



MANUFACTURING PRODUCTION

AUSTRALIA

EMBARGO: 11:30AM (CANBERRA TIME) FRI 18 FEB 2000

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- For further information about these and related statistics, contact Joanne Madden on Sydney 02 9268 4219, or Client Services in any ABS office as shown on the back cover of this publication.

NOTES

FORTHCOMING ISSUES

<i>ISSUE</i>	<i>RELEASE DATE</i>
March quarter 2000	12 May 2000
June quarter 2000	11 August 2000
September quarter 2000	10 November 2000

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IN THIS ISSUE

This publication presents quarterly 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 as a special data service, as are monthly series for a limited number of the data items contained in this publication. These data items are listed in paragraph 20 of the Explanatory Notes on page 7.

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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.

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ABBREVIATIONS AND SYMBOLS

ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
ADC	Australian Dairy Corporation
DISR	Department of Industry, Science and Resources
n.a.	not available
n.p.	not publishable
n.y.a.	not yet available
p	preliminary
r	figure or series revised since previous issue
—	nil or rounded to zero

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Australian Statistician

QUARTERLY COMMODITY PRODUCTION: **All series**(a)

											Percentage changes between latest quarter shown and....	
												same quarter prev. year
											prev. quarter	
No.	Item and unit/Series	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec		
<hr/>												
1	Red meat ('000 tonnes)											
	Original r	733	725	737	752	760	742	740	748	738	-1.4	-3.0
	Seasonally adjusted r	728	736	728	754	756	754	731	752	734	-2.4	-3.0
	Trend	734	731	737	749	753	751	744	741	738	-0.3	-2.0
2	Chicken meat ('000 tonnes)											
	Original	139	138	139	143	142	141	139	r142	151	6.6	6.7
	Seasonally adjusted	136	139	141	142	139	143	141	r141	148	5.0	6.6
	Trend	135	139	141	141	141	141	141	143	145	1.4	3.1
3	Cheese (tonnes)											
	Original	100 634	79 433	56 203	r60 942	r110 480	r83 154	r66 479	71 068	n.y.a.	6.9	16.6
	Seasonally adjusted	73 473	77 336	75 640	r70 690	r80 877	r80 947	r88 991	82 505	n.y.a.	-7.3	16.7
	Trend	75 139	74 964	74 663	74 890	78 187	82 678	85 167	85 279	n.y.a.	0.1	13.9
4	Butter (tonnes)											
	Original	63 243	32 655	24 632	r35 532	r64 426	r45 358	r30 353	37 481	n.y.a.	23.5	5.5
	Seasonally adjusted	40 139	32 381	40 349	r43 919	r40 965	r45 056	r49 612	46 216	n.y.a.	-6.8	5.2
	Trend	40 018	40 347	40 788	41 686	43 296	45 246	47 038	48 211	n.y.a.	2.5	15.7
5	Beer (megalitres)											
	Original	526	428	397	403	517	430	379	424	521	22.9	0.8
	Seasonally adjusted	441	440	438	433	438	436	419	461	439	-4.9	0.1
	Trend	440	439	437	437	433	433	436	442	446	0.9	2.9
6	Tobacco and cigarettes (tonnes)											
	Original	4 821	4 919	5 809	5 904	4 555	5 198	5 388	5 142	5 517	7.3	21.1
	Seasonally adjusted	4 912	5 615	5 666	5 221	4 745	5 815	5 239	4 635	5 694	22.8	20.0
	Trend	5 195	5 432	5 447	5 287	5 238	5 243	5 222	5 182	5 200	0.3	-0.7
7	Newsprint ('000 tonnes)											
	Original	96	100	102	105	100	95	100	92	95	2.5	-5.3
	Seasonally adjusted	98	101	100	103	102	96	98	90	98	8.5	-4.0
	Trend	101	100	101	102	101	98	95	95	95	0.6	-5.6
8	Wood pulp ('000 tonnes)											
	Original	250	235	240	225	223	209	214	212	212	0.1	-4.9
	Seasonally adjusted	247	237	235	230	221	211	210	217	210	-3.6	-5.0
	Trend	241	241	235	228	220	214	212	212	213	0.1	-3.3
9	Undressed sawn timber ('000 m³)											
	Original	890	888	935	r927	r876	r907	r912	1 026	n.y.a.	12.5	10.7
	Seasonally adjusted	920	933	921	r870	r907	r952	r897	963	n.y.a.	7.4	10.7
	Trend	919	923	909	900	905	920	934	943	n.y.a.	1.0	4.8
10	Hardwood woodchips ('000 tonnes)											
	Original	1 362	1 428	1 473	1 233	1 125	1 179	1 319	1 500	1 469	-2.0	30.5
	Seasonally adjusted	1 398	1 463	1 417	1 218	1 158	1 209	1 263	1 483	1 513	2.0	30.7
	Trend	1 433	1 440	1 370	1 260	1 175	1 196	1 307	1 425	1 527	7.2	30.0
11	Automotive gasoline (megalitres)											
	Original	4 745	4 430	4 795	4 632	4 455	4 679	4 939	4 903	n.y.a.	-0.7	5.8
	Seasonally adjusted	4 770	4 572	4 674	4 542	4 586	4 718	4 808	4 923	n.y.a.	2.4	8.4
	Trend	4 666	4 659	4 609	4 577	4 611	4 700	4 814	4 888	n.y.a.	1.5	6.8
12	Fuel oil (megalitres)											
	Original	416	412	385	422	429	377	407	350	n.y.a.	-14.0	-17.1
	Seasonally adjusted	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.y.a.	n.p.	n.p.
	Trend	431	407	401	408	417	406	380	358	n.y.a.	-5.8	-12.3
13	Aviation turbine fuel (megalitres)											
	Original	1 407	1 411	1 235	1 330	1 315	1 288	1 286	1 350	n.y.a.	5.0	1.6
	Seasonally adjusted	1 351	1 369	1 339	1 323	1 263	1 246	1 398	1 344	n.y.a.	-3.9	1.6
	Trend	1 358	1 360	1 343	1 309	1 271	1 265	1 288	1 319	n.y.a.	2.4	0.8
14	Automotive diesel oil (megalitres)											
	Original	3 392	3 323	3 282	3 059	3 324	3 194	3 391	3 287	n.y.a.	-3.1	7.5
	Seasonally adjusted	3 321	3 378	3 246	3 130	3 257	3 239	3 353	3 373	n.y.a.	0.6	7.8
	Trend	3 301	3 315	3 258	3 198	3 206	3 271	3 331	3 363	n.y.a.	1.0	5.2

(a) Trend estimates shown may have been revised. See paragraph 15 of the Explanatory Notes.

											Percentage changes between latest quarter shown and....	
1997.. 1998..... 1999.....												
No.	Item and unit/Series	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	prev. quarter	same quarter prev. year
15	Portland cement ('000 tonnes)											
	Original	1 830	1 719	1 861	1 956	2 067	1 737	1 944	2 005	2 027	1.1	-2.0
	Seasonally adjusted	1 794	1 873	1 835	1 886	2 005	1 911	1 915	1 923	1 950	1.4	-2.7
	Trend	1 802	1 830	1 870	1 911	1 940	1 941	1 924	1 923	1 942	0.9	0.1
16	Clay bricks (million)											
	Original	383	339	394	412	391	383	408	437	425	-2.8	8.8
	Seasonally adjusted	383	377	382	388	388	430	395	409	422	3.4	8.9
	Trend	383	381	379	388	400	407	409	411	413	0.6	3.3
17	Ready mixed concrete ('000 m³)											
	Original r	4 395	4 302	4 477	4 889	4 850	4 251	4 611	5 187	5 260	1.4	8.5
	Seasonally adjusted r	4 286	4 636	4 495	4 654	4 729	4 579	4 632	4 938	5 128	3.8	8.4
	Trend	4 328	4 484	4 606	4 647	4 637	4 637	4 714	4 889	5 092	4.2	9.8
18	Basic iron, spiegeleisen and sponge iron(b) ('000 tonnes)											
	Original	2 025	1 950	1 987	1 951	1 834	1 841	1 827	1 972	1 507	-23.6	-17.8
	Seasonally adjusted	2 035	1 994	1 987	1 898	1 862	1 864	1 825	1 937	1 525	-21.3	-18.1
	Trend	2 002	2 009	1 969	1 914	1 866	1 871	1 859	1 786	1 671	-6.5	-10.5
19	Blooms and slabs of iron or steel(b) ('000 tonnes)											
	Original	2 075	2 083	2 090	2 024	1 890	1 864	1 900	2 056	1 505	-26.8	-20.4
	Seasonally adjusted	2 093	2 113	2 098	1 969	1 910	1 889	1 906	1 999	1 523	-23.8	-20.3
	Trend	2 093	2 111	2 068	1 990	1 915	1 921	1 915	1 834	1 706	-7.0	-10.9
20	Alumina ('000 tonnes)											
	Original	3 385	3 319	3 449	3 532	3 553	r3 522	r3 601	3 707	n.y.a.	2.9	5.0
	Seasonally adjusted	3 404	3 367	3 429	3 516	3 539	r3 608	r3 579	3 659	n.y.a.	2.2	4.1
	Trend	3 377	3 395	3 435	3 497	3 552	3 583	3 611	3 637	n.y.a.	0.7	4.0
21	Zinc ('000 tonnes)											
	Original	78	74	79	81	78	79	85	90	n.y.a.	5.9	11.1
	Seasonally adjusted	78	77	78	80	78	82	84	89	n.y.a.	6.3	11.2
	Trend	75	77	78	78	79	81	84	87	n.y.a.	3.0	10.8
22	Silver (tonnes)											
	Original	51	49	69	101	100	96	113	134	n.y.a.	18.6	32.7
	Seasonally adjusted	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.y.a.	n.p.	n.p.
	Trend	51	54	71	91	101	105	112	124	n.y.a.	11.2	36.0
23	Copper ('000 tonnes)											
	Original	60	71	80	61	73	77	102	120	n.y.a.	17.6	96.7
	Seasonally adjusted	62	79	72	59	76	86	92	116	n.y.a.	26.7	97.8
	Trend	71	71	69	68	72	84	98	110	n.y.a.	12.4	60.3
24	Lead ('000 tonnes)											
	Original	46	46	43	r39	r45	53	62	65	n.y.a.	4.8	66.7
	Seasonally adjusted	46	45	40	r42	r46	52	58	70	n.y.a.	20.2	66.9
	Trend	48	44	42	42	45	52	60	66	n.y.a.	10.1	56.2
25	Tin (tonnes)											
	Original	125	175	205	150	125	170	150	140	n.y.a.	-6.7	-6.7
	Seasonally adjusted	140	167	185	162	142	161	130	152	n.y.a.	16.4	-6.4
	Trend	154	166	171	166	153	146	144	145	n.y.a.	0.2	-12.9
26	Gold (tonnes)											
	Original	92	83	89	131	106	96	86	78	n.y.a.	-9.3	-40.5
	Seasonally adjusted	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.y.a.	n.p.	n.p.
	Trend(c)	87	87	88	93	98	95	88	81	n.y.a.	-8.4	-13.5
27	Electricity (million kWh)											
	Original	43 169	43 241	44 281	46 084	43 235	45 084	45 227	46 785	44 591	-4.7	3.1
	Seasonally adjusted	44 350	44 321	44 113	44 023	44 412	46 190	45 062	44 709	45 803	2.4	3.1
	Trend	44 122	44 287	44 096	44 228	44 828	45 267	45 308	45 231	45 216	—	0.9
28	Gas (petajoules)											
	Original	151	141	174	191	157	145	182	186	159	-14.7	0.7
	Seasonally adjusted	163	166	164	165	169	170	171	161	170	5.8	0.7
	Trend	162	164	165	166	169	170	168	167	166	-0.3	-1.4

(a) Trend estimates shown may have been revised. See paragraph 15 of the Explanatory Notes.

before the final estimates for these series can be determined.

(b) Recent movements in these series have caused some uncertainty in their seasonally adjusted and trend estimates for December quarter 1999. Although these changes are expected to be sustained, a large span of data is required

(c) Due to an abnormal movement in the production of gold the trend has been modified to remove its effect. This modification for September quarter 1998 has therefore affected this item's trend estimates for the preceding and following three quarters. 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 ABS surveys of manufacturing production. Data are also obtained from surveys undertaken by the Department of Industry, Science and Resources (DISR), 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, and include estimates of animals slaughtered on farms and by country butchers and other small slaughtering establishments for human consumption. 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 of 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 of production of base metals and sawn timber are obtained from the ABARE publications *Mineral Statistics* and *Australian Forest Products Statistics*.

7 Data of production of fuels are obtained from the DISR Petroleum and Fisheries Division publication *Australian Petroleum Statistics*.

8 Data of 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-quarter of the output of the manufacturing sector. For information about general trends in the manufacturing sector, refer to the publications shown in paragraphs 10 and 11.

10 Details of the value of manufacturers' sales and stocks are published quarterly in *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).

COMPARABILITY WITH OTHER ESTIMATES *continued*

11 Details from the ABS 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 21 Zinc, 23 Copper and 25 Tin are more volatile than other series. Seasonally adjusted estimates for 12 Fuel oil and 22 Silver are not sufficiently reliable to be published, while those for 26 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 Users may wish to refer to the ABS's *Information Paper: A Guide to Interpreting Time Series — Monitoring 'Trends', an Overview* (Cat. no. 1348.0) for more detailed information on smoothing of seasonally adjusted time series data.

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 Mining Industry* (Cat. no. 8414.0) issued annually
 - *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, 1999* (Cat. no. 8225.0) released on 16 December 1999
 - *Manufacturing Industry, Australia, 1997-98* (Cat. no. 8221.0) released on 13 September 1999
 - *Manufacturing Industry, Australia, Preliminary* (Cat. no. 8201.0) issued annually
 - *Manufacturing Production, Australia: Commodities Produced, 1997-98* (Cat. no. 8365.0) released on 16 December 1999

OTHER PUBLISHED STATISTICS

- 19** Some annual manufacturing production series which mainly relate to textiles, clothing, footwear and food were last published in the June quarter 1999 and September quarter 1999 issues of this publication. These series are expected to be next published in the June quarter 2000 and September quarter 2000 issues.

UNPUBLISHED STATISTICS

- 20** More detailed and other commodity items are collected by the ABS and are available to users as a special data service, as are monthly series for a limited number of the data items contained in this publication. Items for which additional production data are available are:

audio and non-audio compact discs
 beer
 cars and station wagons
 clay bricks
 concrete bricks, blocks and pavers
 cotton broadwoven fabric
 cotton yarn
 gas
 hosiery
 knitted sweatshirts and sloppy-joes
 knitted underwear
 malt
 man-made fibre broadwoven fabric
 men's and boys' long trousers and shorts
 men's and boys' shirts
 men's complete suits and men's and boys' woven coats
 mowers
 other clothing (excluding those listed here)
 plasterboard
 Portland cement and cement clinkers
 ready mixed concrete
 roofing tiles
 space heaters
 starches, wheat gluten and glucose
 synthetic fibre yarn
 textile floor coverings
 unlaminated particle board

EXPLANATORY NOTES *continued*

UNPUBLISHED STATISTICS *continued*

water heaters
women's shirts and blouses
wool broadwoven fabric
wool yarn

For further information, please call Joanne Madden on Sydney 02 9268 4219 or by email through the Internet to jo.madden@abs.gov.au.

CURRENT PUBLICATIONS

21 Current publications produced by the ABS are listed in the *Catalogue of Publications and Products* (Cat. no. 1101.0). The ABS also issues, on Tuesdays and Fridays, a *Release Advice* (Cat. no. 1105.0) which lists publications to be released in the next few days. The Catalogue and Release Advice are available from any ABS office.

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 and stout; 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 Basic iron, spiegeleisen and sponge iron	In pigs, blocks and other primary forms; includes pig iron. This item comprises production of BHP Steel only.
19 Blooms and slabs of iron or steel	Continuous cast; includes steel in the molten state. This item comprises production of BHP Steel only.
20 Alumina	Aluminium oxide.
21 Zinc	Primary origin only.
22 Silver	Refined.
23 Copper	Primary origin only.

APPENDIX CLARIFICATION OF TERMS *continued*

- 24 **Lead** Includes lead content of lead from primary sources.
- 25 **Tin** Primary origin only.
- 26 **Gold** From primary and secondary sources.
- 27 **Electricity** Generation of electricity. Excludes purchases or transfers in of electricity.
- 28 **Gas** Gas (including natural gas) available for issue through mains, including gas production for distribution via natural gas pipelines which service a single user.