



DECEMBER QUARTER 2002

8301.0

MANUFACTURING PRODUCTION

AUSTRALIA

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- For further information about these and related statistics, contact Merv Leaker on Adelaide 08 8237 7536 or the National Information and Referral Service on 1300 135 070.

NOTES

FORTHCOMING ISSUES

<i>ISSUE</i>	<i>RELEASE DATE</i>
March quarter 2003	12 May 2003
June quarter 2003	11 August 2003
September quarter 2003	11 November 2003

IN THIS ISSUE

This publication presents estimates of selected major indicators of manufacturing production for Australia.

More detailed and other commodity items are collected by the Australian Bureau of Statistics (ABS) and are available to users on request and for a charge, as are monthly series for a limited number of data items. These data items are listed in paragraph 20 of the Explanatory Notes on page 7.

EFFECTS OF ROUNDING

Estimates of change shown in this publication have been calculated using unrounded estimates and may be different from, but are more accurate than, movements obtained from the rounded estimates.

ABBREVIATIONS AND SYMBOLS

ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
ADC	Australian Dairy Corporation
DITR	Department of Industry, Tourism and Resources
n.p.	not available for publication
n.y.a.	not yet available
r	figure or series revised since previous issue
—	nil or rounded to zero (including null cells)

Dennis Trewin
Australian Statistician

										Percentage changes between latest quarter shown and....	
2000.. 2001..... 2002.....										prev. quarter	same quarter prev. year
No.	Item and unit/Series	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	
14	Automotive diesel oil (megalitres)										
	Original	3 471	3 288	3 401	3 405	3 213	3 241	3 206	3 356	n.y.a.	4.7
	Seasonally adjusted	3 321	3 370	3 399	3 478	3 115	3 275	3 206	3 477	n.y.a.	8.4
	Trend	3 280	3 393	3 414	3 355	3 254	3 223	3 284	3 381	n.y.a.	3.0
15	Portland cement ('000 tonnes)										
	Original	1 652	1 554	1 717	1 679	1 836	1 729	1 992	2 030	1 978	-2.6
	Seasonally adjusted	1 619	1 687	1 667	1 650	1 773	1 908	1 930	1 966	1 914	-2.6
	Trend	1 746	1 652	1 639	1 694	1 773	1 877	1 934	1 946	1 938	-0.4
16	Clay bricks (million)										
	Original	382	298	348	367	380	356	411	422	415	-1.6
	Seasonally adjusted	382	325	341	346	379	389	402	398	411	3.2
	Trend	375	343	335	350	373	389	398	403	409	1.4
17	Ready mixed concrete ('000 m ³)										
	Original	4 188	3 932	4 452	4 880	4 896	4 523	5 148	5 570	5 433	-2.4
	Seasonally adjusted	4 111	4 266	4 423	4 632	4 808	4 911	5 109	5 285	5 338	1.0
	Trend	4 353	4 227	4 391	4 620	4 786	4 948	5 104	5 247	5 362	2.2
18	Alumina ('000 tonnes)										
	Original	4 049	3 950	4 096	4 119	4 149	4 077	4 072	4 092	n.y.a.	0.5
	Seasonally adjusted	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.y.a.	n.p.
	Trend	4 017	4 049	4 071	4 102	4 132	4 125	4 092	4 050	n.y.a.	-1.0
19	Zinc ('000 tonnes)										
	Original	130	127	137	144	146	139	142	142	n.y.a.	—
	Seasonally adjusted	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.y.a.	n.p.
	Trend	131	133	136	141	144	144	142	140	n.y.a.	-1.4
20	Silver (tonnes)										
	Original	148	140	134	154	156	147	159	159	n.y.a.	—
	Seasonally adjusted	147	147	128	156	155	154	152	160	n.y.a.	5.7
	Trend	140	141	143	147	153	155	155	157	n.y.a.	1.4
21	Copper ('000 tonnes)										
	Original	127	133	141	147	137	142	137	131	n.y.a.	-4.4
	Seasonally adjusted	132	137	136	144	141	147	132	128	n.y.a.	-3.2
	Trend	128	135	139	142	144	141	135	129	n.y.a.	-4.4
22	Lead ('000 tonnes)(b)										
	Original	63	54	47	66	70	69	71	58	n.y.a.	-18.3
	Seasonally adjusted	63	54	46	67	70	70	69	59	n.y.a.	-15.1
	Trend	53	55	60	65	70	70	67	63	n.y.a.	-5.5
23	Tin (tonnes)										
	Original	182	296	345	266	187	193	183	218	n.y.a.	19.1
	Seasonally adjusted	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.y.a.	n.p.
	Trend	239	280	298	276	221	186	182	195	n.y.a.	7.0
24	Gold (tonnes)(c)										
	Original	82	92	108	85	88	86	88	84	n.y.a.	-4.2
	Seasonally adjusted	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.y.a.	n.p.
	Trend	84	85	88	88	86	86	86	88	n.y.a.	2.3
25	Electricity (million kWh)										
	Original	45 977	46 865	46 317	47 412	45 977	45 814	46 650	48 462	46 459	-4.1
	Seasonally adjusted	47 204	47 721	46 212	45 661	47 179	46 652	46 556	46 665	47 729	2.3
	Trend	47 513	47 050	46 509	46 305	46 484	46 684	46 714	46 908	47 372	1.0
26	Gas (petajoules)										
	Original	173	177	205	218	185	166	204	228	186	-18.2
	Seasonally adjusted	185	203	193	193	199	190	192	201	199	-0.7
	Trend	191	194	196	196	193	193	194	197	201	1.9

(a) The most recent trend estimates published in this release are likely to be improved (revised) when next quarter's seasonally adjusted estimates become available. For more information, users should refer to paragraphs 12–15 of the Explanatory Notes.

(b) Due to abnormal movements in the original series for December quarter 2000 and June quarter 2001, the trend has been modified to remove these effects. See also paragraphs 14–16 of the Explanatory Notes.

(c) Due to an abnormal movement in the original series for June quarter 2001, the trend has been modified to remove the effect. See also paragraphs 14–16 of the Explanatory Notes.

EXPLANATORY NOTES

INTRODUCTION

1 This publication presents quarterly estimates of production of selected major manufacturing commodities for Australia.

SCOPE AND COVERAGE

2 Data presented in this publication are collected from a number of different sources. The prime source is the ABS surveys of manufacturing production. Data are also obtained from surveys undertaken by the Department of Industry, Tourism and Resources (DITR), the Australian Bureau of Agricultural and Resource Economics (ABARE), the Australian Dairy Corporation (ADC) and from ABS agriculture collections. Scope and coverage varies slightly depending on the source of the information.

3 Production statistics sourced from ABS manufacturing production surveys are not collected from single establishment manufacturing businesses with fewer than four persons employed, nor from establishments predominantly engaged in non-manufacturing activities but which may carry out some manufacturing in a minor way. However, in general, the contribution of these small producers to statistical aggregates is only marginal and data contained in this publication provide reliable information for the evaluation of movements in commodity production.

4 The statistics of meat production include data collected from abattoirs and other major slaughtering establishments, plus estimates of animals slaughtered for human consumption on farms and by country butchers and other small slaughtering establishments. Further information about this series, including more detail, is available in the monthly publication *Livestock and Meat, Australia* (cat. no. 7218.0) and in the quarterly publication *Livestock Products, Australia* (cat. no. 7215.0).

5 The statistics on chicken meat have been collected from commercial poultry slaughtering establishments. Many very small producers and Tasmanian producers are excluded from the collection; however, the statistics represent a high level of coverage. Further information about this series, including more detail, is available in the quarterly publication *Livestock Products, Australia* (cat. no. 7215.0).

6 Data on the production of base metals and sawn timber are obtained from the ABARE publications *Mineral Statistics* and *Australian Forest and Wood Products Statistics*.

7 Data on the production of fuels are obtained from the DITR Petroleum and International Energy Division publication *Australian Petroleum Statistics*.

8 Data on the production of cheese and butter are obtained from the ADC as unpublished data.

COMPARABILITY WITH OTHER ESTIMATES

9 The quarterly production statistics presented in this publication account, in total, for less than one-fifth of the output of the manufacturing sector. For information on general trends in the manufacturing sector, refer to the publications shown in paragraphs 10, 11 and 18.

EXPLANATORY NOTES *continued*

COMPARABILITY WITH OTHER ESTIMATES *continued*

10 Details of the value of manufacturers' sales and inventories are published quarterly in *Business Indicators, Australia* (cat. no. 5676.0) (which has replaced *Inventories and Sales, Selected Industries, Australia* (cat. no. 5629.0)).

Information about the manufacturing sector's contribution to the Australian economy is published quarterly in *Australian National Accounts: National Income, Expenditure and Product* (cat. no. 5206.0).

11 Details from the annual manufacturing collection are published in *Manufacturing Industry, Australia* (cat. no. 8221.0) and corresponding state publications.

SEASONALLY ADJUSTED AND TREND ESTIMATES

12 In the seasonal adjustment process, account has been taken not only of normal seasonal factors but also, where appropriate, of 'working day' effects (arising from the varying numbers of Sundays, Mondays, Tuesdays, etc. in the quarter) which may, in successive years, affect figures for different quarters. Details of the methods used in seasonally adjusting these series are available on request.

13 Seasonal adjustment procedures do not aim to remove the irregular or non-seasonal influences which may be present in any particular quarter, such as the non-systematic effect of strikes, holiday shutdowns, providers' inconsistent reporting periods (where, for example, a 'quarter' may variously represent 13 or 14 weeks production), or other factors which vary with the prevailing demand for products. Irregular influences that are highly volatile can make it difficult to interpret the movement of the series even after seasonal adjustment. Seasonally adjusted estimates of production for the series 20 Silver, 21 Copper, and 22 Lead are more volatile than other series. Seasonally adjusted estimates for 18 Alumina, 19 Zinc and 23 Tin are not sufficiently reliable to be published, while those for 12 Fuel Oil and 24 Gold do not exhibit sufficient seasonal behaviour to be published.

14 The smoothing of seasonally adjusted series to create trend estimates is a means of reducing the impact of the irregular component of the series. The trend estimates have been derived by applying a 7-term moving average to the quarterly seasonally adjusted series. The 7-term Henderson averages (like all Henderson averages) are symmetric but, as the end of a time series is approached, asymmetric forms of the average are applied. Unlike the weights of the standard 7-term Henderson moving average, the surrogate weights employed with the quarterly data have been tailored to suit the particular characteristics of individual series.

15 While the asymmetric weights enable trend estimates for recent quarters to be produced, it does result in revisions to the estimates for the most recent quarters as additional observations become available. Generally, subsequent revisions become smaller and after two quarters have little impact on the series. There will also be revisions as a result of changes to the original estimates and annual reviews of seasonal and 'working day' factors.

16 More detailed up-to-date information on smoothing of seasonally adjusted time series data is available in unpublished form. Interested users should contact the ABS's Time Series Analysis section, on Canberra 02 6252 6345 or by email to <timeseries@abs.gov.au>.

EXPLANATORY NOTES *continued*

ACKNOWLEDGEMENT

17 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*.

RELATED PUBLICATIONS

- 18** Other ABS publications which may be of interest are:
- *Australian National Accounts: National Income, Expenditure and Product* (cat. no. 5206.0) issued quarterly
 - *Business Indicators, Australia* (cat. no. 5676.0) issued quarterly
 - *Electricity, Gas, Water and Sewerage Industries, Australia, 1999–2000* (cat. no. 8208.0), released on 28 August 2001
 - *Experimental Estimates, Australian Industry, a State Perspective* (cat. no. 8156.0) released on 21 March 2002
 - *Information Paper: Availability of Statistics Related to Manufacturing, 1997* (cat. no. 8205.0), released on 16 January 1998
 - *Livestock and Meat, Australia* (cat. no. 7218.0) issued monthly
 - *Livestock Products, Australia* (cat. no. 7215.0) issued quarterly
 - *Manufacturing, Australia, 2001* (cat. no. 8225.0) released on 8 March 2002
 - *Manufacturing Industry, Australia, 2000–2001* (cat. no. 8221.0) released on 28 October 2002
 - *Manufacturing Industry, Australia, Preliminary, 2000–01* (cat. no. 8201.0) released on 27 March 2002
 - *Mining Operations, Australia, 2000–2001* (cat. no. 8415.0) released on 2 October 2002

OTHER PUBLISHED STATISTICS

19 Some annual manufacturing production series which mainly relate to textiles, clothing and footwear are now published in the September quarter issues of this publication. Selected annual food series (which are now collected less frequently) were last published in the September quarter 2000 issue.

ABS DATA AVAILABLE ON REQUEST

20 More detailed and other commodity items are collected by the ABS and are available to users on request and for a charge. Items for which additional production data are available are:

beer
cars and station wagons
clay bricks (for structural purposes)
clay bricks (for other than structural purposes)
commercial office furniture
concrete bricks, blocks and pavers
cotton broadwoven fabric
hosiery
knitted sweatshirts and sloppy-joes
knitted underwear
malt

EXPLANATORY NOTES *continued*

ABS DATA AVAILABLE ON REQUEST *continued*

man-made fibre broadwoven fabric
men's and boys' long trousers
men's and boys' shirts
men's and boys' woven coats
mowers
other clothing (excluding those listed here)
plasterboard
Portland cement and cement clinkers
ready mixed concrete
roofing tiles
semi-trailers
synthetic fibre yarn
textile floor coverings
water heaters
women's knitted briefs and panties
women's shirts and blouses
women's footwear
wool broadwoven fabric
wool yarn

For further information, please contact Merv Leaker on Adelaide 08 8237 7536.

21 The value of sales for commodities produced (classified in accordance with the Manufacturing Input-Output Commodity Classification) is collected in the annual manufacturing industry survey, and is available to users on request and for a charge. For further information, please contact John Ridley on Sydney 02 9268 4541.

CURRENT PUBLICATIONS

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

APPENDIX CLARIFICATION OF TERMS

1 Red meat	Includes veal, pork and buffalo.
2 Chicken meat	Expressed in the dressed weight of whole birds, pieces and giblets.
3 Cheese	Includes fresh cheeses such as ricotta, cottage, cream and quark.
4 Butter	Includes direct butter oil.
5 Beer	Includes ale, stout and porter; excludes low alcohol beer containing less than 1.15% but more than 0.5%, by volume of alcohol.
6 Tobacco and cigarettes	Includes those containing tobacco substitutes.
7 Newsprint	Excludes directory paper, mechanical and printing paper.
8 Wood pulp	Expressed as air-dried weight.
9 Undressed sawn timber	Expressed in terms of green off saw volumes.
10 Hardwood woodchips	Expressed as greenweight; excludes chips which are not sold or are used in own works.
11 Automotive gasoline	Produced by Australian refineries from imported and indigenous petroleum.
12 Fuel oil	Oils derived from the distillation of petroleum which are generally used for domestic heating or fuelling furnaces; produced by Australian refineries from imported and indigenous petroleum.
13 Aviation turbine fuel	Produced by Australian refineries from imported and indigenous petroleum.
14 Automotive diesel oil	Produced by Australian refineries from imported and indigenous petroleum.
15 Portland cement	Includes blended Portland cement. Excludes both Portland cement clinker and Portland cement used to make blended Portland cement in-house.
16 Clay bricks	Saleable bricks (of all sizes) removed from kiln; excludes firebricks and bricks for other than structural purposes.
17 Ready mixed concrete	Excludes production used or for use within the same business.
18 Alumina	Aluminium oxide.
19 Zinc	Primary origin only.
20 Silver	Refined.
21 Copper	Primary origin only.
22 Lead	Includes lead content of lead from primary sources.
23 Tin	Primary origin only.
24 Gold	From primary and secondary sources.
25 Electricity	Excludes purchases or transfers in of electricity.
26 Gas	Gas (including natural gas) available for issue through mains, including gas production for distribution via natural gas pipelines which service a single user.

FOR MORE INFORMATION...

- INTERNET** www.abs.gov.au the ABS web site is the best place to start for access to summary data from our latest publications, information about the ABS, advice about upcoming releases, our catalogue, and Australia Now—a statistical profile.
- LIBRARY** A range of ABS publications is available from public and tertiary libraries Australia-wide. Contact your nearest library to determine whether it has the ABS statistics you require, or visit our web site for a list of libraries.
- CPI INFOLINE** For current and historical Consumer Price Index data, call 1902 981 074 (call cost 77c per minute).
- DIAL-A-STATISTIC** For the latest figures for National Accounts, Balance of Payments, Labour Force, Average Weekly Earnings, Estimated Resident Population and the Consumer Price Index call 1900 986 400 (call cost 77c per minute).

INFORMATION SERVICE

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

- PHONE** **1300 135 070**
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