

## QUARTERLY INDEXES OF INDUSTRIAL PRODUCTION, AUSTRALIA JUNE QUARTER 1994

### MAIN FEATURES

*NOTE: This issue incorporates a number of revisions to historical data. See Explanatory Notes for more detail. Note also that recent trend estimates are provisional and could change when data for further quarters are available.*  
NEXT ISSUE: 30 NOVEMBER 1994

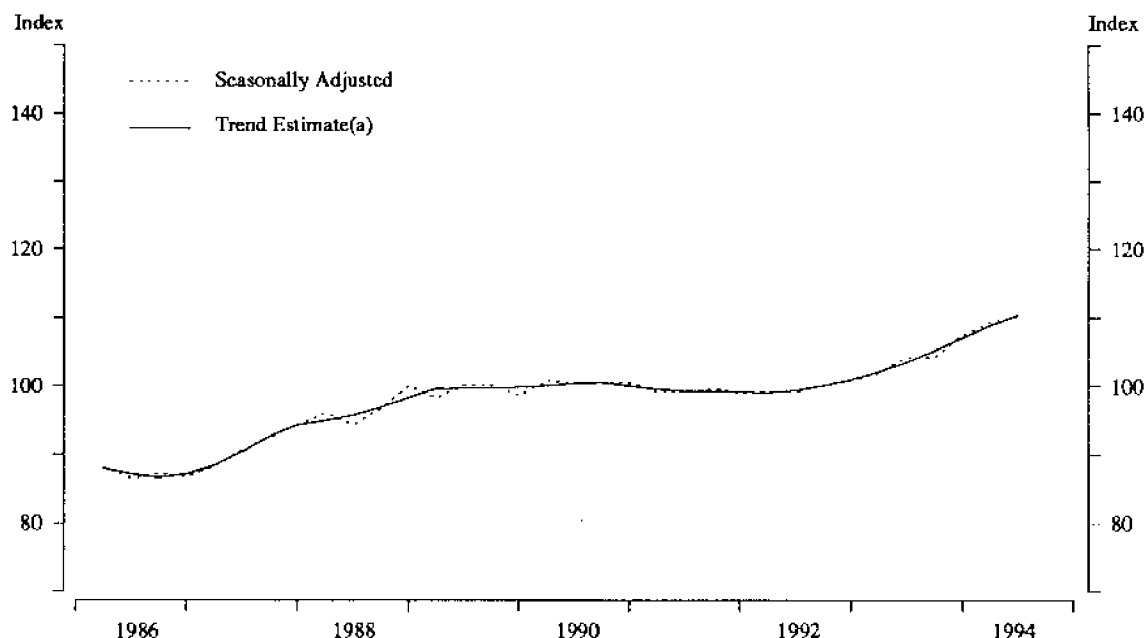
Provisional trend estimates for the June quarter 1994 have the index of industrial production continuing to grow firmly following accelerating growth over the previous eight quarters. The trend in the index has now grown consistently since the March quarter 1992. The trend grew by 1.4 per cent in the June quarter 1994 following growth of 1.8 per cent in the March quarter and 1.8 per cent in the December quarter 1993 and is now 6.8 per cent above the June quarter 1993 estimate.

In the latest quarter one of the three component series, utilities, showed very weak trend growth, while

manufacturing, the major component, grew moderately (up 1.3%), and mining grew strongly (up 2.6%).

In seasonally adjusted terms a strong rise of 3.5 per cent in mining was slightly offset by a rise of 0.4 per cent in manufacturing and a fall of 0.2 per cent in the utilities sector, to give 0.9 per cent growth for the industrial production index overall during the June quarter 1994. This follows stronger rises of 1.8 per cent and 3.2 per cent in the March 1994 and December 1993 quarters respectively.

INDEX OF INDUSTRIAL GROSS PRODUCT AT AVERAGE 1989-90 PRICES  
(BASE: 1989-90 = 100.0)



(a) See paragraph 20 to 22 of the Explanatory Notes. Trend estimates for the most recent periods are provisional and could change when data for further quarters are available.

### Longer term trends

Over the 10 years from 1983-94, the index of industrial production has had an average annual trend rate of

growth of 2.7 per cent. As can be seen from the graph above, industrial production has grown strongly to reach new levels over the last two years after three years of fairly flat trend from the March quarter 1989.

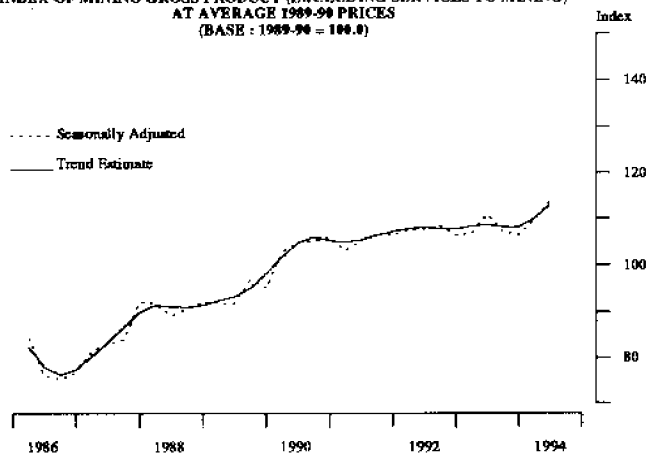
### INQUIRIES

- for information about statistics in this publication and the availability of related unpublished statistics, contact Mr Mal Lawrie on Canberra (06) 252 7421 or any ABS State office.
- for information about other ABS statistics and services please contact Information Services on Canberra (06) 252 6627, 252 5402, 252 6007 or any ABS State Office.

## SUMMARY OF FINDINGS

**Components of the industrial production index****(i) Mining**

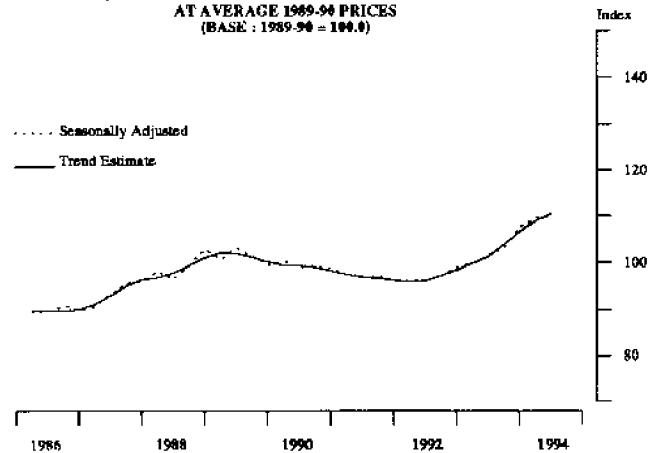
INDEX OF MINING GROSS PRODUCT (EXCLUDING SERVICES TO MINING)  
AT AVERAGE 1989-90 PRICES  
(BASE : 1989-90 = 100.0)



The provisional trend for the index of mining production showed accelerating growth over the last three quarters (reflecting two quarters of strong growth in the seasonally adjusted figures) following generally steady growth since 1990. The trend grew by 2.6 per cent to a record level in the June quarter 1994, following rises of 1.7 per cent in the March quarter and 0.1 per cent in the December quarter 1993, to be 4.1 per cent up on the June quarter 1993. The average annual trend rate of growth for the past 10 years is 4.4 per cent.

**(ii) Manufacturing**

INDEX OF MANUFACTURING GROSS PRODUCT  
AT AVERAGE 1989-90 PRICES  
(BASE : 1989-90 = 100.0)



The trend in the index of manufacturing production has now grown consistently for over two years, following three years of decline. Moderate growth (up 1.3%) in the June quarter 1994 following strong growth (2.2%, 2.8% and 2.5% respectively) for the March 1994, December and September 1993 quarters places the trend at record high levels, 9.0 per cent above that recorded in the June quarter 1993. Over the 10 years from 1983-84, the average annual trend rate of growth has been 2.2 per cent.

Nine of the twelve manufacturing subdivisions are showing trend growth, two are largely flat while only food, beverages and tobacco is showing a slight decline in trend production to the June quarter 1994. Recent movements in the estimates of trend and the average annual trend rate of growth over the last 10 years for each manufacturing subdivision are summarized below

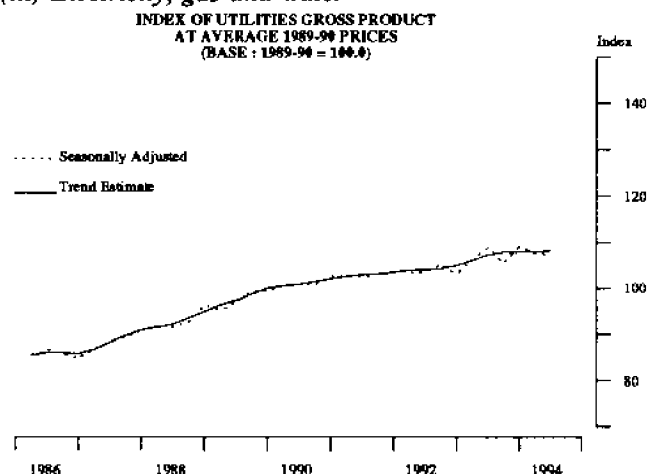
- *Food, beverages and tobacco* production has fallen slightly over the last three quarters from a record level to be down by 0.3 per cent over the year to June quarter 1994, but production has grown by 2.8 per cent annually over the past 10 years.
- The trend in *Textiles* production is showing early signs of a turnaround with a moderate rise over the latest two quarters following a strong decline over the previous eight quarters. Over the last 10 years the average annual trend rate has been a decline of 2.2 per cent.
- *Clothing and footwear* production is showing very strong growth over the last three quarters. However, this series has shown considerable volatility over recent quarters and users should be aware that the trend is provisional and subject to revision. The average annual rate of change in the production trend over the 10 year period is zero.
- Production in the *Wood, wood products and furniture* subdivision has risen moderately over the last

two quarters (to reach 1.6 per cent growth over 1993-94) following three quarters of decline. Since 1983-84 the index has fallen on average each year by 1.4 per cent.

- The trend for the index of *Paper, printing and publishing* gross product has shown continuous growth over the latest five quarters, following a long decline between the March quarters 1991 and 1993. Since the June quarter 1993 the trend has risen by 12.2 per cent. A 0.8 per cent average annual trend growth rate has been measured over the 10 year period.
- *Chemical, petroleum and coal products* trend production has flattened out in the latest quarter after moderately strong growth to record levels over the previous four quarters. However the trend remains 9.2 per cent above the June quarter 1993 level. The average annual trend growth since 1983-84 has been 2.7 per cent.
- The production trend for the *Non-metallic mineral products* subdivision has shown slower growth over the latest three quarters following strong growth for the previous seven quarters. This follows a large decline in production from the March quarter 1989. Despite this fall, the average annual trend growth over the 10 years was 2.2 per cent.
- *Basic metal products* trend production has flattened in the June quarter 1994 following six quarters of consistent growth to record levels. Over the 10 year period the index has grown by an average 3.8 per cent per annum, just over half of the current annual growth of 7.5 per cent.
- The trend in the index of *Fabricated metal products* gross product has risen consistently over the last seven quarters following a long term decline over the previous three and a half years. While the trend has grown by 9.7 per cent since June quarter 1993, the average annual trend rate of growth since 1983-84 has been 1.3 per cent.
- Trend estimates for the index of *Transport equipment* gross product continue to show very strong growth to record levels, from the trough of mid 1992. The series has grown by 18.7 per cent over the last four quarters and by 35.2 per cent since the June quarter 1992. Over the 10 year period the average annual trend rate has been an increase of 1.8 per cent.

- The trend in the *Other machinery and equipment* production index has risen strongly over the last four quarters to record levels. Since the March quarter 1992, trend production has increased by 34.7 per cent. The 10 year average annual growth rate has been 4.1 per cent, the strongest growth of all manufacturing subdivisions.
- The *Miscellaneous manufacturing* trend has grown continuously for seven quarters, to record production levels. An average annual trend rate of growth of 2.2 per cent has been achieved since 1983-84.

### (iii) Electricity, gas and water



The provisional trend for the index of gross product for the Electricity, gas and water sector displays very weak growth to the June quarter 1994. The trend grew by 0.1 per cent in each of the latest two quarters and is now 0.7 per cent above the trend estimate for the June quarter 1993. Since 1983-84, the average annual trend rate of growth has been 3.1 per cent.

TABLE 1. INDEXES OF INDUSTRIAL GROSS PRODUCT AT AVERAGE 1989-90 PRICES — SEASONALLY ADJUSTED AND TREND ESTIMATES

Quarters ended														
1990-91			1991-92			1992-93			1993-94					
Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	
Seasonally adjusted														
Mining (excluding services to mining)	103.2	105.5	106.5	106.5	107.5	107.8	108.4	106.4	106.8	110.8	107.0	106.4	109.9	113.7
Manufacturing	97.4	96.9	97.2	96.1	96.2	96.0	97.1	99.1	99.7	101.7	103.1	107.6	109.7	110.1
Electricity, gas and water	102.5	102.3	103.2	103.6	103.4	103.7	105.3	103.1	106.3	108.8	105.6	109.0	107.6	107.4
Total industrial production	99.2	99.2	99.7	99.0	99.3	99.2	100.3	100.9	101.9	104.3	104.2	107.5	109.4	110.4
Trend estimates														
Mining (excluding services to mining)	105.0	105.4	106.4	107.2	107.8	108.2	107.8	107.7	108.3	108.5	108.1	108.2	110.0	112.9
Manufacturing	97.5	96.9	96.6	96.2	95.9	96.1	97.1	98.4	99.7	101.3	103.8	106.7	109.0	110.4
Electricity, gas and water	102.6	103.0	103.2	103.5	103.9	104.1	104.2	105.0	106.1	107.3	107.9	107.9	108.0	108.1
Total industrial production	99.6	99.3	99.3	99.2	99.1	99.4	100.0	101.0	102.2	103.5	105.2	107.1	109.0	110.5

**TABLE 2. PERCENTAGE CHANGES IN INDEXES OF INDUSTRIAL GROSS PRODUCT AT AVERAGE 1989-90 PRICES — SEASONALLY ADJUSTED AND TREND ESTIMATES**

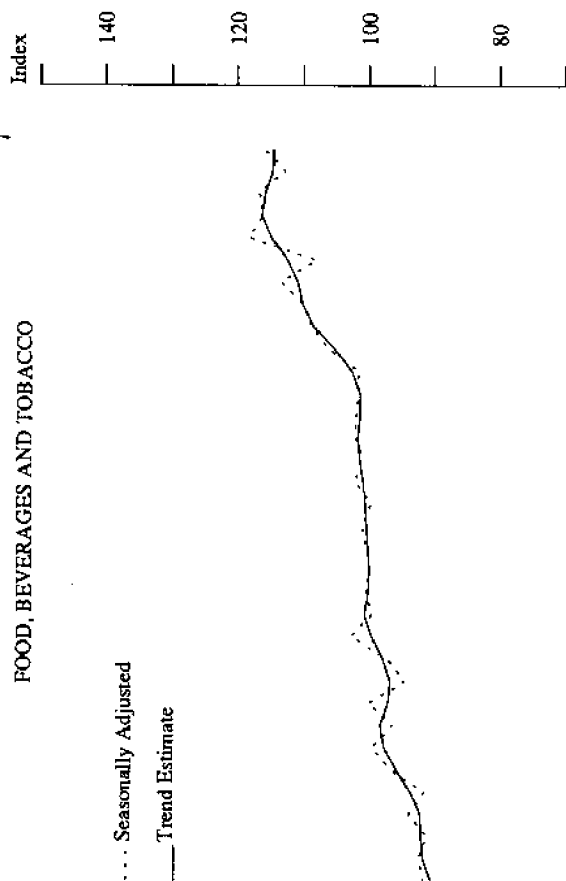
	Change from preceding quarter											
	1990-91			1991-92			1992-93			1993-94		
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.
	Seasonally adjusted											
Mining (excluding services to mining)	2.2	0.9	—	0.9	0.3	0.6	-1.8	0.4	3.7	-3.4	-0.6	3.3
Manufacturing	-0.5	0.3	-1.1	0.1	-0.2	1.1	2.1	0.6	2.0	1.4	4.4	2.0
Electricity, gas and water	-0.2	0.9	0.4	-0.2	0.3	1.5	-2.1	3.1	2.4	-2.9	3.2	-1.3
<b>Total industrial production</b>	—	<b>0.5</b>	<b>-0.7</b>	<b>0.3</b>	<b>-0.1</b>	<b>1.1</b>	<b>0.6</b>	<b>1.0</b>	<b>2.4</b>	<b>-0.1</b>	<b>3.2</b>	<b>1.8</b>
	Trend estimates											
Mining (excluding services to mining)	0.4	0.9	0.8	0.6	0.4	-0.4	-0.1	0.6	0.2	-0.4	0.1	1.7
Manufacturing	-0.6	-0.3	-0.4	-0.3	0.2	1.0	1.3	1.3	1.6	2.5	2.8	2.2
Electricity, gas and water	0.4	0.2	0.3	0.4	0.2	0.1	0.8	1.0	1.1	0.6	—	0.1
<b>Total industrial production</b>	<b>-0.3</b>	<b>—</b>	<b>-0.1</b>	<b>-0.1</b>	<b>0.3</b>	<b>0.6</b>	<b>1.0</b>	<b>1.2</b>	<b>1.3</b>	<b>1.6</b>	<b>1.8</b>	<b>1.8</b>
	to											
	June Qtr 1993			June Qtr 1994			June Qtr 1994			June Qtr 1994		
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.
	2.6	8.3	-1.3	3.3	3.5	0.4	-0.2	3.3	0.9	5.8	1.4	6.8

# INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES

(BASE: 1989-90 = 100.0)

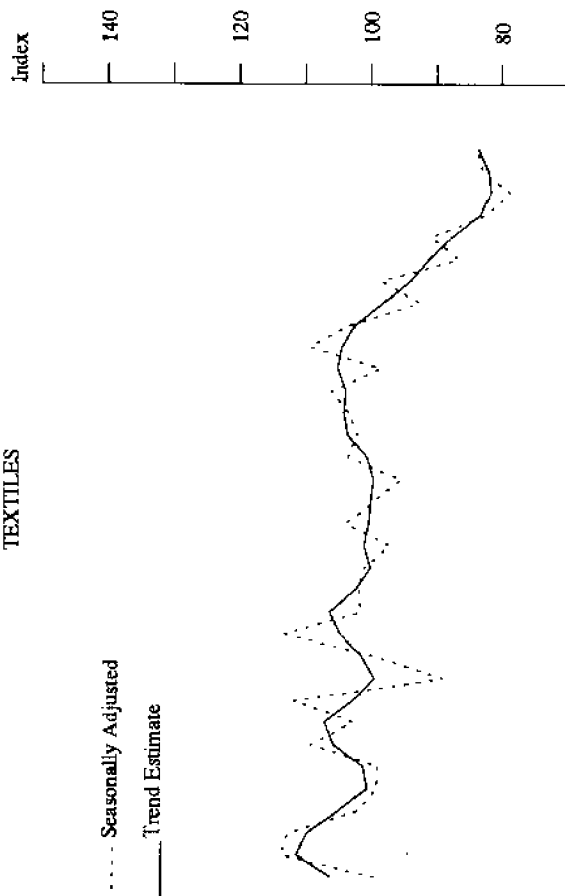
## FOOD, BEVERAGES AND TOBACCO

..... Seasonally Adjusted  
 \_\_\_\_\_ Trend Estimate



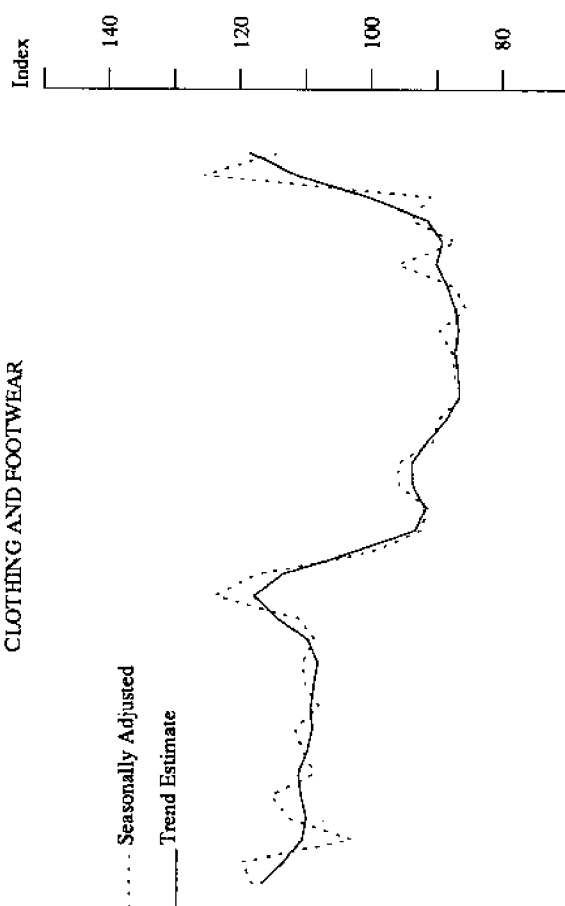
## TEXTILES

..... Seasonally Adjusted  
 \_\_\_\_\_ Trend Estimate



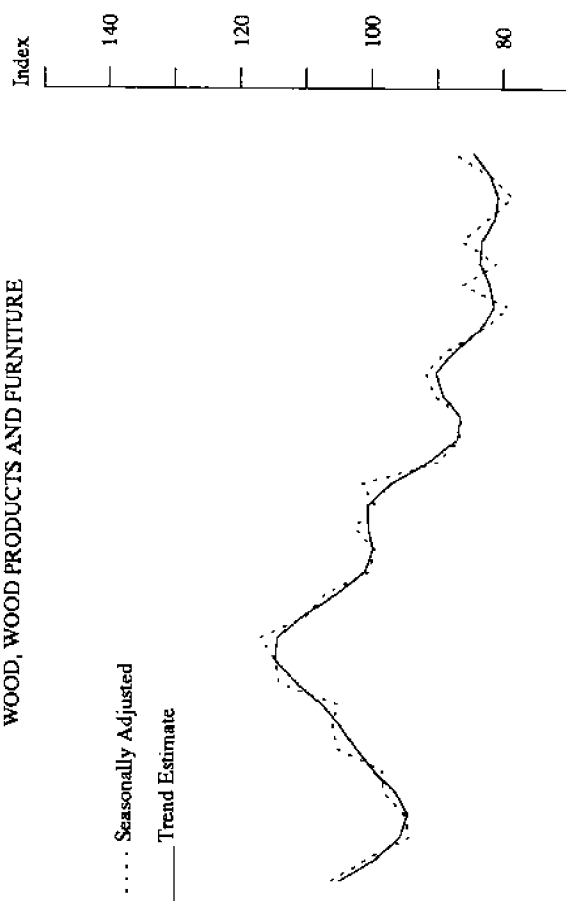
## CLOTHING AND FOOTWEAR

..... Seasonally Adjusted  
 \_\_\_\_\_ Trend Estimate



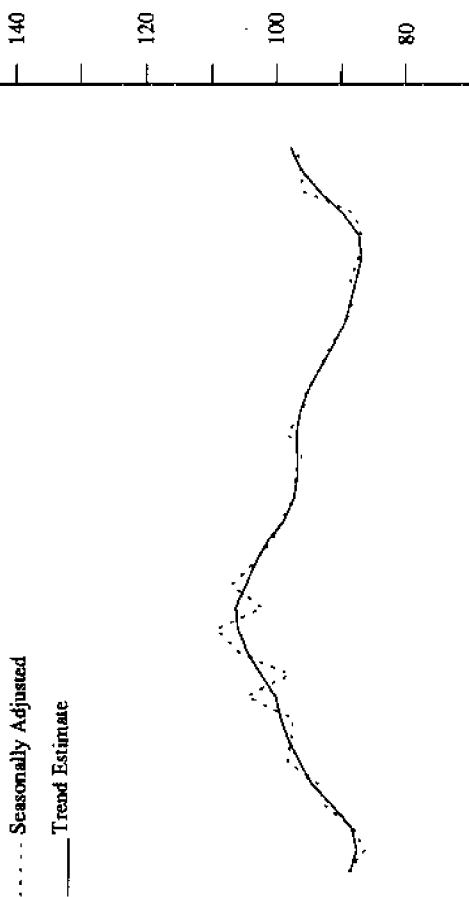
## WOOD, WOOD PRODUCTS AND FURNITURE

..... Seasonally Adjusted  
 \_\_\_\_\_ Trend Estimate

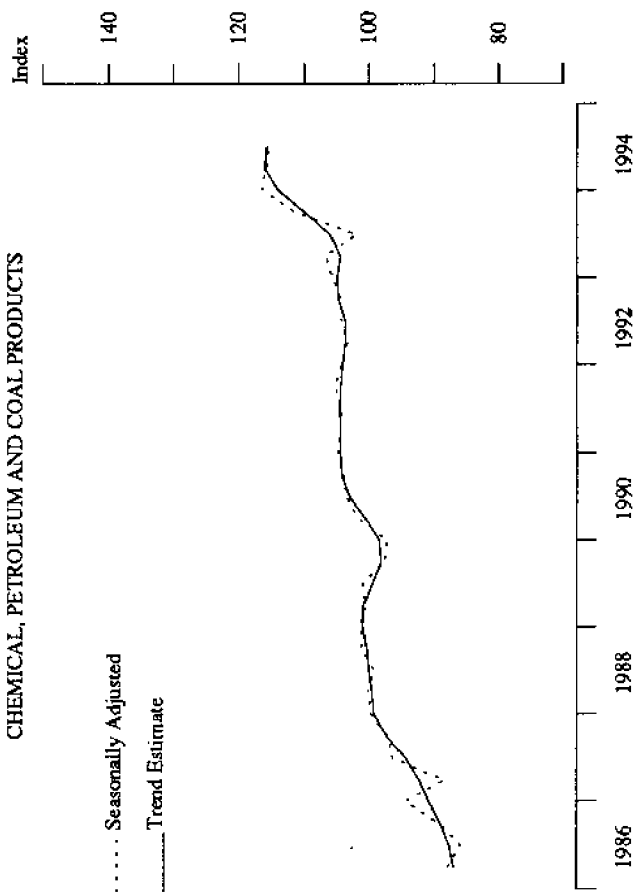


# INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES (BASE: 1989-90 = 100.0)

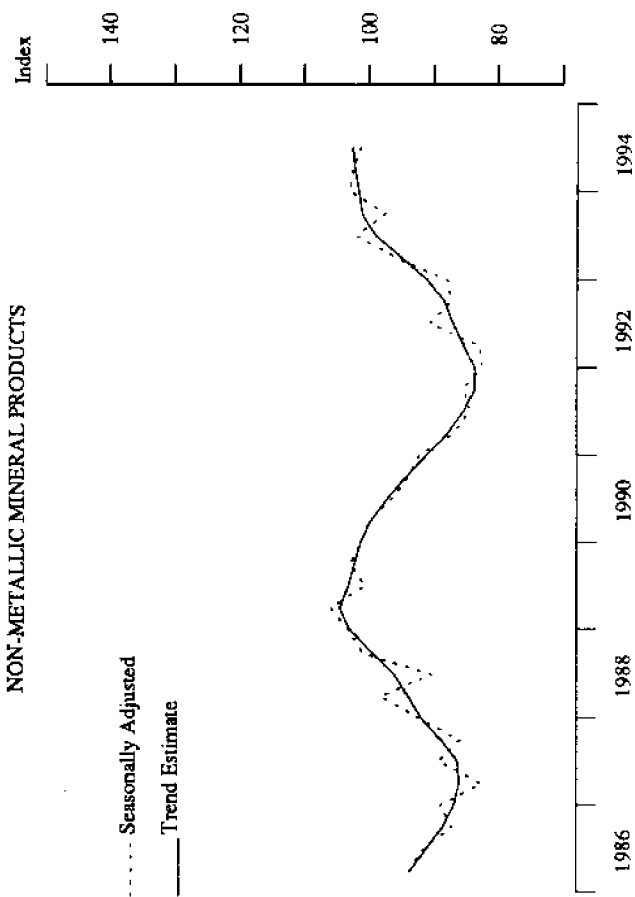
## PAPER, ETC. PRINTING AND PUBLISHING



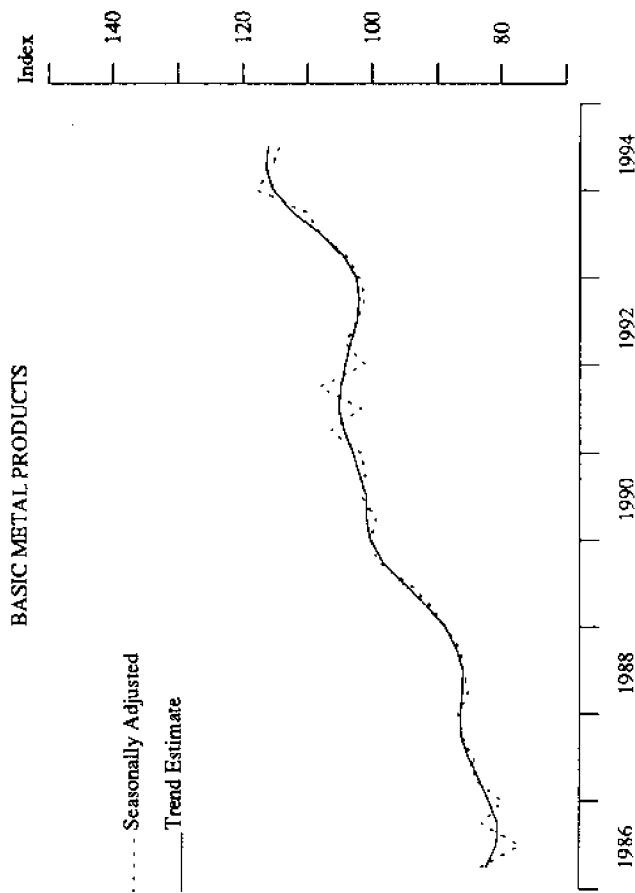
## CHEMICAL, PETROLEUM AND COAL PRODUCTS



## NON-METALLIC MINERAL PRODUCTS



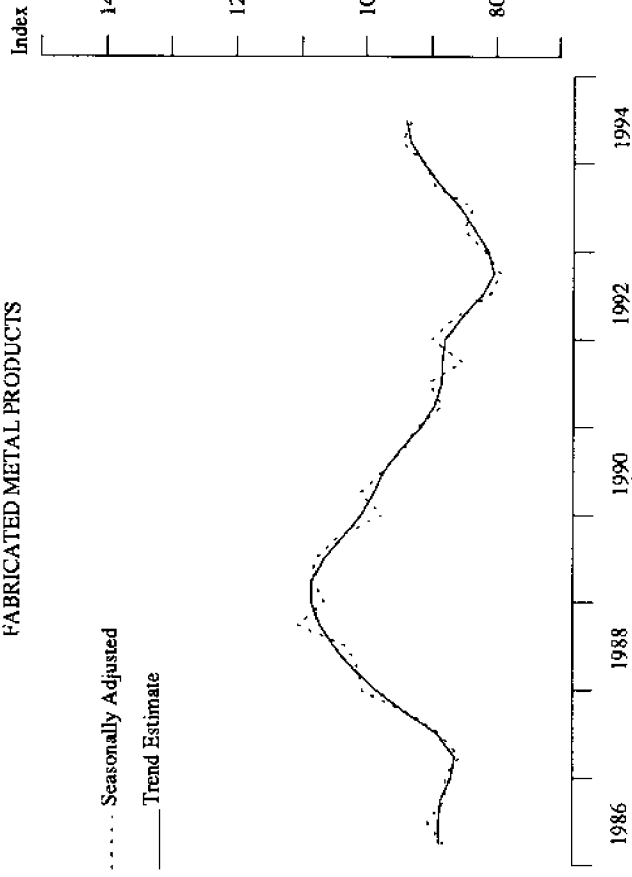
## BASIC METAL PRODUCTS



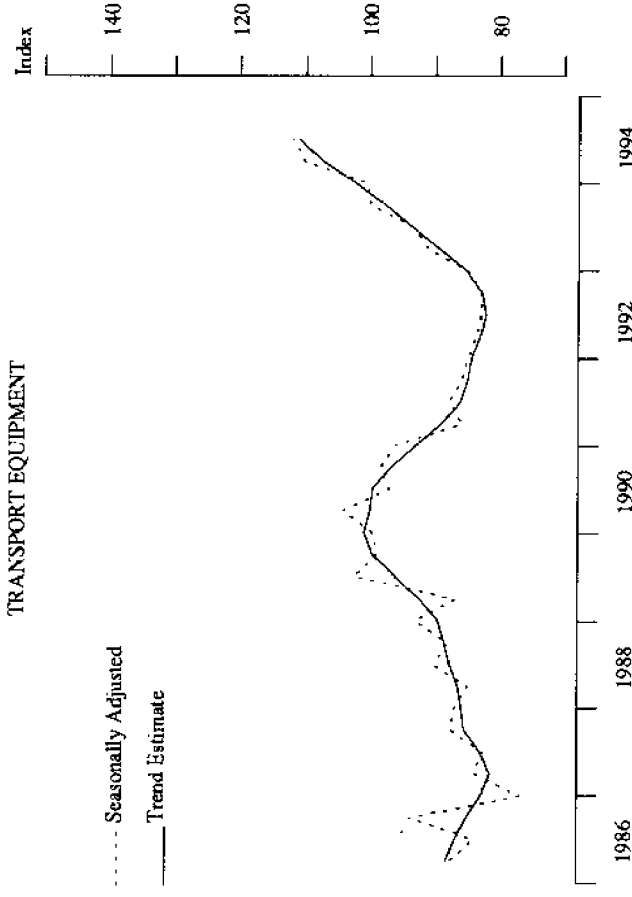
# INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES (BASE: 1989-90 = 100.0)

## FABRICATED METAL PRODUCTS

..... Seasonally Adjusted  
 \_\_\_\_\_ Trend Estimate

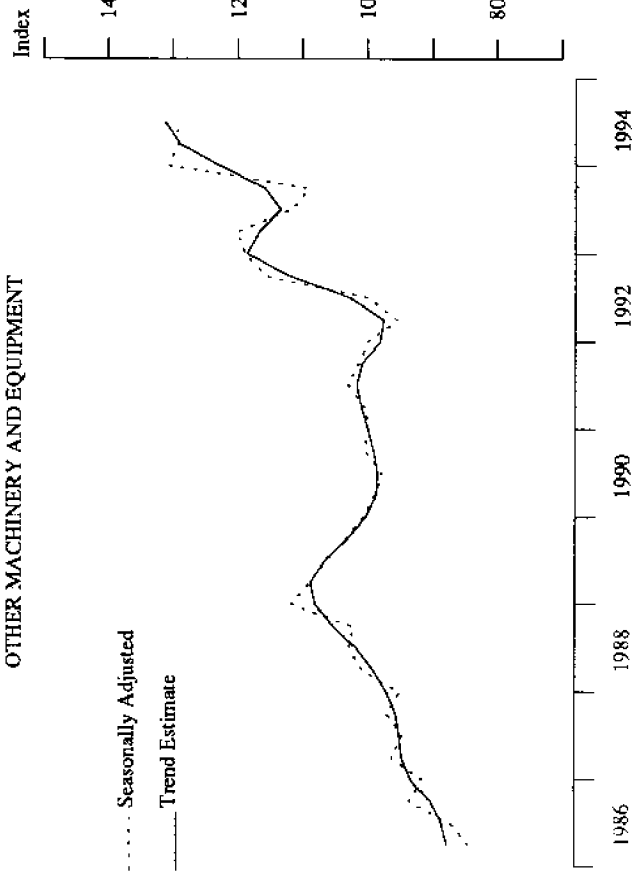


## TRANSPORT EQUIPMENT



## OTHER MACHINERY AND EQUIPMENT

..... Seasonally Adjusted  
 \_\_\_\_\_ Trend Estimate



## MISCELLANEOUS MANUFACTURING

..... Seasonally Adjusted  
 \_\_\_\_\_ Trend Estimate

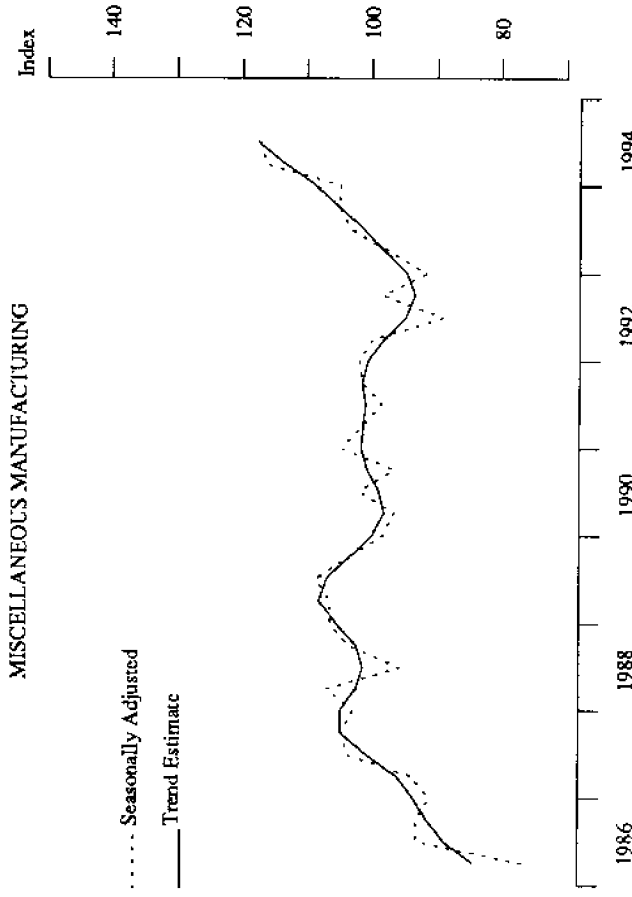


TABLE 3. INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES, BY SUBDIVISION — SEASONALLY ADJUSTED  
Index numbers (Base: 1989-90 = 100.0)

ASIC Sub- Divn.	Industry	Quarters ended											
		1990-91			1991-92			1992-93			1993-94		
		June	Sept.	Dec.	June	Sept.	Dec.	June	Sept.	Dec.	June	Sept.	Dec.
21	Food, beverages and tobacco	101.9	101.7	101.3	101.5	106.0	108.8	109.8	113.4	107.9	118.3	116.2	116.8
23	Textiles	101.9	103.2	105.8	98.3	109.1	103.2	92.4	98.3	86.5	90.8	82.3	78.7
24	Clothing and footwear	90.4	89.5	86.1	87.2	87.4	89.5	85.5	87.2	95.9	86.9	93.8	91.0
25	Wood, wood products and furniture	86.2	85.8	90.2	91.5	88.4	82.9	78.9	85.9	80.8	86.0	82.3	78.4
26	Paper, etc, printing and publishing	98.1	95.6	95.1	93.0	91.5	89.3	88.0	88.5	87.2	86.9	87.9	95.9
27	Chemical, petroleum and coal products	104.4	104.2	105.3	104.3	103.4	104.3	104.4	105.6	106.6	101.9	111.3	116.3
28	Non-metallic mineral products	86.9	84.4	85.3	82.7	83.0	90.6	87.4	88.0	95.9	101.9	97.5	103.0
29	Basic metal products	106.4	101.6	108.1	101.1	104.1	102.3	101.1	102.0	103.9	108.0	110.1	117.6
31	Fabricated metal products	88.1	90.3	85.1	89.9	86.4	80.9	79.1	81.6	84.8	83.5	89.4	91.0
32	Transport equipment	85.9	87.8	85.9	84.9	83.7	82.9	82.9	85.0	91.2	93.4	100.0	100.5
33	Other machinery and equipment	100.4	102.9	101.3	99.8	95.4	99.8	115.6	118.8	120.2	111.6	109.0	130.5
34	Miscellaneous manufacturing	101.5	98.4	101.5	102.0	99.7	89.1	98.3	91.6	97.3	103.2	105.1	104.8
Total manufacturing		97.4	96.9	97.2	96.1	96.2	96.0	97.1	99.1	99.7	101.7	103.1	107.6
													109.7
													110.1

TABLE 4. PERCENTAGE CHANGES IN INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES, BY SUBDIVISION — SEASONALLY ADJUSTED

ASIC Sub- Divn.	Industry	Change from preceding quarter											
		1990-91			1991-92			1992-93			1993-94		
		June	Sept.	Dec.	June	Sept.	Dec.	June	Sept.	Dec.	June	Sept.	Dec.
21	Food, beverages and tobacco	-0.2	-0.4	0.2	4.4	2.6	0.9	3.3	-4.9	9.6	-1.8	0.5	-3.4
23	Textiles	1.3	2.5	-7.1	11.0	-5.4	-10.5	6.4	-12.0	5.0	-9.4	-4.4	5.3
24	Clothing and footwear	-1.0	-3.8	1.3	0.2	2.4	-4.5	2.0	10.0	-9.4	7.9	-3.0	37.9
25	Wood, wood products and furniture	-0.5	5.1	1.4	-3.4	-6.2	-4.8	8.9	-5.9	6.4	-4.3	-4.7	4.5
26	Paper, etc, printing and publishing	-2.5	-0.5	-2.2	-1.6	-2.4	-1.5	0.6	-1.5	-0.3	1.2	9.1	0.5
27	Chemical, petroleum and coal products	-0.2	1.1	-0.9	-0.9	0.9	0.1	1.1	0.9	-4.4	9.2	4.5	-0.4
28	Non-metallic mineral products	-2.9	1.1	-3.0	0.4	9.2	-3.5	0.7	9.0	6.3	-4.3	5.6	-0.5
29	Basic metal products	-4.5	6.4	-6.5	3.0	-1.7	-1.2	0.9	1.9	3.9	1.9	6.8	-1.6
31	Fabricated metal products	2.5	-5.8	5.6	-3.9	-6.4	-2.2	3.2	3.9	-1.5	7.1	1.8	3.7
32	Transport equipment	2.2	-2.2	-1.2	-1.4	-1.0	—	2.5	7.3	2.4	7.1	0.5	9.7
33	Other machinery and equipment	2.5	-1.6	-1.5	-4.4	4.6	15.8	2.8	1.2	-7.2	-2.3	19.7	-1.1
34	Miscellaneous manufacturing	-3.1	3.2	0.5	-2.3	-10.6	10.3	-6.8	6.2	6.1	1.8	-0.3	11.0
Total manufacturing		-0.5	0.3	-1.1	0.1	-0.2	1.1	2.1	0.6	2.0	1.4	4.4	2.0
													0.4
													8.3



TABLE 5. INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES, BY SUBDIVISION — TREND ESTIMATES  
Index numbers (Base : 1989-90 = 100.0)

ASIC Sub- Divn.	Industry	Quarters ended											
		1990-91			1991-92			1992-93			1993-94		
		Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
21	Food, beverages and tobacco	101.5	101.1	101.2	102.5	105.1	108.4	110.0	110.8	112.4	114.8	116.3	115.8
23	Textiles	103.3	103.9	103.6	104.9	104.3	102.3	98.0	93.8	91.1	87.5	83.3	81.6
24	Clothing and footwear	91.3	88.3	86.4	86.6	87.0	86.6	87.0	88.3	90.0	89.1	91.5	100.6
25	Wood, wood products and furniture	86.5	86.1	88.8	89.9	87.1	83.2	81.1	81.8	83.3	83.1	81.1	80.6
26	Paper, etc. printing and publishing	96.7	96.1	94.8	93.0	91.1	89.4	88.4	87.6	86.8	87.2	89.8	93.4
27	Chemical, petroleum and coal products	104.4	104.5	104.4	104.1	103.7	103.7	104.7	104.9	104.4	106.0	109.9	114.0
28	Non-metallic mineral products	87.8	85.3	83.7	83.7	85.3	87.0	88.4	91.0	95.0	99.0	101.1	101.6
29	Basic metal products	104.3	105.1	104.8	104.1	103.3	102.3	102.0	102.4	104.4	107.9	112.3	115.2
31	Fabricated metal products	89.4	88.2	88.1	87.7	85.3	82.0	80.2	81.1	83.2	85.5	88.4	91.2
32	Transport equipment	89.1	86.1	85.0	84.4	83.0	82.2	82.8	85.2	89.4	93.6	97.8	102.4
33	Other machinery and equipment	100.9	101.6	100.8	97.9	97.4	102.7	111.9	118.4	116.6	113.3	115.8	122.8
34	Miscellaneous manufacturing	101.3	101.0	101.5	100.6	98.0	94.8	93.3	94.6	98.0	101.2	105.0	108.7
Total manufacturing		97.5	96.9	96.6	96.2	95.9	96.1	97.1	98.4	99.7	101.3	103.8	106.7
													109.0
													110.4

TABLE 6. PERCENTAGE CHANGES IN INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES  
BY SUBDIVISION — TREND ESTIMATES

ASIC Sub- Divn.	Industry	Change from preceding quarter											
		1990-91			1991-92			1992-93			1993-94		
		June	Sept.	Dec.	June	Sept.	Dec.	June	Sept.	Dec.	June	Sept.	Dec.
21	Food, beverages and tobacco	-0.4	0.1	1.3	2.5	3.1	1.5	1.4	2.1	1.3	-0.4	-1.0	-0.1
23	Textiles	0.6	-0.3	1.3	-0.6	-1.9	-4.2	-4.3	-4.0	-4.8	-2.0	0.5	2.0
24	Clothing and footwear	-3.3	-2.2	0.2	0.5	-0.5	0.5	1.5	-1.0	2.7	9.9	10.7	6.3
25	Wood, wood products and furniture	-0.5	3.1	1.2	-3.1	-4.5	-2.5	0.9	-0.2	-2.4	-0.6	1.5	3.2
26	Paper, etc. printing and publishing	-0.6	-1.4	-1.9	-2.0	-1.9	-1.1	-0.9	0.5	3.0	3.0	1.7	12.2
27	Chemical, petroleum and coal products	0.1	-0.1	-0.3	-0.4	—	1.0	0.2	1.5	3.7	3.7	1.8	-0.3
28	Non-metallic mineral products	-2.8	-1.9	—	1.9	2.0	1.6	2.9	4.4	2.1	0.5	0.6	0.4
29	Basic metal products	0.8	-0.3	-0.7	-0.8	-1.0	-0.3	0.4	3.4	4.1	2.6	0.9	-0.2
31	Fabricated metal products	-1.3	-0.1	-0.5	-2.7	-3.9	-2.2	1.1	2.6	3.4	3.2	2.1	0.8
32	Transport equipment	-3.4	-1.3	-0.7	-1.7	-1.0	0.7	2.9	4.9	4.7	4.5	4.7	4.8
33	Other machinery and equipment	0.7	-0.8	-2.9	-0.5	5.4	9.0	5.8	-1.5	-2.8	2.2	6.0	4.9
34	Miscellaneous manufacturing	-0.3	0.5	-0.9	-2.6	-3.3	-1.6	1.4	3.6	3.3	3.8	3.5	4.3
Total manufacturing		-0.6	-0.3	-0.4	-0.3	0.2	1.0	1.3	1.6	2.5	2.8	2.2	1.3
													9.0

TABLE 7. INDEXES OF INDUSTRIAL GROSS PRODUCT AT AVERAGE 1989-90 PRICES,  
BY INDUSTRY — ORIGINAL

Index numbers (Base : 1989-90 = 100.0)

	Mining excluding Services to mining	Manufacturing	Electricity, gas and water	Total
1976-77	56.8	79.9	57.2	71.6
1977-78	58.2	79.5	58.0	71.9
1978-79	59.7	82.9	61.1	74.8
1979-80	58.4	86.4	65.3	77.1
1980-81	59.5	88.2	68.2	78.8
1981-82	59.0	90.4	71.8	80.5
1982-83	61.3	82.9	73.8	76.9
1983-84	65.8	84.2	76.8	79.3
1984-85	74.3	88.5	81.6	85.0
1985-86	82.9	90.1	84.7	88.0
1986-87	79.2	91.1	86.4	88.3
1987-88	89.3	96.5	90.8	94.4
1988-89	91.7	101.5	95.2	98.9
1989-90	100.0	100.0	100.0	100.0
1990-91	105.0	98.1	102.0	99.9
1991-92	107.1	96.4	103.5	99.3
1992-93	108.2	99.4	105.8	101.9
1993-94	109.2	107.5	107.3	107.9
1977-78 — Sept.	60.5	81.4	60.0	74.0
Dec.	57.8	83.0	57.6	73.8
Mar.	55.9	73.3	55.8	67.3
June	58.5	80.4	58.4	72.6
1978-79 — Sept.	60.4	83.2	62.1	75.3
Dec.	60.1	86.6	58.9	76.9
Mar.	57.3	77.7	60.9	70.9
June	60.9	83.9	62.3	75.9
1979-80 — Sept.	63.1	88.7	66.9	80.0
Dec.	62.4	90.2	64.1	80.3
Mar.	53.9	81.4	64.6	72.7
June	54.3	85.3	65.4	75.3
1980-81 — Sept.	60.4	89.0	69.6	79.8
Dec.	59.4	93.2	67.6	81.7
Mar.	59.7	82.3	66.6	75.1
June	58.5	88.2	68.8	78.7
1981-82 — Sept.	56.9	92.8	73.7	81.6
Dec.	60.6	95.2	69.4	83.5
Mar.	55.7	83.2	70.3	75.1
June	62.7	90.2	73.6	81.7
1982-83 — Sept.	61.2	91.2	77.1	82.3
Dec.	62.7	84.8	73.2	78.3
Mar.	58.3	73.4	71.3	70.0
June	63.0	82.3	73.6	77.0
1983-84 — Sept.	64.9	84.9	78.0	79.7
Dec.	64.4	87.1	75.2	80.4
Mar.	65.2	79.4	75.6	76.1
June	68.7	85.4	78.3	81.0
1984-85 — Sept.	74.2	91.4	84.3	87.3
Dec.	73.0	90.1	80.5	85.7
Mar.	70.8	82.3	80.0	79.9
June	79.3	90.0	81.6	86.9
1985-86 — Sept.	90.6	92.6	87.0	91.4
Dec.	84.6	94.9	81.7	91.2
Mar.	81.5	83.8	83.9	83.4
June	75.0	88.9	86.0	86.0
1986-87 — Sept.	78.3	93.3	89.3	90.0
Dec.	77.9	93.4	83.4	89.2
Mar.	78.8	84.9	85.4	83.9
June	81.7	92.7	87.5	90.0
1987-88 — Sept.	87.5	98.3	93.0	95.6
Dec.	93.1	99.7	89.7	97.1
Mar.	88.7	92.3	90.1	91.3
June	87.8	95.7	90.5	93.5
1988-89 — Sept.	94.3	101.9	96.2	99.7
Dec.	92.9	106.9	95.2	102.7
Mar.	88.9	94.7	93.4	93.5
June	90.5	102.6	95.8	99.5
1989-90 — Sept.	100.8	103.6	103.3	103.0
Dec.	96.0	103.5	98.6	101.5
Mar.	99.6	94.7	98.5	96.1
June	103.6	98.2	99.6	99.4
1990-91 — Sept.	109.2	101.6	104.5	103.3
Dec.	107.0	102.4	101.7	103.1
Mar.	99.8	92.4	100.6	94.9
June	104.1	96.1	101.0	98.3
1991-92 — Sept.	110.6	99.2	107.2	102.4
Dec.	107.5	99.7	102.7	101.5
Mar.	103.9	91.5	101.3	95.1
June	106.5	95.2	102.6	98.3
1992-93 — Sept.	112.6	99.0	109.5	102.9
Dec.	107.2	102.7	101.8	103.4
Mar.	103.2	94.9	104.2	97.7
June	109.7	100.8	107.6	103.4
1993-94 — Sept.	111.1	105.1	109.8	106.9
Dec.	107.1	111.3	107.7	110.1
Mar.	106.1	104.4	105.4	104.9
June	112.6	109.3	106.3	109.5

TABLE 8. INDEXES OF INDUSTRIAL GROSS PRODUCT AT AVERAGE 1989-90 PRICES,  
BY INDUSTRY — SEASONALLY ADJUSTED AND TREND ESTIMATES  
Index numbers (Base : 1989-90 = 100.0)

	Seasonally adjusted				Trend estimates			
	Mining excluding Services to mining	Manufacturing	Electricity, gas and water	Total	Mining excluding Services to mining	Manufacturing	Electricity, gas and water	Total
1977-78 — Sept.	59.5	79.4	57.7	72.2	58.0	79.4	57.8	71.8
Dec.	56.5	78.7	58.3	71.0	57.4	79.2	57.8	71.4
Mar.	57.9	78.9	57.2	71.4	57.5	79.4	57.9	71.7
June	58.5	81.0	58.8	73.0	58.0	80.4	58.4	72.5
1978-79 — Sept.	59.4	81.0	59.4	73.4	58.6	81.5	59.2	73.3
Dec.	58.8	82.2	59.9	73.9	58.7	82.5	60.5	74.2
Mar.	59.4	83.7	62.2	75.3	59.4	83.6	61.6	75.2
June	60.9	84.4	62.8	76.3	60.6	84.8	62.9	76.5
1979-80 — Sept.	61.9	86.3	64.1	77.9	61.1	85.9	64.1	77.4
Dec.	61.0	85.7	65.1	77.4	59.2	86.7	65.1	77.4
Mar.	55.9	87.9	66.0	77.3	56.7	86.7	65.7	76.8
June	54.4	85.7	65.9	75.7	55.6	86.6	66.3	76.5
1980-81 — Sept.	59.1	86.3	66.9	77.4	57.0	87.1	67.1	77.3
Dec.	58.3	88.8	68.5	78.9	59.2	88.0	67.9	78.6
Mar.	61.8	88.9	68.3	79.9	59.5	88.9	68.6	79.3
June	58.8	88.6	69.1	79.0	58.4	89.4	69.3	79.3
1981-82 — Sept.	55.6	89.7	70.6	79.0	57.2	89.9	70.0	79.4
Dec.	59.5	90.9	70.5	80.9	57.5	90.6	71.1	80.1
Mar.	57.8	90.1	72.3	80.0	59.2	91.0	72.4	81.0
June	63.2	90.3	74.0	81.9	60.4	89.9	73.5	80.9
1982-83 — Sept.	59.7	88.1	74.1	79.6	60.5	86.6	74.1	78.9
Dec.	61.3	81.1	74.1	75.9	60.5	82.8	73.8	76.6
Mar.	60.3	79.4	73.0	74.4	61.0	80.7	73.5	75.4
June	63.6	82.3	73.9	77.2	62.0	81.0	73.9	75.9
1983-84 — Sept.	63.3	82.0	75.0	77.1	62.7	82.6	74.9	77.3
Dec.	63.1	83.6	76.4	78.2	64.1	84.0	76.2	78.6
Mar.	67.3	85.7	77.5	80.8	66.2	85.2	77.5	80.1
June	69.4	85.3	78.7	81.3	68.7	86.2	78.9	81.6
1984-85 — Sept.	71.6	88.6	80.7	84.4	71.0	86.5	80.8	82.9
Dec.	72.0	86.9	81.7	83.5	72.2	87.7	81.6	84.0
Mar.	73.4	87.9	81.9	84.5	75.7	88.4	82.1	85.2
June	80.4	90.5	81.9	87.5	80.6	89.4	82.4	86.8
1985-86 — Sept.	87.3	89.8	83.4	88.5	85.0	90.4	82.9	88.4
Dec.	83.5	91.4	83.0	88.8	85.7	90.3	84.0	88.6
Mar.	84.4	89.5	85.5	88.0	82.3	89.9	85.4	87.9
June	76.2	89.4	86.7	86.6	78.1	89.7	86.1	87.1
1986-87 — Sept.	75.3	90.6	85.8	87.2	76.3	89.6	86.0	86.7
Dec.	76.9	89.8	84.7	86.8	77.5	90.0	85.8	87.1
Mar.	81.5	90.5	87.0	88.4	80.4	91.0	86.7	88.5
June	83.1	93.3	88.3	90.7	83.3	92.8	88.2	90.5
1987-88 — Sept.	84.1	95.7	89.4	92.7	86.8	95.0	89.7	92.8
Dec.	92.0	95.9	90.8	94.5	89.9	96.3	90.9	94.4
Mar.	91.7	98.1	91.9	96.1	91.4	96.7	91.5	95.0
June	89.2	96.3	91.5	94.4	91.1	97.7	92.2	95.7
1988-89 — Sept.	90.6	99.3	92.5	96.8	90.9	99.3	93.5	97.0
Dec.	92.0	102.9	96.3	100.0	91.4	101.0	94.9	98.4
Mar.	91.8	100.6	95.3	98.3	92.4	102.1	96.3	99.6
June	91.9	103.2	96.9	100.2	93.3	101.9	97.5	99.7
1989-90 — Sept.	96.9	101.3	99.3	100.2	95.1	101.1	98.7	99.7
Dec.	95.1	99.5	99.5	98.7	98.2	100.2	100.0	99.8
Mar.	102.9	100.3	100.4	100.8	101.8	99.4	100.5	100.0
June	105.1	98.9	100.7	100.3	104.9	99.3	100.8	100.5
1990-91 — Sept.	105.2	99.3	100.5	100.6	106.0	98.9	101.4	100.6
Dec.	106.0	98.6	102.6	100.5	105.3	98.2	102.1	100.0
Mar.	103.2	97.4	102.5	99.2	105.0	97.5	102.6	99.6
June	105.5	96.9	102.3	99.2	105.4	96.9	103.0	99.3
1991-92 — Sept.	106.5	97.2	103.2	99.7	106.4	96.6	103.2	99.3
Dec.	106.5	96.1	103.6	99.0	107.2	96.2	103.5	99.2
Mar.	107.5	96.2	103.4	99.3	107.8	95.9	103.9	99.1
June	107.8	96.0	103.7	99.2	108.2	96.1	104.1	99.4
1992-93 — Sept.	108.4	97.1	105.3	100.3	107.8	97.1	104.2	100.0
Dec.	106.4	99.1	103.1	100.9	107.7	98.4	105.0	101.0
Mar.	106.8	99.7	106.3	101.9	108.3	99.7	106.1	102.2
June	110.8	101.7	108.8	104.3	108.5	101.3	107.3	103.5
1993-94 — Sept.	107.0	103.1	105.6	104.2	108.1	103.8	107.9	105.2
Dec.	106.4	107.6	109.0	107.5	108.2	106.7	107.9	107.1
Mar.	109.9	109.7	107.6	109.4	110.0	109.0	108.0	109.0
June	113.7	110.1	107.4	110.4	112.9	110.4	108.1	110.5

TABLE 9. INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES,  
BY SUBDIVISION — ORIGINAL  
Index numbers (Base : 1989-90 = 100.0)

	<i>Food, beverages and tobacco</i>	<i>Textiles</i>	<i>Clothing and footwear</i>	<i>Wood, wood products and furniture</i>	<i>Paper, etc. printing and publishing</i>	<i>Chemicals, petroleum and coal products</i>	<i>Non-metallic mineral products</i>
1976-77	83.3	87.4	91.3	88.7	67.7	75.3	79.6
1977-78	86.4	84.8	91.0	85.6	69.5	78.2	76.8
1978-79	87.7	90.5	96.0	88.5	73.2	82.3	78.9
1979-80	88.4	92.7	98.8	91.4	78.0	84.5	84.2
1980-81	89.4	92.2	100.8	94.7	80.0	84.2	86.3
1981-82	89.8	94.3	100.5	96.2	82.1	87.1	88.2
1982-83	89.4	86.8	93.9	84.9	77.8	84.6	76.0
1983-84	89.1	90.6	101.1	89.2	81.1	87.7	76.5
1984-85	90.2	99.8	104.6	93.5	88.3	89.9	82.7
1985-86	90.1	98.9	116.7	105.4	89.7	87.7	94.4
1986-87	92.9	102.8	108.3	95.6	93.1	92.0	86.9
1987-88	97.2	102.1	108.9	107.0	99.4	99.0	91.3
1988-89	99.6	103.8	112.2	111.8	106.3	100.9	102.4
1989-90	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1990-91	101.6	100.9	92.3	90.8	97.1	104.3	89.4
1991-92	104.3	103.8	86.8	88.4	92.8	104.3	85.5
1992-93	112.3	92.1	88.1	82.9	88.1	104.6	93.1
1993-94	115.5	81.9	104.8	82.4	94.6	114.6	101.0
1977-78 — Sept.	86.1	89.4	97.7	87.8	72.4	76.6	77.0
Dec.	92.0	89.4	88.3	91.3	73.1	79.7	83.4
Mar.	84.0	74.3	82.1	72.7	64.1	75.5	71.2
June	83.4	86.1	95.7	90.4	68.3	81.0	75.6
1978-79 — Sept.	86.5	97.4	97.2	94.1	72.6	84.8	77.8
Dec.	95.0	90.3	96.9	95.8	75.6	83.6	80.1
Mar.	85.4	84.6	88.6	78.1	68.9	77.4	77.4
June	83.7	89.8	101.3	86.1	75.5	83.3	80.3
1979-80 — Sept.	88.5	93.2	102.2	95.6	80.7	81.4	88.1
Dec.	92.3	98.9	104.8	90.4	80.1	91.8	83.1
Mar.	85.8	83.2	91.8	85.2	74.1	81.1	75.9
June	86.9	95.5	96.2	94.5	77.1	83.6	89.7
1980-81 — Sept.	90.0	92.2	110.5	101.6	81.6	83.6	87.5
Dec.	99.3	97.4	104.0	98.4	82.7	84.7	90.8
Mar.	86.5	77.5	90.4	82.8	75.6	82.2	83.1
June	81.9	101.7	98.3	96.0	80.2	86.4	83.8
1981-82 — Sept.	87.3	98.9	114.9	103.6	83.9	87.6	87.3
Dec.	96.9	97.0	101.9	101.8	85.4	90.9	96.2
Mar.	86.4	85.6	86.5	85.3	76.1	79.8	82.1
June	88.5	95.5	98.6	93.9	82.8	90.0	87.3
1982-83 — Sept.	91.6	97.4	105.8	91.0	80.2	87.2	81.3
Dec.	95.8	91.7	88.3	85.9	80.9	86.2	80.8
Mar.	85.4	75.6	80.0	71.4	71.9	78.1	63.5
June	84.8	82.3	101.3	91.1	78.1	86.8	78.4
1983-84 — Sept.	86.4	90.3	106.9	88.1	80.0	87.6	82.1
Dec.	94.0	85.6	100.4	95.6	83.9	91.1	78.2
Mar.	86.6	80.4	93.3	82.3	76.4	91.7	72.4
June	89.5	106.0	103.7	90.6	84.1	80.5	73.3
1984-85 — Sept.	92.0	114.1	113.4	97.5	90.7	91.0	80.8
Dec.	93.1	97.5	104.5	96.3	88.0	88.6	80.8
Mar.	86.9	83.1	90.1	84.4	82.1	90.0	76.6
June	88.6	104.6	110.4	95.8	92.2	90.1	92.5
1985-86 — Sept.	89.3	84.4	130.3	116.1	92.9	88.6	101.3
Dec.	93.1	102.7	116.8	111.8	98.3	89.3	98.2
Mar.	89.2	83.1	103.9	92.8	82.4	88.0	87.5
June	88.7	125.5	115.7	100.8	85.2	84.9	90.5
1986-87 — Sept.	90.8	120.6	112.3	97.6	89.6	89.1	89.3
Dec.	99.1	97.8	114.4	100.4	98.9	94.8	92.9
Mar.	89.2	83.1	101.5	85.6	86.9	88.5	77.6
June	92.4	109.5	104.9	98.8	96.9	95.6	87.7
1987-88 — Sept.	99.2	115.4	120.1	108.9	99.3	97.1	88.2
Dec.	102.0	99.8	114.0	112.6	104.5	100.1	96.2
Mar.	97.7	93.9	95.4	91.5	97.2	100.3	92.7
June	90.0	99.1	106.2	115.0	96.4	98.5	88.1
1988-89 — Sept.	96.8	103.7	119.7	118.6	107.6	101.0	104.2
Dec.	108.7	110.5	111.3	124.8	117.2	101.4	107.5
Mar.	97.7	86.1	98.6	95.6	95.5	98.8	100.3
June	95.3	114.8	119.3	108.1	105.0	102.4	97.7
1989-90 — Sept.	99.8	103.0	126.9	103.5	106.0	97.7	106.6
Dec.	106.4	95.5	102.2	106.3	105.6	97.1	104.9
Mar.	99.3	88.0	82.9	95.1	93.0	100.0	94.7
June	94.6	113.4	88.0	95.1	95.4	105.3	93.8
1990-91 — Sept.	102.1	95.2	103.0	104.4	101.7	104.2	97.7
Dec.	106.7	102.4	97.7	96.0	100.3	104.5	95.1
Mar.	100.7	86.7	82.7	80.4	92.5	102.6	82.3
June	96.8	119.3	85.9	82.4	93.9	106.0	82.6
1991-92 — Sept.	101.3	104.0	92.6	92.8	99.8	105.6	88.9
Dec.	107.5	98.1	88.0	98.3	97.2	103.8	85.3
Mar.	104.7	92.6	81.4	82.8	86.4	101.6	78.3
June	103.8	120.3	85.2	79.7	87.7	106.2	89.3
1992-93 — Sept.	109.7	90.0	91.8	80.9	92.3	104.7	91.0
Dec.	119.8	98.5	87.4	92.3	92.3	105.1	90.5
Mar.	106.6	73.7	90.7	75.7	82.6	104.8	90.3
June	112.9	106.3	82.5	82.8	85.2	103.6	100.7
1993-94 — Sept.	116.1	79.9	100.7	84.3	92.2	111.7	101.3
Dec.	123.4	78.6	91.0	84.3	100.0	115.7	106.0
Mar.	111.6	70.7	119.5	76.8	91.4	113.8	96.5
June	110.8	98.5	108.1	84.0	94.8	117.2	100.3

TABLE 9. INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES,  
BY SUBDIVISION — ORIGINAL—continued  
Index numbers (Base : 1989-90 = 100.0)

	Basic metal products	Fabricated metal products	Transport equipment	Other machinery and equipment	Miscellaneous manufacturing	Total manufacturing
1976-77	64.0	81.8	85.0	90.1	78.6	79.9
1977-78	63.9	80.8	79.6	86.9	78.0	79.5
1978-79	68.1	85.8	81.0	90.5	84.4	82.9
1979-80	74.3	90.7	88.1	93.2	85.6	86.4
1980-81	77.9	94.6	83.4	99.0	88.2	88.2
1981-82	77.8	98.1	88.5	103.4	92.0	90.4
1982-83	67.3	83.9	84.2	86.5	83.7	82.9
1983-84	74.6	81.6	82.7	82.0	85.9	84.2
1984-85	81.5	81.7	90.2	86.4	91.0	88.5
1985-86	82.1	88.6	89.4	86.3	82.9	90.1
1986-87	82.7	87.2	84.4	93.7	95.2	91.1
1987-88	85.8	99.3	87.6	98.6	102.3	96.5
1988-89	90.0	108.2	93.0	106.9	106.1	101.5
1989-90	100.0	100.0	100.0	100.0	100.0	100.0
1990-91	102.6	91.2	92.4	100.8	100.3	98.1
1991-92	103.9	85.6	84.4	99.1	98.2	96.4
1992-93	103.8	82.2	88.2	116.4	97.4	99.4
1993-94	114.4	91.9	105.7	124.3	110.6	107.5
1977-78 — Sept.	64.4	83.2	80.0	90.4	89.1	81.4
Dec.	63.8	82.6	81.6	95.3	76.4	83.0
Mar.	62.7	73.9	72.7	73.5	67.1	73.3
June	64.7	83.5	84.0	88.5	79.5	80.4
1978-79 — Sept.	65.9	86.2	82.2	89.5	87.8	83.2
Dec.	69.0	90.4	81.0	97.7	87.5	86.6
Mar.	67.1	78.9	71.8	82.2	77.1	77.7
June	70.4	87.6	88.8	92.5	85.2	83.9
1979-80 — Sept.	75.0	95.2	94.0	96.5	92.2	88.7
Dec.	73.2	96.1	96.7	98.7	89.9	90.2
Mar.	77.6	83.3	75.8	85.9	77.8	81.4
June	71.5	88.0	85.9	91.7	82.3	85.3
1980-81 — Sept.	75.6	91.1	84.0	100.6	90.4	89.0
Dec.	81.0	100.4	86.4	103.5	95.8	93.2
Mar.	75.4	90.4	73.2	89.6	78.1	82.3
June	79.4	96.4	90.0	102.2	88.3	88.2
1981-82 — Sept.	82.1	101.8	90.6	108.5	95.4	92.8
Dec.	78.0	105.0	89.8	109.7	101.6	95.2
Mar.	73.3	91.1	75.5	94.6	84.9	83.2
June	77.6	94.5	97.9	100.8	86.1	90.2
1982-83 — Sept.	75.1	95.0	101.3	106.0	94.5	91.2
Dec.	62.4	84.0	85.2	87.7	86.8	84.8
Mar.	59.7	72.4	68.5	71.5	74.2	73.4
June	72.0	84.0	81.6	80.8	79.2	82.3
1983-84 — Sept.	78.0	79.6	87.8	85.0	85.1	84.9
Dec.	74.0	82.7	83.7	87.6	91.1	87.1
Mar.	68.9	77.5	72.5	73.3	83.5	79.4
June	77.6	86.5	86.7	81.9	83.9	85.4
1984-85 — Sept.	84.9	86.0	92.3	87.1	100.7	91.4
Dec.	85.1	87.5	88.3	87.0	101.3	90.1
Mar.	73.5	73.7	80.1	82.6	85.0	82.3
June	82.4	79.5	100.2	88.7	76.9	90.0
1985-86 — Sept.	85.0	94.4	97.0	84.8	79.1	92.6
Dec.	87.4	91.1	96.2	93.5	90.6	94.9
Mar.	78.8	79.9	76.4	80.5	69.8	83.8
June	77.0	88.9	87.9	86.2	92.0	88.9
1986-87 — Sept.	84.3	91.3	98.0	98.9	95.7	93.3
Dec.	82.3	92.5	79.5	90.1	97.0	93.4
Mar.	79.8	78.1	73.5	92.2	84.9	84.9
June	84.3	86.8	86.4	93.7	103.1	92.7
1987-88 — Sept.	87.3	97.5	90.9	102.7	107.3	98.3
Dec.	89.3	105.3	90.2	93.5	110.1	99.7
Mar.	80.7	93.4	74.9	96.5	96.6	92.3
June	85.9	101.1	94.4	101.8	95.2	95.7
1988-89 — Sept.	87.6	114.9	91.1	107.8	106.1	101.9
Dec.	91.2	111.0	96.0	110.0	114.7	106.9
Mar.	86.4	101.0	77.2	104.2	96.0	94.7
June	94.9	105.9	107.5	105.6	107.7	102.6
1989-90 — Sept.	100.4	108.1	102.4	105.8	106.3	103.6
Dec.	102.5	101.4	102.4	104.7	106.0	103.5
Mar.	94.6	95.0	93.4	92.2	87.3	94.7
June	102.5	95.5	101.9	97.2	100.4	98.2
1990-91 — Sept.	102.3	97.2	101.6	102.6	99.4	101.6
Dec.	104.0	95.6	98.4	104.1	113.1	102.4
Mar.	101.4	83.8	77.8	93.6	91.9	92.4
June	102.7	88.3	91.7	102.8	96.7	96.1
1991-92 — Sept.	109.3	87.6	88.9	103.3	104.8	99.2
Dec.	103.2	93.4	86.2	104.3	110.4	99.7
Mar.	99.3	82.6	76.3	88.9	90.2	91.5
June	103.6	78.9	86.2	99.7	87.3	95.2
1992-93 — Sept.	102.2	81.2	86.2	117.9	101.7	99.0
Dec.	104.1	84.9	86.1	124.0	99.1	102.7
Mar.	99.2	81.2	83.4	112.0	88.2	94.9
June	109.5	81.4	96.9	111.7	100.7	100.8
1993-94 — Sept.	111.2	91.7	104.0	111.0	109.1	105.1
Dec.	119.9	94.7	101.6	136.2	113.4	111.3
Mar.	110.5	90.5	100.9	120.3	105.6	104.4
June	115.8	90.5	116.2	129.6	114.2	109.3

TABLE 10. INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES,  
BY SUBDIVISION — SEASONALLY ADJUSTED

Index numbers (Base : 1989-90 = 100.0)							
	<i>Food, beverages and tobacco</i>	<i>Textiles</i>	<i>Clothing and footwear</i>	<i>Wood, wood products and furniture</i>	<i>Paper, etc., printing and publishing</i>	<i>Chemicals, petroleum and coal products</i>	<i>Non-metallic mineral products</i>
1977-78 — Sept.	86.5	85.6	92.3	83.1	69.8	76.5	75.1
Dec.	85.6	84.2	85.2	86.2	69.6	77.3	79.4
Mar.	86.7	83.2	90.5	81.8	68.9	79.0	76.0
June	86.7	85.6	95.5	90.5	69.1	80.1	76.0
1978-79 — Sept.	87.0	93.6	90.8	89.2	70.0	84.6	76.0
Dec.	88.3	85.1	93.7	90.5	72.1	81.1	76.4
Mar.	88.1	95.1	97.9	87.7	74.0	81.1	82.7
June	87.0	88.9	101.5	86.0	76.1	82.3	80.6
1979-80 — Sept.	89.1	89.4	94.7	90.5	77.9	80.9	85.9
Dec.	85.6	93.6	102.3	85.5	76.4	89.3	79.3
Mar.	88.8	93.6	102.0	95.7	79.6	85.3	81.0
June	90.3	94.1	96.4	94.6	77.5	82.5	89.9
1980-81 — Sept.	90.4	88.0	101.1	96.1	78.9	82.8	85.1
Dec.	92.2	93.2	102.3	93.1	79.1	82.3	87.0
Mar.	89.6	87.5	100.8	92.9	80.9	86.5	88.8
June	84.9	99.3	98.5	96.1	80.2	85.3	83.9
1981-82 — Sept.	87.7	94.1	104.4	98.0	81.7	86.7	84.9
Dec.	90.1	94.1	100.5	96.5	81.7	88.7	92.4
Mar.	89.5	97.0	97.0	95.9	81.6	84.0	87.8
June	91.6	92.2	98.7	94.2	82.6	88.7	87.2
1982-83 — Sept.	92.0	91.7	95.3	85.8	78.3	86.3	78.9
Dec.	89.3	90.3	87.6	81.4	77.2	84.3	77.5
Mar.	88.6	86.5	90.0	80.3	77.1	81.7	67.9
June	87.4	78.0	101.5	91.2	77.7	85.8	78.1
1983-84 — Sept.	86.7	84.2	96.4	83.3	78.6	86.7	79.8
Dec.	87.9	86.1	99.7	90.3	79.6	89.6	75.1
Mar.	89.9	93.2	105.0	92.5	82.1	95.1	77.7
June	92.1	98.9	103.8	90.7	83.8	79.7	73.1
1984-85 — Sept.	91.7	104.8	103.1	92.8	88.5	90.8	78.6
Dec.	88.2	101.9	102.7	91.0	82.2	88.2	77.2
Mar.	89.1	98.9	101.9	95.5	88.0	89.7	82.3
June	91.8	94.4	114.0	95.1	92.9	91.1	92.9
1985-86 — Sept.	89.0	77.7	118.5	110.6	90.7	88.4	98.7
Dec.	88.2	106.8	114.4	105.3	91.8	88.8	94.0
Mar.	91.4	98.9	117.6	105.4	88.4	87.7	93.6
June	92.0	113.0	119.3	99.9	85.8	85.7	91.4
1986-87 — Sept.	90.7	112.0	102.5	93.4	87.7	89.1	87.0
Dec.	93.6	101.2	112.1	94.3	92.0	94.3	88.9
Mar.	91.2	98.6	114.9	97.5	93.1	88.2	82.5
June	96.2	98.3	108.3	97.7	97.3	96.4	89.2
1987-88 — Sept.	99.2	108.7	110.0	104.5	97.3	97.0	85.8
Dec.	96.0	102.2	111.2	105.3	97.0	99.7	92.1
Mar.	99.7	111.3	107.6	104.5	104.1	100.1	98.0
June	94.2	88.5	109.7	113.6	97.5	99.1	90.2
1988-89 — Sept.	96.7	98.9	110.2	114.1	105.3	101.0	100.9
Dec.	102.4	112.7	108.3	116.4	109.0	101.2	103.1
Mar.	99.3	101.2	110.8	109.3	101.9	100.5	105.7
June	100.1	101.6	123.4	106.5	106.6	100.9	100.5
1989-90 — Sept.	99.6	100.6	117.2	99.8	103.5	97.5	102.8
Dec.	100.2	96.7	99.5	99.0	100.5	97.2	101.0
Mar.	100.8	103.5	92.1	102.2	99.0	101.7	99.8
June	99.4	99.3	91.2	99.0	97.0	103.5	96.4
1990-91 — Sept.	101.9	95.0	95.5	101.1	97.0	104.0	93.9
Dec.	100.8	103.2	95.9	89.4	95.8	104.8	92.1
Mar.	101.9	101.9	90.4	86.2	98.1	104.4	86.9
June	101.7	103.2	89.5	85.8	95.6	104.2	84.4
1991-92 — Sept.	101.3	105.8	86.1	90.2	95.1	105.3	85.3
Dec.	101.5	98.3	87.2	91.5	93.0	104.3	82.7
Mar.	106.0	109.1	87.4	88.4	91.5	103.4	83.0
June	108.8	103.2	89.5	82.9	89.3	104.3	90.6
1992-93 — Sept.	109.8	92.4	85.5	78.9	88.0	104.4	87.4
Dec.	113.4	98.3	87.2	85.9	88.5	105.6	88.0
Mar.	107.9	86.5	95.9	80.8	87.2	106.6	95.9
June	118.3	90.8	86.9	86.0	86.9	101.9	101.9
1993-94 — Sept.	116.2	82.3	93.8	82.3	87.9	111.3	97.5
Dec.	116.8	78.7	91.0	78.4	95.9	116.3	103.0
Mar.	112.8	82.9	125.5	81.9	96.4	115.8	102.5
June	116.0	83.9	114.0	87.4	96.7	115.2	101.3

TABLE 10. INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES,  
BY SUBDIVISION — SEASONALLY ADJUSTED—continued

Index numbers (Base : 1989-90 = 100.0)

	Basic metal products	Fabricated metal products	Transport equipment	Other machinery and equipment	Miscellaneous manufacturing	Total
1977-78 — Sept.	63.6	81.3	77.3	87.0	83.3	79.4
Dec.	62.2	78.4	78.2	88.7	73.5	78.7
Mar.	65.3	80.3	82.8	80.9	75.6	78.9
June	64.9	83.2	80.5	90.1	80.1	81.0
1978-79 — Sept.	64.9	84.4	79.1	86.1	82.4	81.0
Dec.	67.5	85.8	77.6	91.1	84.0	82.2
Mar.	70.0	85.5	82.2	90.8	86.4	83.7
June	70.6	87.6	85.0	93.9	86.4	84.4
1979-80 — Sept.	73.4	92.9	90.1	92.5	86.8	86.3
Dec.	71.8	91.5	92.8	92.4	85.7	85.7
Mar.	81.3	90.2	87.3	95.1	86.4	87.9
June	71.5	88.1	82.3	92.6	84.2	85.7
1980-81 — Sept.	73.2	88.7	79.8	96.2	85.7	86.3
Dec.	79.8	95.6	83.2	97.6	91.1	88.8
Mar.	79.7	97.8	84.7	99.3	86.1	88.9
June	79.3	96.4	86.2	102.8	91.1	88.6
1981-82 — Sept.	79.0	99.2	85.3	103.3	90.7	89.7
Dec.	77.1	100.4	86.9	104.2	96.1	90.9
Mar.	78.1	98.6	87.8	104.7	92.6	90.1
June	77.2	94.3	93.8	100.7	89.3	90.3
1982-83 — Sept.	71.9	92.5	94.7	100.8	90.1	88.1
Dec.	61.8	80.3	82.9	83.9	82.0	81.1
Mar.	64.1	78.5	79.6	78.9	80.4	79.4
June	71.5	83.6	78.2	80.7	82.6	82.3
1983-84 — Sept.	74.3	77.3	81.9	80.7	81.2	82.0
Dec.	73.2	79.0	81.9	84.6	85.9	83.6
Mar.	74.2	84.4	83.8	80.2	90.3	85.7
June	77.0	86.0	83.3	81.8	87.1	85.3
1984-85 — Sept.	83.6	82.4	87.8	82.1	97.7	88.6
Dec.	82.2	82.4	85.4	88.2	95.1	86.9
Mar.	77.5	81.4	91.4	86.5	93.1	87.9
June	82.5	80.7	96.1	89.5	77.5	90.5
1985-86 — Sept.	83.6	90.4	92.5	80.0	76.6	89.8
Dec.	84.6	85.8	92.8	94.7	85.0	91.4
Mar.	83.1	87.8	87.4	84.3	76.5	89.5
June	77.1	90.3	83.9	87.0	92.8	89.4
1986-87 — Sept.	83.0	87.4	93.8	93.3	92.8	90.6
Dec.	79.6	87.6	76.7	91.4	90.9	89.8
Mar.	84.1	85.4	83.8	96.2	93.6	90.5
June	84.3	88.2	82.5	94.5	103.7	93.3
1987-88 — Sept.	85.9	93.4	87.4	96.9	104.4	95.7
Dec.	86.6	100.4	87.0	94.9	102.7	95.9
Mar.	85.0	101.1	84.9	100.7	106.8	98.1
June	85.7	102.7	90.0	102.7	95.6	96.3
1988-89 — Sept.	86.3	110.4	87.9	101.9	103.5	99.3
Dec.	88.7	106.3	93.0	111.5	106.4	102.9
Mar.	90.8	108.1	86.8	108.7	106.4	100.6
June	94.4	107.8	102.5	106.3	108.4	103.2
1989-90 — Sept.	99.1	104.3	99.0	103.2	103.5	101.3
Dec.	100.0	97.4	99.6	100.6	98.1	99.5
Mar.	99.3	100.8	104.2	98.7	96.5	100.3
June	101.6	97.4	97.2	97.6	101.8	98.9
1990-91 — Sept.	101.0	94.1	98.4	100.4	96.5	99.3
Dec.	101.7	92.0	96.3	99.7	104.5	98.6
Mar.	106.4	88.1	85.9	100.4	101.5	97.4
June	101.6	90.3	87.8	102.9	98.4	96.9
1991-92 — Sept.	108.1	85.1	85.9	101.3	101.5	97.2
Dec.	101.1	89.9	84.9	99.8	102.0	96.1
Mar.	104.1	86.4	83.7	95.4	99.7	96.2
June	102.3	80.9	82.9	99.8	89.1	96.0
1992-93 — Sept.	101.1	79.1	82.9	115.6	98.3	97.1
Dec.	102.0	81.6	85.0	118.8	91.6	99.1
Mar.	103.9	84.8	91.2	120.2	97.3	99.7
June	108.0	83.5	93.4	111.6	103.2	101.7
1993-94 — Sept.	110.1	89.4	100.0	109.0	105.1	103.1
Dec.	117.6	91.0	100.5	130.5	104.8	107.6
Mar.	115.7	94.4	110.2	129.1	116.3	109.7
June	114.2	92.9	112.0	129.4	117.3	110.1

TABLE 11. INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES,  
BY SUBDIVISION — TREND ESTIMATES

BY SUBDIVISION — TREND ESTIMATES								
Index numbers (Base : 1989-90 = 100.0)								
		Food, beverages and tobacco	Textiles	Clothing and footwear	Wood, wood products and furniture	Paper, etc., printing and publishing	Chemicals, petroleum and coal products	Non-metallic mineral products
1977-78	— Sept.	86.1	86.2	86.0	83.1	69.8	78.0	76.0
	Dec.	86.4	84.8	88.3	83.1	69.7	78.3	77.1
	Mar.	86.4	85.8	90.4	84.8	69.3	79.7	76.9
	June	86.7	87.7	91.5	87.1	69.5	82.0	75.7
1978-79	— Sept.	87.4	90.1	92.7	89.0	70.4	83.2	76.0
	Dec.	87.6	92.0	94.5	88.8	72.2	83.2	77.9
	Mar.	88.0	91.5	96.5	87.5	74.4	82.1	80.6
	June	87.8	91.5	98.0	86.7	76.3	82.4	82.7
1979-80	— Sept.	87.4	92.5	98.8	86.8	77.5	84.8	82.2
	Dec.	87.4	93.4	99.5	89.0	78.2	86.5	81.7
	Mar.	88.3	94.9	99.5	92.0	78.5	86.5	83.3
	June	89.8	93.9	99.5	94.3	78.7	84.6	85.4
1980-81	— Sept.	91.3	92.0	99.8	94.3	79.1	83.4	87.4
	Dec.	90.9	91.5	100.3	92.9	79.7	84.5	87.4
	Mar.	88.8	93.4	100.6	93.3	80.6	85.7	86.0
	June	87.3	95.8	100.6	94.7	81.1	87.2	86.0
1981-82	— Sept.	87.3	96.8	100.9	96.2	81.7	87.8	87.0
	Dec.	88.8	96.8	100.3	96.6	82.1	87.8	89.1
	Mar.	90.6	95.8	98.8	95.1	82.3	87.9	89.1
	June	91.2	94.9	96.2	91.4	81.3	87.8	85.8
1982-83	— Sept.	91.1	93.4	92.7	85.7	79.5	86.8	80.0
	Dec.	90.0	90.1	90.4	82.0	77.8	85.2	75.0
	Mar.	88.3	86.2	91.8	82.2	77.3	84.3	73.4
	June	87.3	82.9	95.4	84.6	77.9	85.4	75.4
1983-84	— Sept.	87.1	83.4	98.5	87.0	78.8	89.0	77.4
	Dec.	88.1	88.2	100.6	88.6	80.2	91.0	77.7
	Mar.	90.1	94.4	102.1	90.3	82.4	90.2	75.5
	June	91.0	98.7	103.2	91.4	84.2	88.3	74.6
1984-85	— Sept.	90.9	99.3	105.9	86.4	81.2	88.4	76.4
	Dec.	89.7	103.6	101.6	91.3	85.9	88.9	78.7
	Mar.	89.4	98.4	104.4	94.9	88.7	89.8	84.7
	June	89.6	91.5	110.7	99.0	90.6	89.7	91.6
1985-86	— Sept.	89.4	90.5	115.2	104.5	92.1	89.4	96.2
	Dec.	89.4	96.1	117.5	106.6	90.6	88.1	96.4
	Mar.	90.1	105.6	116.3	104.0	88.1	86.8	93.5
	June	91.4	110.8	112.9	98.5	87.1	87.5	91.0
1986-87	— Sept.	91.7	109.2	110.1	94.9	87.9	88.9	88.5
	Dec.	91.8	104.3	109.5	93.7	90.9	90.7	86.7
	Mar.	93.3	100.0	110.3	95.6	94.1	92.2	85.9
	June	95.4	100.7	110.7	99.0	96.0	94.3	86.2
1987-88	— Sept.	97.4	105.2	109.3	101.7	97.7	97.2	88.8
	Dec.	98.0	106.6	108.6	104.1	98.9	99.2	91.8
	Mar.	96.7	102.3	108.8	107.0	99.7	99.5	93.8
	June	96.4	99.0	108.4	110.9	102.0	100.0	96.0
1988-89	— Sept.	97.6	101.0	107.8	114.1	104.1	100.3	99.3
	Dec.	99.3	104.3	109.3	113.8	105.5	100.9	102.9
	Mar.	100.4	105.9	114.1	109.9	105.9	100.8	104.4
	June	99.8	102.0	117.5	104.6	104.5	99.4	103.1
1989-90	— Sept.	99.7	99.7	113.3	100.6	103.1	98.1	102.2
	Dec.	99.9	100.7	102.3	99.3	101.1	98.4	101.2
	Mar.	100.1	100.0	93.0	100.0	98.6	100.5	99.6
	June	100.3	99.7	91.5	100.1	97.1	103.0	97.1
1990-91	— Sept.	100.7	99.3	93.4	96.6	96.6	104.2	94.3
	Dec.	101.2	100.3	93.6	90.8	96.6	104.4	91.0
	Mar.	101.5	103.3	91.3	86.5	96.7	104.4	87.8
	June	101.1	103.9	88.3	86.1	96.1	104.5	85.3
1991-92	— Sept.	101.2	103.6	86.4	88.8	94.8	104.4	83.7
	Dec.	102.5	104.9	86.6	89.9	93.0	104.1	83.7
	Mar.	105.1	104.3	87.0	87.1	91.1	103.7	85.3
	June	108.4	102.3	86.6	83.2	89.4	103.7	87.0
1992-93	— Sept.	110.0	98.0	87.0	81.1	88.4	104.7	88.4
	Dec.	110.8	93.8	88.3	81.8	87.6	104.9	91.0
	Mar.	112.4	91.1	90.0	83.3	86.8	104.4	95.0
	June	114.8	87.5	89.1	83.1	87.2	106.0	99.0
1993-94	— Sept.	116.3	83.3	91.5	81.1	89.8	109.9	101.1
	Dec.	115.8	81.6	100.6	80.6	93.4	114.0	101.6
	Mar.	114.6	82.0	111.4	81.8	96.2	116.0	102.2
	June	114.5	83.6	118.4	84.4	97.8	115.7	102.6



TABLE 11. INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES,  
BY SUBDIVISION — TREND ESTIMATES—continued

Index numbers (Base : 1989-90 = 100.0)

	<i>Basic metal products</i>	<i>Fabricated metal products</i>	<i>Transport equipment</i>	<i>Other machinery and equipment</i>	<i>Miscellaneous manufacturing</i>	<i>Total manufacturing</i>
1977-78 — Sept.	63.6	80.8	80.8	87.4	80.5	79.4
Dec.	63.8	78.8	80.0	86.5	77.6	79.2
Mar.	64.0	79.1	80.8	86.4	76.6	79.4
June	64.9	81.4	81.1	87.1	79.1	80.4
1978-79 — Sept.	65.9	83.3	79.6	88.9	82.6	81.5
Dec.	67.4	84.0	79.4	90.9	85.0	82.5
Mar.	69.7	85.2	81.9	92.3	86.3	83.6
June	71.0	87.6	86.5	93.4	87.1	84.8
1979-80 — Sept.	72.9	89.8	90.5	93.8	87.1	85.9
Dec.	75.1	90.3	91.2	94.0	86.5	86.7
Mar.	75.6	88.5	88.0	94.2	85.7	86.7
June	75.0	87.5	83.6	95.1	86.0	86.6
1980-81 — Sept.	75.4	89.4	81.6	96.3	87.1	87.1
Dec.	77.4	92.7	82.8	98.3	88.4	88.0
Mar.	79.9	95.3	85.0	100.9	89.2	88.9
June	79.8	96.9	86.2	102.8	90.4	89.4
1981-82 — Sept.	78.7	97.7	86.4	104.7	92.7	89.9
Dec.	78.4	98.1	87.3	105.2	94.3	90.6
Mar.	78.2	97.4	90.5	105.3	93.7	91.0
June	75.8	93.8	93.1	103.1	91.3	89.9
1982-83 — Sept.	70.2	87.8	91.7	96.5	87.7	86.6
Dec.	65.3	82.3	86.0	88.0	84.2	82.8
Mar.	65.4	79.1	80.7	81.3	81.7	80.7
June	69.7	78.2	79.3	80.1	81.2	81.0
1983-84 — Sept.	73.2	78.4	81.1	82.1	83.6	82.6
Dec.	74.1	79.6	82.7	82.9	86.0	84.0
Mar.	74.9	81.7	83.8	82.6	88.4	85.2
June	77.7	83.4	84.7	82.3	91.2	86.2
1984-85 — Sept.	84.0	78.2	88.0	81.6	92.5	86.5
Dec.	81.8	81.6	87.4	86.4	95.3	87.7
Mar.	80.4	82.6	90.0	87.1	90.0	88.4
June	81.7	83.6	93.2	86.6	82.3	89.4
1985-86 — Sept.	83.9	86.0	93.5	86.6	78.5	90.4
Dec.	84.1	87.9	90.2	86.9	79.3	90.3
Mar.	82.3	88.5	88.1	87.5	84.1	89.9
June	80.6	88.5	86.8	88.4	88.6	89.7
1986-87 — Sept.	80.4	88.2	85.0	90.1	91.3	89.6
Dec.	81.8	86.7	82.7	93.1	93.3	90.0
Mar.	83.4	86.2	81.4	94.6	96.0	91.0
June	84.9	88.8	82.9	95.0	100.7	92.8
1987-88 — Sept.	86.1	93.7	85.4	95.5	104.7	95.0
Dec.	86.2	98.2	85.9	96.9	104.7	96.3
Mar.	85.9	101.9	86.4	98.9	102.3	96.7
June	85.8	104.8	87.6	101.6	101.3	97.7
1988-89 — Sept.	86.8	107.0	88.4	105.1	102.3	99.3
Dec.	88.7	108.3	89.5	107.9	105.3	101.0
Mar.	91.5	108.3	92.4	108.6	108.0	102.1
June	95.2	106.3	96.2	106.5	106.9	101.9
1989-90 — Sept.	98.3	103.5	99.6	103.0	103.3	101.1
Dec.	100.1	100.6	100.9	100.2	99.9	100.2
Mar.	100.8	98.7	100.0	98.5	98.0	99.4
June	100.8	97.2	99.6	98.3	98.8	99.3
1990-91 — Sept.	101.9	94.5	96.9	98.9	100.7	98.9
Dec.	102.9	91.5	93.0	99.9	101.6	98.2
Mar.	104.3	89.4	89.1	100.9	101.3	97.5
June	105.1	88.2	86.1	101.6	101.0	96.9
1991-92 — Sept.	104.8	88.1	85.0	100.8	101.5	96.6
Dec.	104.1	87.7	84.4	97.9	100.6	96.2
Mar.	103.3	85.3	83.0	97.4	98.0	95.9
June	102.3	82.0	82.2	102.7	94.8	96.1
1992-93 — Sept.	102.0	80.2	82.8	111.9	93.3	97.1
Dec.	102.4	81.1	85.2	118.4	94.6	98.4
Mar.	104.4	83.2	89.4	116.6	98.0	99.7
June	107.9	85.5	93.6	113.3	101.2	101.3
1993-94 — Sept.	112.3	88.4	97.8	115.8	105.0	103.8
Dec.	115.2	91.2	102.4	122.8	108.7	106.7
Mar.	116.2	93.1	107.3	128.8	113.4	109.0
June	116.0	93.8	111.1	131.2	117.6	110.4

## EXPLANATORY NOTES

**Introduction**

This publication presents in index number form, quarterly estimates of gross product at constant prices (average 1989-90 prices) for the non-farm, goods producing sector which, for brevity, is termed the 'industrial sector' (see paragraph 3). Also presented are indexes for component industries, including individual manufacturing subdivisions.

**Changes in this issue**

2. Revisions to data have effected the estimates in this issue. The changes are:

- (a) The estimates of mining quarterly gross product, used to produce the quarterly indexes, have now been benchmarked to 1991-92 Mining Census based estimates (see paragraph 7);
- (b) The estimates of quarterly gross product for electricity, used to produce the quarterly indexes, have now been benchmarked to 1992-93 Census of Electricity and Gas Establishments based estimates (see paragraph 7);
- (c) The estimates of quarterly gross product for gas, used to produce the quarterly indexes, have now been benchmarked to 1991-92 Census of Electricity and Gas Establishments based estimates (see paragraph 7); and
- (d) The estimates of quarterly gross product for water and sewerage, used to produce the quarterly indexes, have now been benchmarked to 1992-93 data (see paragraph 7).

**Scope of the estimates**

3. The scope of the industrial sector referred to in this publication is defined to include all *establishments* classified to the Australian Standard Industrial Classification (ASIC) Division B (Mining), excluding ASIC subdivision 16 (Services to mining n.e.c.); Division C (Manufacturing); and Division D (Electricity, gas and water). The base year weights used in constructing the indexes in this publication have been derived from establishment data. However, the quarterly indicator series used for manufacturing are based on data relating to *business units* which may cover more than one establishment.

The table below sets out the base year weights associated with the major components of the industrial sector, and each manufacturing subdivision.

	1989-90 Weight %
Mining (excluding services to mining)	18.6
Manufacturing	67.8
Food, beverages and tobacco	14.0
Textiles	1.4
Clothing and footwear	2.2
Wood, wood products and furniture	3.5
Paper, etc, printing and publishing	6.4
Chemicals, petroleum and coal products	6.5
Non-metallic mineral products	3.4
Basic metal products	7.7
Fabricated metal products	5.2
Transport equipment	7.3
Other machinery and equipment	6.9
Miscellaneous manufacturing	3.3
Electricity, gas and water	13.6
<b>Total Industrial sector</b>	<b>100.0</b>

4. The use of Manufacturers' sales and stocks data means that the manufacturing indexes have three important limitations as measures of manufacturing production:

- (a) changes in quarterly production by manufacturing establishments of non-manufacturing businesses are not reflected in the indexes;
- (b) changes in a part of the quarterly production of non-manufacturing establishments of manufacturing businesses are reflected in the indexes; and
- (c) changes in quarterly production by government bodies such as shipyards and railway workshops are not reflected in the indexes.

5. The scope of the data used in the manufacturing indicator series also differs slightly from the general definition of manufacturing gross product. The stocks estimates used include finished goods bought in, but not manufactured, by a business. As far as can be assessed this has not had a significant influence on the estimates.

**Derivation of the estimates of gross product**

6. The estimates are derived using the *gross output* method whereby base year (1989-90) estimates of gross product are extrapolated by constant price estimates of gross output. All the quarterly indexes contained in this publication have been *benchmarked*, where possible, to annual estimates (see paragraph 7 below). For further details on the derivation of constant price gross product for individual industries refer to Chapter 18 in *Australian National Accounts : Concepts, Sources and Methods* (5216.0).

**Benchmarking**

7. Deriving quarterly estimates presents special problems in that it is often difficult to adhere strictly to the definitions and concepts used in annual estimates. Fre-

quently, it is not possible to use the same data sources as used for annual estimates, and alternative quarterly data sources are generally much less detailed. For example, annual estimates of gross product for the Mining industry (as published in *Australian National Accounts : National Income and Expenditure* (5204.0)) are compiled (using the double deflation method) from detailed output and input data from the annual census of mining establishments. On the other hand, the quarterly series draw on the quantities of minerals mined (gross output), reported in surveys of mining establishments. In such cases, where the quarterly estimates are inferior to the annual, the quarterly estimates are adjusted to agree with the annual estimates in such a way that preserves, as far as practical, the movements of the quarterly series. This is commonly referred to as *benchmarking*.

#### Data sources for quarterly output series

##### (i) Mining (excluding services to mining)

8. Quarterly constant price output estimates are derived for major ASIC classes by quantity revaluation (i.e. quantities produced each quarter multiplied by associated base year (1989-90) average prices). Estimates of quantities produced are obtained from data contained in *Quarterly Mineral Statistics* (Australian Bureau of Agriculture and Resource Economics) and *Mineral Production, Australia* (8405.0). Constant price estimates of value added are derived by the gross output method (see paragraph 6) for each ASIC class. Total quarterly estimates of value added are then benchmarked (see paragraph 7) to annual gross product estimates obtained from the mining census.

##### (ii) Manufacturing

9. Quarterly constant price estimates of gross output for 22 manufacturing industry groups (excluding petroleum) are derived by summing constant price estimates of manufacturers' sales of manufactured goods, other operating revenue (where significant) and changes in the level of stocks of finished goods and work-in-progress.

10. Constant price estimates of all components of manufacturing output are derived by price deflation, i.e. current price components (obtained from the quarterly Survey of Stocks and Manufacturers' Sales) are derived by fixed weighted producer price indexes (published in *Price Indexes of Articles Produced by Manufacturing Industry, Australia* (6412.0)).

11. Quarterly petroleum production estimates are based on quarterly data published in *Major Energy Statistics* (released by the Department of Primary Industries and Energy).

12. Quarterly constant price estimates of output are used to derive constant price estimates of gross product at factor cost by the gross output method. The latter estimates are aggregated to 12 manufacturing ASIC subdivisions and then benchmarked to corresponding annual estimates of gross product at market prices (based on manufacturing census data).

##### (iii) Electricity

13. Quarterly quantities of electricity produced, as published in *Production of Energy Products, Australia*

(8368.0), are benchmarked to annual gross product estimates based on the quantity of electricity sold (published by the Electricity Supply Association of Australia in *The Electricity Industry of Australia*).

##### (iv) Gas

14. Quarterly quantities of gas available through mains, are published in *Production of Energy Products, Australia* (8368.0), are benchmarked to gross product estimates derived from ABS economic census data relating to the performance of the gas production and distribution industry.

##### (v) Water and sewerage

15. Quarterly constant price output estimates are derived by quantity revaluation, i.e. quantities of water sold (to final consumers and for irrigation) and sewerage connections, are multiplied by average 1989-90 prices for each type of service. The quantity data are supplied by a selection of state and local government authorities. Quarterly output estimates are then benchmarked to annual constant price gross product estimates.

#### Sample revision

16. Each year the sample used for the survey of stocks and manufacturers' sales is revised. Differences between the old and revised samples have in general been apportioned back over the preceeding quarters of each year, and incorporated in the estimates included in this publication. For more information on the sample revision, refer to *Stocks and Manufacturers' Sales, Australia* (5629.0).

#### Reliability of estimates

17. Because the measures used in the derivation of the manufacturing indexes are based on a sample survey, the indexes themselves are subject to sampling variability. In terms of original estimates the standard errors in percentage terms approximate the errors reported in *Stocks and Manufacturers' Sales, Australia* (5629.0). However, for constant price estimates the standard errors may be up to 10 per cent higher than those for the corresponding current price estimates because of the sampling variability contained in the prices data used to deflate the current price estimates. Seasonally adjusting the estimates has an insignificant effect on standard errors.

18. The imprecision due to sampling variability, which is measured by the standard error, should not be confused with inaccuracies that may occur because of imperfections in reporting by respondents and errors made in collecting and processing data. Inaccuracies of this kind are known as non-sampling errors and may occur in any collection, whether it be a sample or a full count. In addition to the non-sampling errors which may occur in current prices estimates, there may be non-sampling errors introduced by the process of compiling constant price estimates. These further errors may arise from the introduction of additional data and from the assumptions and approximations which are necessary in compiling constant price estimates. Every effort is made to minimise non-sampling errors by careful design of forms, editing of data and efficient operating procedures.

### Seasonal adjustment

19. 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 may be more clearly recognized. 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 effect of a major industrial dispute or major plant breakdowns. Irregular factors of this nature can make it difficult to interpret the movement of the series even after adjustment for seasonal variation.

20. Seasonal adjustment may be carried out by various methods and the results may vary slightly according to the procedure adopted. Accordingly, seasonally adjusted statistics should not be regarded as in any way definitive. In interpreting particular seasonally adjusted statistics it is important to note the methods by which they have been derived and the limitations to which the methods used are subject. Details of the various seasonal adjustment methods used are available on request.

### Trend estimates

21. The seasonally adjusted series can be smoothed to reduce the impact of the irregular component in the adjusted series. There are a number of ways of accomplishing this, depending on the intended uses of the smoothed series. If importance is attached to measuring the underlying change in the most recent periods, moving averages employing appropriate weighting patterns should be adopted; the choice of averaging technique will determine the degree of smoothness of the derived series. For example, a 9-term moving average will even out more of the short term fluctuation in a series (and therefore appear 'smoother') than will a 5-term moving average. However, the longer the term of the moving average the longer the series affected by revisions resulting from more recent data becoming available. Such smoothed seasonally adjusted estimates are referred to as 'trend estimates' in this publication.

22. Trend estimates included in this issue are derived using a 7-term Henderson moving average. (The weights of the 7-term average are available upon request.) As a moving average approaches the end of a time series and begins to run out of observations, asymmetric averages have been used. Unlike the asymmetric weights of the standard 7-term Henderson moving averages, the weights employed here have been tailored to suit the particular characteristics of individual manufacturing subdivisions.)

23. Users may wish to refer to the ABS Information Papers *A Guide to Smoothing Time Series — Estimates of 'Trend'* (1316.0) and *Time Series Decomposition — An Overview* (1317.0) for more detailed information on smoothing seasonally adjusted time series data.

### Related publications

24. Users may also wish to refer to the following publications:

*Australian National Accounts : National Income and Expenditure* (5204.0) — issued annually

*Australian National Accounts : National Income and Expenditure* (5206.0) — issued quarterly

*Australian National Accounts : Concepts, Sources and Methods* (5216.0)

*Manufacturing Industry, Australia* (8221.0) — issued annually

*Mining Industry, Australia* (8402.0) — issued annually

*Price Indexes of Articles Produced by Manufacturing Industry, Australia* (6412.0) — issued monthly

*Production Bulletins* (8357.0 to 8363.0, 8367.0 to 8369.0) — issued quarterly

*Production Statistics, Australia, Preliminary* (8301.0) — issued monthly

*Stocks and Manufacturers' Sales, Australia* (5629.0) — issued quarterly

25. Current publications produced by the ABS are listed in the *Catalogue of Publications and Products, Australia* (1101.0). The ABS also issues on Tuesday and Fridays, a *Publications Advice* (1105.0) which lists publications to be released in the next few days. The Catalogue and Publications Advice are available from any ABS office.

### Symbols and other usages

- nil or rounded to zero
- ASIC Australian Standard Industrial Classification, 1983 edition

IAN CASTLES  
Australian Statistician

