

**QUARTERLY INDEXES OF INDUSTRIAL PRODUCTION, AUSTRALIA
JUNE QUARTER 1993**

MAIN FEATURES

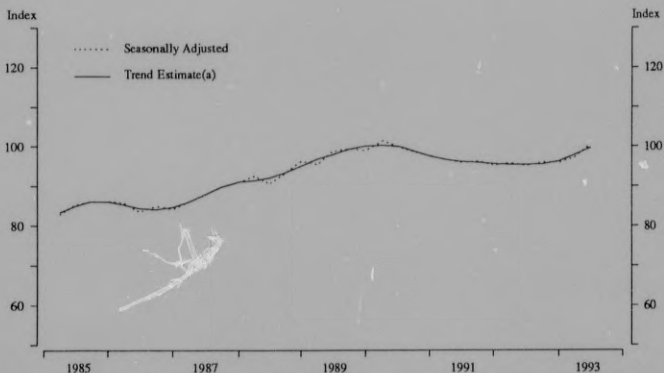
NOTE: Recent trend estimates are provisional and could change when data for further quarters are available.

Provisional trend estimates for the June quarter 1993 have the index of industrial production showing accelerating growth over the last four quarters. The trend grew by a moderate 1.8 per cent in the June quarter 1993 following growth of 1.6 per cent in the March quarter and 0.8 per cent in the December quarter 1992 and is now 4.4 per cent above the June quarter 1992 estimate. This recent growth confirms the gradual turnaround in industrial production in 1992-93 following a period of decline over the two years to March 1992.

In the latest quarter all three of the component series, mining, manufacturing and utilities, showed trend growth.

In seasonally adjusted terms all component series grew strongly (3.5% for manufacturing, 3.3% for mining and 2.7% for utilities) to give 3.4 per cent growth for the industrial production index overall during the June quarter 1993, following moderate growth (up 1.4%) in the previous quarter.

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 1982-83, the index of industrial production has had an average annual trend rate of

growth of 2.6 per cent. As can be seen from the graph above, industrial production appears to have recovered from a two year decline; the June quarter 1993 trend being at its highest point since the June quarter 1990.

INQUIRIES

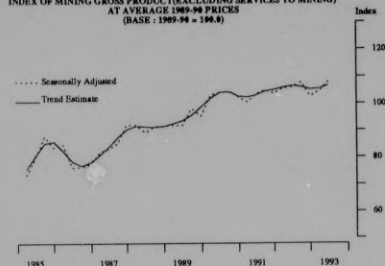
- for information about statistics in this publication and the availability of related unpublished statistics, contact Mr Mal Lawrie on Canberra (06) 252 7421 or any ABS State office.
- for information about other ABS statistics and services please refer to the back page of this publication

SUMMARY OF FINDINGS

Components of the industrial production index

(i) Mining

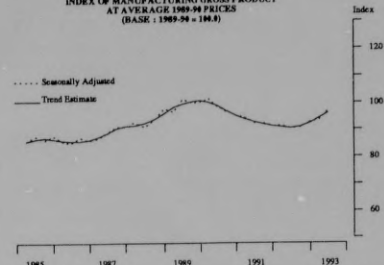
INDEX OF MINING GROSS PRODUCT (EXCLUDING SERVICES TO MINING)
AT AVERAGE 1989-90 PRICES
(BASE: 1989-90 = 100.0)



The provisional trend for the index of mining production has now grown weakly over the last two quarters (reflecting two quarters of moderate growth in the seasonally adjusted figures) to a near record level. This follows two quarters of weak decline in the trend with the result that the trend estimate at June quarter 1993 is comparable with that for the June quarter 1992. With the series exhibiting volatility, further data will be required before being able to confirm any strengthening in trend growth. The average annual trend rate of growth for the past 10 years is 5.6 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 grew in the June quarter 1993 for the fourth consecutive quarter, following eleven consecutive quarters of decline. Since the June quarter 1992 the trend in the index has risen by 6.2 per cent. The moderate strength of the recent growth confirms a recovery from the turning point in the June quarter 1992. Over the 10 years from 1982-83, the average annual trend rate of growth of the index has been 1.5 per cent.

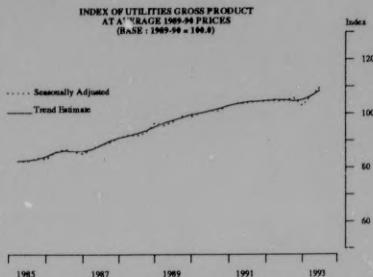
To the June quarter 1993, eight of the twelve manufacturing subdivisions are showing growth in the trend, three are largely flat while only textiles is showing declining trend production. Recent movements in the estimates of trend and the average annual trend rates of growth over the last 10 years for each manufacturing subdivision are summarized below

- *Food, beverages and tobacco* production has continued to grow over the last six quarters but has only grown by 1.8 per cent annually over the past 10 years.
- The trend in *Textiles* production has fallen sharply over the last two quarters, after strong growth since the last trough recorded in the December quarter 1990. Over the last 10 years the average annual trend rate of growth has been a strong 4.1 per cent.
- *Clothing and footwear* production is showing strong growth to the June quarter 1993 although the index has been volatile since the last peak in the March quarter 1989. The average annual growth rate over the 10 year period is zero, with recent trend growth following the very large decline during 1989-90.
- Production in the *Wood, wood products and furniture* subdivision has risen over the last three quarters following three quarters of decline. Since

1982-83 the index has grown on average each year by 2.3 per cent.

- The trend for the index of *Paper, printing and publishing* gross product has flattened out following a continuous decline from the peak achieved in the December quarter 1989. A 2.5 per cent annual growth rate has occurred over the 10 year period.
- *Chemical, petroleum and coal products* trend production has flattened out over the last two quarters. However, despite some minor fluctuations the general trend since the December quarter 1987 has been one of broadly consistent growth. The average annual trend growth since 1982-83 has been 2.6 per cent.
- The production trend for the *Non-metallic mineral products* subdivision has been moderately strong over the last two quarters and has been growing fairly consistently now since the December quarter 1991. This follows a large decline in production from the March quarter 1989, resulting in a 10 year growth of only 0.2 per cent per annum.
- *Basic metal products* production has shown moderately strong growth over the last three quarters. Over the 10 year period the index has grown by an average 2.9 per cent each year.
- The trend in the index of *Fabricated metal products* gross product has risen consistently over the last three quarters from the turning point in the September quarter 1992. Prior to that the index had declined almost continuously from the March quarter 1990 peak. The average annual trend rate of growth since 1982-83 has been 1.9 per cent.
- Trend estimates for the index of *Transport equipment* gross product have risen significantly over the past four quarters from the trough of 1991-92. However over the 10 year period the average annual trend rate has seen a fall of 1.4 per cent.
- The trend in the *Other machinery and equipment* production index has flattened out over the last two quarters after rising from a low point in the March quarter 1992. The 10 year average annual growth rate has been 1.0 per cent.
- The *Miscellaneous manufacturing* trend grew over the latest three quarters following a general decline from the September quarter 1989 peak. An average annual trend rate of growth of 1.2 per cent has been achieved since 1982-83.

(iii) Electricity, gas and water



The provisional trend for the index of gross product for the Electricity, gas and water sector shows moderate growth in the June quarter 1993 following on from weaker growth in the March quarter. Since 1982-83, the average annual trend rate of growth has been 3.6 per cent.

TABLE 1. INDEXES OF INDUSTRIAL GROSS PRODUCT AT AVERAGE 1989-90 PRICES — SEASONALLY ADJUSTED AND TREND ESTIMATES
Index numbers (Base: 1989-90 = 100.0)

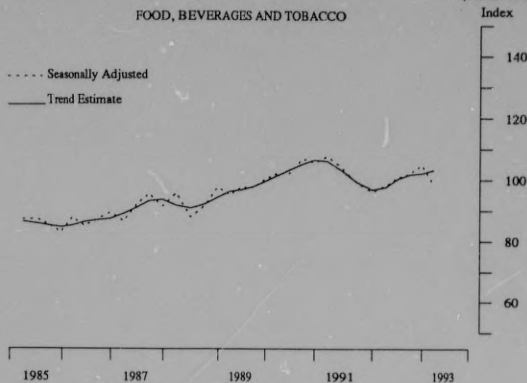
	Quarters ended													
	1989-90		1990-91				1991-92				1992-93			
	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June
	Seasonally adjusted													
Mining (excluding services to mining)	103.0	104.0	104.1	102.2	100.4	103.5	104.8	103.6	105.5	105.9	107.8	102.5	104.4	107.8
Manufacturing	101.3	93.5	96.7	95.3	94.3	92.4	92.4	91.1	91.4	90.3	90.8	92.8	93.6	96.9
Electricity, gas and water	100.4	101.2	101.2	103.3	103.7	104.1	104.5	104.7	104.6	105.0	105.8	102.9	106.5	109.4
Total industrial production	101.5	99.9	98.7	97.7	96.7	96.1	96.4	95.3	95.8	96.2	96.0	96.0	97.3	100.6
	<i>Trend estimates</i>													
Mining (excluding services to mining)	101.8	104.0	104.1	102.5	102.3	103.1	104.4	105.0	105.8	106.5	106.0	105.1	105.3	106.4
Manufacturing	100.1	98.8	96.9	95.2	93.9	92.8	91.9	91.3	90.8	90.5	91.0	92.3	94.2	96.1
Electricity, gas and water	100.4	101.1	102.0	103.0	103.9	104.4	104.6	104.8	105.1	105.1	104.7	105.1	106.5	108.5
Total industrial production	100.4	100.1	98.9	97.6	96.8	96.3	96.0	95.7	95.5	95.5	95.6	96.4	97.9	99.7

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

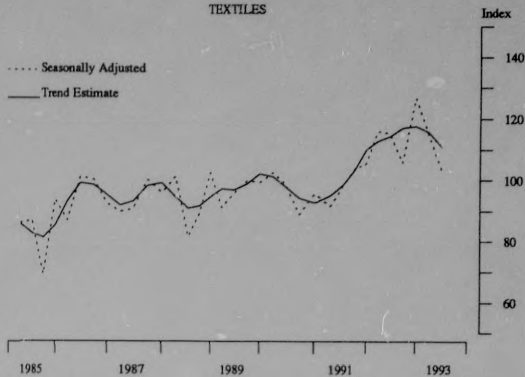
	Change from preceding quarter													June Qtr
	1989-90		1990-91				1991-92				1992-93			1992
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	June Qtr
	Seasonally adjusted													
Mining (excluding services to mining)	1.0	0.1	-1.8	-1.8	3.1	1.3	-1.1	1.8	0.4	1.8	-4.9	1.9	3.3	1.8
Manufacturing	-2.8	-1.8	-1.4	-1.0	-2.0	—	-1.4	0.3	-1.2	0.6	2.2	0.9	3.5	7.3
Electricity, gas and water	0.8	—	2.1	0.4	0.4	0.4	0.2	-0.1	0.4	0.8	-2.7	3.5	2.7	4.2
Total industrial production	-1.6	-1.2	-1.0	-1.0	-0.6	0.3	-1.1	0.5	-0.6	0.8	—	1.4	3.4	5.7
	<i>Trend estimates</i>													
Mining (excluding services to mining)	2.2	0.1	-1.5	-0.2	0.8	1.3	0.6	0.8	0.7	-0.5	-0.8	0.2	1.0	-0.1
Manufacturing	-1.3	-1.9	-1.8	-1.4	-1.2	-1.0	-0.7	-0.5	-0.3	0.6	1.4	2.1	2.0	6.2
Electricity, gas and water	0.7	0.9	1.0	0.9	0.5	0.2	0.2	0.3	—	-0.4	0.4	1.3	1.9	3.2
Total industrial production	-0.3	-1.2	-1.3	-0.8	-0.5	-0.3	-0.3	-0.2	—	0.1	0.8	1.6	1.8	4.4

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

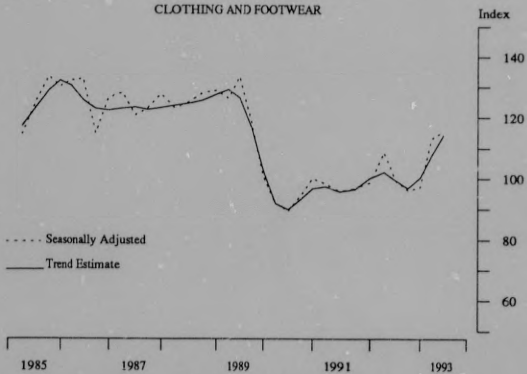
FOOD, BEVERAGES AND TOBACCO



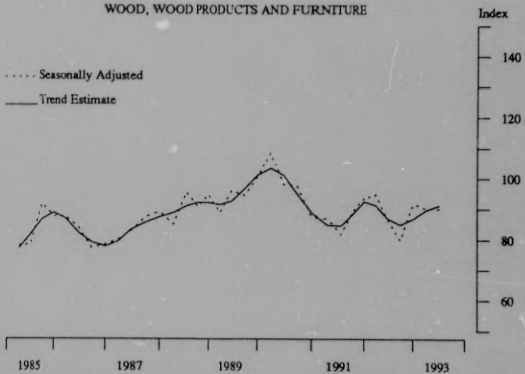
TEXTILES



CLOTHING AND FOOTWEAR

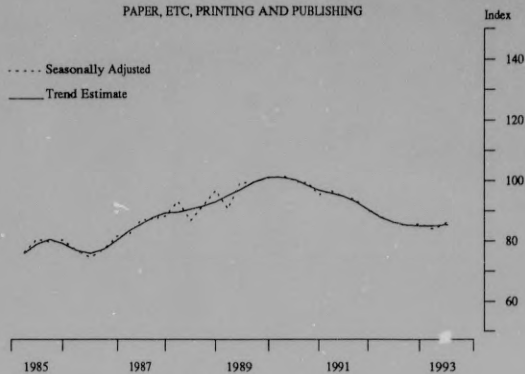


WOOD, WOOD PRODUCTS AND FURNITURE

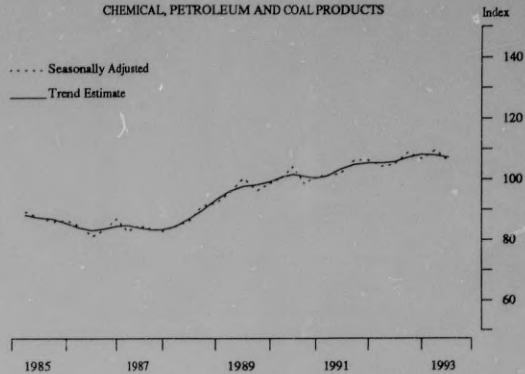


INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES
(BASE: 1989-90 = 100.0)

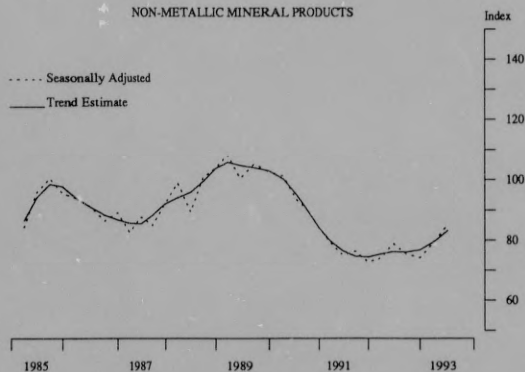
PAPER, ETC., PRINTING AND PUBLISHING



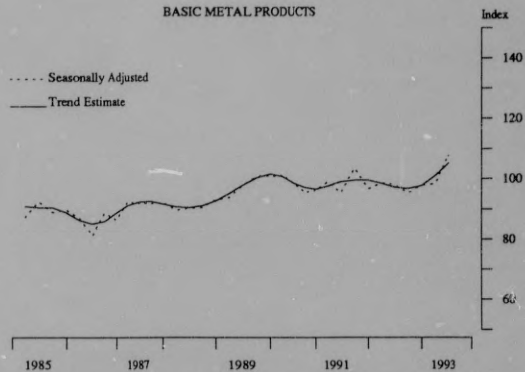
CHEMICAL, PETROLEUM AND COAL PRODUCTS



NON-METALLIC MINERAL PRODUCTS

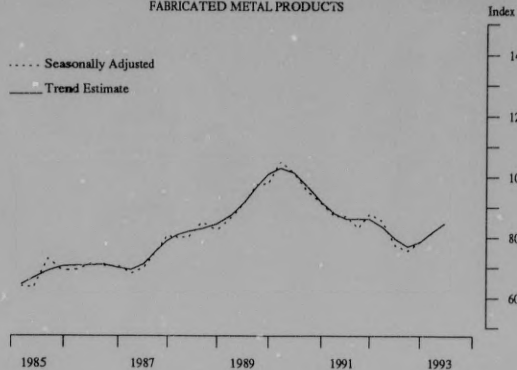


BASIC METAL PRODUCTS

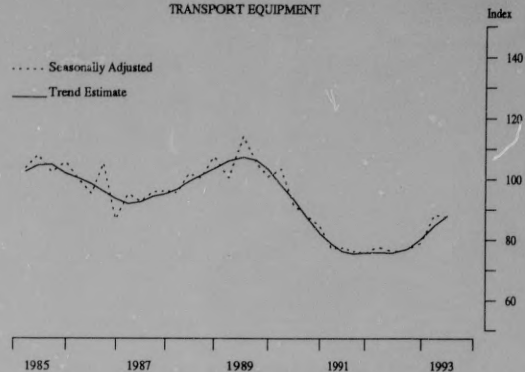


INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES
(BASE: 1989-90 = 100.0)

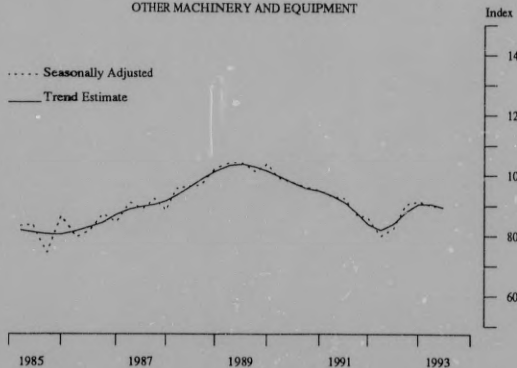
FABRICATED METAL PRODUCTS



TRANSPORT EQUIPMENT



OTHER MACHINERY AND EQUIPMENT



MISCELLANEOUS MANUFACTURING

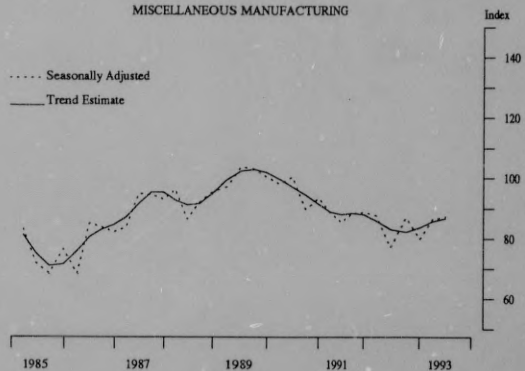


TABLE 3. INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES, BY SUBDIVISION — SEASONALLY ADJUSTED
Index numbers (Base: 1989-90 = 100.0)

ASIC Sub- Divn.	Industry	Quarters ended															
		1989-90				1990-91				1991-92				1992-93			
		Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June		
21	Food, beverages and tobacco	101.6	101.8	106.2	105.1	107.1	103.6	98.6	95.8	97.8	100.5	101.7	104.4	98.4	108.4		
23	Textiles	102.5	98.6	88.8	95.7	91.4	98.3	103.8	105.5	115.9	115.3	105.8	126.7	114.9	103.5		
24	Clothing and footwear	91.8	89.3	94.2	99.9	98.2	95.7	96.7	98.6	108.4	99.0	96.1	97.1	113.0	115.2		
25	Wood, wood products and furniture	108.4	97.5	97.3	86.8	86.5	81.4	89.1	93.2	94.3	86.4	79.4	91.3	89.6	89.7		
26	Paper, etc., printing and publishing	101.1	99.2	98.8	94.9	96.2	94.3	93.3	89.7	87.6	85.9	84.7	85.5	83.6	86.1		
27	Chemical, petroleum and coal products	100.8	104.2	98.6	100.8	101.6	101.8	106.2	106.2	104.2	105.0	108.8	106.7	109.5	106.0		
28	Non-metallic mineral products	100.6	92.9	89.4	83.8	79.0	74.9	76.2	72.6	74.0	78.5	75.2	74.1	79.1	84.7		
29	Basic metal products	100.8	98.3	95.3	95.9	98.7	95.0	103.1	96.4	98.3	97.6	94.9	97.5	98.0	107.7		
31	Fabricated metal products	104.6	100.8	94.8	90.9	86.7	86.6	82.9	87.4	85.1	77.1	75.3	78.4	81.3	84.5		
32	Transport equipment	103.1	91.2	87.8	84.4	77.3	77.4	76.2	75.6	77.7	76.3	76.9	79.2	88.2	87.3		
33	Other machinery and equipment	98.6	97.2	95.7	94.6	92.7	91.9	86.7	85.7	79.8	82.3	90.3	91.2	89.7	89.3		
34	Miscellaneous manufacturing	97.6	100.1	89.4	93.1	88.2	85.2	88.1	88.5	87.2	76.8	86.7	79.4	86.2	87.1		
Total manufacturing		101.3	98.5	96.7	95.3	94.3	92.4	92.4	91.1	91.4	90.3	90.8	92.8	93.6	96.9		

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												June Qtr 1992 to June Qtr 1991				
		1989-90				1990-91				1991-92					1992-93			
		June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.		June			
21	Food, beverages and tobacco	0.2	4.3	-1.0	1.9	-3.3	-4.8	-2.8	2.1	2.8	1.2	2.7	-5.7	10.2	7.9			
23	Textiles	-3.8	-9.9	7.8	-4.5	7.5	5.6	1.6	9.9	-0.5	-8.2	19.8	-9.3	-9.9	-10.2			
24	Clothing and footwear	-2.7	5.5	6.1	-1.7	-2.5	1.0	2.0	9.9	-8.7	-2.9	1.0	16.4	1.9	16.4			
25	Wood, wood products and furniture	-10.1	-0.2	-10.8	-0.3	-5.9	9.5	4.6	1.2	-8.4	-8.1	15.0	-1.9	0.1	3.8			
26	Paper, etc., printing and publishing	-1.9	-0.4	-3.9	1.4	-2.0	-1.1	-3.9	-2.3	-1.9	-1.4	0.9	-2.2	3.0	0.2			
27	Chemical, petroleum and coal products	3.4	-5.4	2.2	0.8	0.2	4.3	—	-1.9	0.8	3.6	-1.9	2.6	-3.2	1.0			
28	Non-metallic mineral products	-7.7	-3.8	-6.3	-5.7	-5.2	1.7	-4.7	1.9	6.1	-4.2	-1.5	6.7	7.1	7.9			
29	Basic metal products	-2.5	-3.1	0.6	2.9	-3.7	8.5	-6.5	2.0	-0.7	-2.8	2.7	0.5	9.9	10.3			
31	Fabricated metal products	-3.6	-6.0	-4.1	-4.6	-0.1	-4.3	5.4	-2.6	-9.4	-2.3	4.1	3.7	3.9	9.6			
32	Transport equipment	-11.5	-3.7	-3.9	-8.4	0.1	-1.6	-0.8	2.8	-1.8	0.8	3.0	11.4	-1.0	14.4			
33	Other machinery and equipment	-1.4	-1.5	-1.1	-2.0	-0.9	-5.7	-1.2	-6.9	3.1	9.7	1.0	-1.6	-0.4	8.5			
34	Miscellaneous manufacturing	2.6	-10.7	4.1	-5.3	-3.4	3.4	0.5	-1.5	-11.9	12.9	-8.4	8.6	1.0	13.4			
Total manufacturing		-2.8	-1.8	-1.4	-1.0	-2.0	—	-1.4	0.3	-1.2	0.6	2.2	0.9	3.5	7.3			

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													
		1989-90		1990-91				1991-92				1992-93			
		Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June
21	Food, beverages and tobacco	100.9	102.8	104.6	106.0	105.6	102.7	98.9	96.6	97.3	100.0	101.4	101.8	102.8	104.5
23	Textiles	101.2	97.9	94.2	92.6	94.9	98.5	103.5	110.0	112.7	114.3	117.0	117.6	115.7	111.0
24	Clothing and footwear	91.6	89.7	93.1	96.6	97.3	95.6	96.4	100.0	101.9	99.2	96.8	100.2	107.6	113.9
25	Wood, wood products and furniture	102.8	100.5	94.6	88.2	84.4	84.1	88.1	92.0	90.9	86.6	84.6	86.5	89.2	90.8
26	Paper, etc, printing and publishing	100.5	99.6	97.9	96.3	95.4	94.4	92.6	90.0	87.5	85.9	85.0	84.7	84.7	85.2
27	Chemical, petroleum and coal products	100.8	101.7	101.0	100.4	101.2	103.3	104.9	105.4	105.4	105.8	107.2	108.1	107.9	107.2
28	Non-metallic mineral products	99.7	94.6	89.2	83.8	79.5	76.3	74.5	74.2	75.3	76.0	75.9	76.6	79.2	82.9
29	Basic metal products	100.4	98.3	96.9	96.2	97.3	98.7	99.2	99.2	98.2	96.9	96.3	97.4	100.7	104.7
31	Fabricated metal products	102.4	100.9	96.3	91.2	87.6	85.8	85.9	85.8	83.3	79.3	76.7	78.3	81.5	84.4
32	Transport equipment	97.9	93.2	87.3	82.1	78.7	76.2	75.5	75.8	75.9	75.8	77.0	80.4	84.6	87.8
33	Other machinery and equipment	99.3	97.2	95.4	94.4	92.8	90.7	87.5	83.6	81.8	83.8	87.7	90.2	90.2	89.3
34	Miscellaneous manufacturing	99.3	96.8	94.1	91.0	88.5	87.7	88.1	87.7	85.5	82.8	81.9	83.4	85.4	86.5
Total manufacturing		100.1	98.8	96.9	95.2	93.9	92.8	91.9	91.3	90.8	90.5	91.0	92.3	94.2	96.1

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												June Qtr 1992 to June Qtr 1992	
		1989-90		1990-91				1991-92				1992-93			
		June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.		June
21	Food, beverages and tobacco	1.9	1.8	1.3	-0.4	-2.7	-3.7	-2.3	0.7	2.8	1.4	0.4	1.0	1.7	4.5
23	Textiles	-3.3	-3.8	-1.7	2.5	3.8	5.1	6.3	2.5	1.4	2.4	0.5	-1.6	-4.1	-2.9
24	Clothing and footwear	-2.1	3.8	3.8	0.7	-1.7	0.8	3.7	1.9	-2.6	-2.4	3.5	7.4	5.9	14.8
25	Wood, wood products and furniture	-2.2	-5.9	-6.8	-4.3	-0.4	4.8	4.4	-1.2	-4.7	-2.3	2.2	3.1	1.8	4.8
26	Paper, etc, printing and publishing	-0.9	-1.7	-1.6	-0.9	-1.0	-1.9	-2.8	-2.8	-1.8	-1.0	-0.4	—	0.6	-0.8
27	Chemical, petroleum and coal products	0.9	-0.7	-0.6	0.8	2.1	1.5	0.5	—	0.4	1.3	0.8	-0.2	-0.6	1.3
28	Non-metallic mineral products	-5.1	-5.7	-6.1	-5.1	-4.0	-2.4	-0.4	1.5	0.9	-0.1	0.9	3.4	4.7	9.1
29	Basic metal products	-2.1	-1.4	-0.7	1.1	1.4	0.5	—	-1.0	-1.3	-0.6	1.1	3.4	4.0	8.0
31	Fabricated metal products	-1.5	-4.6	-5.3	-3.9	-2.1	0.1	-0.1	-2.9	-4.8	-3.3	2.1	4.1	3.6	6.4
32	Transport equipment	-4.8	-6.3	-6.0	-4.1	-3.2	-0.9	0.4	0.1	-0.1	1.6	4.4	5.2	3.8	15.8
33	Other machinery and equipment	-2.1	-1.9	-1.0	-1.7	-2.3	-3.5	-4.5	-2.2	2.4	4.7	2.9	—	-1.0	6.6
34	Miscellaneous manufacturing	-2.5	-2.8	-3.3	-2.7	-0.9	0.5	-0.5	-2.5	-3.2	-1.1	1.8	2.4	1.3	4.5
Total manufacturing		-1.3	-1.9	-1.8	-1.4	-1.2	-1.0	-0.7	-0.5	-0.3	0.6	1.4	2.1	2.0	6.2

HISTORICAL TABLES

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	56.7	71.5	57.5	70.1
1977-78	58.1	77.1	58.3	73.1
1978-79	59.6	80.3	61.4	75.4
1979-80	58.3	83.8	65.7	77.2
1980-81	59.4	85.5	68.6	78.8
1981-82	59.0	87.6	72.2	75.2
1982-83	61.3	80.4	74.2	77.6
1983-84	65.7	81.6	77.3	83.1
1984-85	74.3	85.8	82.1	85.4
1985-86	83.1	86.2	85.1	85.8
1986-87	79.7	87.2	86.9	91.0
1987-88	87.5	91.4	91.3	96.0
1988-89	91.7	97.3	95.7	100.0
1989-90	100.0	100.0	100.0	100.0
1990-91	102.6	94.8	103.1	97.4
1991-92	105.0	91.3	104.7	95.7
1992-93	105.7	93.5	106.1	97.5
1976-77 — Sept.	59.2	78.5	58.8	71.6
Dec.	54.2	82.0	57.0	72.2
Mar.	55.6	71.8	56.5	66.2
June	57.7	77.5	57.7	70.4
1977-78 — Sept.	60.4	78.9	60.3	72.4
Dec.	57.7	80.5	57.9	72.2
Mar.	55.8	71.1	56.1	65.8
June	58.4	78.0	58.8	71.1
1978-79 — Sept.	60.3	80.6	62.5	73.6
Dec.	60.0	84.0	59.3	75.2
Mar.	57.2	75.3	61.2	69.4
June	60.8	81.3	62.6	74.2
1979-80 — Sept.	63.0	86.0	67.3	78.3
Dec.	62.3	87.4	64.5	78.6
Mar.	53.8	78.9	65.0	71.2
June	54.2	82.7	65.8	73.6
1980-81 — Sept.	60.4	86.3	70.0	78.1
Dec.	59.3	90.3	68.0	80.0
Mar.	59.6	79.8	67.0	73.5
June	58.4	85.5	69.2	77.0
1981-82 — Sept.	56.9	90.0	74.1	79.9
Dec.	60.6	92.3	69.8	81.7
Mar.	55.7	80.6	70.7	73.5
June	62.7	87.5	74.0	80.0
1982-83 — Sept.	61.1	88.4	77.6	80.5
Dec.	62.6	8.2	73.6	76.6
Mar.	58.3	71.2	71.7	68.5
June	63.0	79.8	74.0	75.3
1983-84 — Sept.	64.8	82.3	78.5	78.0
Dec.	64.4	84.4	75.7	78.7
Mar.	65.1	76.9	76.1	74.5
June	68.6	82.8	78.8	79.3
1984-85 — Sept.	75.1	88.1	84.7	85.1
Dec.	72.9	87.3	81.0	83.8
Mar.	70.7	80.1	80.6	78.4
June	79.3	87.5	82.0	85.2
1985-86 — Sept.	90.6	88.9	87.4	89.0
Dec.	84.7	89.9	82.1	88.5
Mar.	81.7	80.3	84.4	81.1
June	75.3	84.7	86.4	83.1
1986-87 — Sept.	78.8	89.6	89.7	87.6
Dec.	78.5	89.2	83.9	86.3
Mar.	79.3	81.5	85.9	81.7
June	82.2	88.4	87.9	87.2
1987-88 — Sept.	87.9	93.7	93.3	92.6
Dec.	93.3	94.3	90.2	93.5
Mar.	88.9	87.3	90.6	88.0
June	88.0	90.3	91.0	89.9
1988-89 — Sept.	94.4	96.4	96.8	96.0
Dec.	92.8	101.5	95.8	99.1
Mar.	88.8	90.9	94.0	90.9
June	90.6	100.4	96.0	98.0
1989-90 — Sept.	100.9	102.7	103.2	102.4
Dec.	96.5	104.3	98.4	102.0
Mar.	99.7	95.5	98.4	94.7
June	102.8	97.5	100.0	98.8
1990-91 — Sept.	107.1	99.0	105.3	101.4
Dec.	103.9	99.1	102.7	100.5
Mar.	97.1	89.4	101.8	92.5
June	102.4	91.5	102.5	95.0
1991-92 — Sept.	107.8	94.5	108.7	98.9
Dec.	105.4	94.6	104.1	97.9
Mar.	102.0	86.6	102.4	91.6
June	104.7	89.4	103.5	94.2
1992-93 — Sept.	110.9	92.8	110.3	98.6
Dec.	104.3	96.4	102.0	98.6
Mar.	100.9	88.7	104.2	93.7
June	106.7	95.9	107.8	99.5

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
	1976-77 — Sept. Dec. Mar. June	58.3 53.1 57.5 57.8	76.6 77.8 77.4 78.0	56.9 57.8 57.5 58.1	69.9 69.3 70.2 70.8	55.5 55.5 56.3 57.4	76.5 77.6 77.9 77.7	56.8 57.5 57.8 58.0
1977-78 — Sept. Dec. Mar. June	59.5 56.4 57.8 58.4	76.9 76.3 76.5 78.5	58.0 58.7 57.2 59.1	70.7 69.5 69.8 71.4	57.9 57.3 57.4 57.9	77.0 76.8 77.0 78.0	58.1 58.1 58.3 58.8	70.2 69.9 70.2 70.9
1978-79 — Sept. Dec. Mar. June	59.3 58.7 59.3 60.9	78.6 79.7 81.1 81.8	59.8 60.2 62.5 63.1	71.8 72.3 73.6 74.6	58.5 58.7 59.3 60.6	79.0 79.9 81.1 82.3	59.6 60.8 62.0 63.3	71.2 72.6 73.6 74.8
1979-80 — Sept. Dec. Mar. June	61.9 61.0 55.8 54.4	83.7 83.1 83.2 83.1	64.5 65.5 66.4 66.3	76.2 75.7 75.6 74.1	61.0 59.2 56.7 55.5	83.3 84.1 84.1 84.0	64.5 65.5 66.1 66.6	75.7 75.9 75.1 74.9
1980-81 — Sept. Dec. Mar. June	59.0 58.2 61.8 58.7	83.6 86.1 86.2 85.9	67.3 68.9 68.7 69.5	77.2 75.7 78.2 77.3	56.9 59.2 56.3 58.4	84.5 85.3 86.2 86.6	67.5 68.3 69.0 69.7	75.6 76.9 77.6 77.6
1981-82 — Sept. Dec. Mar. June	55.5 59.5 57.7 63.1	87.0 88.2 87.3 87.6	71.0 70.9 72.7 74.4	77.3 79.1 78.3 80.1	57.2 57.5 59.1 60.4	87.1 87.8 88.3 87.1	70.4 71.5 72.3 73.9	77.7 78.4 78.4 79.1
1982-83 — Sept. Dec. Mar. June	59.6 61.3 60.2 63.6	85.4 78.7 76.9 79.8	74.5 74.5 73.5 74.4	77.9 74.2 72.8 75.6	60.4 60.4 61.0 61.9	84.0 80.3 78.2 78.5	74.5 74.3 73.9 74.4	77.2 75.0 73.8 74.3
1983-84 — Sept. Dec. Mar. June	63.3 63.0 67.3 69.3	79.5 81.1 83.1 82.7	75.4 76.8 78.0 79.2	75.5 76.5 79.1 79.6	62.7 64.0 66.2 68.6	80.1 81.4 82.6 83.5	75.3 76.7 78.0 79.4	75.6 76.9 78.4 79.9
1984-85 — Sept. Dec. Mar. June	71.8 71.3 73.4 79.9	85.6 84.2 85.8 87.6	81.2 82.2 82.4 82.4	82.4 81.6 83.0 85.4	71.0 72.1 75.6 80.5	84.7 85.1 85.8 86.6	81.2 82.1 82.6 82.8	81.7 82.3 83.4 85.0
1985-86 — Sept. Dec. Mar. June	87.8 83.5 84.7 76.1	86.3 87.7 85.9 85.0	83.8 83.3 86.0 87.0	86.2 85.8 85.7 83.6	85.1 85.8 82.5 78.4	87.1 86.7 86.1 85.8	83.3 84.4 85.8 85.5	86.2 86.2 85.4 84.5
1986-87 — Sept. Dec. Mar. June	76.3 77.4 82.1 83.2	87.0 86.0 86.9 89.0	86.1 85.1 87.4 88.7	84.9 84.3 86.1 87.9	76.8 78.1 80.9 83.8	85.8 86.3 87.3 88.7	86.3 86.3 87.1 88.6	84.2 84.8 86.1 87.8
1987-88 — Sept. Dec. Mar. June	85.1 92.0 91.9 89.1	91.0 90.8 92.8 90.9	89.7 91.3 92.3 92.0	89.7 91.1 92.6 90.7	87.3 90.2 91.6 92.3	90.4 91.3 91.5 92.3	90.2 91.3 91.9 92.7	89.8 91.1 91.5 92.2
1988-89 — Sept. Dec. Mar. June	91.4 91.5 91.8 91.7	93.7 97.7 96.5 101.2	93.0 97.4 95.7 97.2	93.2 96.4 95.5 98.9	91.1 91.4 92.3 93.4	93.8 96.0 98.3 99.5	93.9 95.3 96.7 97.7	93.3 95.1 96.9 98.1
1989-90 — Sept. Dec. Mar. June	97.9 95.0 103.0 104.0	100.0 100.2 101.3 104.0	99.3 99.1 100.4 101.2	99.5 99.1 101.5 99.9	95.5 98.6 101.8 104.0	100.4 100.8 103.1 101.1	98.7 100.8 104.4 101.1	99.3 100.2 104.4 101.1
1990-91 — Sept. Dec. Mar. June	104.1 102.2 100.4 103.5	96.7 95.3 94.3 92.4	101.2 103.3 103.7 104.1	98.7 97.7 96.7 96.1	104.1 102.5 102.3 103.1	96.9 95.2 93.9 92.8	102.0 103.0 103.9 104.4	98.9 99.6 96.8 96.3
1991-92 — Sept. Dec. Mar. June	104.8 103.6 105.5 105.9	92.4 91.1 91.4 90.3	104.5 104.7 104.6 105.0	96.4 95.3 95.8 95.2	104.4 105.0 105.8 106.5	91.9 91.3 90.8 90.5	104.6 104.8 105.1 105.1	96.0 97.9 95.5 95.5
1992-93 — Sept. Dec. Mar. June	107.8 102.5 104.4 107.8	90.8 92.8 93.6 96.9	105.8 102.9 106.5 109.4	96.0 96.0 97.3 90.6	106.0 105.1 105.3 106.4	91.0 92.3 96.2 96.1	104.7 105.1 106.5 108.5	95.6 96.4 97.9 99.7

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

	Food, beverages and tobacco	Clothing products and footwear		Wood, wood products and furniture	Paper, etc., printing and publishing	Chemicals, petro- leum and coal products	Non-metallic mineral products
		Tailors					
1976-77	80.6	75.4	101.5	73.1	57.8	74.0	80.1
1977-78	83.6	73.2	101.0	70.4	59.3	76.9	79.3
1978-79	84.9	78.1	106.6	72.9	62.4	80.9	77.4
1979-80	85.6	81.0	106.7	75.3	66.5	83.1	84.7
1980-81	86.6	79.6	112.0	78.0	68.3	82.8	86.9
1981-82	86.9	81.3	111.6	79.1	70.0	83.6	88.8
1982-83	86.5	74.9	104.3	69.9	66.3	83.2	78.4
1983-84	86.3	78.2	112.3	73.4	69.2	86.3	85.0
1984-85	87.3	86.1	116.2	77.0	75.3	88.4	77.2
1985-86	84.8	87.8	130.8	87.6	77.8	84.8	94.6
1986-87	88.3	93.7	121.1	79.4	81.9	84.6	86.0
1987-88	92.3	94.6	123.5	89.0	88.5	84.4	90.7
1988-89	95.0	94.8	128.1	92.5	94.3	84.8	102.7
1989-90	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1990-91	105.6	94.1	96.9	88.2	96.1	100.7	81.9
1991-92	98.1	110.3	100.4	90.7	89.2	105.5	75.3
1992-93	103.2	112.3	104.8	87.4	85.1	107.8	78.2
1976-77 — Sept.	78.8	76.7	112.5	77.8	57.4	70.2	87.8
Dec.	55.6	82.8	111.9	78.9	60.9	76.4	86.1
Mar.	77.8	66.6	89.8	66.0	54.4	71.7	71.7
June	80.3	75.5	91.6	69.5	58.3	77.6	74.9
1977-78 — Sept.	83.3	77.1	108.5	72.2	61.7	75.3	77.5
Dec.	89.1	77.1	98.1	75.2	62.3	78.3	83.9
Mar.	81.3	64.1	91.2	59.9	56.7	74.2	71.7
June	80.7	74.3	106.3	74.4	58.3	79.7	76.1
1978-79 — Sept.	83.8	84.0	107.9	77.5	62.0	83.4	78.2
Dec.	92.0	77.9	107.6	78.9	64.5	82.1	80.6
Mar.	82.6	73.0	98.1	64.3	58.8	76.1	77.9
June	81.0	77.5	112.5	70.9	64.4	81.9	80.8
1979-80 — Sept.	85.7	80.4	113.5	78.7	68.8	80.0	88.6
Dec.	89.3	85.3	116.4	74.4	68.2	90.3	83.6
Mar.	83.1	71.8	102.0	70.1	63.3	79.8	76.3
June	84.1	82.4	106.9	77.8	63.8	82.1	90.2
1980-81 — Sept.	87.1	79.6	122.7	83.6	69.6	82.1	88.1
Dec.	96.1	84.0	115.5	81.0	70.6	83.3	91.4
Mar.	73.8	66.9	100.4	68.2	64.5	80.8	83.6
June	79.2	87.7	109.2	79.0	68.4	85.0	84.3
1981-82 — Sept.	84.5	85.3	127.6	85.2	71.6	86.1	87.8
Dec.	93.8	83.7	113.2	83.8	72.8	84.9	96.8
Mar.	83.6	73.9	96.1	70.2	64.9	78.4	82.6
June	85.7	82.4	109.6	77.3	70.6	88.5	87.8
1982-83 — Sept.	88.6	84.0	117.5	74.5	68.4	85.8	81.8
Dec.	92.7	79.1	98.1	70.7	69.0	84.7	81.2
Mar.	82.6	65.3	88.9	58.8	61.3	76.8	63.9
June	82.1	71.0	112.5	75.0	66.6	85.3	78.8
1983-84 — Sept.	83.6	77.9	118.8	72.5	68.2	86.1	82.6
Dec.	91.0	73.9	111.6	78.7	71.5	89.6	78.7
Mar.	83.8	69.4	103.7	67.7	65.1	90.2	72.8
June	86.6	91.4	115.2	74.5	71.8	79.1	73.8
1984-85 — Sept.	89.4	92.8	124.5	81.0	75.2	90.1	78.5
Dec.	90.2	83.7	114.0	79.1	75.6	88.4	80.7
Mar.	83.9	73.9	100.7	69.1	70.8	89.3	78.5
June	85.5	94.1	123.6	78.6	80.5	85.8	95.0
1985-86 — Sept.	84.5	75.2	145.7	96.0	80.5	85.9	102.6
Dec.	87.4	90.8	130.4	93.0	85.1	88.2	98.7
Mar.	84.8	73.9	101.5	77.5	71.5	85.1	87.2
June	82.6	111.4	130.2	83.8	74.0	79.8	89.9
1986-87 — Sept.	86.8	108.8	125.6	89.9	78.3	83.4	88.8
Dec.	94.1	88.9	127.3	80.3	86.7	88.2	91.9
Mar.	84.1	76.5	113.5	71.2	76.6	83.2	86.4
June	88.1	100.7	117.9	82.1	85.8	83.4	86.0
1987-88 — Sept.	95.3	107.5	134.7	91.6	88.6	83.7	87.5
Dec.	96.7	92.8	128.7	94.4	93.6	83.5	95.1
Mar.	93.3	86.6	109.0	75.9	86.6	84.6	87.2
June	83.7	91.5	121.5	94.2	85.3	81.2	92.8
1988-89 — Sept.	91.6	93.8	140.6	95.2	93.8	85.6	103.7
Dec.	103.0	99.3	129.4	100.6	101.9	92.7	107.4
Mar.	93.1	78.4	112.4	79.3	84.6	95.3	100.8
June	92.2	107.8	129.4	94.7	96.9	100.1	98.7
1989-90 — Sept.	97.3	102.6	129.8	98.9	102.3	96.5	107.9
Dec.	106.2	96.4	101.4	107.7	105.9	98.9	106.1
Mar.	100.0	88.9	82.1	97.5	94.9	100.6	94.4
June	96.6	112.1	86.7	96.4	96.9	104.2	91.5
1990-91 — Sept.	106.6	90.2	104.1	101.8	102.5	98.6	92.5
Dec.	111.8	93.5	101.0	92.8	99.4	100.8	87.2
Mar.	105.6	79.4	88.9	77.8	77.8	90.5	74.3
June	98.3	113.1	93.7	80.2	91.8	102.0	73.7
1991-92 — Sept.	98.8	103.9	106.7	93.2	97.1	106.2	79.0
Dec.	101.9	103.3	99.7	99.7	93.7	106.2	75.5
Mar.	96.5	100.7	98.4	85.0	82.5	104.1	69.6
June	95.3	133.3	96.9	84.8	83.6	105.3	77.2
1992-93 — Sept.	101.9	105.2	105.8	95.8	88.4	108.7	77.0
Dec.	111.0	124.5	94.8	87.3	89.5	106.7	101.0
Mar.	97.1	99.7	102.9	80.9	78.8	109.3	74.4
June	102.8	119.9	112.6	82.0	83.8	106.3	83.1

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	71.4	64.2	95.9	84.6	70.4	77.5
1977-78	71.3	63.4	89.8	81.7	70.0	77.1
1978-79	76.0	67.3	91.4	85.0	75.7	80.3
1979-80	82.9	71.2	99.5	87.6	76.7	83.8
1980-81	86.9	74.2	94.1	93.0	79.0	85.5
1981-82	86.8	77.0	99.8	97.1	82.5	87.6
1982-83	75.1	65.8	95.0	81.3	75.0	80.4
1983-84	83.3	64.0	93.6	81.3	77.0	81.6
1984-85	90.9	64.1	101.8	81.1	87.0	85.8
1985-86	86.6	70.3	100.8	80.2	74.4	86.2
1986-87	89.5	69.6	95.1	87.5	85.8	87.2
1987-88	90.8	78.6	97.4	92.8	92.2	91.4
1988-89	93.6	86.0	105.8	101.3	96.7	97.3
1989-90	100.0	100.0	100.0	100.0	100.0	100.0
1990-91	96.2	89.9	81.9	93.8	89.1	94.8
1991-92	98.9	83.1	76.4	83.7	35.4	91.3
1992-93	99.5	79.8	82.7	90.2	84.7	93.5
1976-77 — Sept.	72.5	62.6	97.5	90.9	68.8	78.5
Dec.	73.7	66.3	101.0	90.6	75.3	82.0
Mar.	66.5	59.7	83.7	78.1	62.9	71.8
June	72.9	68.0	101.7	78.7	74.5	77.5
1977-78 — Sept.	71.8	65.3	90.3	84.9	78.8	78.9
Dec.	71.2	64.8	92.1	89.6	68.5	80.5
Mar.	69.9	58.0	82.1	69.0	60.2	71.1
June	72.2	65.5	94.8	83.2	71.3	78.0
1978-79 — Sept.	73.6	67.7	92.8	84.1	78.7	80.6
Dec.	77.0	70.9	91.4	91.4	78.4	84.3
Mar.	74.8	61.9	81.1	77.2	69.1	75.3
June	78.6	68.8	100.2	86.9	76.4	81.3
1979-80 — Sept.	83.7	74.7	106.1	90.6	82.6	86.0
Dec.	81.7	75.4	109.1	92.7	80.5	87.4
Mar.	86.6	65.4	85.6	80.7	69.7	78.4
June	79.7	69.1	97.0	86.2	73.8	82.7
1980-81 — Sept.	84.4	71.4	94.3	94.5	81.0	86.3
Dec.	90.4	78.7	97.5	97.3	85.8	90.3
Mar.	84.2	70.9	82.6	84.0	70.9	79.0
June	88.6	78.6	101.5	96.1	79.2	85.5
1981-82 — Sept.	91.7	79.9	102.3	101.9	85.5	90.0
Dec.	87.0	82.4	101.3	103.0	91.1	92.3
Mar.	81.8	71.4	85.2	88.9	76.1	80.6
June	86.7	74.1	110.5	94.7	77.1	87.5
1982-83 — Sept.	83.8	74.5	114.3	96.5	84.7	88.4
Dec.	69.6	65.9	96.1	82.4	82.8	82.2
Mar.	66.6	56.8	77.3	67.2	66.5	71.2
June	80.4	65.9	92.1	75.9	77.0	79.8
1983-84 — Sept.	87.0	62.4	99.1	79.8	76.2	82.3
Dec.	82.6	64.8	94.5	82.3	81.6	84.4
Mar.	76.9	60.8	81.8	68.9	74.8	76.9
June	86.7	67.9	97.9	76.9	75.2	82.8
1984-85 — Sept.	94.4	66.3	105.3	82.1	88.6	88.1
Dec.	95.1	68.5	100.1	81.7	90.9	87.3
Mar.	82.7	58.3	89.7	77.0	80.0	80.4
June	91.5	63.2	112.2	84.7	69.6	87.5
1985-86 — Sept.	90.9	74.8	108.9	78.3	71.0	88.9
Dec.	92.3	72.4	108.3	86.7	81.0	90.9
Mar.	82.4	63.3	86.6	74.9	62.7	80.3
June	80.7	70.7	99.3	80.9	72.9	84.7
1986-87 — Sept.	90.2	72.8	111.1	91.7	86.3	89.6
Dec.	88.9	74.1	89.5	84.5	87.6	89.2
Mar.	87.6	62.3	82.9	86.1	76.4	81.5
June	91.4	69.1	96.8	87.8	83.0	88.4
1987-88 — Sept.	93.1	77.7	100.3	96.6	97.0	93.7
Dec.	94.6	83.9	99.2	88.5	84.4	94.3
Mar.	85.4	73.8	83.6	90.9	87.1	87.3
June	90.1	79.0	106.3	95.2	85.3	90.3
1988-89 — Sept.	91.5	88.1	104.5	100.5	94.0	96.4
Dec.	95.3	83.7	110.8	103.3	102.6	101.5
Mar.	89.5	80.5	88.3	84.4	87.9	90.9
June	98.0	89.8	119.3	103.0	102.1	100.4
1989-90 — Sept.	102.4	103.6	109.4	104.3	105.1	102.7
Dec.	103.3	101.4	104.0	105.9	108.3	104.3
Mar.	95.9	98.5	91.5	92.3	87.3	91.5
June	98.5	99.4	95.1	97.0	98.3	97.5
1990-91 — Sept.	95.9	97.0	91.5	98.5	92.0	99.0
Dec.	98.2	94.2	86.8	88.1	101.3	99.1
Mar.	84.9	82.1	68.8	84.3	78.7	89.4
June	95.9	85.3	80.4	91.9	83.4	91.5
1991-92 — Sept.	103.6	85.3	78.5	89.2	90.9	94.5
Dec.	98.6	90.4	77.6	89.2	96.6	94.6
Mar.	94.6	80.8	69.4	74.1	78.6	86.6
June	98.7	76.0	82.4	85.4	73.3	89.4
1992-93 — Sept.	95.3	77.3	80.4	93.0	89.3	92.8
Dec.	99.5	81.1	81.3	95.1	86.7	94.3
Mar.	94.4	77.4	78.9	83.1	77.6	88.7
June	108.9	83.3	90.3	89.4	85.6	95.9

TABLE 16. INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES,
BY SUBDIVISION—SEASONALLY ADJUSTED
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
1976-77 — Sept.	79.1	73.4	106.4	73.7	55.5	70.2	85.4
Dec.	79.7	77.9	107.7	74.3	57.9	74.0	82.1
Mar.	80.4	74.3	99.2	74.0	58.5	75.2	76.4
June	83.3	75.5	91.1	69.6	59.0	76.7	75.3
1977-78 — Sept.	83.8	73.9	102.5	68.4	59.6	75.2	75.5
Dec.	82.9	72.7	94.7	70.9	59.3	76.0	79.9
Mar.	83.9	71.8	100.5	67.3	58.7	77.6	76.4
June	83.9	73.9	106.1	74.5	59.0	77.7	76.4
1978-79 — Sept.	84.2	80.8	100.9	73.4	59.7	83.1	76.4
Dec.	85.4	73.4	104.1	74.5	61.5	79.8	83.2
Mar.	85.2	82.1	108.8	72.2	63.1	79.8	83.2
June	84.2	76.7	112.7	70.8	64.9	80.9	81.1
1979-80 — Sept.	86.2	77.1	105.2	74.5	66.5	79.5	86.4
Dec.	82.9	80.8	113.6	70.4	65.2	87.8	79.7
Mar.	85.9	80.8	113.3	78.8	67.9	83.8	81.5
June	87.4	81.2	107.1	77.9	66.1	81.1	90.5
1980-81 — Sept.	87.5	75.9	112.4	79.1	67.3	81.4	85.6
Dec.	89.3	80.4	113.6	76.6	67.5	80.9	87.6
Mar.	86.7	75.5	112.0	76.5	69.0	85.1	89.3
June	82.2	85.7	109.5	79.1	68.4	83.8	84.4
1981-82 — Sept.	84.9	81.2	116.0	80.6	69.6	85.2	85.4
Dec.	87.2	81.2	111.7	79.4	69.7	87.2	93.0
Mar.	86.6	83.7	107.7	78.9	69.6	82.6	88.3
June	88.6	79.6	109.7	77.5	70.5	87.2	87.7
1982-83 — Sept.	89.0	79.1	105.9	70.6	66.8	84.8	79.3
Dec.	86.5	77.9	97.3	67.0	65.9	82.9	78.0
Mar.	85.3	74.7	99.9	66.1	65.8	80.3	68.3
June	84.6	67.3	112.7	75.1	66.3	84.4	78.6
1983-84 — Sept.	83.9	72.7	107.1	68.5	67.0	85.2	80.3
Dec.	85.1	74.3	110.7	74.3	67.9	88.1	75.5
Mar.	87.0	80.4	116.7	76.2	70.0	93.5	78.2
June	89.2	85.3	115.3	74.6	71.5	78.3	73.5
1984-85 — Sept.	90.1	85.6	113.5	76.7	74.3	91.0	76.6
Dec.	85.5	85.6	116.2	74.4	70.6	86.1	77.6
Mar.	86.9	86.2	114.1	77.8	76.1	89.4	83.9
June	87.0	86.9	124.9	78.2	80.4	87.6	95.4
1985-86 — Sept.	84.8	69.2	133.0	91.1	79.4	86.1	99.8
Dec.	82.8	93.7	129.8	87.3	80.2	86.5	95.0
Mar.	87.3	86.9	131.9	87.1	76.8	84.3	93.2
June	84.9	101.2	132.3	83.7	74.3	81.4	90.3
1986-87 — Sept.	86.8	100.2	114.5	76.9	77.2	83.4	86.0
Dec.	89.0	92.4	126.2	78.2	81.5	87.0	88.6
Mar.	86.2	89.8	127.9	79.7	82.2	83.0	82.3
June	91.5	90.8	120.5	82.5	86.7	84.8	87.2
1987-88 — Sept.	95.0	100.2	122.8	86.9	87.0	83.7	84.6
Dec.	91.1	96.0	127.5	88.7	88.0	82.8	91.6
Mar.	95.3	101.2	122.8	84.5	92.8	84.8	98.4
June	87.6	81.6	124.9	95.0	86.6	86.2	88.8
1988-89 — Sept.	91.2	89.1	127.9	90.4	91.5	91.3	100.2
Dec.	97.0	102.5	128.5	94.2	96.3	92.1	103.4
Mar.	94.8	91.1	126.0	88.3	90.3	95.4	107.5
June	97.0	95.7	133.0	95.6	98.9	100.4	99.9
1989-90 — Sept.	96.9	99.6	118.3	94.0	99.1	96.3	104.6
Dec.	99.7	99.3	100.5	100.1	100.6	98.7	101.9
Mar.	101.6	102.5	91.8	108.4	101.1	100.8	100.6
June	101.8	98.6	89.3	97.5	99.2	104.2	92.9
1990-91 — Sept.	106.2	88.8	94.2	97.3	98.8	98.6	89.4
Dec.	105.1	95.7	99.9	86.8	94.9	100.8	83.8
Mar.	107.1	91.4	98.2	86.5	96.2	101.6	79.0
June	103.6	98.3	95.7	81.4	94.3	101.8	74.9
1991-92 — Sept.	98.6	103.8	96.7	89.1	93.3	106.2	76.2
Dec.	85.8	105.5	98.6	93.2	89.7	106.2	72.6
Mar.	97.8	115.9	108.4	94.3	87.6	104.2	74.0
June	100.5	115.3	99.0	86.4	85.9	105.0	78.5
1992-93 — Sept.	101.7	105.8	96.1	79.4	84.7	108.8	75.2
Dec.	104.4	126.7	97.1	91.3	85.5	106.7	74.1
Mar.	98.4	114.9	113.0	89.6	83.6	109.5	79.1
June	108.4	103.5	115.2	97.7	86.1	106.0	84.7

TABLE 10. INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES,
BY SUBDIVISION — SEASONALLY ADJUSTED—continued
Index numbers (Base: 1989-90 = 100.0)

	Fabricated				Total manufacture
	Basic metal products	metal products	Transport equipment	Other machinery and equipment	
1976-77 — Sept.	71.7	61.2	94.0	87.8	76.6
Dec.	71.9	63.0	97.0	84.1	77.5
Mar.	69.1	64.8	95.1	85.9	77.4
June	73.0	67.8	97.5	80.3	78.0
1977-78 — Sept.	70.9	63.8	87.2	81.8	74.7
Dec.	69.4	61.3	88.3	83.3	76.3
Mar.	72.8	63.0	93.4	79.0	76.3
June	72.4	65.3	90.9	84.7	78.5
1978-79 — Sept.	72.5	66.2	89.3	80.9	73.9
Dec.	75.3	67.3	87.6	85.6	75.2
Mar.	78.1	67.1	92.8	85.3	77.4
June	78.7	68.8	95.9	88.2	81.8
1979-80 — Sept.	81.9	72.9	101.6	86.9	77.8
Dec.	80.1	71.8	104.7	86.8	76.8
Mar.	90.7	70.7	98.5	89.3	77.4
June	79.8	69.1	92.9	87.0	83.1
1980-81 — Sept.	81.7	69.6	90.0	90.4	76.8
Dec.	89.1	75.0	93.9	91.7	81.6
Mar.	88.9	76.8	95.6	93.3	77.1
June	88.5	78.6	97.3	96.5	81.6
1981-82 — Sept.	88.2	77.9	96.2	91.0	81.3
Dec.	86.0	78.7	98.1	97.9	86.1
Mar.	87.2	77.3	99.1	98.4	83.0
June	86.2	73.9	105.8	94.6	80.1
1982-83 — Sept.	80.2	72.5	106.8	94.7	80.7
Dec.	69.0	63.0	93.6	78.9	73.5
Mar.	71.6	61.6	89.8	74.1	72.1
June	79.7	65.5	88.3	75.8	74.0
1983-84 — Sept.	82.9	60.7	92.4	75.8	72.8
Dec.	81.7	62.0	92.4	79.5	77.0
Mar.	82.8	66.2	94.6	75.4	81.0
June	85.9	67.5	94.0	76.8	78.0
1984-85 — Sept.	91.8	64.3	98.1	78.1	84.9
Dec.	92.3	65.3	97.6	80.5	85.5
Mar.	87.1	63.6	103.4	83.0	82.9
June	92.2	63.2	107.7	83.5	71.7
1985-86 — Sept.	88.7	72.5	102.1	74.2	68.2
Dec.	89.5	68.7	105.4	86.2	76.1
Mar.	86.7	69.1	99.5	79.3	68.6
June	81.2	71.0	95.1	81.6	84.7
1986-87 — Sept.	88.4	70.3	105.0	87.0	83.4
Dec.	86.2	70.4	89.7	84.3	81.9
Mar.	92.0	67.7	95.0	90.6	83.4
June	91.7	69.8	92.5	88.6	94.5
1987-88 — Sept.	91.7	74.8	95.7	91.9	94.1
Dec.	91.9	80.0	95.9	88.1	92.6
Mar.	89.5	79.7	95.3	95.3	95.8
June	90.1	80.1	101.6	96.0	86.1
1988-89 — Sept.	90.4	84.7	100.1	94.1	91.5
Dec.	92.8	82.1	107.2	102.0	95.1
Mar.	93.6	86.3	101.3	103.8	96.8
June	97.6	91.0	114.2	103.5	103.4
1989-90 — Sept.	100.5	97.1	105.0	100.8	102.4
Dec.	100.4	97.5	100.7	103.4	99.9
Mar.	100.8	104.6	103.1	98.6	97.6
June	98.3	100.8	91.2	97.2	100.1
1990-91 — Sept.	95.3	94.8	87.8	95.7	89.4
Dec.	95.9	90.9	84.6	92.2	93.1
Mar.	98.7	86.7	77.3	92.7	88.2
June	95.0	86.6	77.4	91.9	85.2
1991-92 — Sept.	103.1	82.9	76.2	86.7	88.1
Dec.	96.4	87.4	75.6	85.7	85.5
Mar.	98.3	85.1	77.7	79.8	87.2
June	97.6	77.1	76.3	82.3	76.8
1992-93 — Sept.	94.9	75.3	76.9	90.3	86.7
Dec.	97.5	78.4	79.2	91.2	79.4
Mar.	98.0	81.3	88.2	89.7	86.2
June	107.7	94.5	87.3	89.3	87.1

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

		Food, beverages and tobacco		Clothing and footwear		Wood, wood products and furniture	Paper, etc., printing and publishing	Chemicals, petroleum and coal products	Non-metallic mineral products
			Textiles						
1976-77	Sept.	78.7	76.1	108.5		74.0	56.3	71.9	85.0
	Dec.	79.7	76.5	103.7		73.4	57.6	74.2	81.2
	Mar.	81.1	76.5	99.1		71.9	58.7	76.0	77.6
	June	82.5	76.1	96.1		70.2	59.4	76.7	75.8
1977-78	Sept.	83.3	74.4	95.5		68.4	59.6	76.7	76.4
	Dec.	83.6	73.2	98.1		68.4	59.5	76.9	77.6
	Mar.	83.6	74.0	103.4		69.8	59.1	78.3	77.3
	June	83.9	75.7	101.7		71.7	59.3	80.6	76.2
1978-79	Sept.	84.5	77.8	103.0		73.2	60.1	81.8	76.4
	Dec.	84.8	79.4	104.9		73.1	61.6	81.6	78.3
	Mar.	85.2	79.0	107.3		72.0	63.5	80.7	81.1
	June	85.0	79.9	108.9		71.3	65.1	81.0	83.2
1979-80	Sept.	84.5	79.8	109.8		71.5	66.1	83.4	82.7
	Dec.	84.6	80.6	110.5		73.2	66.7	85.1	82.2
	Mar.	85.4	81.9	110.5		75.7	66.9	85.1	83.8
	June	86.9	81.0	110.5		77.6	67.1	83.1	85.9
1980-81	Sept.	88.4	79.4	110.9		77.6	67.5	82.0	87.9
	Dec.	87.9	79.0	111.4		76.5	68.0	83.0	87.9
	Mar.	85.9	80.6	111.8		76.8	68.7	84.3	86.5
	June	84.5	82.7	111.8		77.9	69.2	85.8	86.5
1981-82	Sept.	86.5	83.5	112.1		79.2	69.6	86.3	87.5
	Dec.	85.9	83.5	111.4		79.5	70.0	86.3	89.6
	Mar.	87.7	82.7	109.8		78.2	70.2	86.8	89.6
	June	88.3	81.9	106.9		75.2	69.3	86.3	86.3
1982-83	Sept.	88.1	80.6	103.0		70.5	67.8	85.3	80.5
	Dec.	87.1	77.8	100.4		67.5	66.3	83.7	75.4
	Mar.	85.5	74.4	102.0		67.6	66.0	82.9	73.8
	June	84.5	71.6	106.0		69.6	66.4	83.9	75.8
1983-84	Sept.	84.3	72.0	109.5		71.6	67.2	87.4	77.9
	Dec.	85.2	76.1	111.8		72.9	68.4	89.5	78.2
	Mar.	87.2	81.5	113.4		74.3	70.3	88.7	76.0
	June	88.0	85.2	114.7		75.2	71.8	86.8	75.0
1984-85	Sept.	89.5	86.7	113.7		75.1	72.1	88.3	75.9
	Dec.	87.3	88.0	113.2		74.9	73.4	88.2	78.9
	Mar.	86.1	85.7	116.8		76.9	75.8	88.3	86.1
	June	85.5	82.7	122.9		81.3	78.8	87.5	93.7
1985-86	Sept.	84.8	81.4	128.4		86.2	80.3	87.1	97.9
	Dec.	84.3	85.3	131.7		88.4	79.0	85.7	97.1
	Mar.	84.8	93.2	130.0		86.4	76.7	84.1	93.3
	June	86.0	99.2	125.4		81.9	75.8	83.3	90.4
1986-87	Sept.	86.6	98.5	122.5		78.7	77.1	83.7	87.9
	Dec.	87.0	95.2	122.1		77.4	80.2	84.6	86.3
	Mar.	88.7	91.9	122.7		79.1	83.3	84.9	85.2
	June	90.6	93.2	123.1		82.9	85.3	84.1	85.0
1987-88	Sept.	92.8	98.2	122.3		85.2	87.5	83.5	87.9
	Dec.	93.3	99.2	122.9		86.9	89.0	83.5	91.5
	Mar.	91.4	94.6	123.7		88.4	89.2	84.5	93.6
	June	90.5	90.9	124.4		90.5	90.2	87.1	95.4
1988-89	Sept.	91.7	91.6	125.4		91.7	91.2	89.9	98.9
	Dec.	93.9	94.6	127.3		91.6	92.6	93.2	103.1
	Mar.	95.8	97.2	128.8		91.0	94.7	96.1	105.2
	June	96.3	96.9	126.1		92.2	96.6	97.7	104.1
1989-90	Sept.	97.3	98.8	116.4		96.1	99.2	98.3	103.4
	Dec.	99.0	102.1	102.3		100.6	100.7	99.3	102.3
	Mar.	100.9	101.2	91.6		102.8	100.5	100.8	99.7
	June	102.8	97.9	89.7		100.5	99.6	101.7	94.2
1990-91	Sept.	104.6	94.2	93.1		94.6	97.9	101.0	89.2
	Dec.	106.0	92.6	96.6		88.2	96.3	100.4	83.8
	Mar.	105.6	94.9	97.3		84.4	95.4	101.2	79.5
	June	102.7	98.5	95.6		84.1	94.4	103.3	76.3
1991-92	Sept.	98.9	103.5	96.4		88.1	92.6	104.9	74.5
	Dec.	96.6	110.0	100.0		86.5	90.0	105.4	74.2
	Mar.	97.3	112.7	101.9		87.4	97.5	105.4	75.3
	June	100.0	114.3	99.2		86.6	85.9	105.8	76.0
1992-93	Sept.	101.4	117.0	96.8		84.6	85.0	107.2	75.9
	Dec.	101.8	117.6	100.2		86.5	84.7	108.1	76.6
	Mar.	102.8	115.7	107.6		89.2	84.7	107.9	79.2
	June	104.5	111.0	113.9		90.8	85.2	107.2	82.9

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

	Fabricated				Other machinery and equipment	Miscellaneous manufacturing	Total manufacturing
	Basic metal products	metal products	Transport equipment				
1976-77	Sept.	71.6	60.2	95.4	87.8	66.9	76.5
	Dec.	71.3	62.4	96.8	86.5	70.2	77.6
	Mar.	71.3	64.3	94.3	84.3	73.2	77.9
	June	71.2	64.8	94.1	83.3	74.4	77.7
1977-78	Sept.	71.0	63.4	91.2	82.1	72.1	77.0
	Dec.	71.2	61.8	90.2	81.3	69.5	76.8
	Mar.	71.5	62.0	91.2	81.2	68.6	77.3
	June	72.4	63.9	91.6	81.9	70.9	78.0
1978-79	Sept.	73.6	65.4	89.8	83.5	74.0	79.0
	Dec.	75.2	65.9	89.6	85.4	76.1	79.9
	Mar.	77.7	66.8	92.5	86.7	77.4	81.1
	June	79.2	68.7	97.6	87.8	78.0	82.3
1979-80	Sept.	81.4	70.5	102.2	88.1	78.0	83.3
	Dec.	83.8	70.9	103.0	88.3	77.5	84.1
	Mar.	84.4	69.5	99.3	88.5	76.8	84.1
	June	83.7	68.6	94.3	89.3	77.0	84.0
1980-81	Sept.	84.2	70.1	92.1	90.5	78.0	84.5
	Dec.	86.4	72.7	93.5	92.3	79.2	85.3
	Mar.	89.2	74.8	94.8	94.8	80.0	86.2
	June	89.0	76.0	97.3	96.5	81.0	86.6
1981-82	Sept.	87.8	76.6	97.5	98.3	83.1	87.1
	Dec.	87.5	77.0	98.5	98.8	84.5	87.8
	Mar.	87.3	76.4	102.2	98.9	84.0	88.3
	June	84.6	73.6	105.1	96.9	81.9	87.1
1982-83	Sept.	78.4	68.9	103.5	90.7	78.6	84.0
	Dec.	72.8	64.6	97.1	82.7	75.4	80.3
	Mar.	73.0	62.1	91.1	76.4	73.2	78.2
	June	77.7	61.3	89.5	75.3	72.8	78.5
1983-84	Sept.	81.7	61.5	91.6	77.1	74.9	80.1
	Dec.	82.7	62.4	93.3	77.9	77.0	81.4
	Mar.	83.6	64.1	94.6	77.6	79.2	82.6
	June	86.7	65.4	95.6	77.3	81.7	83.5
1984-85	Sept.	90.4	66.2	96.0	77.9	84.4	84.7
	Dec.	91.4	64.3	99.0	81.1	85.1	85.1
	Mar.	90.7	64.2	102.3	81.6	80.8	85.8
	June	90.2	66.3	104.6	81.0	74.9	86.6
1985-86	Sept.	90.3	68.6	104.6	80.3	70.7	87.1
	Dec.	89.6	70.2	101.7	80.2	71.2	86.7
	Mar.	86.1	70.4	100.0	81.4	75.5	86.1
	June	84.9	70.5	98.3	82.7	80.2	85.8
1986-87	Sept.	85.7	70.8	95.8	84.1	82.6	85.8
	Dec.	88.5	69.7	93.4	86.7	84.2	86.3
	Mar.	90.9	69.0	91.7	88.5	86.7	87.3
	June	92.1	70.9	92.4	89.4	91.2	88.7
1987-88	Sept.	92.3	75.0	94.2	90.0	95.0	90.4
	Dec.	91.4	78.5	94.9	91.1	94.8	91.3
	Mar.	90.5	80.6	96.4	93.0	92.3	91.3
	June	90.2	81.7	99.0	95.4	90.8	92.3
1988-89	Sept.	90.9	82.6	101.1	98.1	91.2	93.8
	Dec.	92.4	84.1	103.2	100.9	94.5	96.0
	Mar.	94.8	87.0	105.7	102.8	99.1	98.3
	June	97.6	91.2	106.9	103.2	102.0	99.5
1989-90	Sept.	100.1	96.3	106.0	102.3	102.4	100.4
	Dec.	101.2	100.5	103.0	101.1	101.4	100.8
	Mar.	100.4	102.4	97.9	99.3	99.3	100.1
	June	98.3	100.9	93.2	97.2	96.8	98.8
1990-91	Sept.	96.9	96.3	87.3	95.4	94.1	96.9
	Dec.	96.2	91.2	82.1	94.4	91.0	96.2
	Mar.	97.3	87.4	78.7	92.8	88.5	93.9
	June	98.7	85.8	76.2	90.7	87.7	92.8
1991-92	Sept.	99.2	85.9	75.5	87.5	88.1	91.9
	Dec.	99.2	85.8	75.8	83.6	87.7	91.3
	Mar.	98.2	83.3	75.9	81.8	85.5	90.8
	June	96.9	79.3	75.8	83.8	82.8	90.5
1992-93	Sept.	96.3	76.7	77.0	87.7	81.9	91.0
	Dec.	97.4	78.3	80.4	90.2	83.4	92.3
	Mar.	100.7	81.5	84.6	90.2	85.4	94.2
	June	104.7	84.4	87.8	89.3	86.5	96.1

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 2). Also presented are indexes for component industries, including individual manufacturing subdivisions.

Scope of the estimates

2. 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)	19.6
Manufacturing	71.1
Food, beverages and tobacco	14.4
Textiles	1.5
Clothing and footwear	2.3
Wood, wood products and furniture	3.7
Paper, etc, printing and publishing	6.7
Chemicals, petroleum and coal products	6.9
Non-metallic mineral products	3.6
Basic metal products	8.1
Fabricated metal products	5.4
Transport equipment	7.7
Other machinery and equipment	7.2
Miscellaneous manufacturing	3.5
Electricity, gas and water	9.3
Total Industrial sector	100.0

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

- changes in quarterly production by manufacturing establishments of non-manufacturing businesses are not reflected in the indexes;
- 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.

4. 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

5. 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 6 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

6. Deriving quarterly estimates presents special problems in that it is often difficult to adhere strictly to the definitions and concepts used in annual estimates. Frequently, 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)

7. 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 5) for each ASIC class. Total quarterly estimates of value added are then benchmarked (see paragraph 6) to annual gross product estimates obtained from the mining census.

(ii) Manufacturing

8. 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.

9. 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)).

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

11. 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

12. 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

13. 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

14. 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

15. 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 preceding 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

16. 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.

17. 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 price 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

18. 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.

19. 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

20. 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.

21. 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.)

22. 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

23. 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 monthly

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

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

24. 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



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