Statistics South Africa

# Manufacturing: production and sales 

December 2002

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This data in this statistical release adheres to the Special Data Dissemination Standard (SDDS) of the International Monetary Fund (IMF), which sets out standards on coverage, periodicity and timeliness of data; access by the public; integrity; and quality of the disseminated data.

Embargo: 13:00 Date: 11 February 2003

Key figures as at the end of December 2002

| Actual <br> estimates | December <br> 2002 | \% change <br> between <br> December 2001 <br> and <br> December 2002 | \% change <br> between <br> October 2001 to <br> December 2001 <br> and <br> October 2002 to <br> December 2002 | \% change <br> between <br> January 2001 to <br> December 2001 <br> and |
| :--- | :---: | :---: | :---: | :---: |
| Physical volume <br> January 2002 to <br> December 2002 |  |  |  |  |
| manufacturing <br> production index <br> (2000=100) | 92,7 | $+1,5$ | $+3,0$ | $+5,4$ |
| Total value of <br> of manufactured <br> products <br> (R million) | 47950,8 | $+13,6$ | $+18,1$ | $+22,2$ |


| Seasonally <br> adjusted <br> estimates | December <br> $\mathbf{2 0 0 2}$ | \% change <br> between <br> November 2002 <br> and <br> December 2002 | \% change <br> between <br> July 2002 to <br> September 2002 <br> and <br> October 2002 to <br> December 2002 |
| :--- | :---: | :---: | :---: |
| Physical volume of <br> manufacturing <br> production index <br> $(2000=100)$ | 107,5 | $-1,0$ |  |
| Total value of | $-1,9$ | $-0,9$ |  |
| of manufactured <br> products <br> (R million) | 52061,0 | $-0,3$ |  |

## Key findings for the year 2002

## MANUFACTURING PRODUCTION INCREASES

Manufacturing production for the year 2002 reflected an increase of 5,4\% compared with the year 2001. Higher production was reported by 23 of the 27 manufacturing divisions.

The major contributor to the annual increase of $5,4 \%$ was the fabricated metal products division (contributing $+0,8$ of percentage points to total manufacturing production), followed by the machinery and equipment ( $+0,6$ of a percentage point), basic chemicals $(+0,5$ of a percentage point), basic iron and steel products ( $+0,5$ of a percentage point), other chemical products ( $+0,4$ of a percentage point) and plastic products ( $+0,4$ of a percentage point) divisions.

## SALES OF MANUFACTURED PRODUCTS INCREASE

The total value of sales of manufactured products at current prices for the year 2002 reflected an increase of $\mathbf{2 2 , 2 \%}(+$ R111 441 million) compared with sales for the year 2001. Increases in manufacturing sales were reported by all 27 manufacturing divisions.

The largest increases were reported by the basic iron and steel products division ( $+36,5 \%$ or + R12 981 million), coke and refined petroleum products $(+24,0 \%$ or + R8 799 million), basic
chemicals $\quad(+24,0 \%$ or + R6 053 million), machinery and equipment ( $+23,9 \%$ or + R5 211 million), motor vehicles, trailers and parts and accessories ( $+23,7 \%$ or + R15 412 million), fabricated metal products ( $+23,4 \%$ or + R6 469 million) and food and food products ( $+22,5 \%$ or +R15 209 million) divisions.

## Key findings as at the end of December 2002

## MANUFACTURING PRODUCTION DECREASES

Manufacturing production for the fourth quarter of 2002 reflected a decrease of 0,9\% after seasonal adjustment compared with the third quarter of 2002. Lower production was reported by 15 of the 27 manufacturing divisions.

The major contributor to the decrease of $0,9 \%$ after seasonal adjustment in the total manufacturing production was the paper and paper products division (contributing $-0,5$ of a percentage point to total manufacturing production), followed by the basic chemicals ( $-0,3$ of a percentage point), textile, plastic products, fabricated metal products, machinery and equipment and motor vehicles, trailers, parts and accessories (each contributing $-0,1$ of a percentage point) divisions (cf. table A).

Figure 1 - Index of the physical volume of manufacturing production


Source: Stats SA $\qquad$ Seasonally adjusted
Trend cycle

Table A - Contribution of the production by the different manufacturing divisions to the total manufacturing production (Base 2000=100)

| Manufacturing Divisions | \|Percentage contribution to the total manufacturing production in the base year 2000 (Weights) | Average <br> seasonally <br> adjusted <br> production <br> index for <br> the three <br> months <br> October <br> to <br> to <br> December 2002 | Quarterly percentage change (October 2002 to December 2002 compared with the preceding three months) | ```\|Contribution (percentage points) to the seaso- nally adjus- ted quarterly percentage change in total manu- facturing |production 1/``` |
| :---: | :---: | :---: | :---: | :---: |
| Food and food products | 10,7 | 100,6 | +0, 3 | +0, 0 |
| Beverages | 4,6 | 111, 9 | -0, 9 | -0, 0 |
| Total textiles | 2,9 | 110,3 | -2,0 | -0,1 |
| Total wearing apparel | 3,6 | 102,5 | +0,4 | +0, 0 |
| Tanning and dressing of leather | 0,4 | 94,9 | -8,7 | -0,0 |
| Footwear | 0,9 | 88,1 | +4,5 | +0, 0 |
| Wood and products of wood | 1,9 | 115,4 | +5,4 | +0, 1 |
| Paper and paper products | 5,3 | 97, 6 | -8,5 | -0,5 |
| Total publishing and printing | 4,1 | 93,5 | -0,2 | -0,0 |
| Coke and refined petroleum products | 4,2 | 102,0 | +1, 3 | +0, 1 |
| Basic chemicals | 4,5 | 112, 8 | -6,9 | -0, 3 |
| Other chemical products | 6,2 | 110,1 | -0,1 | -0,0 |
| Rubber products | 1,4 | 109,8 | +2,8 | +0, 0 |
| Plastic products | 3,1 | 122, 2 | -3, 5 | -0, 1 |
| Glass and glass products | 1,0 | 115, 6 | -3, 7 | -0,0 |
| Other non-metallic mineral products | 3,5 | 108,1 | +1,4 | +0, 1 |
| Basic iron and steel products | 7,6 | 112,2 | -0,2 | -0, 0 |
| Basic precious and non-ferrous metal products | 3,2 | 100,9 | -0,3 | -0,0 |
| Fabricated metal products | 7,0 | 121,5 | -1,2 | -0,1 |
| Total machinery and equipment | 5,8 | 123, 8 | -2, 3 | -0,1 |
| Electrical machinery, apparatus | 3,4 | 105, 6 | +0, 8 | +0,0 |
| Radio, television and communication apparatus | 1,0 | 82,0 | +9,9 | +0, 1 |
| Professional equipment | 0,5 | 122,3 | +1, 3 | +0, 0 |
| Motor vehicles; trailers; parts and accessories | 8,0 | 109,5 | -1,4 | -0,1 |
| Other transport equipment | 1,0 | 124,2 | +3, 0 | +0, 0 |
| Furniture | 1,6 | 113,5 | +6, 3 | +0, 1 |
| Other manufacturing divisions | 2,6 | 102,2 | -1,4 | -0,0 |
| Total | 100,0 | 108,6 | -0, 9 | -0,9 |

1/ The contribution is calculated by multiplying the quarterly percentage change of each manufacturing division with its corresponding weight in the base year, divided by 100.

Following international practice of re-basing indices every five years, the base year of the index of physical volume of manufacturing production has been changed from 1995=100 to $2000=100$ with effect from the December 2002 statistical release P3041.2.

The base period is the reference point of an index and is usually set at 100 . Base periods have to be chosen carefully because different results can be obtained with different base periods. The following are important criteria for selecting base periods:

- The base period must be recent to ensure that as many as possible of the components of the index are included in both the base period and the current period. The more recent the base period, the more comparable the current indices are with those of the base period.
- Due to a large number of indices being published regularly, it is useful if they all have a common base period. The internationally accepted current base period is 2000.

To compare different indices or to compare the movements in a specific index over a period, it often becomes necessary to shift the base period of an index.

Each index was transformed to the new base period by dividing each monthly index (base 1995=100) from January 1990, by the average annual index for the year 2000 and multiplying the result by 100 .

The re-basing of indices was done on all the major groups of manufacturing, retaining the current weights based on the 1996 Census of Manufacturing. The average indices of the major groups for the year 2000 (cf. table E) were equated to 100 . The obtained conversion factor of each major group was implemented to re-base the monthly indices since January 1990 per major group.

## SALES OF MANUFACTURED PRODUCTS DECREASE

The total value of sales of manufactured products at current prices for the fourth quarter of 2002 reflected a decrease of $0,3 \%(+R 410$ million) after seasonal adjustment compared with the third quarter of 2002. Lower manufacturing sales were reported by 9 of the 27 manufacturing divisions during this period. However, the actual total value of sales of manufactured products at current prices for the fourth quarter of 2002 reflected an increase of 18,1\% (+R25 409 million) compared with the fourth quarter of 2001. Higher manufacturing sales were reported by all 27 manufacturing divisions during this period.

The decrease of $0,3 \%$ after seasonal adjustment in the total value of sales of manufactured products at current prices for the fourth quarter of 2002 compared with the third quarter 2002 was mainly due to large decreases reported by the basic chemicals ( $-7,7 \%$ or -R636 million), basic iron and steel products ( $-6,9 \%$ or -R928 million), paper and paper products ( $-5,9 \%$ or -R 466 million) and coke and refined petroleum products ( $-4,8 \%$ or -R576 million) divisions (cf. table B).

Table B - Contribution of the manufacturing divisions to the total value of seasonally adjusted sales of manufactured products

| Manufacturing Divisions |  | Percentage  <br> chamge  <br> between  <br> July 2002 <br> to  <br> September 2002 <br> and  <br> October 2002  <br> to  <br> December 2002  | $\|$Difference in <br> seasonally <br> adjusted <br> sales of <br> manufacturing <br> divisions <br> between <br> July 2002 <br> to <br> September <br> and <br> $\|$October <br> to <br> December <br> R'000 <br> 2002 |
| :---: | :---: | :---: | :---: |
| Food and food products | 21665605 | +1, 6 | 342739 |
| Beverages | 6996634 | +0, 8 | 58889 |
| Total textiles | 3489571 | +0, 9 | 30968 |
| Total Wearing apparel | 3352917 | +7, 3 | 228396 |
| Tanning and dressing of leather | 812895 | -9,8 | 87935 |
| Footwear | 613381 | +9,4 | 52453 |
| Wood and products of wood | 3375733 | +5,4 | 174057 |
| Paper and paper products | 7363266 | -5,9 | 465521 |
| Total publishing and printing | 3591402 | +0, 7 | 25442 |
| Coke and refined petroleum products | 11475335 | -4,8 | 576093 |
| Basic chemicals | 7615969 | -7, 7 | 636445 |
| Other chemical products | 9015119 | -0, 9 | 79730 |
| Rubber products | 1828260 | +8, 6 | 145170 |
| Plastic products | 3982969 | +2, 3 | 89651 |
| Glass and glass products Other non-metallic mineral | 828442 | -3,4 | 29564 |
| products | 3852064 | +2, 3 | 86062 |
| Basic iron and steel products | 12579782 | -6,9 | 927755 |
| Basic precious and non-ferrous metal products | 5652403 | +1,8 | 102086 |
| Fabricated metal products | 9075641 | +2, 7 | 242602 |
| Total machinery and equipment | 7172961 | +6,5 | 437633 |
| Electrical machinery, apparatus | 4447704 | +3,8 | 162621 |
| Radio, television and communication apparatus | 1313994 | +21,5 | 232576 |
| Professional equipment | 528166 | +2,5 | 12904 |
| Motor vehicles; trailers; parts and accessories | 20616641 | -0,8 | 172914 |
| Other transport equipment | 1200841 | +10, 0 | 108995 |
| Furniture | 1923108 | +5, 8 | 106017 |
| Other manufacturing industries | 4533576 | -1,6 | 73664 |
| Total | 158904380 | -0, 3 | 410358 |

The major contributors to the increase of $18,1 \%$ in the actual value of sales of manufactured products at current prices for the fourth quarter of 2002 compared with the fourth quarter of 2001 were the food and food products ( $+2,9$ percentage points or R4 082 million), basic iron and steel products ( $+1,9$ percentage point or + R2 707 million), coke and refined petroleum product $(+1,6$ percentage points or + R2 282 million), fabricated metal products $(+1,3$ percentage points or + R1 839 million), motor vehicles, trailers, parts and accessories ( $+1,3$ percentage points or + R1 898 million), machinery and equipment ( $+0,9$ of a percentage point or + R1 210 million), other chemical products $(+0,8$ of a percentage point or + R1 157 million) and basic chemicals ( $+0,7$ of a percentage point or + R1 026 million) divisions (cf. table C).

Table C - Contribution of the manufacturing divisions to total value of sales of manufactured products

| Manufacturing | Percentage <br> contribution <br> to total value <br> of sales of <br> manufactured <br> products <br> October 2001 <br> to <br> December 2001 | Percentage  <br> change  <br> between  <br> October 2001 <br> to  <br> December 2001 <br> and  <br> October 2002 <br> to  <br> December 2002$\|$ | $\mid$ Contribution <br> (percentage <br> points) to <br> the percen- <br> tage change <br> in the total <br> value of <br> sales of <br> manufactured <br> products $1 /$$\|$ | Difference  <br> in sales of  <br> manufacturing  <br> divisions  <br> between  <br> October 2001 <br> to  <br> December 2001 <br> and  <br> October 2002 <br> to  <br> December 2002 <br> R'000  |
| :---: | :---: | :---: | :---: | :---: |
| Food and food products | 13, 5 | 21, 5 | 2,9 | 4082195 |
| Beverages | 5,2 | 13, 8 | 0,7 | 1014027 |
| Total textiles | 2,1 | 18,4 | 0,4 | 535953 |
| Total Wearing apparel | 2,2 | 16,4 | 0,4 | 509896 |
| Tanning and dressing of leather | 0,5 | 19,1 | 0,1 | 134638 |
| Footwear | 0,4 | 21, 4 | 0,1 | 114524 |
| Wood and products of wood | 2,1 | 19,2 | 0,4 | 555037 |
| Paper and paper products | 4,7 | 12,7 | 0,6 | 845014 |
| Total publishing and printing | 2,4 | 13,2 | 0, 3 | 454652 |
| Coke and refined petroleum products | 6,9 | 23,7 | 1,6 | 2282329 |
| Basic chemicals | 5,2 | 14,1 | 0,7 | 1026486 |
| Other chemical products | 6,0 | 13,7 | 0,8 | 1156965 |
| Rubber products | 1,0 | 30, 3 | 0, 3 | 418302 |
| Plastic products | 2,4 | 21,5 | 0,5 | 734252 |
| Glass and glass products | 0,6 | 8,4 | 0,1 | 72878 |
| Other non-metallic mineral products | 2,3 | 18,9 | 0,4 | 606796 |
| Basic iron and steel products | 7,3 | 26,5 | 1,9 | 2707482 |
| Basic precious and non-ferrous metal products | 3,8 | 15,7 | 0,6 | 828965 |
| Fabricated metal products | 5,2 | 25,1 | 1,3 | 1838650 |
| Total machinery and equipment | 4,3 | 19,9 | 0,9 | 1209576 |
| Electrical machinery, apparatus Radio, television and | 2,6 | 23, 0 | 0,6 | 835220 |
| communication apparatus | 0,7 | 31,3 | 0,2 | 286179 |
| Professional equipment | 0, 3 | 14,4 | 0, 0 | 65258 |
| Motor vehicles; trailers; parts and accessories | 13,3 | 10,1 | 1,3 | 1897513 |
| Other transport equipment | 0,6 | 31, 5 | 0,2 | 267246 |
| Furniture | 1,3 | 20,6 | 0, 3 | 378801 |
| Other manufacturing divisions | 3,0 | 13, 0 | 0,4 | 549717 |
| Total | 100,0 | 18, 1 | 18,1 | 25408551 |

1/ The contribution (percentage points) is calculated by multiplying the percentage change of each manufacturing division with the percentage contribution of the same division during corresponding period, divided by 100.

Figure 2 - Total value of sales of manufactured products at current prices


## Contents

Page
Notes ..... 9
Tables
Table 1 Indices of the physical volume of manufacturing production: Total 10
Table 2 Indices of the physical volume of manufacturing production according to manufacturing divisions and major groups ..... 11
Table 3 Value of sales of the manufacturing industry: Total (R'000) ..... 12
Table 4 Value of sales of manufactured products according to manufacturing divisions and major groups (R'000) ..... 13
Table 5 Value of unfilled orders according to selected manufacturing subgroups (R'000) ..... 14
Additional information
Explanatory notes ..... 15
Technical notes ..... 19
Glossary20
For more information ..... 23

## Notes

Forthcoming issues

Purpose of the survey

## Issue

January 2003
February 2003
March 2003
April 2003
May 2003
June 2003

Expected release date
11 March 2003
8 April 2003
13 May 2003
10 June 2003
8 July 2003
12 August 2003

The monthly Manufacturing Production and Sales Survey is a country-wide sample survey covering a sample of private establishments, public corporations and government establishments operating in the manufacturing industry in the South African economy. The results of this survey are used to calculate physical volume of manufacturing production indices in order to estimate the Gross Domestic Product (GDP) to monitor and develop government policy.

Table 1 - Indices of the physical volume of manufacturing production: Total


[^0]1/ Preliminary

Table 2 - Indices of the physical volume of manufacturing production according to manufacturing divisions and major groups

Base $2000=100$

| Manufacturing divisions and major groups | Weights | $\left\lvert\, \begin{aligned} & \text { Year } \\ & 2002 \end{aligned}\right.$ | Actual indices |  |  | Seasonally adjusted indices |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | cembe | Novembe | December1/ | December | Novem | ember |
|  |  |  | 2001 | 2002 |  | 2001 | 2002 |  |
| Food and food products | 10, 7 | 101, 6 | 102, 4 | 110, 7 | 101, 3 | 102, 0 | 99, 8 | 100,6 |
| Meat, fish, fruit etc. | 2,8 | 113, 1 | 109, 7 | 121, 6 | 115,1 | 108, 0 | 115,8 | 113, 0 |
| Dairy products | 1,4 | 100,7 | 107, 4 | 107, 4 | 112,1 | 97, 8 | 96,4 | 102,2 |
| Grain mill products | 2,1 | 113,7 | 108,8 | 116,9 | 109,9 | 110, 3 | 111,6 | 111,9 |
| Other food products | 4,4 | 88,7 | 93, 1 | 101, 7 | 85,0 | 95,5 | 85,1 | 86,7 |
| Beverages | 4,6 | 112,1 | 145,5 | 136,0 | 137,7 | 112,7 | 117,2 | 107, 3 |
| Total textiles | 2,9 | 111, 6 | 70,9 | 132,5 | 70,0 | 108,8 | 113,4 | 107, 6 |
| Textiles | 1,7 | 110, 1 | 67,2 | 128, 9 | 66,6 | 108, 4 | 114,3 | 108,1 |
| Other textile products | 1,2 | 113,7 | 76,1 | 137, 5 | 74,9 | 109, 4 | 112,2 | 106,8 |
| Total wearing apparel | 3, 6 | 101, 7 | 73, 9 | 125,6 | 76,6 | 98,8 | 102,1 | 102,4 |
| Knitted, crocheted articles | 0,6 | 110,6 | 70,6 | 131, 8 | 78,2 | 103,7 | 114,9 | 115,1 |
| Wearing apparel | 3, 0 | 99, 9 | 74, 6 | 124, 3 | 76, 3 | 97,8 | 99,5 | 99,9 |
| Tanning and dressing of leather | 0,4 | 96,9 | 70,9 | 106,0 | 71,9 | 91, 3 | 94,7 | 91,8 |
| Footwear | 0,9 | 82,0 | 63, 3 | 102, 0 | 68,2 | 84,1 | 85,7 | 89,8 |
| Wood and products of wood | 1,9 | 110,6 | 83, 9 | 132,5 | 86,2 | 115, 0 | 115,4 | 118, 6 |
| Sawmilling and planing of wood | 0, 8 | 108,4 | 68,4 | 118,6 | 81, 9 | 96,7 | 109,3 | 116,0 |
| Products of wood | 1,2 | 112,1 | 94, 0 | 141, 7 | 89,0 | 127,1 | 119,4 | 120, 3 |
| Paper and paper products | 5,3 | 103, 1 | 90, 4 | 105,8 | 87,6 | 97, 5 | 100, 1 | 94,7 |
| Total publishing and printing | 4,1 | 94,8 | 77,6 | 108,8 | 80,7 | 88, 3 | 93, 4 | 91,6 |
| Publishing | 1,5 | 91, 1 | 76,0 | 104,7 | 87, 7 | 78,6 | 93,1 | 90,9 |
| Printing, recorded media | 2,6 | 96,9 | 78,5 | 111, 1 | 76,8 | 93, 8 | 93, 6 | 92,0 |
| Coke and refined petroleum products | 4,2 | 102,5 | 114,6 | 97,8 | 105,6 | 109,3 | 95,8 | 100,3 |
| Basic chemicals | 4,5 | 119, 3 | 102,1 | 126,5 | 110,3 | 106,7 | 109,5 | 115,3 |
| Other chemical products | 6,2 | 111, 5 | 92, 3 | 124, 2 | 95, 0 | 108, 4 | 109,1 | 111,2 |
| Rubber products | 1,4 | 109,9 | 59,7 | 128,2 | 60,7 | 97, 4 | 114,8 | 100,1 |
| Plastic products | 3,1 | 123,9 | 93, 2 | 143, 7 | 92, 3 | 117,2 | 123,5 | 115,4 |
| Glass and glass products | 1,0 | 118,9 | 109, 3 | 131, 4 | 98,4 | 122,9 | 112,7 | 111, 6 |
| Other non-metallic mineral products | 3,5 | 104,2 | 70,4 | 117,0 | 86,0 | 91,2 | 105,6 | 111,1 |
| Basic iron and steel products | 7,6 | 106,0 | 108, 9 | 115, 3 | 103,7 | 123, 7 | 110, 9 | 117,4 |
| Basic precious and non-ferrous metal products | 3,2 | 101, 1 | 96,6 | 108,5 | 89,0 | 98,9 | 106, 3 | 91, 3 |
| Fabricated metal products | 7,0 | 119,4 | 77, 2 | 135, 1 | 92, 3 | 99,9 | 119, 3 | 119,5 |
| Structural metal products | 2,4 | 116,9 | 79, 0 | 130, 5 | 98, 2 | 92,5 | 112,2 | 114,7 |
| Other fabricated metal product | 4,6 | 120,7 | 76,3 | 137,4 | 89,2 | 103,7 | 123,0 | 122,0 |
| Total machinery and equipment | 5,8 | 121, 6 | 97, 7 | 132, 8 | 107,7 | 111, 7 | 129,0 | 122, 3 |
| General purpose machinery | 2,5 | 109, 2 | 95,2 | 117,2 | 92, 3 | 112,6 | 122,7 | 108, 3 |
| Special purpose machinery | 2,9 | 134, 1 | 103,6 | 142,0 | 124, 6 | 112,7 | 134,0 | 135,5 |
| Household appliances | 0,4 | 109,4 | 69,6 | 164,2 | 81, 5 | 97, 6 | 132,4 | 114,3 |
| Electrical machinery, apparatus | 3,4 | 103,8 | 81,9 | 119,3 | 86,5 | 100, 7 | 108,9 | 107,0 |
| Radio, television and communication apparatus | 1,0 | 73,9 | 59,9 | 75,8 | 75,6 | 69, 1 | 78,5 | 86,4 |
| Professional equipment | 0,5 | 120,8 | 99,5 | 113, 8 | 104,6 | 120,5 | 111,4 | 126,1 |
| Motor vehicles; trailers; parts and accessories | 8,0 | 109, 3 | 76,0 | 124,0 | 71,2 | 113,5 | 109,3 | 105,9 |
| Motor vehicles | 4,5 | 105,5 | 77,4 | 117,1 | 68,6 | 113, 7 | 103, 8 | 100,2 |
| Bodies for motor vehicles; trailers and semi-trailers | 0,5 3,0 | 107, 8 | 78,9 73,3 | 125,7 | 84,8 | 107,4 | 107, 8 | 115,2 |
| Parts and accessories | 3,0 | 115,3 | 73, 3 | 134,0 | 72,7 | 114,2 | 117,8 | 112,8 |
| Other transport equipment | 1,0 | 118,7 | 75, 7 | 109,3 | 101, 4 | 93,2 | 119,3 | 126,0 |
| Furniture | 1,6 | 109,5 | 70,2 | 151,5 | 76,5 | 105,8 | 111,2 | 114,7 |
| Other manufacturing divisions | 2,6 | 103,7 | 70, 3 | 132,7 | 64,9 | 105,9 | 102,4 | 97,6 |
| Total | 100,0 | \|108,3| | 91, 3 | 121,2 | 92, 7 | 105, 6 | 108, 6 | 107,5 |

* Revised

1/ Preliminary

Table 3 - Value of sales of the manufacturing industry: Total (R'000)


* Revised

1/ Preliminary

Table 4 - Value of sales of manufactured products according to manufacturing divisions and major groups (R'000)


* Revised

1/ Preliminary

Table 5 - Value of unfilled orders according to selected manufacturing subgroups (R'000)


[^1]
## Additional information

## Explanatory notes

## Introduction

## Scope of the survey

## Classification

## Statistical unit

## Weighting

Survey methodology and design

1 Statistics South Africa (Stats SA) conducts a monthly sample survey of the manufacturing industry covering private manufacturing establishments (branches), public corporations and government establishments. This statistical release contains historical information regarding indices of the physical volume of manufacturing production, the total value of sales of manufactured products and unfilled orders, according to manufacturing divisions and major groups on a monthly basis.

2 In accordance with international practice, the indices have to be re-based every five years to a new base year. The base year of the index of the physical volume of manufacturing production has been changed from $1995=100$ to $2000=100$. Both actual and seasonally adjusted figures are presented.

3 In order to improve timeliness, some information for the current month (December 2002) have been estimated due to late response. These estimates will be revised in the future statistical release(s) as soon as more up-to-date information is available.

4 This survey covers manufacturing establishments conducting activities regarding -

- the manufacturing, processing, making or packing of products;
- the slaughtering of animals, including poultry; and
- installation, assembly, completion, repair and related work.

5 The 1993 edition of the Standard Industrial Classification of all Economic Activities (SIC), Fifth Edition, Report No. 09-90-02, was used to classify the statistical units in the survey. The SIC is based on the 1990 International Standard Industrial Classification of all Economic Activities (ISIC) with suitable adaptations for local conditions. Statistics in this publication are presented at SIC division and major group level. Each statistical unit is classified to an industry which reflects the predominant activity of the establishment (branch).

6 The basic statistical unit for the collection of information is the manufacturing establishment. An establishment is the smallest economic unit that functions as a separate entity. Each statistical unit is classified to an industry (cf. paragraph 5).

7 A weight is calculated for every major group according to the value added of the relevant major group compared with the value added of the total manufacturing industry based on the 1991, 1993 and 1996 Censuses of Manufacturing. Weights between census years are fixed and are based on the results of the most recent Census of Manufacturing. The production indices of all the major groups are multiplied by the applicable weights and aggregated to reflect the total physical volume of manufacturing production index (cf. Table E for the fixed weights which were used for the three periods 1990 to 1992, 1993 to 1995 and 1996 to 2002.).

The calculation of the monthly production indices is based on the value of products and articles manufactured, after the effect of price changes has been eliminated through deflation by using appropriate sub-indices of the Production Price Index (PPI). The value of the manufactured products is obtained from a monthly sample survey of manufacturing establishments in the private and public sectors.

9 The survey is collected by mail each month from a sample of approximately 2400 manufacturing establishments.

10 The above-mentioned measurement method in paragraph 8 was followed in 39 of the 45 major groups. On account of certain considerations more appropriate indicators were used for the six remaining major groups namely grain mill products, tobacco products, coke and refined petroleum products, basic iron and steel products, basic precious and non-ferrous metal products and bodies for motor vehicles. The volume indices for the major groups grain mill products, tobacco products, coke and refined petroleum products, basic iron and steel products, basic precious and non-ferrous metal products and bodies for motor vehicles are calculated on the basis of physical quantities. This method based on physical quantities is applied by other international statistical agencies for petroleum products due to the results being more satisfactory (mainly due to these commodities being relatively homogeneous and the nature of the industry). For publication purposes, the major group tobacco products is included under 'Other' manufacturing industries.

## Sample design

## Benchmarking

11 The 1988 Census of Manufacturing provided the sampling frame for the selection of the monthly sample regarding manufacturing production and sales which was implemented as from January 1995. A stratified systematic sample design based on gross output was used. All statistical units were stratified by type of economic activity according to the Standard Industrial Classification of all Economic Activities (SIC) and measure of size, where measure of size was the total manufacturing gross output of the establishment. All large establishments (size category one cases) are completely enumerated. A sample was drawn from medium and small size establishments by systematically selecting establishments with equal probability.

12 The index of physical volume of manufacturing production as well as the total value of sales of manufactured products should provide an accurate reflection of the trend of activities of the relevant industry. The level of activities as measured by the monthly Manufacturing Production and Sales sample survey is based on information received from a sample of manufacturing establishments which is weighted according to the original sample design in order to represent the population of manufacturing establishments. It is necessary to adjust the level of activities as measured by the monthly sample survey to the level of activities as measured periodically by the Census of Manufacturing. This procedure, whereby the latest results of an economic census are used to compile more accurate level estimates for a certain year, is known as benchmarking. The results, due to benchmarking, were published in statistical releases P3041.3 (entitled Manufacturing statistics: Indices of the physical volume of manufacturing production, Base: 1995=100, January 1990 to September 1999) on 21 December 1999 and P3041.4 (entitled Manufacturing statistics: Value of sales, January 1990 to September 1999) on 8 December 1999.

13 The results of the 1991, 1993 and 1996 Censuses of Manufacturing and information obtained from the former TBVC states were used to adjust the level of the manufacturing production indices and the value of sales of manufactured products. The total value of output of the manufacturing major groups (which represents the total value of work done by the establishments in these major groups) as obtained from the manufacturing censuses, was deflated with appropriate sub-indices of the Production Price Index in order to calculate the real output. The latter served as benchmarks to verify or adjust the level of the monthly physical volume of manufacturing production indices. The level adjustments were done on the volume indices for January of the relevant census year (e.g. the 1996 census year covers the period 1 July 1995 to 30 June 1996 and therefore the benchmarking was done using the index of January 1996 as reference point). The motor vehicle major group is the only exception where the financial year for most of the establishments covered the period 1 January 1995 to 31 December 1995. The benchmarking was done using the physical volume of manufacturing production index for July 1995 as reference point.

## Production index for the total manufacturing industry

## Seasonal adjustment

Trend cycle

## Reliability of estimates

## Historical data

## Related publications

14 In order to calculate a production index for the total manufacturing industry, the production indices for the major groups are combined as follows:

A weight is calculated for every major group according to the value added of the relevant major group compared with the value added of the total manufacturing industry based on the 1991, 1993 and 1996 Censuses of Manufacturing. Weights between census years are fixed and are based on the results of the most recent Census of Manufacturing. The production indices of all the major groups are multiplied by the applicable weights and aggregated to reflect the total physical volume of manufacturing production index.

15 Seasonally adjusted estimates of all major groups are generated each month, using the X-11 Seasonal Adjustment Program developed by US Bureau of the Census Economic Research and Analyses Division, 1968. Seasonal adjustment is a means of removing the estimated effects of normal seasonal variation from the series so that the effects of other influences on the series can be more clearly recognised. Seasonal adjustment does not aim to remove irregular or non-seasonal influences which may be present in any particular month. Influences that are volatile or unsystematic can still make it difficult to interpret the movement of the series even after adjustment for seasonal variations. This means the month-to-month movements of seasonally adjusted estimates may not be reliable indicators of trend behaviour.

16 The trend is the long-term pattern or movement of a time series. The X-11 Seasonal Adjustment Program is used for smoothing seasonally adjusted estimates.

17 Estimates are subject to sampling and non-sampling errors. Figures for the latest month are preliminary.

18 More comprehensive detail on the method of calculation and historical data in respect of the production indices according to manufacturing major groups for the period January 1990 to November 2002 is available in statistical release P3041.3 (entitled Manufacturing statistics: Indices of the physical volume of manufacturing production, Base: 2000=100, January 1990 to November 2002.

19 More comprehensive detail on the method of calculation and historical data in respect of the value of sales for the period January 1990 to September 1999 was published on 8 December 1999 in statistical release P3041.4.

20 Users may also wish to refer to the following publications which are available from Stats SA -

- P3041.3 - Manufacturing statistics: Indices of the physical volume of manufacturing production, Base: $2000=100$, January 1990 to November 2002.
- P3041.4 - Manufacturing statistics: Value of sales (divisions, major groups and subgroups), January 1990 to September 1999.
- Bulletin of Statistics.
- SA Statistics.
- P0441 - Gross Domestic Product.


## Rounding-off of figures

## Pre-release policy

21 In some cases Stats SA can also make available statistics which are not published. The statistics can be made available as a computer printout, diskette or CD. Generally a charge is made for providing unpublished statistics.

22 The figures in the tables have, where necessary, been rounded off to the nearest final digit shown. There may, therefore, be slight discrepancies between the sums of the constituent items and the totals shown.

23 Stats SA has adopted the confidential pre-release policy in respect of selected economic indicators and specific government departments. The policy accords with practice among leading statistical agencies. The statistical integrity of the indices and strict observance of the release time has been assured by the following procedure: in respect of this statistical release, an official representative from the Office of the President, the Office of the Deputy President, the Department of Trade and Industry, the Department of Finance and the South African Reserve Bank receive a copy of the release on a strictly confidential basis two hours in advance of the public issue.

24 Stats SA's pre-release policy may be inspected at its Website, www.statssa.gov.za.

| GDP | Gross Domestic Product |
| :--- | :--- |
| ISIC | International Standard Classification of all Economic Activities |
| PPI | Production Price Index |
| SIC | Standard Industrial Classification of all Economic Activities |
| SNA | System of National Accounts |
| Stats SA | Statistics South Africa |
| TBVC states | Relates to the former Transkei, Bophuthatswana, Venda and Ciskei <br> states |
| $1 /$ | Preliminary figures |
| $*$ | Revised figures |

## Technical notes

Response rates The response rate for the survey on manufacturing production and sales for December 2002 is $78,6 \%$. The response rates by manufacturing major division are tabulated in table D .

Table D - Response rates for December 2002

| Manufacturing major divisions | Sample <br> No. of establishments | \% <br> response |
| :--- | :---: | :---: |
|  |  |  |
| Food and food products | 310 | 76,1 |
| Beverages | 62 | 85,5 |
| Textile | 106 | 92,5 |
| Total wearing apparel | 126 | 81,0 |
| Tanning and dressing of leather | 24 | 87,5 |
| Footwear | 21 | 81,0 |
| Wood and products of wood | 118 | 67,8 |
| Paper and paper products | 92 | 72,8 |
| Total publishing and printing | 86 | 75,6 |
| Coke and refined petroleum products | 28 | 78,6 |
| Basic chemicals | 73 | 94,5 |
| Other chemical products | 107 | 76,6 |
| Rubber products | 21 | 81,0 |
| Plastic products | 92 | 81,5 |
| Glass and glass products | 12 | 100,0 |
| Other non-metallic mineral products | 129 | 80,6 |
| Basic iron and steel products | 40 | 85,0 |
| Basic precious and non-ferrous metal products | 22 | 77,3 |
| Fabricated metal products | 224 | 79,5 |
| Total machinery and equipment | 182 | 77,5 |
| Electrical machinery, apparatus | 80 | 67,5 |
| Radio, television and communication apparatus | 22 | 72,7 |
| Professional equipment | 25 | 64,0 |
| Motor vehicles; trailers; parts and accessories | 130 | 79,2 |
| Other transport equipment | 36 | 88,9 |
| Furniture | 70 | 78,6 |
| Other manufacturing industries | 80 | 71,3 |
|  |  |  |
| Total | 318 | 78,6 |

## Glossary

| Enterprise | An enterprise (firm) is a legal entity consisting of one or more establishments. The <br> establishments need not necessarily all be manufacturing establishments, but some may be <br> classifiable as other industries of the economy, such as wholesale trade, retail trade, motor <br> trade and construction. |
| :--- | :--- |
| Establishment |  |
|  | An establishment is defined as an enterprise (firm), or part of an enterprise, that is situated |
| at a single location and in which only a single (non-ancillary) productive activity is carried |  |
| out or in which the principal productive activity accounts for most of the value added. |  |

Output excludes -

- excise and customs duty paid.

Value added

Sales

## Weight

Value added is the value of output less intermediate consumption. It represents the value added to the cost of the materials used in the process of production.

Sales are the total value of sales and transfers-out of all own manufactured products/articles and the amounts received for installation, erection or assembly or other services rendered.

The weight of a major group is the ratio of the value added of a major group (i.e. output of a major group minus intermediate consumption) to the total value added of the manufacturing industry. The weight of a major group reflects the importance of the major group in the total manufacturing industry. The weights change over time due to quality changes, changes in relative prices, and changes in preference, etc. New weights need to be calculated from time to time.

Table E - Weights and the average indices of physical volume of manufacturing production according to manufacturing
divisions and major groups before re-basing

| Manufacturing divisions and major groups |  |  |  | Base 1995 = 100 |
| :---: | :---: | :---: | :---: | :---: |
|  | Weights |  |  | Average indices for the year 2000 before re-basing |
|  | 1990-1992 | 1993-1995 | 1996-2002 |  |
| Food and food products | 10,97 | 12,33 | 10,71 | 99,1 |
| Meat, fish, fruit etc. | 2,93 | 3,20 | 2,83 | 111,7 |
| Dairy products | 1,40 | 1,68 | 1,36 | 89,4 |
| Grain mill products | 2,13 | 2,80 | 2,10 | 91,3 |
| Other food products | 4,52 | 4,65 | 4,41 | 97,6 |
| Beverages | 4,83 | 5,26 | 4,60 | 92,6 |
| Total textiles | 3,33 | 3,33 | 2,88 | 93,5 |
| Textiles | 2,09 | 2,03 | 1,69 | 84,6 |
| Other textile products | 1,24 | 1,30 | 1,19 | 106,2 |
| Total wearing apparel | 3,94 | 3,81 | 3,60 | 82,8 |
| Knitted, crocheted articles | 0,67 | 0,64 | 0,60 | 73,9 |
| Wearing apparel | 3,27 | 3,17 | 3,00 | 84,5 |
| Tanning and dressing of leather | 0,41 | 0,34 | 0,41 | 125,2 |
| Footwear | 1,15 | 1,10 | 0,93 | 65,6 |
| Wood and products of wood | 1,96 | 1,81 | 1,95 | 119,3 |
| Sawmilling and planning of wood | 0,98 | 0,82 | 0,77 | 104,8 |
| Products of wood | 0,97 | 0,99 | 1,17 | 128,8 |
| Paper and paper products | 4,58 | 4,73 | 5,32 | 105,3 |
| Total publishing and printing | 3,57 | 3,95 | 4,11 | 87,8 |
| Publishing | 1,15 | 1,41 | 1,48 | 97,8 |
| Printing, recorded media | 2,42 | 2,54 | 2,63 | 82,3 |
| Coke and refined petroleum products | 6,45 | 6,41 | 4,17 | 104,5 |
| Basic chemicals | 4,57 | 3,19 | 4,47 | 132,0 |
| Other chemical products | 5,97 | 6,61 | 6,17 | 101,8 |
| Rubber products | 1,59 | 1,52 | 1,36 | 98,7 |
| Plastic products | 2,58 | 2,85 | 3,08 | 89,7 |
| Glass and glass products | 1,15 | 0,99 | 1,00 | 88,5 |
| Other non-metallic mineral products | 3,67 | 3,58 | 3,50 | 97,6 |
| Basic iron and steel products | 6,90 | 6,49 | 7,56 | 116,3 |
| Basic precious and non-ferrous metal products | 2,15 | 2,19 | 3,25 | 175,6 |
| Fabricated metal products | 7,53 | 6,84 | 7,03 | 103,4 |
| Structural metal products | 2,84 | 2,04 | 2,39 | 90,5 |
| Other fabricated metal products | 4,69 | 4,80 | 4,65 | 110,0 |
| Total machinery and equipment | 6,31 | 6,06 | 5,78 | 99,7 |
| General purpose machinery | 2,58 | 2,59 | 2,50 | 110,6 |
| Special purpose machinery | 3,14 | 2,82 | 2,89 | 87,8 |
| Household appliances | 0,60 | 0,65 | 0,39 | 117,0 |
| Electrical machinery, apparatus | 3,36 | 3,49 | 3,45 | 102,1 |
| Electric motors | 0,31 | 0,37 | 0,57 | 106,9 |
| Electricity distribution | 0,32 | 0,46 | 0,52 | 135,2 |
| Insulated wire and cables | 0,71 | 0,79 | 0,77 | 91,1 |
| Accumulators | 0,43 | 0,47 | 0,33 | 82,3 |
| Electric lamps | 0,30 | 0,25 | 0,22 | 90,5 |
| Other electrical equipment | 1,28 | 1,15 | 1,04 | 99,9 |
| Radio, television and communication apparatus | 1,59 | 1,20 | 0,97 | 123,8 |
| Professional equipment | 0,41 | 0,54 | 0,51 | 80,9 |
| Motor vehicles; trailers; parts and accessories | 6,40 | 6,77 | 8,05 | 119,6 |
| Motor vehicles | 3,30 | 3,62 | 4,50 | 114,9 |
| Bodies for motor vehicles; trailers and semi-trailers | 0,61 | 0,52 | 0,55 | 63,3 |
| Parts and accessories | 2,49 | 2,62 | 3,00 | 137,0 |
| Other transport equipment | 1,16 | 1,10 | 1,01 | 118,3 |
| Furniture | 1,69 | 1,62 | 1,56 | 98,9 |
| Other manufacturing divisions | 1,79 | 1,88 | 2,58 | 111,5 |
| TOTAL | 100,0 | 100,0 | 100,0 | 106,0 |

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## Enquiries




[^0]:    * Revised

[^1]:    * Revised

    1/ Preliminary

