

	Wages and salaries	Sales and service income	Industry value added	Employment at end June
	\$m	\$m	\$m	no.
Manufacturing <i>cont.</i>	51 853	381 165	96 809	955 047
13 Textile, leather, clothing and footwear manufacturing <i>cont.</i>	1 595	9 162	2 839	44 404
132 Leather tanning, fur dressing and leather product manufacturing	96	650	189	2 842
1320 Leather tanning, fur dressing and leather product manufacturing	96	650	189	2 842
133 Textile product manufacturing	652	3 711	1 121	16 877
1331 Textile floor covering manufacturing	121	946	200	2 233
1332 Rope, cordage and twine manufacturing	20	142	37	521
1333 Cut and sewn textile product manufacturing	393	2 044	685	10 732
1334 Textile finishing and other textile product manufacturing	119	580	200	3 392
134 Knitted product manufacturing	66	251	108	1 331
1340 Knitted product manufacturing	66	251	108	1 331
135 Clothing and footwear manufacturing	692	3 930	1 271	21 617
1351 Clothing manufacturing	618	3 477	1 144	19 655
1352 Footwear manufacturing	73	453	127	1 963
14 Wood product manufacturing	2 224	12 692	4 211	48 466
141 Log sawmilling and timber dressing	701	4 693	1 310	13 855
1411 Log sawmilling	233	1 321	457	5 341
1412 Wood chipping	46	628	216	814
1413 Timber resawing and dressing	422	2 744	636	7 700
149 Other wood product manufacturing	1 523	7 999	2 902	34 611
1491 Prefabricated wooden building manufacturing	25	207	51	603
1492 Wooden structural fitting and component manufacturing	1 065	5 376	2 028	25 034
1493 Veneer and plywood manufacturing	68	468	96	1 263
1494 Reconstituted wood product manufacturing	188	1 062	379	3 170
1499 Other wood product manufacturing n.e.c.	177	885	348	4 542
15 Pulp, paper and converted paper product manufacturing	1 459	9 657	2 633	20 538
151 Pulp, paper and paperboard manufacturing	335	2 429	433	4 099
1510 Pulp, paper and paperboard manufacturing	335	2 429	433	4 099
152 Converted paper product manufacturing	1 124	7 228	2 200	16 440
1521 Corrugated paperboard and paperboard container manufacturing	504	3 306	975	6 654
1522 Paper bag manufacturing	37	167	53	675
1523 Paper stationery manufacturing	149	704	251	3 289
1524 Sanitary paper product manufacturing	306	2 237	731	3 329
1529 Other converted paper product manufacturing	128	815	190	2 493
16 Printing (including the reproduction of recorded media)	2 246	9 183	4 034	50 295
161 Printing and printing support services	2 128	8 696	3 817	47 865
1611 Printing	2 035	8 395	3 649	45 251
1612 Printing support services	93	300	168	2 614
162 Reproduction of recorded media	118	487	217	2 430
1620 Reproduction of recorded media	118	487	217	2 430
17 Petroleum and coal product manufacturing	627	25 590	1 584	6 247
170 Petroleum and coal product manufacturing	627	25 590	1 584	6 247
1701 Petroleum refining and petroleum fuel manufacturing	462	23 845	1 146	3 738
1709 Other petroleum and coal product manufacturing	165	1 745	437	2 509
18 Basic chemical and chemical product manufacturing	3 625	30 482	8 393	44 894
181 Basic chemical manufacturing	778	7 501	1 726	9 957
1811 Industrial gas manufacturing	259	3 430	890	3 978
1812 Basic organic chemical manufacturing	152	1 216	140	1 932
1813 Basic inorganic chemical manufacturing	367	2 856	695	4 047
182 Basic polymer manufacturing	348	2 895	550	4 329
1821 Synthetic resin and synthetic rubber manufacturing	336	2 801	524	4 110
1829 Other basic polymer manufacturing	13	94	27	219

A1.1 MANUFACTURING INDUSTRY BY ANZSIC CLASS, 2009-10 *continued*

	Wages and salaries	Sales and service income	Industry value added	Employment at end June
	\$m	\$m	\$m	no.
Manufacturing <i>cont.</i>	51 853	381 165	96 809	955 047
18 Basic chemical and chemical product manufacturing <i>cont.</i>	3 625	30 482	8 393	44 894
183 Fertiliser and pesticide manufacturing	409	4 582	1 143	5 154
1831 Fertiliser manufacturing	298	3 545	1 022	3 448
1832 Pesticide manufacturing	111	1 037	121	1 706
184 Pharmaceutical and medicinal product manufacturing	1 309	10 021	2 844	15 074
1841 Human pharmaceutical and medicinal product manufacturing	1 252	9 571	2 711	14 181
1842 Veterinary pharmaceutical and medicinal product manufacturing	58	450	133	893
185 Cleaning compound and toiletry preparation manufacturing	452	3 337	1 176	6 952
1851 Cleaning compound manufacturing	314	2 492	884	4 215
1852 Cosmetic and toiletry preparation manufacturing	138	845	292	2 737
189 Other basic chemical product manufacturing	328	2 145	953	3 429
1891 Photographic chemical product manufacturing	np	np	np	np
1892 Explosive manufacturing	309	1 984	np	3 025
1899 Other basic chemical product manufacturing n.e.c.	np	np	np	np
19 Polymer product and rubber product manufacturing	2 764	16 078	5 390	48 001
191 Polymer product manufacturing	2 606	15 245	5 063	45 338
1911 Polymer film and sheet packaging material manufacturing	422	2 465	776	6 407
1912 Rigid and semi-rigid polymer product manufacturing	943	5 778	1 943	17 561
1913 Polymer foam product manufacturing	136	780	274	2 455
1914 Tyre manufacturing	41	214	80	828
1915 Adhesive manufacturing	105	786	189	1 457
1916 Paint and coatings manufacturing	550	3 155	1 015	8 430
1919 Other polymer product manufacturing	410	2 068	785	8 200
192 Natural rubber product manufacturing	158	832	327	2 664
1920 Natural rubber product manufacturing	158	832	327	2 664
20 Non-metallic mineral product manufacturing	2 689	17 197	5 411	42 770
201 Glass and glass product manufacturing	691	3 394	1 327	9 056
2010 Glass and glass product manufacturing	691	3 394	1 327	9 056
202 Ceramic product manufacturing	286	1 448	568	4 915
2021 Clay brick manufacturing	177	904	392	2 468
2029 Other ceramic product manufacturing	109	544	176	2 447
203 Cement, lime, plaster and concrete product manufacturing	1 372	10 417	2 862	22 069
2031 Cement and lime manufacturing	255	2 169	828	2 941
2032 Plaster product manufacturing	100	802	253	1 567
2033 Ready-mixed concrete manufacturing	559	4 915	952	8 402
2034 Concrete product manufacturing	459	2 530	829	9 159
209 Other non-metallic mineral product manufacturing	340	1 939	655	6 730
2090 Other non-metallic mineral product manufacturing	340	1 939	655	6 730
21 Primary metal and metal product manufacturing	4 585	59 188	6 844	58 614
211 Basic ferrous metal manufacturing	1 607	14 649	2 722	22 735
2110 Iron smelting and steel manufacturing	1 607	14 649	2 722	22 735
212 Basic ferrous metal product manufacturing	559	3 243	1 087	9 257
2121 Iron and steel casting	387	2 084	824	6 606
2122 Steel pipe and tube manufacturing	172	1 159	263	2 651
213 Basic non-ferrous metal manufacturing	2 145	38 619	2 724	22 073
2131 Alumina production	np	np	np	np
2132 Aluminium smelting	549	6 946	np	6 842
2133 Copper, silver, lead and zinc smelting and refining	261	np	np	2 959
2139 Other basic non-ferrous metal manufacturing	np	np	np	np

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

A1.1 MANUFACTURING INDUSTRY BY ANZSIC CLASS, 2009-10 *continued*

	Wages and salaries	Sales and service income	Industry value added	Employment at end June
	\$m	\$m	\$m	no.
Manufacturing <i>cont.</i>	51 853	381 165	96 809	955 047
21 Primary metal and metal product manufacturing <i>cont.</i>	4 585	59 188	6 844	58 614
214 Basic non-ferrous metal product manufacturing	273	2 678	311	4 549
2141 Non-ferrous metal casting	27	120	35	543
2142 Aluminium rolling, drawing, extruding	158	1 283	145	2 618
2149 Other basic non-ferrous metal product manufacturing	87	1 274	131	1 388
22 Fabricated metal product manufacturing	5 820	28 656	10 510	117 763
221 Iron and steel forging	89	850	185	1 666
2210 Iron and steel forging	89	850	185	1 666
222 Structural metal product manufacturing	3 118	15 582	5 452	59 164
2221 Structural steel fabricating	1 446	6 890	2 445	25 251
2222 Prefabricated metal building manufacturing	273	1 774	554	5 267
2223 Architectural aluminium product manufacturing	826	3 851	1 433	16 925
2224 Metal roof and guttering manufacturing (except aluminium)	113	782	184	1 811
2229 Other structural metal product manufacturing	460	2 285	835	9 910
223 Metal container manufacturing	391	2 337	870	9 310
2231 Boiler, tank and other heavy gauge metal container manufacturing	213	875	398	5 968
2239 Other metal container manufacturing	178	1 462	473	3 342
224 Sheet metal product manufacturing (except metal structural and container products)	462	2 018	820	10 224
2240 Sheet metal product manufacturing (except metal structural and container products)	462	2 018	820	10 224
229 Other fabricated metal product manufacturing	1 760	7 870	3 184	37 399
2291 Spring and wire product manufacturing	199	1 186	378	3 702
2292 Nut, bolt, screw and rivet manufacturing	112	724	213	2 116
2293 Metal coating and finishing	453	1 608	804	10 024
2299 Other fabricated metal product manufacturing n.e.c.	996	4 353	1 789	21 557
23 Transport equipment manufacturing	5 350	30 431	8 448	79 519
231 Motor vehicle and motor vehicle part manufacturing	2 949	19 420	4 513	45 915
2311 Motor vehicle manufacturing	1 281	10 109	1 593	17 076
2312 Motor vehicle body and trailer manufacturing	614	3 351	1 078	11 492
2313 Automotive electrical component manufacturing	196	1 280	392	2 897
2319 Other motor vehicle parts manufacturing	858	4 681	1 451	14 450
239 Other transport equipment manufacturing	2 400	11 011	3 935	33 604
2391 Shipbuilding and repair services	646	2 637	979	7 883
2392 Boatbuilding and repair services	235	1 221	447	6 087
2393 Railway rolling stock manufacturing and repair services	487	2 815	881	5 115
2394 Aircraft manufacturing and repair services	972	3 920	1 516	13 401
2399 Other transport equipment manufacturing n.e.c.	60	420	113	1 118
24 Machinery and equipment manufacturing	6 299	33 653	10 575	112 315
241 Professional and scientific equipment manufacturing	1 108	5 308	2 109	20 382
2411 Photographic, optical and ophthalmic equipment manufacturing	69	345	118	1 346
2412 Medical and surgical equipment manufacturing	587	2 891	1 296	11 199
2419 Other professional and scientific equipment manufacturing	452	2 072	695	7 837
242 Computer and electronic equipment manufacturing	919	4 132	1 472	15 310
2421 Computer and electronic office equipment manufacturing	130	771	188	2 773
2422 Communication equipment manufacturing	373	1 714	568	6 000
2429 Other electronic equipment manufacturing	415	1 648	715	6 537
243 Electrical equipment manufacturing	1 059	6 822	1 655	18 868
2431 Electric cable and wire manufacturing	176	1 642	306	2 780
2432 Electric lighting equipment manufacturing	239	1 288	403	4 652
2439 Other electrical equipment manufacturing	644	3 892	946	11 436

A1.1 MANUFACTURING INDUSTRY BY ANZSIC CLASS, 2009-10 *continued*

	Wages and salaries	Sales and service income	Industry value added	Employment at end June
	\$m	\$m	\$m	no.
Manufacturing <i>cont.</i>	51 853	381 165	96 809	955 047
24 Machinery and equipment manufacturing <i>cont.</i>	6 299	33 653	10 575	112 315
244 Domestic appliance manufacturing	330	2 391	720	5 969
2441 Whiteware appliance manufacturing	137	1 173	292	2 597
2449 Other domestic appliance manufacturing	193	1 218	428	3 372
245 Pump, compressor, heating and ventilation equipment manufacturing	568	2 783	859	9 576
2451 Pump and compressor manufacturing	262	1 223	358	4 130
2452 Fixed space heating, cooling and ventilation equipment manufacturing	307	1 560	502	5 446
246 Specialised machinery and equipment manufacturing	1 571	8 248	2 538	27 556
2461 Agricultural machinery and equipment manufacturing	325	1 908	553	6 585
2462 Mining and construction machinery manufacturing	741	4 059	1 215	10 317
2463 Machine tool and parts manufacturing	249	928	378	5 450
2469 Other specialised machinery and equipment manufacturing	256	1 353	392	5 204
249 Other machinery and equipment manufacturing	745	3 969	1 224	14 654
2491 Lifting and material handling equipment manufacturing	393	2 090	638	7 350
2499 Other machinery and equipment manufacturing n.e.c.	351	1 879	586	7 304
25 Furniture and other manufacturing	1 445	7 296	2 495	40 542
251 Furniture manufacturing	951	4 604	1 600	25 318
2511 Wooden furniture and upholstered seat manufacturing	608	2 853	1 030	17 567
2512 Metal furniture manufacturing	174	821	289	4 039
2513 Mattress manufacturing	np	np	np	np
2519 Other furniture manufacturing	np	np	np	np
259 Other manufacturing	495	2 692	895	15 224
2591 Jewellery and silverware manufacturing	109	725	202	4 514
2592 Toy, sporting and recreational product manufacturing	np	np	np	np
2599 Other manufacturing n.e.c.	np	np	np	np

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, 2009-10

	Wages and salaries	Sales and service income	Employment at end June
	\$m	\$m	no.
NEW SOUTH WALES			
Manufacturing	16 025	114 123	287 633
11 Food product manufacturing	2 905	23 489	65 787
12 Beverage and tobacco product manufacturing	593	5 787	8 063
13 Textile, leather, clothing and footwear manufacturing	492	2 959	13 455
14 Wood product manufacturing	626	3 835	14 042
15 Pulp, paper and converted paper product manufacturing	402	2 915	5 930
16 Printing (including the reproduction of recorded media)	897	3 714	18 717
17 Petroleum and coal product manufacturing	206	10 366	1 908
18 Basic chemical and chemical product manufacturing	1 268	10 335	16 130
19 Polymer product and rubber product manufacturing	834	4 396	14 435
20 Non-metallic mineral product manufacturing	835	4 563	12 355
21 Primary metal and metal product manufacturing	1 247	12 908	16 796
22 Fabricated metal product manufacturing	1 519	7 822	31 402
23 Transport equipment manufacturing	1 445	6 155	17 772
24 Machinery and equipment manufacturing	2 317	12 430	38 689
25 Furniture and other manufacturing	439	2 449	12 153
VICTORIA			
Manufacturing	15 173	103 330	277 823
11 Food product manufacturing	2 762	23 776	58 650
12 Beverage and tobacco product manufacturing	553	6 112	7 891
13 Textile, leather, clothing and footwear manufacturing	681	3 769	17 933
14 Wood product manufacturing	586	2 887	12 609
15 Pulp, paper and converted paper product manufacturing	590	4 400	8 833
16 Printing (including the reproduction of recorded media)	785	3 354	16 893
17 Petroleum and coal product manufacturing	199	3 548	1 947
18 Basic chemical and chemical product manufacturing	1 186	9 242	14 194
19 Polymer product and rubber product manufacturing	1 059	5 962	17 415
20 Non-metallic mineral product manufacturing	690	4 034	11 379
21 Primary metal and metal product manufacturing	672	5 479	9 260
22 Fabricated metal product manufacturing	1 411	6 993	28 839
23 Transport equipment manufacturing	1 980	13 936	30 635
24 Machinery and equipment manufacturing	1 545	7 526	28 753
25 Furniture and other manufacturing	473	2 312	12 593
QUEENSLAND			
Manufacturing	9 102	67 603	181 014
11 Food product manufacturing	1 921	14 759	46 116
12 Beverage and tobacco product manufacturing	136	1 589	2 330
13 Textile, leather, clothing and footwear manufacturing	202	1 169	6 382
14 Wood product manufacturing	511	2 885	11 178
15 Pulp, paper and converted paper product manufacturing	130	1 065	2 082
16 Printing (including the reproduction of recorded media)	250	939	6 747
17 Petroleum and coal product manufacturing	121	6 494	1 171
18 Basic chemical and chemical product manufacturing	536	3 994	6 680
19 Polymer product and rubber product manufacturing	398	2 924	7 530
20 Non-metallic mineral product manufacturing	526	4 095	9 030
21 Primary metal and metal product manufacturing	1 067	10 019	14 643
22 Fabricated metal product manufacturing	1 291	6 115	26 554
23 Transport equipment manufacturing	747	4 445	14 340
24 Machinery and equipment manufacturing	1 033	5 961	19 156
25 Furniture and other manufacturing	233	1 148	7 076

A1.2 MANUFACTURING INDUSTRY BY STATES AND TERRITORIES BY ANZSIC SUBDIVISION, 2009-10 *continued*

	Wages and salaries	Sales and service income	Employment at end June
	\$m	\$m	no.
SOUTH AUSTRALIA			
Manufacturing	4 398	28 121	82 377
11 Food product manufacturing	656	5 494	16 675
12 Beverage and tobacco product manufacturing	493	3 087	8 966
13 Textile, leather, clothing and footwear manufacturing	84	460	2 515
14 Wood product manufacturing	199	1 161	4 075
15 Pulp, paper and converted paper product manufacturing	169	632	2 229
16 Printing (including the reproduction of recorded media)	107	402	2 791
17 Petroleum and coal product manufacturing	4	196	53
18 Basic chemical and chemical product manufacturing	170	1 337	2 347
19 Polymer product and rubber product manufacturing	213	1 185	3 757
20 Non-metallic mineral product manufacturing	200	1 544	3 181
21 Primary metal and metal product manufacturing	306	3 039	4 016
22 Fabricated metal product manufacturing	424	2 170	8 832
23 Transport equipment manufacturing	692	3 816	8 887
24 Machinery and equipment manufacturing	589	3 107	11 224
25 Furniture and other manufacturing	93	491	2 830
WESTERN AUSTRALIA			
Manufacturing	5 590	58 632	96 840
11 Food product manufacturing	575	4 489	14 435
12 Beverage and tobacco product manufacturing	138	1 048	3 132
13 Textile, leather, clothing and footwear manufacturing	98	632	3 151
14 Wood product manufacturing	204	1 368	4 214
15 Pulp, paper and converted paper product manufacturing	47	315	842
16 Printing (including the reproduction of recorded media)	133	508	3 460
17 Petroleum and coal product manufacturing	94	4 961	1 104
18 Basic chemical and chemical product manufacturing	412	5 108	4 841
19 Polymer product and rubber product manufacturing	215	1 380	3 946
20 Non-metallic mineral product manufacturing	374	2 355	5 631
21 Primary metal and metal product manufacturing	1 080	25 481	10 985
22 Fabricated metal product manufacturing	1 001	4 757	18 321
23 Transport equipment manufacturing	394	1 703	6 269
24 Machinery and equipment manufacturing	646	3 777	11 637
25 Furniture and other manufacturing	178	749	4 873
TASMANIA			
Manufacturing	1 059	6 208	19 038
11 Food product manufacturing	324	1 877	6 648
12 Beverage and tobacco product manufacturing	18	121	427
13 Textile, leather, clothing and footwear manufacturing	28	113	629
14 Wood product manufacturing	71	399	1 739
15 Pulp, paper and converted paper product manufacturing	113	273	441
16 Printing (including the reproduction of recorded media)	22	67	548
17 Petroleum and coal product manufacturing	4	19	61
18 Basic chemical and chemical product manufacturing	41	358	547
19 Polymer product and rubber product manufacturing	34	166	679
20 Non-metallic mineral product manufacturing	38	334	714
21 Primary metal and metal product manufacturing	138	1 311	1 893
22 Fabricated metal product manufacturing	75	308	1 712
23 Transport equipment manufacturing	57	217	962
24 Machinery and equipment manufacturing	79	564	1 449
25 Furniture and other manufacturing	16	82	590

A1.2 MANUFACTURING INDUSTRY BY STATES AND TERRITORIES BY ANZSIC SUBDIVISION, 2009-10 *continued*

	Wages and salaries	Sales and service income	Employment at end June
	\$m	\$m	no.
NORTHERN TERRITORY			
Manufacturing	268	1 984	4 992
11 Food product manufacturing	22	156	585
12 Beverage and tobacco product manufacturing	np	np	np
13 Textile, leather, clothing and footwear manufacturing	5	23	145
14 Wood product manufacturing	11	50	246
15 Pulp, paper and converted paper product manufacturing	np	25	4
16 Printing (including the reproduction of recorded media)	7	24	163
17 Petroleum and coal product manufacturing	np	np	np
18 Basic chemical and chemical product manufacturing	3	64	55
19 Polymer product and rubber product manufacturing	8	47	143
20 Non-metallic mineral product manufacturing	15	131	275
21 Primary metal and metal product manufacturing	74	945	996
22 Fabricated metal product manufacturing	65	288	1 465
23 Transport equipment manufacturing	23	123	433
24 Machinery and equipment manufacturing	22	84	np
25 Furniture and other manufacturing	4	17	140
AUSTRALIAN CAPITAL TERRITORY			
Manufacturing	238	1 164	5 331
11 Food product manufacturing	17	87	877
12 Beverage and tobacco product manufacturing	np	np	np
13 Textile, leather, clothing and footwear manufacturing	4	38	194
14 Wood product manufacturing	16	109	363
15 Pulp, paper and converted paper product manufacturing	np	32	177
16 Printing (including the reproduction of recorded media)	45	175	975
17 Petroleum and coal product manufacturing	np	np	np
18 Basic chemical and chemical product manufacturing	9	44	102
19 Polymer product and rubber product manufacturing	4	17	97
20 Non-metallic mineral product manufacturing	11	141	205
21 Primary metal and metal product manufacturing	1	7	25
22 Fabricated metal product manufacturing	35	203	638
23 Transport equipment manufacturing	10	36	221
24 Machinery and equipment manufacturing	67	204	np
25 Furniture and other manufacturing	9	48	289
AUSTRALIA			
Manufacturing	51 853	381 165	955 047
11 Food product manufacturing	9 183	74 128	209 771
12 Beverage and tobacco product manufacturing	1 942	17 770	30 906
13 Textile, leather, clothing and footwear manufacturing	1 595	9 162	44 404
14 Wood product manufacturing	2 224	12 692	48 466
15 Pulp, paper and converted paper product manufacturing	1 459	9 657	20 538
16 Printing (including the reproduction of recorded media)	2 246	9 183	50 295
17 Petroleum and coal product manufacturing	627	25 590	6 247
18 Basic chemical and chemical product manufacturing	3 625	30 482	44 894
19 Polymer product and rubber product manufacturing	2 764	16 078	48 001
20 Non-metallic mineral product manufacturing	2 689	17 197	42 770
21 Primary metal and metal product manufacturing	4 585	59 188	58 614
22 Fabricated metal product manufacturing	5 820	28 656	117 763
23 Transport equipment manufacturing	5 350	30 431	79 519
24 Machinery and equipment manufacturing	6 299	33 653	112 315
25 Furniture and other manufacturing	1 445	7 296	40 542

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 2010. 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
<i>plus</i>	Funding from federal, state and/or local government for operational costs
<i>plus</i>	Capital work done for own use
<i>plus</i>	Closing inventories
<i>less</i>	Opening inventories
<i>less</i>	Purchases of goods and materials
<i>less</i>	Other intermediate input expenses (for details, see the entry for total expenses)
<i>equals</i>	IVA

However, it should be noted that IVA is a measure of economic activity and is not equivalent to operating profit before tax (OPBT). 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.

More details on IVA and its components are presented in the glossary of *Australian Industry* (cat. no. 8155.0).

Sales and service income	This item includes:
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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.

Sales and service income <i>continued</i>	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 <i>Standard Economic Sector Classifications of Australia (SESCA)</i> (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 <i>Standard Economic Sector Classifications of Australia (SESCA)</i> (cat. no. 1218.0).
Wages and salaries	<p>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.</p> <p>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.</p>

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