## P3041. 2

## Manufacturing: production and sales

February 2002

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Key figures as at the end of February 2002

|  | Actual estimates | $\begin{gathered} \text { February } \\ 2002 \end{gathered}$ | $\begin{gathered} \text { \% change } \\ \text { between } \\ \text { February } 2001 \\ \text { and } \\ \text { February } 2002 \end{gathered}$ | \% change between December 2000 to February 2001 and December 2001 to February 2002 | \% change <br> between <br> January 2001 to <br> February 2001 <br> and <br> January 2002 to <br> February 2002 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| volume of |  |  |  |  |  |
| manufacturing |  | 111,7 | +5,5 | +4,7 | +5,3 |
| index $\quad(1995=100)$ |  |  |  |  |  |
|  |  |  |  |  |  |
| of sales | Total value | 46 465,1 | +18,6 | +16,6 | +18,7 |
|  | of |  |  |  |  |
| manufactured | ( R million) |  |  |  |  |
|  | Seasonally adjusted estimates | $\begin{aligned} & \text { February } \\ & 2002 \end{aligned}$ | $\begin{gathered} \begin{array}{c} \text { \% change } \\ \text { between } \end{array} \\ \text { January } 2002 \\ \text { and } \\ \text { February } 2002 \end{gathered}$ | \% change <br> between <br> September 2001 to <br> November 2001 <br> and <br> Deceember 2001 to <br> February 2002 |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| volume of |  | 113,6 | -0,4 | +2,7 |  |
| manufacturing |  |  |  |  |  |
|  | production | 47 600,3 | +0,2 |  |  |
| index | $(1995=100)$ |  |  |  |  |
| of sales | Total value |  |  | +8,2 |  |
|  | of |  |  |  |  |
| manufactured |  |  |  |  |  |
|  | ( R million) |  |  |  |  |

Key findings as at the end of February 2002

Manufacturing production for the three months ended February 2002 reflected an increase of $2,7 \%$ after seasonal adjustment compared with the previous three months. Higher production was reported by 19 of the 27 manufacturing divisions.

The major contributor to the increase of $2,7 \%$ after seasonal adjustment in the total manufacturing production was the basic iron and steel products division (contributing $+0,7$ of a percentage point to total manufacturing production), followed by the food and food products ( $+0,4$ of a percentage point), 'other' chemical products ( $+0,4$ of a percentage point), basic chemicals ( $+0,3$ of a percentage point), plastic products ( $+0,3$ of a percentage point) and 'other' manufacturing industries ( $+0,3$ of a percentage point) divisions (cf. table A).

Table A - Contribution of the production by the different manufacturing divisions to the total manufacturing production (Base 1995=100)

| Manufacturing Divisions | \|Percentage contribution to the total manufacturing production in the base year 1995 (Weights) | Average <br> seasonally <br> adjusted <br> production <br> index for <br> the three <br> months <br> December 2002 <br> to <br> February 2002 | $\mid$ Quarterly percentage change (December 2002 to February compared with the preceding three \|months) |  |
| :---: | :---: | :---: | :---: | :---: |
| Food and food products | 10,7 | 108,7 | +3,4 | +0, 4 |
| Beverages | 4,6 | 103,0 | +3, 3 | +0,2 |
| Total textiles | 2,9 | 100,9 | +3,2 | +0, 1 |
| Total wearing apparel | 3,6 | 81,4 | +3,6 | +0, 1 |
| Tanning and dressing of leather | 0,4 | 97, 8 | +1,7 | +0,0 |
| Footwear | 0,9 | 55,5 | +12,3 | +0,1 |
| Wood and products of wood | 1,9 | 128,7 | +5,2 | +0,1 |
| Paper and paper products | 5,3 | 106,3 | +3, 9 | +0,2 |
| Total publishing and printing | 4,1 | 80,1 | -6,3 | -0,3 |
| Coke and refined petroleum products | 4,2 | 111,3 | +5,5 | +0,2 |
| Basic chemicals | 4,5 | 147,4 | +7,5 | +0,3 |
| Other chemical products | 6,2 | 114,8 | +7,1 | +0, 4 |
| Rubber products | 1,4 | 109,3 | +17,1 | +0,2 |
| Plastic products | 3,1 | 106,9 | +10,9 | +0, 3 |
| Glass and glass products | 1,0 | 106,6 | +6,2 | +0,1 |
| Other non-metallic mineral products | 3,5 | 91,1 | -2,1 | -0,1 |
| Basic iron and steel products | 7,6 | 129,4 | +9,6 | +0, 7 |
| Basic precious and non-ferrous metal products | 3,2 | 173,4 | +5,3 | +0,2 |
| Fabricated metal products | 7,0 | 108,0 | -8,7 | -0,6 |
| Total machinery and equipment | 5,8 | 106,2 | -2,0 | -0,1 |
| Electrical machinery, apparatus | 3,4 | 99,9 | -2,5 | -0,1 |
| Radio, television and communication apparatus | 1,0 | 105,0 | -4,5 | -0,0 |
| Professional equipment | 0,5 | 96,1 | +2,5 | +0,0 |
| Motor vehicles; trailers; parts and accessories | 8,0 | 148,1 | -1,9 | -0,1 |
| Other transport equipment | 1,0 | 122,0 | -0,9 | -0,0 |
| Furniture | 1,6 | 104,8 | +7, 3 | +0,1 |
| Other manufacturing divisions | 2,6 | 122,4 | +12,7 | +0,3 |
| Total | 100,0 | 114,0 | +2, 7 | +2, 7 |

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.

## SALES OF MANUFACTURED PRODUCTS INCREASE

The total value of sales of manufactured products at current prices for the three months ended February 2002 reflected an increase of $8,2 \%(+$ R10 598 million) after seasonal adjustment compared with the previous three months. Higher manufacturing sales were reported by 23 of the 27 manufacturing divisions during this period. Furthermore, the actual total value of sales of manufactured products at current prices for the three months ended February 2002 reflected an increase of 16,6\% (+R18 297 million) compared with the three months ended February 2001. Higher manufacturing sales were reported by 24 of the 27 manufacturing divisions during this period.

The increase of $8,2 \%$ after seasonal adjustment in the total value of sales of manufactured products at current prices for the three months ended February 2002 compared with the previous three months was mainly due to large increases reported by the basic precious and non-ferrous metal products ( $+32,5 \%$ or +R 1365 million), basic iron and steel products $(+14,7 \%$ or + R1 403 million), coke and refined petroleum products $(+13,7 \%$ or + R1 252 million), basic chemicals ( $+12,6 \%$ or + R797 million), food and food products $(+11,1 \%$ or + R1 916 million) and 'other' chemical products $(+9,7 \%$ or + R727 million) divisions (cf. table B).

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


The major contributors to the increase of $16,6 \%$ in the actual value of sales of manufactured products at current prices for the three months ended February 2002 compared with the three months ended February 2001 were the food and food products $(+2,8$ percentage points or + R3 129 million), motor vehicles, trailers, parts and accessories ( $+2,4$ percentage points or + R2 598 million), basic iron and steel products ( $+2,2$ percentage points or + R2 421 million), basic precious and non-ferrous metal products ( $+1,2$ percentage points or + R1 320 million), 'other' chemical products $(+1,1$ percentage points or + R1 264 million) and coke and refined petroleum products ( $+1,0$ percentage point or +R 1048 million) divisions (cf. table C ).

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

| Manufacturing | \|Percentage contribution to total value of sales of manufactured products December 2001 to February 2001 | $\left.\left\|\begin{array}{c}\text { Percentage } \\ \text { change } \\ \text { between } \\ \text { December } \\ \text { to }\end{array} \quad 2000\right\|$February  <br> and 2001 <br> December <br> to 2001 <br> February 2002 \right\rvert\, | Contribution (percentage points) to the percentage change in the total value of sales of manufactured products 1/ | $\left.\begin{array}{\|ll}\text { Difference } \\ \text { in sales of } \\ \text { manufacturing } \\ \text { divisions } \\ \text { between }\end{array}\right]$December 2000 <br> to  <br> February <br> and 2001 <br> December 2001 <br> to  <br> February 2002 <br> R'000   |
| :---: | :---: | :---: | :---: | :---: |
| Food and food products | 13, 8 | 20,6 | 2,8 | 3128850 |
| Beverages | 5,6 | 11,1 | 0,6 | 682626 |
| Total textiles | 1,9 | 14,3 | 0,3 | 294292 |
| Total Wearing apparel | 1,9 | 15,2 | 0,3 | 311675 |
| Tanning and dressing of leather | 0,6 | -12,3 | -0,1 | -78 582 |
| Footwear | 0,3 | 8,2 | 0,0 | 28375 |
| Wood and products of wood | 1,8 | 23,0 | 0,4 | 457610 |
| Paper and paper products | 5,3 | 12,0 | 0,6 | 697565 |
| Total publishing and printing | 2,5 | 2,5 | 0,1 | 71106 |
| Coke and refined petroleum products | 8,2 | 11,6 | 1,0 | 1047917 |
| Basic chemicals | 5,4 | 14,7 | 0,8 | 876395 |
| Other chemical products | 5,6 | 20,4 | 1,1 | 1264808 |
| Rubber products | 0,9 | 28,8 | 0,3 | 296181 |
| Plastic products | 2,3 | 21,4 | 0,5 | 545330 |
| Glass and glass products | 0,5 | 27,0 | 0,1 | 156536 |
| Other non-metallic mineral products | 2,0 | 13,6 | 0,3 | 304037 |
| Basic iron and steel products | 7,2 | 30,5 | 2,2 | 2420741 |
| Basic precious and non-ferrous metal products | 3,6 | 33,0 | 1,2 | 1320402 |
| Fabricated metal products | 5,1 | 16,8 | 0,9 | 940471 |
| Total machinery and equipment | 4,3 | 7,1 | 0,3 | 336412 |
| Electrical machinery, apparatus | 2,8 | 2,1 | 0,1 | 65170 |
| Radio, television and communication apparatus | 0,9 | -8,9 | -0,1 | -92 869 |
| Professional equipment | 0,3 | 25,5 | 0,1 | 93622 |
| Motor vehicles; trailers; parts and accessories | 11,9 | 19,8 | 2,4 | 2598167 |
| Other transport equipment | 0,7 | -1,9 | -0,0 | -13 971 |
| Furniture | 1,0 | 15,0 | 0,2 | 169033 |
| Other manufacturing divisions | 3,5 | 9, 7 | 0,3 | 375507 |
| Total | 100,0 | 16,6 | 16,6 | 18297406 |

1/ The contribution (percentage points) is calculated by multiplying the percentage
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## Notes

Issue
March 2002
April 2002
May 2002
June 2002
July 2002
August 2002
September 2002
October 2002
November 2002
December 2002

## Expected release date

7 May 2002
11 June 2002
9 July 2002
6 August 2002
10 September 2002
8 October 2002
12 November 2002
10 December 2002
7 January 2003
11 February 2003

Purpose of the survey 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



* Revised

1/ Preliminary

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

$$
\text { Base } 1995=100
$$

| Manufacturing divisions and major groups | Weights | $\left\lvert\, \begin{aligned} & \text { Year } \\ & 2001 \end{aligned}\right.$ | Actual indices |  |  | Seasonally adjusted indices |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | February | January | February1/ | February | January | February |
|  |  |  | 2001 | 2002 |  | 2001 | 2002 |  |
| Food and food products | 10,7 | 104,8 | 95,0 | 89,4 | 103,3 | 105,1 | 104,2 | 115,3 |
| Meat, fish, fruit etc. | 2,8 | 119,8 | 120, 8 | 109,0 | 121,7 | 114,2 | 116,5 | 116,2 |
| Dairy products | 1,4 | 90,9 | 91,1 | 90,6 | 83, 6 | 95,4 | 90,0 | 87,3 |
| Grain mill products | 2,1 | 99,8 | 88,3 | 98,6 | 103,5 | 94,4 | 108,4 | 110,5 |
| Other food products | 4,4 | 101,8 | 82,9 | 72,0 | 97,5 | 107,3 | 98,5 | 125,5 |
| Beverages | 4,6 | 97,2 | 87,3 | 93,0 | 99,7 | 94,0 | 100,3 | 107,0 |
| Total textiles | 2,9 | 96, 4 | 95,2 | 73,0 | 100,9 | 94,5 | 102,3 | 100,4 |
| Textiles | 1,7 | 86,3 | 81,0 | 60,8 | 88,0 | 80,0 | 85,7 | 87,4 |
| Other textile products | 1,2 | 110,8 | 115,4 | 90,4 | 119,1 | 115,0 | 125,9 | 118,9 |
| Total wearing apparel | 3,6 | 78,9 | 73,4 | 51,8 | 82,9 | 74,5 | 78,8 | 84,4 |
| Knitted, crocheted articles | 0,6 | 76,5 | 70,3 | 51,5 | 81,5 | 68,8 | 75,1 | 80,0 |
| Wearing apparel | 3,0 | 79,4 | 74,0 | 51,9 | 83,2 | 75,6 | 79,5 | 85,2 |
| Tanning and dressing of leather | 0,4 | 114,8 | 126,0 | 71,2 | 86,0 | 126,0 | 89,8 | 86,2 |
| Footwear | 0,9 | 53,9 | 55,2 | 39,5 | 46,1 | 56,2 | 61,2 | 47,2 |
| Wood and products of wood | 1,9 | 120, 8 | 121,7 | 95,8 | 127,9 | 120,3 | 120,8 | 126,5 |
| Sawmilling and planing of wood | 0,8 | 101,5 | 109,6 | 82,8 | 112,9 | 106,1 | 108,4 | 108,9 |
| Products of wood | 1,2 | \|133,4 | 129,6 | 104,4 | 137,7 | 129,7 | 128,9 | 138,0 |
| Paper and paper products | 5,3 | 103,5 | 96,4 | 104,5 | 105,2 | 103,0 | 106,1 | 112,0 |
| Total publishing and printing | 4,1 | 83,8 | 79,7 | 70,8 | 78,8 | 84,2 | 81,6 | 83,2 |
| Publishing | 1,5 | 96,2 | 92,4 | 73, 4 | 90,9 | 95,2 | 77,1 | 93,5 |
| Printing, recorded media | 2,6 | 76,8 | 72,5 | 69,3 | 72,0 | 78,1 | 84,1 | 77,4 |
| Coke and refined petroleum products | 4,2 | 104,6 | 104,5 | 118,0 | 102,7 | 105,4 | 111,3 | 103,8 |
| Basic chemicals | 4,5 | 140,3 | 146,3 | 159,0 | 142,5 | 141,9 | 164,2 | 139,2 |
| Other chemical products | 6,2 | \|105,3| | 100,5 | 97,5 | 116,7 | 101,5 | 114,9 | 118,0 |
| Rubber products | 1,4 | 99,3 | 113,3 | 99,1 | 131,2 | 99,7 | 122,9 | 115,5 |
| Plastic products | 3,1 | 97,0 | 102,0 | 87,3 | 109,8 | 97,2 | 111,1 | 104,6 |
| Glass and glass products | 1,0 | 98,9 | 96,7 | 93,6 | 102,8 | 97,3 | 109,3 | 103,8 |
| Other non-metallic mineral products | 3,5 | 91,3 | 85,7 | 73,9 | 87,6 | 88,4 | 88,1 | 90,5 |
| Basic iron and steel products | 7,6 | 115,3 | 105,2 | 111,5 | 117,2 | 110,9 | 116,4 | 123,6 |
| Basic precious and non-ferrous metal products | 3,2 | 166,5 | 143,9 | 166,3 | 171,0 | 148,3 | 178,8 | 176,5 |
| Fabricated metal products | 7,0 | 110,8 | 105,6 | 98, 3 | 110,8 | 105,0 | 112,6 | 110,2 |
| Structural metal products | 2,4 | \|100,8| | 86,0 | 83,2 | 92,4 | 89,2 | 97,0 | 96,0 |
| Other fabricated metal product | 4,6 | 116,1 | 115,6 | 106,0 | 120,2 | 113,1 | 120,6 | 117,6 |
| Total machinery and equipment | 5,8 | 108,7 | 112,6 | 91,7 | 106,2 | 108,4 | 107,1 | 102,0 |
| General purpose machinery | 2,5 | 112,3\| | 120,0 | 92,2 | 112,3 | 118,8 | 114,7 | 110,0 |
| Special purpose machinery | 2,9 | 104,3 | 105,7 | 92,4 | 97, 8 | 98,0 | 98,4 | 91,2 |
| Household appliances | 0,4 | 118,8 | 116,9 | 83,6 | 128,8 | 119,1 | 123,7 | 130,7 |
| Electrical machinery, apparatus | 3,4 | 102,7 | 105,1 | 86,6 | 94,7 | 104,5 | 102,8 | 94,2 |
| Radio, television and communication apparatus | 1,0 | 110,2 | 124,6 | 89,2 | 98,5 | 121,9 | 101,1 | 96,4 |
| Professional equipment | 0,5 | 89,4 | 96,0 | 83,9 | 101,9 | 91,8 | 92,8 | 96,9 |
| ```Motor vehicles; trailers;``` parts and accessories | 8,0 | 141,3 | 142,1 | 126,1 | 150,2 | 136,2 | 150,7 | 143,7 |
| Motor vehicles | 4,5 | 127,6 | 132,5 | 108,2 | 130,1 | 124,6 | 138,9 | 121, 6 |
| Bodies for motor vehicles; trailers and semi-trailers | 0,5 | 66,7 | 86,4 | 35,8 | 67,2 | 80,5 | 50,2 | 62,3 |
| Parts and accessories | 3,0 | \|175,7| | 166,8 | 169,6 | 195,6 | 163,7 | 186,7 | 191,7 |
| Other transport equipment | 1,0 | 117,6 | 109,7 | 125,5 | 112,2 | 117,0 | 120,9 | 119,8 |
| Furniture | 1,6 | 98,3 | 92,6 | 72,7 | 92, 6 | 96,1 | 111,1 | 96,5 |
| Other manufacturing divisions | 2,6 | $\|110,6\|$ | 111, 7 | 84,4 | 122,2 | 115,3 | 120,8 | 127,5 |
| Total | 100,0 | \|109,5| | 105,9 | 99,5 | 111,7 | 107,4 | 114,1 | 113,6 |

* 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)


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


* Revised


## Additional information

## Explanatory notes

Introduction

Scope of the survey 4
4 This survey covers manufacturing establishments conducting activities

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

Classification

Statistical unit

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 detailed 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 to international practice, the indices have to be rebased every five years to a new base year. The indices in this statistical release have been calculated on the basis of 1995=100 since November 1997. Both actual and seasonally adjusted figures are presented.

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

## regarding -

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, major group and subgroup 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 6).

Survey methodology 7 The calculation of the monthly production indices is based on the value and design
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.
8 The survey is collected by mail each month from a sample of approximately 2400 manufacturing establishments.

9 The above-mentioned measurement method in paragraph 7 was followed in 38 of the various major groups. On account of certain considerations more appropriate indicators were used for the seven 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, bodies for motor vehicles and 'other transport equipment". 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. The major group tobacco products is included under 'Other' manufacturing industries. This method is also 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). In the case of "other transport equipment" units such as ships and aircraft are completed over a relatively long period and establishments can often not report charges for work done continuously. The sales and charges for work done are only shown after completion of the product, which is not a true reflection of the real production for the month under consideration. Therefore the index for "other transport equipment" is calculated monthly according to man-hours worked.

Sample design

Benchmarking

10 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.

11 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.

12 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 13 In order to calculate a production index for the total manufacturing the total industry, the production indices for the major groups are combined as manufacturing follows:

 industryA weight is calculated for every major group according to the value added of the relevant major group compared with the value added to 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.

## Seasonal adjustment

14 Seasonally adjusted estimates of all items 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 <br> estimates may not be reliable indicators of trend behaviour. |
| :--- | ---: | :--- |
| Trend cycle | $\mathbf{1 5}$The trend is the long-term pattern or movement of a time series. The X- <br> 11 Seasonal Adjustment Program is used for smoothing seasonally <br> adjusted estimates. |
| Reliability |  |
| estimates |  |$\quad$ of $\mathbf{1 6}$| Estimates are subject to sampling and non-sampling errors. Figures for |
| :--- |
| the latest month are preliminary. |


| Symbols and <br> abbreviations | GDP <br> ISIC | Gross Domestic Product <br> International Standard Classification of all Economic <br> Activities |
| :--- | :--- | :--- |
|  | PPI | Production Price Index |
|  | SIC | Standard Industrial Classification of all Economic <br> Activities |
|  | SNA | System of National Accounts |

## Technical notes

Response rates The response rate for the survey on manufacturing production and sales for February 2002 is $76,6 \%$. The response rates by manufacturing major division are tabulated in table D.

Table D - Response rates for February 2002

| Manufacturing major divisions | Sample <br> No. of <br> establishments | $\%$ <br> response |
| :--- | :---: | :---: |
| Food and food products | 310 |  |
| Beverages | 67 | 77,7 |
| Textile | 111 | 91,0 |
| Total wearing apparel | 133 | 87,4 |
| Tanning and dressing of leather | 26 | 85,7 |
| Footwear | 21 | 76,9 |
| Wood and products of wood | 120 | 71,4 |
| Paper and paper products | 93 | 70,0 |
| Total publishing and printing | 89 | 68,8 |
| Coke and refined petroleum products | 30 | 65,2 |
| Basic chemicals | 78 | 70,0 |
| Other chemical products | 108 | 84,6 |
| Rubber products | 19 | 73,1 |
| Plastic products | 82 | 94,7 |
| Glass and glass products | 14 | 74,4 |
| Other non-metallic mineral products | 133 | 71,4 |
| Basic iron and steel products | 42 | 78,9 |
| Basic precious and non-ferrous metal products | 24 | 76,2 |
| Fabricated metal products | 231 | 66,7 |
| Total machinery and equipment | 184 | 77,1 |
| Electrical machinery, apparatus | 75 | 75,0 |
| Radio, television and communication apparatus | 20 | 62,7 |
| Professional equipment | 26 | 70,0 |
| Motor vehicles; trailers; parts and accessories | 118 | 65,4 |
| Other transport equipment | 38 | 76,3 |
| Furniture | 61 | 84,2 |
| Other manufacturing industries | 82,0 |  |
|  | 2335 | 84 |
| Total |  | 74,4 |
|  |  | 76,6 |

## Glossary

Enterprise

## Establishment

## Index of physical volume of manufacturing production

Industry

An enterprise (firm) is a legal entity consisting of one or more establishments. The establishments need not necessarily all be manufacturing establishments, but some may be classifiable as other industries of the economy, such as wholesale trade, retail trade, motor trade and construction.

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.

The index of physical volume of manufacturing production or a production index is a statistical measure of the change in the volume of production. The production index of a major group is the ratio between the volume of production of a major group in a given period and the volume of production of the same major group in the base period. The base period is 1995 . The production in the base period is set at 100 .

An industry consists of a group of establishments engaged in the same or similar kinds of economic activity. Industries are defined in the System of National Accounts (SNA) in the same way as in the Standard Industrial Classification of all Economic Activities, Fifth Edition, Report No. 09-90-02 of January 1993 (SIC).

Intercensal period is the period between January of the one census year and January of the next census year.

Intermediate consumption includes -

- purchases and transfers-in of materials;
- payments to other establishments for work done;
- other direct factory costs;
- rent and leasing paid;
- head office charges;
- royalties, copyright, trade names and patent rights paid;
- advertising;
- insurance premiums;
- services; and
- secretarial and administrative fees.


## Output

Output is the aggregate value of goods manufactured and work done.
Output includes -

- sales and transfers-out of own manufactures, factory waste and stocks of factored
- goods;
- repairs;
- installation, erection and assembly;
- sundry trading revenue;
- sales of factored goods minus purchases of factored goods;
- rent and leasing received;
- royalties received;
- difference between opening value and closing value of work in progress, stocks of own manufactures and stocks of factored goods;
- head office charges; and
- other revenue.

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.

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## Enquiries

Telephone number:
(012) 310 8600/8095/8390/8351 (user enquiries)
(012) 310 8233/310 8669 (technical enquiries)
(012) 3108161 (publications)
(012) 3108490 (library)

Fax number: (012) 3108332

| E-mail address: | Dawnvd@statssa.pwv.gov.za <br> Teresam@statssa.pwv.gov.za |
| :--- | :--- |

Postal address: Private Bag X44, Pretoria, 0001

