# MANUFACTURING PRODUCTION 

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## NOTES

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IN THIS ISSUE

EFFECTS OF ROUNDING

ABBREVIATIONS AND SYMBOLS
issue
September quarter 2000
December quarter 2000
March quarter 2001

## RELEASE DATE

10 November 2000
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11 May 2001

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

This issue includes those quarterly data items published in the previous issue. Additionally, summary data mainly related to yarns, textiles and footwear, are included in this issue as annual series. See also paragraph 19 of the Explanatory Notes on page 8.

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 8.

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.

| 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 |

[^0]QUARTERLY COMMODITY PRODUCTION: All series(a)

## -

$\cdots \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet$

Percentage changes between latest 1998. 1999. $\qquad$

Jun Sep Dec Mar Jun Sep Dec Mar Jun
No. Item and unit/Series Jun Sep Dec Mar Jun Sep Dec Mar Jun quarter prev. year

1 Red meat ('000 tonnes)

Original
Seasonally adjusted Trend
2 Chicken meat ('000 tonnes)
Original
Seasonally adjusted Trend
3 Cheese (tonnes)
Original r
Seasonally adjusted $r$
Trend
4 Butter (tonnes)
Original
Seasonally adjusted
Trend
5 Beer (megalitres)
Original
Seasonally adjusted Trend
6 Tobacco and cigarettes (tonnes)
Original
Seasonally adjusted Trend
7 Newsprint ('OOO tonnes)
Original
Seasonally adjusted
Trend
8 Wood pulp ('000 tonnes)
Original
Seasonally adjusted
Trend
9 Undressed sawn timber ('000 m ${ }^{3}$ ) Original Seasonally adjusted Trend
10 Hardwood woodchips ('000 tonnes) Original Seasonally adjusted Trend
11 Automotive gasoline (megalitres) Original Seasonally adjusted Trend
12 Fuel oil (megalitres) Original Seasonally adjusted Trend
13 Aviation turbine fuel (megalitres) Original Seasonally adjusted Trend
14 Automotive diesel oil (megalitres) Original Seasonally adjusted Trend

| 737 | 752 | 760 | 742 | 740 | 748 | 743 | 736 | 773 | 5.0 | 4.4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 728 | 754 | 756 | 754 | 731 | 752 | 739 | 747 | 764 | 2.3 | 4.5 |
| 737 | 749 | 753 | 750 | 744 | 741 | 744 | 751 | 756 | 0.7 | 1.6 |
| 139 | 143 | 142 | 141 | 139 | 142 | 151 | r150 | 149 | -0.7 | 7.5 |
| 141 | 142 | 139 | 143 | 141 | 141 | 148 | r152 | 152 | -0.5 | 7.4 |
| 141 | 141 | 141 | 141 | 141 | 143 | 147 | 151 | 153 | 1.7 | 8.6 |
| 56203 | 60452 | 109952 | 82893 | 66220 | 74672 | 111662 | 94819 | n.у.a. | -15.1 | 14.4 |
| 75640 | 70121 | 80491 | 80693 | 88645 | 86689 | 81852 | 92295 | n.y.a. | 12.8 | 14.4 |
| 74489 | 74547 | 77520 | 82929 | 85730 | 85958 | 86727 | 87961 | n.y.a. | 1.4 | 6.1 |
| 24632 | 35532 | 64426 | 45358 | 30353 | 38016 | 66838 | 41535 | n.у.a. | -37.9 | -8.4 |
| 40349 | 43919 | 40965 | 45056 | 49612 | 46875 | 42538 | 41294 | n.y.a. | -2.9 | -8.3 |
| 40788 | 41686 | 43257 | 45657 | 47370 | 46509 | 43786 | 41199 | n.y.a. | -5.9 | -9.8 |
| 397 | 403 | 517 | 430 | 379 | 424 | 521 | 409 | 390 | -4.8 | 2.8 |
| 438 | 433 | 438 | 436 | 419 | 461 | 439 | 412 | 431 | 4.7 | 2.9 |
| 437 | 437 | 433 | 433 | 438 | 441 | 436 | 428 | 422 | -1.4 | -3.7 |
| 5809 | 5904 | 4555 | 5198 | 5388 | 5142 | 5517 | 5169 | 4860 | -6.0 | -9.8 |
| 5666 | 5221 | 4745 | 5815 | 5239 | 4635 | 5694 | 5759 | 4717 | -18.1 | -10.0 |
| 5447 | 5287 | 5238 | 5243 | 5199 | 5247 | 5348 | 5398 | 5243 | -2.9 | 0.8 |
| 102 | 105 | 100 | 95 | 100 | 92 | 95 | 98 | 96 | -1.1 | -3.2 |
| 100 | 103 | 102 | 96 | 98 | 90 | 98 | 96 | 95 | -1.1 | -3.2 |
| 101 | 102 | 101 | 98 | 95 | 95 | 95 | 96 | 96 | 0.3 | 1.0 |
| 240 | 225 | 223 | 209 | 214 | 212 | 212 | 221 | 216 | -2.1 | 0.9 |
| 235 | 230 | 221 | 211 | 210 | 217 | 210 | 223 | 212 | -5.0 | 0.9 |
| 235 | 228 | 220 | 214 | 211 | 213 | 215 | 216 | 216 | -0.3 | 2.1 |
| 935 | 927 | 876 | 886 | 913 | r1 032 | r935 | 947 | п.у.a. | 1.3 | 6.9 |
| 921 | 870 | 907 | 930 | 898 | r968 | r969 | 994 | n.у.a. | 2.6 | 6.9 |
| 910 | 898 | 898 | 911 | 929 | 949 | 973 | 998 | n.у.a. | 2.5 | 9.5 |
| 1473 | 1233 | 1125 | 1179 | 1319 | 1500 | 1469 | 1524 | 1671 | 9.6 | 26.7 |
| 1417 | 1218 | 1158 | 1209 | 1263 | 1483 | 1513 | 1563 | 1596 | 2.1 | 26.3 |
| 1370 | 1260 | 1175 | 1196 | 1306 | 1429 | 1516 | 1567 | 1593 | 1.6 | 22.0 |
| 4795 | 4632 | 4455 | 4679 | 4939 | 4903 | 4713 | 4429 | n.у.a. | -6.0 | -5.3 |
| 4674 | 4542 | 4586 | 4718 | 4808 | 4923 | 4793 | 4466 | n.y.a. | -6.8 | -5.3 |
| 4609 | 4577 | 4611 | 4705 | 4837 | 4845 | 4742 | 4611 | n.у.a. | -2.8 | -2.0 |
| 385 | 422 | 429 | 377 | 407 | 350 | 486 | 539 | n.y.a. | 10.8 | 42.9 |
| n.p. | n.p. | n.p. | n.p. | n.p. | n.p. | n.p. | n.p. | n.у.a. | n.p. | n.p. |
| 401 | 408 | 417 | 398 | 376 | 404 | 468 | 524 | n.у.a. | 12.0 | 31.5 |
| 1235 | 1330 | 1315 | 1288 | 1286 | 1350 | 1419 | 1393 | n.у.a. | -1.9 | 8.2 |
| 1339 | 1323 | 1263 | 1246 | 1398 | 1344 | 1364 | 1346 | n.y.a. | -1.3 | 8.0 |
| 1343 | 1309 | 1271 | 1261 | 1289 | 1331 | 1354 | 1358 | n.y.a. | 0.3 | 7.7 |
| 3282 | 3059 | 3324 | 3194 | 3391 | 3287 | 3404 | 3024 | n.y.a. | -11.1 | -5.3 |
| 3246 | 3130 | 3257 | 3239 | 3353 | 3373 | 3273 | 3043 | n.y.a. | -7.0 | -6.0 |
| 3258 | 3198 | 3206 | 3277 | 3347 | 3329 | 3243 | 3139 | n.y.a. | -3.2 | -4.2 |

[^1]\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \& \& \multicolumn{2}{|l|}{1998.} \& ..... \& \multicolumn{2}{|l|}{1999.} \& \multirow[b]{2}{*}{Sep} \& \multirow[b]{2}{*}{Dec} \& \multicolumn{2}{|l|}{2000.........} \& \multicolumn{2}{|l|}{Percentage changes between latest quarter shown and....} <br>
\hline No. \& Item and unit/Series \& Jun \& Sep \& Dec \& \multicolumn{2}{|l|}{Mar Jun} \& \& \& Mar \& Jun \& prev.
quarter \&  <br>
\hline \multirow[t]{4}{*}{15} \& Portland cement ('000 tonnes) \& \& \& \& \& \& \& \& \& \& \& <br>
\hline \& Original \& 1861 \& 1956 \& 2067 \& 1737 \& 1944 \& 2005 \& 2027 \& 1835 \& 2070 \& 12.9 \& 6.5 <br>
\hline \& Seasonally adjusted \& 1835 \& 1886 \& 2005 \& 1911 \& 1915 \& 1923 \& 1950 \& 1996 \& 2039 \& 2.1 \& 6.4 <br>
\hline \& Trend \& 1870 \& 1911 \& 1940 \& 1941 \& 1920 \& 1920 \& 1956 \& 1994 \& 2031 \& 1.9 \& 5.8 <br>
\hline \multirow[t]{4}{*}{16} \& Clay bricks (million) \& \& \& \& \& \& \& \& \& \& \& <br>
\hline \& Original \& 394 \& 412 \& 391 \& 383 \& 408 \& 437 \& 425 \& 423 \& 450 \& 6.3 \& 10.4 <br>
\hline \& Seasonally adjusted \& 382 \& 388 \& 388 \& 430 \& 395 \& 409 \& 422 \& 469 \& 436 \& -7.1 \& 10.4 <br>
\hline \& Trend \& 379 \& 388 \& 400 \& 407 \& 406 \& 413 \& 429 \& 446 \& 454 \& 1.8 \& 11.6 <br>
\hline \multirow[t]{4}{*}{17} \& Ready mixed concrete ('000 m ${ }^{\text {3 }}$ ) \& \& \& \& \& \& \& \& \& \& \& <br>
\hline \& Original \& 4477 \& 4889 \& 4850 \& 4251 \& 4611 \& 5187 \& r5 217 \& r4 977 \& 5467 \& 9.8 \& 18.6 <br>
\hline \& Seasonally adjusted \& 4495 \& 4654 \& 4729 \& 4579 \& 4632 \& 4938 \& r5 086 \& r5 360 \& 5493 \& 2.5 \& 18.6 <br>
\hline \& Trend \& 4606 \& 4647 \& 4637 \& 4639 \& 4695 \& 4875 \& 5116 \& 5325 \& 5489 \& 3.1 \& 16.9 <br>
\hline \multirow[t]{4}{*}{18} \& Basic iron, spiegeleisen and sponge iron ('000 tonnes) \& \& \& \& \& \& \& \& \& \& \& <br>
\hline \& Original \& 1987 \& 1951 \& 1834 \& 1841 \& 1827 \& 1972 \& 1507 \& 1503 \& 1507 \& 0.2 \& -17.5 <br>
\hline \& Seasonally adjusted \& 1987 \& 1898 \& 1862 \& 1864 \& 1825 \& 1937 \& 1525 \& 1515 \& 1504 \& -0.7 \& -17.6 <br>
\hline \& Trend(b) \& 1969 \& 1913 \& 1866 \& 1850 \& 1868 \& 1889 \& 1532 \& 1520 \& 1501 \& -1.3 \& -19.6 <br>
\hline \multirow[t]{4}{*}{19} \& Blooms and slabs of iron or steel ('000 tonnes) \& \& \& \& \& \& \& \& \& \& \& <br>
\hline \& Original \& 2090 \& 2024 \& 1890 \& 1864 \& 1900 \& 2056 \& 1505 \& 1577 \& 1604 \& 1.7 \& -15.6 <br>
\hline \& Seasonally adjusted \& 2098 \& 1969 \& 1910 \& 1889 \& 1906 \& 1999 \& 1523 \& 1598 \& 1608 \& 0.7 \& -15.6 <br>
\hline \& Trend(b) \& 2068 \& 1990 \& 1915 \& 1896 \& 1919 \& 1953 \& 1558 \& 1582 \& 1602 \& 1.3 \& -16.5 <br>
\hline \multirow[t]{4}{*}{20} \& Alumina ('000 tonnes) \& \& \& \& \& \& \& \& \& \& \& <br>
\hline \& Original \& 3449 \& 3532 \& 3553 \& 3522 \& 3601 \& 3707 \& 3702 \& 3710 \& n.y.a. \& 0.2 \& 5.3 <br>
\hline \& Seasonally adjusted \& 3429 \& 3516 \& 3539 \& 3608 \& 3579 \& 3659 \& 3717 \& 3753 \& n.y.a. \& 1.0 \& 4.0 <br>
\hline \& Trend \& 3435 \& 3497 \& 3552 \& 3581 \& 3610 \& 3655 \& 3707 \& 3753 \& n.y.a. \& 1.2 \& 4.8 <br>
\hline \multirow[t]{4}{*}{21} \& Zinc ('000 tonnes) \& \& \& \& \& \& \& \& \& \& \& <br>
\hline \& Original \& 79 \& 81 \& 78 \& 79 \& 85 \& 90 \& r90 \& 112 \& n.y.a. \& 24.4 \& 41.8 <br>
\hline \& Seasonally adjusted \& 78 \& 80 \& 78 \& 82 \& 84 \& 89 \& r90 \& 116 \& n.y.a. \& 29.4 \& 41.8 <br>
\hline \& Trend \& 78 \& 78 \& 79 \& 81 \& 83 \& 88 \& 97 \& 105 \& n.y.a. \& 8.4 \& 29.5 <br>
\hline \multirow[t]{4}{*}{22} \& Silver (tonnes) \& \& \& \& \& \& \& \& \& \& \& <br>
\hline \& Original \& 69 \& 101 \& 100 \& 96 \& 113 \& 134 \& 129 \& 131 \& n.y.a. \& 1.6 \& 36.5 <br>
\hline \& 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. <br>
\hline \& Trend \& 71 \& 91 \& 101 \& 105 \& 112 \& 125 \& 136 \& 141 \& n.y.a. \& 4.1 \& 35.0 <br>
\hline \multirow[t]{4}{*}{23} \& Copper ('000 tonnes) \& \& \& \& \& \& \& \& \& \& \& <br>
\hline \& Original \& 80 \& 61 \& 73 \& 77 \& 102 \& r121 \& 119 \& 116 \& n.y.a. \& -2.5 \& 50.6 <br>
\hline \& Seasonally adjusted \& 72 \& 59 \& 76 \& 86 \& 92 \& r117 \& 124 \& 129 \& n.y.a. \& 4.6 \& 50.7 <br>
\hline \& Trend \& 69 \& 68 \& 72 \& 84 \& 98 \& 112 \& 123 \& 132 \& n.y.a. \& 6.9 \& 57.7 <br>
\hline \multirow[t]{4}{*}{24} \& Lead ('000 tonnes) \& \& \& \& \& \& \& \& \& \& \& <br>
\hline \& Original \& 43 \& 39 \& 45 \& 53 \& 62 \& 65 \& 60 \& 55 \& n.y.a. \& -8.3 \& 3.8 <br>
\hline \& Seasonally adjusted \& 40 \& 42 \& 46 \& 52 \& 58 \& 70 \& 61 \& 54 \& n.y.a. \& -11.6 \& 3.6 <br>
\hline \& Trend \& 42 \& 42 \& 45 \& 53 \& 61 \& 64 \& 62 \& 58 \& n.y.a. \& -6.5 \& 10.0 <br>
\hline \multirow[t]{4}{*}{25} \& Tin (tonnes) \& \& \& \& \& \& \& \& \& \& \& <br>
\hline \& Original \& 205 \& 150 \& 125 \& 170 \& 150 \& 140 \& 125 \& 155 \& n.y.a. \& 24.0 \& -8.8 <br>
\hline \& Seasonally adjusted \& 185 \& 162 \& 142 \& 161 \& 130 \& 152 \& 142 \& 146 \& n.y.a. \& 2.2 \& -9.6 <br>
\hline \& Trend \& 171 \& 166 \& 153 \& 145 \& 144 \& 144 \& 144 \& 146 \& n.y.a. \& 1.4 \& 0.6 <br>
\hline \multirow[t]{3}{*}{26} \& Gold (tonnes) \& \& \& \& \& \& \& \& \& \& \& <br>
\hline \& Original \& 89 \& 131 \& 106 \& 96 \& 86 \& 78 \& 115 \& 88 \& n.y.a. \& -23.5 \& -8.3 <br>
\hline \& Seasonally adjusted Trend(c) \& n.p.
88 \& $$
\begin{array}{r}
\text { n.p. } \\
93
\end{array}
$$ \& $$
\begin{array}{r}
\text { n.p. } \\
98
\end{array}
$$ \& $$
\begin{gathered}
\text { n.p. } \\
94
\end{gathered}
$$ \& n.p.
89 \& n.p.
89 \& n.p.
92 \& n.p.

95 \& n.y.а. \& n.p.
2.4 \& n.p. <br>
\hline \multirow[t]{4}{*}{27} \& Electricity (million kWh) \& 88 \& 93 \& 98 \& 94 \& 89 \& 89 \& 92 \& 95 \& n.y.a. \& 2.4 \& 0.5 <br>
\hline \& Original \& 44281 \& 46084 \& 43235 \& 45084 \& 45227 \& 46785 \& 44591 \& 46040 \& 47374 \& 2.9 \& 4.7 <br>
\hline \& Seasonally adjusted \& 44113 \& 44023 \& 44412 \& 46190 \& 45062 \& 44709 \& 45803 \& 47159 \& 47204 \& 0.1 \& 4.8 <br>
\hline \& Trend \& 44096 \& 44228 \& 44828 \& 45267 \& 45233 \& 45236 \& 45812 \& 46716 \& 47508 \& 1.7 \& 5.0 <br>
\hline \multirow[t]{4}{*}{28} \& Gas (petajoules)(d) \& \& \& \& \& \& \& \& \& \& \& <br>
\hline \& Original \& 174 \& 191 \& 157 \& 145 \& 182 \& r198 \& r165 \& r164 \& 199 \& 21.2 \& 9.3 <br>
\hline \& Seasonally adjusted \& 164 \& 165 \& 169 \& 170 \& 171 \& r171 \& r178 \& r193 \& 187 \& -2.7 \& 9.3 <br>
\hline \& Trend \& 165 \& 166 \& 168 \& 170 \& 170 \& 174 \& 180 \& 186 \& 192 \& 2.8 \& 12.4 <br>
\hline
\end{tabular}

(a) Trend estimates shown may have been revised. See paragraph 15 of the Explanatory Notes.
(b) Due to an abnormal movement in the original series for December quarter 1999, the trend has been modified to remove the effect. See also paragraphs 14-16 of the Explanatory Notes.
(c) Due to abnormal movements in September quarter 1998 and December quarter 1999 in the production of gold, the trend has been modified to remove their effect. See also paragraphs 14-16 of the Explanatory Notes.
$\qquad$
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ANNUAL COMMODITY PRODUCTION(a)

-     -         - 

Percentage
change
between
latest year
shown and

| No. | Item and unit | 1994-95 | 1995-96 | 1996-97 | 1997-98 | 1998-99 | 1999-2000 | prev. year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Yarns and textiles |  |  |  |  |  |  |  |  |
| A1 | Scoured and carbonised wool (tonnes) | 165247 | 158268 | 165268 | 165104 | 129753 | 107608 | -17.1 |
| A2 | Wool and man-made fibre tops (tonnes) | n.p. | 54282 | 57645 | 60084 | 53162 | 55335 | 4.1 |
| A3 | Wool yarn (tonnes) | 23093 | 20073 | 18285 | 18077 | 17668 | 19020 | 7.7 |
| A4 | Cotton yarn (tonnes) | 37643 | 36955 | 39853 | 36897 | 36814 | 33368 | -9.4 |
| A5 | Synthetic fibre yarn (tonnes) | 11076 | 10020 | 12547 | 12913 | 10311 | 11148 | 8.1 |
| A6 | Wool broadwoven fabric ('000 m²) | 8189 | 6523 | 6300 | 6636 | 6254 | 5427 | -13.2 |
| A7 | Cotton broadwoven fabric ('000 m²) | 51865 | 63886 | 60617 | 62088 | 55824 | 47230 | -15.4 |
| A8 | Man-made fibre broadwoven fabric ('000 m²) | 185171 | 149344 | 142194 | 135768 | 136886 | 130461 | -4.1 |
| A9 | Knitted or crocheted fabrics (tonnes) | n.p. | 18653 | 16117 | 13019 | (b)14 004 | 14135 | 0.9 |
|  | Textile floor coverings- |  |  |  |  |  |  |  |
| A10 | Of tufted wool or fine animal hair ('000 m²) | 12916 | 10880 | 11610 | 11709 | 13286 | 14894 | 12.1 |
| A11 | Of other tufted textile material ('000 m²) | 31606 | 29185 | 30483 | 31241 | r30 261 | 29993 | -0.9 |
| A12 | Other ('000 m²) | 2736 | 2159 | 1888 | 1544 | 1595 | 1515 | -5.0 |
| Footwear |  |  |  |  |  |  |  |  |
| A13 | Men's ('000 pairs) | 5167 | 5361 | 4687 | 4558 | 4254 | 3722 | -12.5 |
| A14 | Women's ('000 pairs) | 7992 | 7682 | 7197 | 6947 | 6249 | 5737 | -8.2 |
| A15 | Children's ('000 pairs) | 1556 | 1314 | 1272 | 862 | 735 | 169 | -77.0 |
| Other |  |  |  |  |  |  |  |  |
| A16 | Paperboard containers ('000 tonnes) | 1072 | 1091 | 1138 | 1177 | 1285 | p1 338 | p4.1 |
| A17 | Superphosphates ('000 tonnes) | 1590 | 1697 | 1511 | 1819 | 1464 | 1429 | -2.4 |

(a) Refer to the Clarification of terms from page 10 for important definitional information. Clothing, hosiery and food items A18-A61 are to be included in Table 2 of the September quarter 2000 issue of this publication.
(b) Commencing with 1998-99, there has been an improvement in coverage for knitted or crocheted fabrics. For 1998-99, this improved coverage contributed approximately a $6 \%$ increase in the production level for Australia.

## INTRODUCTION

1 This publication presents quarterly and annual 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, 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, 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 Products Statistics.

7 Data on the production of fuels are obtained from the DISR Petroleum and Fisheries 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-quarter 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.

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).

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 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.

18 Other ABS publications which may be of interest are:

- Australian Mining Industry (Cat. no. 8414.0) issued biennially
- 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, 1998-99 (Cat. no. 8221.0) to be released on 22 September 2000
- Manufacturing Industry, Australia, Preliminary, 1998-99 (Cat. no. 8201.0) released on 30 March 2000
- Manufacturing Production, Australia: Commodities Produced, 1997-98 (Cat. no. 8365.0) released on 16 December 1999
- Mining Operations (Cat. no. 8415.0) issued biennially

19 Some annual manufacturing production series which mainly relate to textiles, clothing, footwear and food are published in the June and September quarter issues of this publication. Those annual series not included in this issue are to be published in the September quarter 2000 issue.

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

## EXPLANATORXNOTESccinct continued

UNPUBLISHED STATISTICS continued
textile floor coverings
unlaminated particle board
water heaters
women's shirts and blouses
wool broadwoven fabric
wool yarn
For further information, please contact Joanne Madden on Sydney 0292684219 or by email through the Internet to jo.madden@abs.gov.au.

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21 Current publications and other products 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 products to be released in the next few days. The Catalogue and Release Advice are available from any ABS office or by subscription, and can also be accessed through the ABS web site www.abs.gov.au.


## APPENDIX CLARIFICATION OF TERMS continued



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[^2]
[^0]:    T. J. Skinner

    Acting Australian Statistician

[^1]:    (a) Trend estimates shown may have been revised. See paragraph 15 of the Explanatory Notes.

[^2]:    © Commonwealth of Australia 2000

