Australian Bureau of Statistics

CATALOGUE 8125.0
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QUARTERLY INDEXES OF INDUSTRIAL PRODUCTION, AUSTRALIA DECEMBER QUARTER 1993

MAIN FEATURES

NOTE: *This issue incorporates a number of revisions to historical data. The sources of these revisions are: (a) the benchmarking of indexes for the mining sector to the 1990-91 Mining Census; (b) revised benchmarking of indexes for the manufacturing, gas and water sectors for 1990-91; (c) the benchmarking of indexes for the electricity and gas sectors for 1991-92; and (d) revised benchmarking of indexes for the water and sewerage sector for 1991-92. See Explanatory Notes for more detail. Note also that recent trend estimates are provisional and could change when data for further quarters are available.*

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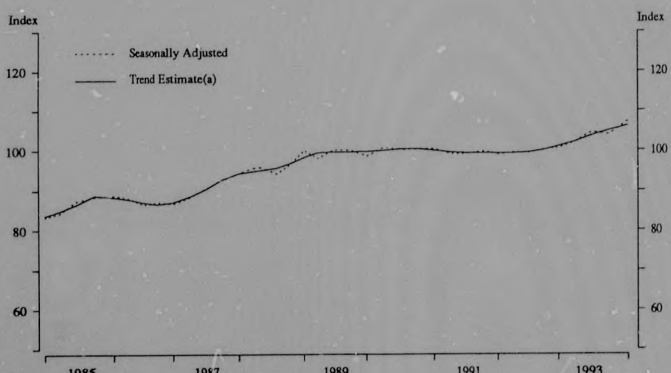
Provisional trend estimates show that the index of industrial production continues to grow in the December quarter 1993. The trend in the index has now grown consistently over the seven quarters from the March quarter 1992. The trend grew by 1.1 per cent in the December quarter 1993 following growth of 1.4 per cent in the September quarter and 1.5 per cent in the June quarter and is now 5.1 per cent above the December quarter 1992 estimate. This recent growth confirms the gradual turnaround in industrial production in 1992-93 following a fairly stagnant period since early 1989.

In the latest two quarters two of the three component series, manufacturing and utilities, showed trend growth, while mining contracted.

In seasonally adjusted terms strong rises of 4.4 per cent for manufacturing and 3.1 per cent for utilities were slightly offset by a fall of 0.7 per cent for the mining sector, to give a strong 3.3 per cent growth for the industrial production index overall during the December quarter 1993. This follows a slight fall in the September quarter (0.6%) and, before that, four quarters of growth.

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



(a) See paragraph 21 to 23 of the Explanatory Notes. Trend estimates for the most recent periods are provisional and could change when data for further quarters are available.

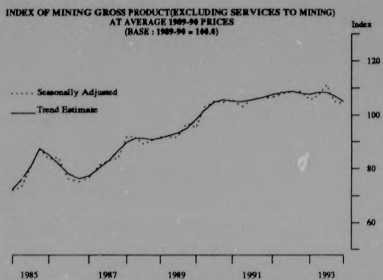
INQUIRIES

- *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

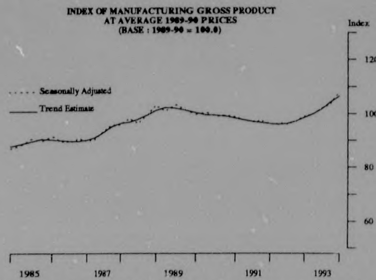
Components of the industrial production index

(i) Mining



The provisional trend for the index of mining production has fallen over the last two quarters (down 2.0% in December following a fall of 1.2% in the September quarter 1993). Previous editions of this publication had indicated the the trend in mining gross product was showing weak growth. The trend has been revised as a result of significant revisions to the original and seasonally adjusted estimates (see paragraph 2 of the Explanatory Notes). The trend estimate for the December quarter 1993 is now a significant 2.6 per cent below that for the December quarter 1992.

(ii) Manufacturing



The trend in the index of manufacturing production grew in the December quarter 1993 for the seventh consecutive quarter, following twelve consecutive quarters of decline. Strong growth in the last two quarters (2.2% and 2.4% respectively) means that the trend is now 8.1 per cent above that recorded in the December quarter 1992. The strength of the recent growth confirms a recovery in manufacturing from the turning point in the March quarter 1992.

Eight of the twelve manufacturing subdivisions are showing trend growth, three are showing declining trend production and one (Miscellaneous manufacturing) is largely flat to the December quarter 1993. Recent movements in the estimates of gross product trend for each manufacturing subdivision are summarized below -

- *Food, beverages and tobacco* production continues to grow, as it has for the last ten quarters.

- The trend in *Textiles* production has declined strongly for the last eight quarters, particularly during 1992-93. However, there are signs that the rate of trend decline is slowing in the December quarter 1993.

- *Clothing and footwear* production is showing some indications of decline following four quarters of growth. However, this series has shown considerable volatility in the last four quarters and users should be aware that the trend is provisional and subject to revision.

- Production in the *Wood, wood products and furniture* subdivision has declined slightly over the last two quarters. The trend in output of this subdivision has been generally one of decline since 1988.

- The trend for the index of *Paper, printing and publishing* gross product is showing quite strong growth in the last three quarters, following a continuous decline between the March quarters 1991 and 1993. Since the December quarter 1992 the trend has risen by 6.5 per cent.

- *Chemical, petroleum and coal products* trend production has grown moderately over the last three quarters to record a rise of 7.1 per cent for the year to December quarter 1993.

- The production trend for the *Non-metallic mineral products* subdivision has now shown moderate growth over the last eight quarters although the rate of trend growth has slowed. A strong 11.5 per cent growth was recorded for the latest four quarters.

- *Basic metal products* production continues to show very strong growth over the last four quarters, to record the strongest growth (up 20.3%) of all manufacturing subdivisions over that period.

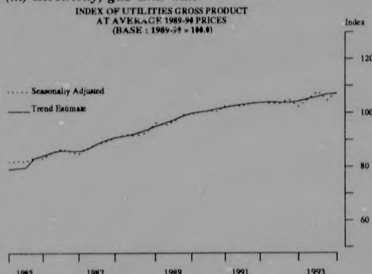
- The trend in the index of *Fabricated metal products* gross product has risen consistently over the last five quarters from the turning point in the September quarter 1992. The trend has increased by 11.8 per cent since the December quarter 1992 and appears to be still strengthening, with the latest quarterly estimate.

- Trend estimates for the index of *Transport equipment* gross product have risen significantly over the past six quarters from the trough of 1991-92. However the latest quarterly estimates suggest a slowing in this trend growth. Since the December quarter 1992 the index has risen by 14.9 per cent.

- The trend in the *Other machinery and equipment* production index has risen slightly over the last two quarters largely offsetting declines measured in the two previous quarters.

- The *Miscellaneous manufacturing* trend has flattened out after four quarters of continuous growth.

(iii) Electricity, gas and water



The provisional trend for the index of gross product for the Electricity, gas and water sector continues a period of slow but consistent growth to the December quarter 1993, despite some volatility in the seasonally adjusted series over the past year. The trend grew by 0.3 per cent in the December quarter 1993, following slightly stronger growth over the previous four quarters.

NOTE: Explanatory Notes are published at the back of this publication.

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

Index numbers (Base : 1989-90 = 100.0)

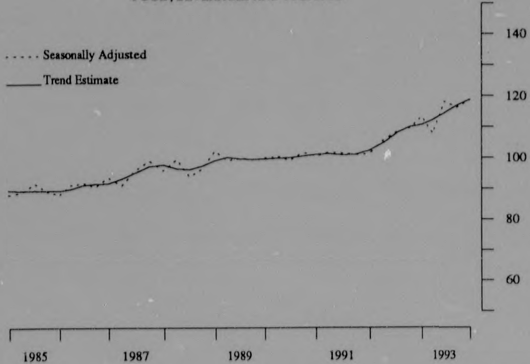
	Quarters ended													
	1990-91				*1991-92*				*1992-93*				*1993-94*	
	Sept.	*Dec.*	*Mar.*	*June.*	*Sept*	*Dec.*	*Mar.*	*June.*	*Sept.*	*Dec.*	*Mar.*	*June.*	*Sept.*	*Dec.*
	Seasonally adjusted													
Mining (excluding services to mining)	104.7	105.7	103.1	105.9	106.5	106.6	107.9	108.6	108.5	105.7	107.3	111.1	104.9	104.2
Manufacturing	99.4	98.5	97.5	96.8	97.2	96.0	96.3	96.0	97.1	99.0	99.8	102.0	103.4	108.0
Electricity, gas and water	100.5	102.5	102.5	102.5	103.6	103.9	103.5	103.5	104.9	102.3	105.1	107.8	104.6	107.8
Total industrial production	**100.5**	**100.4**	**99.2**	**99.3**	**99.8**	**99.1**	**99.5**	**99.4**	**100.3**	**100.7**	**101.9**	**104.5**	**103.9**	**107.3**
	Trend estimates													
Mining (excluding services to mining)	105.7	105.1	105.0	105.6	106.5	107.5	108.3	108.7	107.9	107.7	108.3	108.3	107.0	104.9
Manufacturing	98.9	98.2	97.5	96.9	96.6	96.2	95.9	96.1	97.1	98.4	99.8	101.7	104.1	106.4
Electricity, gas and water	101.4	102.0	102.7	103.1	103.5	103.7	104.0	103.9	103.7	104.3	105.2	106.1	106.8	107.1
Total industrial production	**100.5**	**100.0**	**99.6**	**99.4**	**99.4**	**99.3**	**99.3**	**99.5**	**100.0**	**101.0**	**102.1**	**103.6**	**105.0**	**106.2**

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

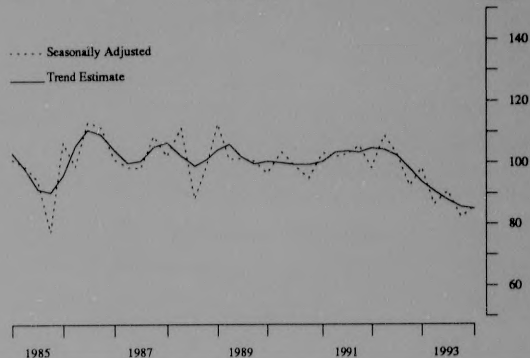
	Change from preceding quarter													*Dec. Qtr 1992 to Dec. Qtr 1993*
	1990-91			*1991-92*				*1992-93*				*1993-94*		
	Dec.	*Mar.*	*June*	*Sept.*	*Dec.*	*Mar.*	*June*	*Sept.*	*Dec.*	*Mar.*	*June*	*Sept.*	*Dec.*	
	Seasonally adjusted													
Mining (excluding services to mining)	1.0	–2.5	2.7	0.6	0.1	1.2	0.6	–0.1	–2.6	1.5	3.5	–5.6	–0.7	–1.4
Manufacturing	–0.9	–1.0	–0.7	0.4	–1.2	0.3	–0.3	1.1	2.0	0.8	2.2	1.4	4.4	9.1
Electricity, gas and water	2.0	—	—	1.1	0.3	–0.4	—	1.4	–2.5	2.7	2.6	–3.0	3.1	5.4
Total industrial production	**–0.1**	**–1.2**	**0.1**	**0.5**	**–0.7**	**0.4**	**–0.1**	**0.9**	**0.4**	**1.2**	**2.6**	**–0.6**	**3.3**	**6.6**
	Trend estimates													
Mining (excluding services to mining)	–0.6	–0.1	0.6	0.9	0.9	0.7	0.4	–0.7	–0.2	0.6	—	–1.2	–2.0	–2.6
Manufacturing	–0.7	–0.7	–0.6	–0.3	–0.4	–0.3	0.2	1.0	1.3	1.4	1.9	2.4	2.2	8.1
Electricity, gas and water	0.6	0.7	0.4	0.4	0.2	0.3	–0.1	–0.2	0.6	0.9	0.9	0.7	0.3	2.7
Total industrial production	**–0.5**	**–0.4**	**–0.2**	—	**–0.1**	—	**0.2**	**0.5**	**1.0**	**1.1**	**1.5**	**1.4**	**1.1**	**5.1**

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

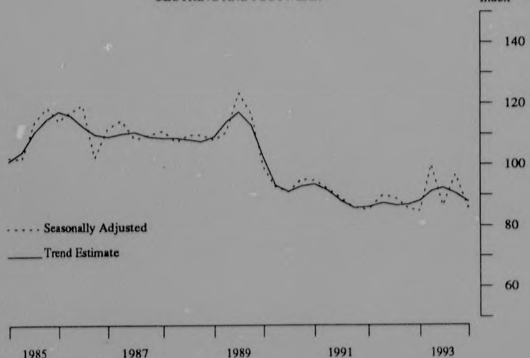
FOOD, BEVERAGES AND TOBACCO



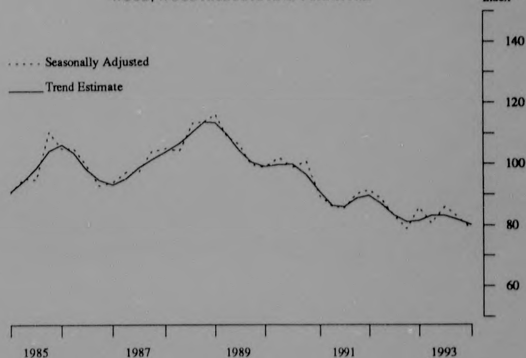
TEXTILES



CLOTHING AND FOOTWEAR

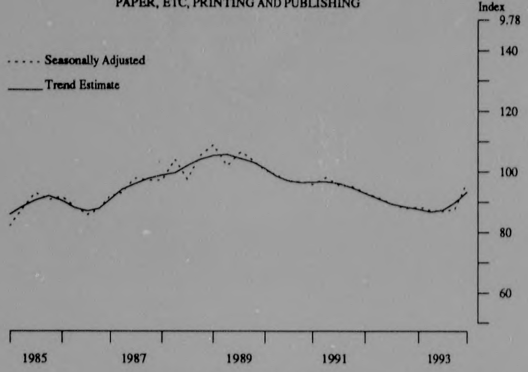


WOOD, WOOD PRODUCTS AND FURNITURE

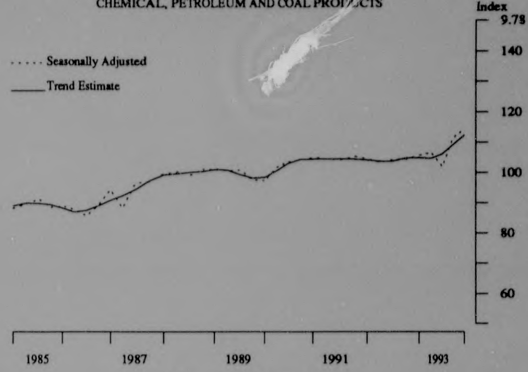


INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES
(BASE: 1989-90 = 100.0)

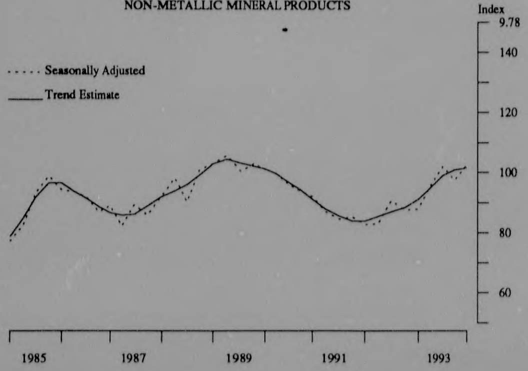
PAPER, ETC, PRINTING AND PUBLISHING



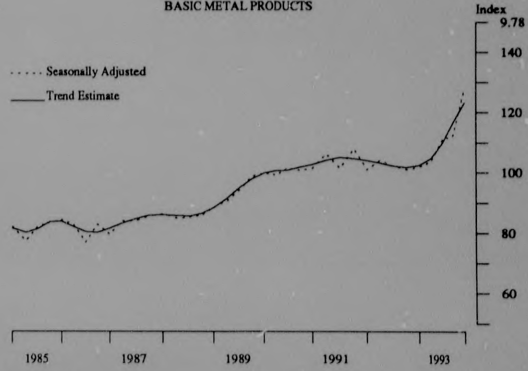
CHEMICAL, PETROLEUM AND COAL PRODUCTS



NON-METALLIC MINERAL PRODUCTS

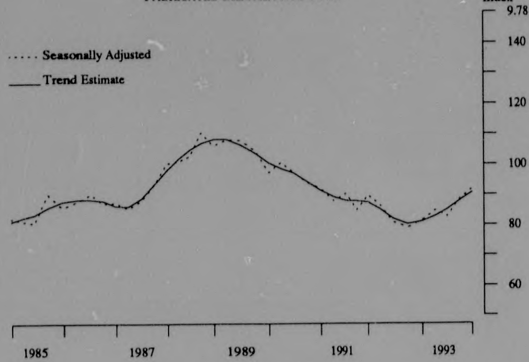


BASIC METAL PRODUCTS

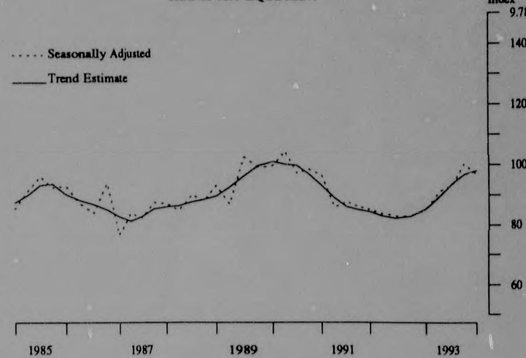


INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES
(BASE: 1989-90 = 100.0)

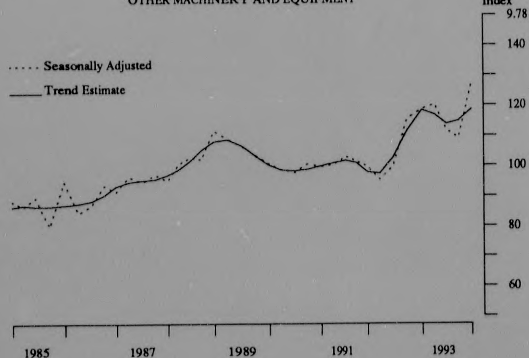
FABRICATED METAL PRODUCTS



TRANSPORT EQUIPMENT



OTHER MACHINERY AND EQUIPMENT



MISCELLANEOUS MANUFACTURING

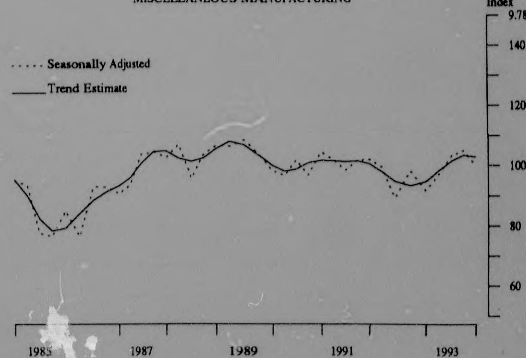


TABLE 3. INDEXES OF MANUFACTURING GROSS PRODUCT AT AVERAGE 1989-90 PRICES, BY SUBDIVISION — SEASONALLY ADJUSTED

Index numbers (Base : 1989-90 = 100.0)

ASIC Sub—Divn.	Industry	1990-91 Sept.	1990-91 Dec.	1990-91 Mar.	1990-91 June.	1991-92 Sept.	1991-92 Dec.	1991-92 Mar.	1991-92 June.	1992-93 Sept.	1992-93 Dec.	1992-93 Mar.	1992-93 June.	1993-94 Sept.	1993-94 Dec.
		Quarters ended													
21	Food, beverages and tobacco	101.9	100.8	102.0	101.7	101.3	101.5	106.0	108.8	109.8	113.4	107.9	118.2	116.2	118.7
23	Textiles	95.1	103.3	102.0	103.0	105.6	98.4	108.9	103.0	92.5	98.4	86.6	90.8	82.3	85.6
24	Clothing and footwear	95.4	94.8	92.2	89.0	86.0	85.3	90.1	88.8	85.6	84.9	99.9	86.4	96.7	85.8
25	Wood, wood products and furniture	101.1	89.5	86.2	85.7	90.3	91.5	88.5	83.0	78.8	85.8	80.6	86.1	82.5	78.6
26	Paper, etc, printing and publishing	96.9	95.8	98.1	95.5	95.1	93.0	91.4	89.4	88.0	88.5	87.2	86.9	87.8	96.5
27	Chemical, petroleum and coal products	104.1	104.9	104.4	104.1	105.3	104.3	103.3	104.3	104.4	105.6	106.7	101.9	111.5	114.1
28	Non-metallic mineral products	93.9	92.0	87.0	84.5	85.3	82.8	83.0	90.6	87.6	88.0	95.9	101.9	97.5	102.6
29	Basic metal products	101.0	101.6	106.4	101.6	108.1	101.1	104.1	102.3	101.1	102.0	103.8	111.0	112.4	127.7
31	Fabricated metal products	94.0	92.0	88.1	90.3	85.0	89.9	86.5	81.0	79.2	81.6	84.9	82.9	88.5	92.0
32	Transport equipment	98.4	96.4	85.9	87.7	85.9	85.0	83.7	83.0	83.0	85.2	91.2	93.3	100.1	96.8
33	Other machinery and equipment	100.5	99.7	100.4	103.0	101.4	99.7	95.4	99.8	115.6	118.7	120.3	111.8	109.1	126.8
34	Miscellaneous manufacturing	96.7	104.4	101.7	98.4	101.7	101.9	99.6	89.3	98.3	91.6	97.4	103.3	105.0	99.9
Total manufacturing		**99.4**	**98.5**	**97.5**	**96.8**	**97.2**	**96.0**	**96.3**	**96.0**	**97.1**	**99.0**	**99.8**	**102.0**	**103.4**	**108.0**

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

ASIC Sub—Divn.	Industry	1990-91 Dec.	1990-91 Mar.	1990-91 June	1991-92 Sept.	1991-92 Dec.	1991-92 Mar.	1991-92 June	1992-93 Sept.	1992-93 Dec.	1992-93 Mar.	1992-93 June	1993-94 Sept.	1993-94 Dec.	Dec. Qtr 1992 to Dec. Qtr 1993
		Change from preceding quarter													
21	Food, beverages and tobacco	-1.1	1.2	-0.3	-0.4	0.2	4.4	2.6	0.9	3.3	-4.9	9.5	-1.7	2.2	4.7
23	Textiles	8.6	-1.3	1.0	2.5	-6.8	10.7	-5.4	-10.2	6.4	-12.0	4.8	-9.4	4.0	-13.0
24	Clothing and footwear	-0.6	-2.7	-3.5	-3.4	-0.8	5.6	-1.4	-3.6	-0.8	17.7	-13.5	11.9	-11.3	1.1
25	Wood, wood products and furniture	-11.5	-3.7	-0.6	5.4	1.3	-3.3	-6.2	-5.1	8.9	-6.1	6.8	-4.2	-4.7	-8.4
26	Paper, etc, printing and publishing	-1.1	2.4	-2.7	-0.4	-2.2	-1.7	-2.2	-1.6	0.6	-1.5	-0.3	1.0	9.9	9.0
27	Chemical, petroleum and coal products	0.8	-0.5	-0.3	1.2	-0.9	-1.0	1.0	0.1	1.1	1.0	-4.5	9.4	2.3	8.0
28	Non-metallic mineral products	-2.0	-5.4	-2.9	0.9	-2.9	0.2	9.2	-3.3	0.5	9.0	6.3	-4.3	5.2	16.6
29	Basic metal products	0.6	4.7	-4.5	6.4	-6.5	3.0	-1.7	-1.2	0.9	1.8	6.9	1.3	13.6	25.2
31	Fabricated metal products	-2.1	-4.2	2.5	-5.9	5.8	-3.8	-6.4	-2.2	3.0	4.0	-2.4	6.8	4.0	12.7
32	Transport equipment	-2.0	-10.9	2.1	-2.1	-1.0	-1.5	-0.8	—	2.7	7.0	2.3	7.3	-3.3	13.6
33	Other machinery and equipment	-0.8	0.7	2.6	-1.6	-1.7	-4.3	4.6	15.8	2.7	1.3	-7.1	-2.4	16.2	6.8
34	Miscellaneous manufacturing	8.0	-2.6	-3.2	3.4	0.2	-2.3	-10.3	10.1	-6.8	6.3	6.1	1.6	-4.9	9.1
Total manufacturing		**-0.9**	**-1.0**	**-0.7**	**0.4**	**-1.2**	**0.3**	**-0.3**	**1.1**	**2.0**	**0.8**	**2.2**	**1.4**	**4.4**	**9.1**

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 Sept.	Dec.	Mar.	June	1991-92 Sept.	Dec.	Mar.	June	1992-93 Sept.	Dec.	Mar.	June	1993-94 Sept.	Dec.
21	Food, beverages and tobacco	100.7	101.2	101.5	101.1	101.2	102.5	105.1	108.4	110.1	110.8	112.3	114.5	116.9	118.8
23	Textiles	99.5	100.5	103.5	103.8	103.5	104.8	104.4	102.5	98.2	93.9	90.9	88.0	85.7	85.0
24	Clothing and footwear	93.0	93.7	91.6	88.2	86.0	86.2	87.5	86.7	86.9	88.2	91.3	92.4	90.7	87.9
25	Wood, wood products and furniture	96.6	90.9	86.5	86.1	88.9	89.8	87.0	83.3	81.1	81.5	83.1	83.1	81.7	80.1
26	Paper, etc, printing and publishing	96.5	96.6	96.7	96.1	94.7	92.9	91.1	89.4	88.4	87.7	86.8	87.4	89.8	93.4
27	Chemical, petroleum and coal products	104.2	104.3	104.3	104.5	104.4	104.1	103.7	103.7	104.7	104.9	104.6	106.1	109.2	112.3
28	Non-metallic mineral products	94.4	91.1	87.9	85.5	83.9	83.9	85.4	87.0	88.4	91.1	95.1	99.0	100.9	101.6
29	Basic metal products	101.9	102.9	104.3	105.1	104.8	104.1	103.3	102.3	101.8	102.4	104.8	109.9	116.7	123.2
31	Fabricated metal products	94.4	91.5	89.3	88.1	88.0	87.6	85.3	82.1	80.3	81.2	83.0	85.2	87.9	90.8
32	Transport equipment	96.9	93.0	89.0	86.0	85.0	84.4	83.0	82.2	82.9	85.3	89.6	93.8	96.7	98.0
33	Other machinery and equipment	98.8	99.9	101.0	101.7	100.9	97.9	97.4	102.7	111.8	118.4	116.9	113.8	114.8	118.6
34	Miscellaneous manufacturing	100.8	101.6	101.5	101.2	101.5	100.6	98.0	94.7	93.3	94.7	98.5	101.6	103.5	102.8
Total manufacturing		**98.9**	**98.2**	**97.5**	**96.9**	**96.6**	**96.2**	**95.9**	**96.1**	**97.1**	**98.4**	**99.8**	**101.7**	**104.1**	**106.4**

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 Dec.	Mar.	June	1991-92 Sept.	Dec.	Mar.	June	1992-93 Sept.	Dec.	Mar.	June	1993-94 Sept.	Dec.	Dec. Qtr 1992 to Dec. Qtr 1993
21	Food, beverages and tobacco	0.5	0.3	–0.4	0.1	1.3	2.5	3.1	1.6	0.6	1.4	2.0	2.1	1.6	7.2
23	Textiles	1.0	3.0	0.3	–0.3	1.3	–0.4	–1.8	–4.2	–4.4	–3.2	–3.2	–2.6	–0.8	–9.5
24	Clothing and footwear	0.8	–2.2	–3.7	–2.5	0.2	1.5	–0.9	0.2	1.5	3.5	1.2	–1.8	–3.1	–0.3
25	Wood, wood products and furniture	–5.9	–4.8	–0.5	3.3	1.0	–3.1	–4.3	–2.6	0.5	2.0	—	–1.7	–2.0	–1.7
26	Paper, etc, printing and publishing	0.1	0.1	–0.6	–1.5	–1.9	–1.9	–1.9	–1.1	–0.8	–1.0	0.7	2.7	4.0	6.5
27	Chemical, petroleum and coal products	0.1	—	0.2	–0.1	–0.3	–0.4	—	1.0	0.2	–0.3	1.4	2.9	2.8	7.1
28	Non-metallic mineral products	–3.5	–3.5	–2.7	–1.9	—	1.8	1.9	1.6	3.1	4.4	4.1	1.9	0.7	11.5
29	Basic metal products	1.0	1.4	0.8	–0.3	–0.7	–0.8	–1.0	–0.5	0.6	2.3	4.9	6.2	5.6	20.3
31	Fabricated metal products	–3.1	–2.4	–1.3	–0.1	–0.5	–2.6	–3.8	–2.2	1.1	2.2	2.7	3.2	3.3	11.8
32	Transport equipment	–4.0	–4.3	–3.4	–1.2	–0.7	–1.7	–1.0	0.9	2.9	5.0	4.7	3.1	1.3	14.9
33	Other machinery and equipment	1.1	1.1	0.7	–0.8	–3.0	–0.5	5.4	8.9	5.9	–1.3	–2.7	0.9	3.3	0.2
34	Miscellaneous manufacturing	0.8	–0.1	–0.3	0.3	–0.9	–2.6	–3.4	–1.5	1.5	4.0	3.1	1.9	–0.7	8.6
Total manufacturing		**–0.7**	**–0.7**	**–0.6**	**–0.3**	**–0.4**	**–0.3**	**0.2**	**1.0**	**1.3**	**1.4**	**1.9**	**2.4**	**2.2**	**8.1**

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	56.8	79.9	57.3	71.6
1977-78	58.2	79.5	58.0	71.9
1978-79	59.7	82.9	61.1	74.7
1979-80	58.4	86.4	65.4	77.0
1980-81	59.5	88.2	68.2	78.8
1981-82	59.0	90.4	71.9	80.5
1982-83	61.3	82.9	73.9	76.9
1983-84	65.8	84.2	76.9	79.3
1984-85	74.3	88.5	81.7	84.9
1985-86	83.0	90.1	84.7	88.0
1986-87	79.2	91.1	86.4	88.2
1987-88	89.3	96.5	90.9	94.4
1988-89	91.7	101.5	95.2	98.8
1989-90	100.0	100.0	100.0	100.0
1990-91	104.9	98.1	102.1	99.9
1991-92	107.5	96.4	103.6	99.5
1992-93	108.3	99.5	105.0	101.8
1977-78 — Sept.	60.5	81.4	60.0	73.9
Dec.	57.8	83.0	57.7	73.8
Mar.	55.9	73.3	55.9	67.2
June	58.5	80.4	58.5	72.6
1978-79 — Sept.	60.4	83.2	62.2	75.2
Dec.	60.1	86.6	59.0	76.8
Mar.	57.3	77.7	60.9	70.9
June	60.9	83.9	62.3	75.8
1979-80 — Sept.	63.1	88.7	67.0	80.0
Dec.	62.4	90.2	64.2	80.2
Mar.	53.9	81.4	64.7	72.7
June	54.3	85.3	65.5	75.2
1980-81 — Sept.	60.4	89.0	69.7	79.7
Dec.	59.4	93.2	67.6	81.7
Mar.	59.7	82.3	66.7	75.1
June	58.5	88.2	68.9	78.6
1981-82 — Sept.	56.9	92.8	73.8	81.6
Dec.	60.6	95.2	69.5	83.5
Mar.	55.7	83.2	70.4	75.1
June	62.7	90.2	73.7	81.7
1982-83 — Sept.	61.2	91.2	77.2	82.3
Dec.	62.7	84.8	73.3	78.3
Mar.	58.3	73.4	71.4	70.0
June	63.0	82.3	73.7	76.9
1983-84 — Sept.	64.9	84.9	78.1	79.6
Dec.	64.4	87.1	75.3	80.4
Mar.	65.2	79.4	75.7	76.1
June	68.7	85.4	78.4	81.0
1984-85 — Sept.	74.2	91.4	84.4	87.2
Dec.	73.0	90.1	80.6	85.6
Mar.	70.8	82.3	80.1	79.9
June	79.3	90.0	81.7	86.9
1985-86 — Sept.	90.6	92.6	87.1	91.4
Dec.	84.6	94.9	81.8	91.2
Mar.	81.5	83.8	83.9	83.4
June	75.1	88.9	85.9	85.9
1986-87 — Sept.	78.3	93.3	89.2	89.9
Dec.	77.9	93.3	83.5	89.1
Mar.	78.8	84.9	85.4	83.8
June	81.7	92.7	87.6	89.9
1987-88 — Sept.	87.5	98.3	93.0	95.6
Dec.	93.0	99.7	89.8	97.1
Mar.	88.7	92.2	90.1	91.3
June	87.8	95.6	90.6	93.5
1988-89 — Sept.	94.3	101.9	96.3	99.7
Dec.	92.9	106.9	95.3	102.7
Mar.	88.9	94.7	93.5	93.5
June	90.5	102.6	95.8	99.4
1989-90 — Sept.	100.7	103.6	103.4	103.0
Dec.	96.1	103.5	98.6	101.5
Mar.	99.6	94.7	98.4	96.1
June	103.6	98.2	99.6	99.4
1990-91 — Sept.	108.7	101.6	104.5	103.3
Dec.	106.7	102.3	101.8	103.1
Mar.	99.8	92.4	100.6	94.9
June	104.5	96.1	101.3	98.4
1991-92 — Sept.	110.6	99.2	107.5	102.5
Dec.	107.6	99.7	103.0	101.6
Mar.	104.4	91.5	101.4	95.3
June	107.4	95.3	102.5	98.5
1992-93 — Sept.	112.8	99.0	109.1	103.0
Dec.	106.5	102.7	101.1	103.2
Mar.	103.7	94.9	103.1	97.6
June	110.0	101.2	106.6	103.5
1993-94 — Sept.	109.0	105.5	108.8	106.6
Dec.	104.9	111.9	106.5	109.8

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	57.8	72.2	58.0	79.4	57.8	71.7
Dec.	56.5	78.7	58.4	71.0	57.4	79.2	57.8	71.4
Mar.	57.9	78.9	57.3	71.3	57.5	79.4	58.0	71.7
June	58.5	81.0	58.8	72.9	58.0	80.4	58.5	72.4
1978-79 — Sept.	59.4	81.0	59.5	73.4	58.6	81.5	59.3	73.3
Dec.	58.8	82.2	60.0	73.9	58.7	82.5	60.5	74.1
Mar.	59.4	83.7	62.3	75.2	59.4	83.6	61.7	75.1
June	60.9	84.4	62.8	76.2	60.6	84.8	63.0	76.4
1979-80 — Sept.	61.9	86.3	64.2	77.9	61.1	85.9	64.2	77.3
Dec.	61.0	85.7	65.2	77.3	59.2	86.7	65.2	77.3
Mar.	55.9	87.9	66.1	77.3	56.7	86.7	65.8	76.7
June	54.4	85.7	66.0	75.6	55.6	86.6	66.3	76.5
1980-81 — Sept.	59.1	86.3	67.0	77.3	57.0	87.1	67.2	77.3
Dec.	58.3	88.8	68.5	78.9	59.2	88.0	68.0	78.5
Mar.	61.8	88.9	68.4	79.9	59.5	88.9	68.7	79.3
June	58.8	88.6	69.2	79.0	58.4	89.4	69.4	79.3
1981-82 — Sept.	55.6	89.7	70.7	79.0	57.2	89.9	70.1	79.4
Dec.	59.5	90.9	70.6	80.8	57.5	90.6	71.2	80.1
Mar.	57.8	90.1	72.4	80.0	59.2	91.0	72.5	80.9
June	63.2	90.3	74.1	81.8	60.4	89.9	73.6	80.8
1982-83 — Sept.	59.7	88.1	74.2	79.6	60.5	86.6	74.2	78.9
Dec.	61.3	81.1	74.2	75.8	60.5	82.8	73.9	76.6
Mar.	60.3	79.4	73.1	74.4	61.0	80.7	73.6	75.4
June	63.6	82.3	74.0	77.2	62.0	81.0	74.0	75.9
1983-84 — Sept.	63.3	82.0	75.1	77.1	62.7	82.6	75.0	77.3
Dec.	63.1	83.6	76.5	78.1	64.1	84.0	76.3	78.5
Mar.	67.3	85.7	77.6	80.7	66.2	85.2	77.6	80.1
June	69.4	85.3	78.8	81.2	68.7	86.2	79.0	81.6
1984-85 — Sept.	71.5	88.6	80.8	84.4	71.0	86.6	80.9	82.9
Dec.	72.0	86.9	81.8	83.4	72.1	87.6	81.7	83.9
Mar.	73.4	88.0	82.0	84.4	75.6	88.4	82.2	85.2
June	80.4	90.5	82.0	87.4	80.6	89.4	82.5	86.8
1985-86 — Sept.	87.3	89.8	83.5	88.5	85.0	90.4	85.0	88.4
Dec.	83.5	91.4	83.1	88.8	85.7	90.3	84.1	88.6
Mar.	84.4	89.5	85.5	88.0	82.3	89.9	85.4	87.9
June	76.2	89.4	86.6	86.6	78.2	89.7	86.1	87.1
1986-87 — Sept.	75.3	90.6	85.7	87.1	76.3	89.6	86.0	86.6
Dec.	76.9	89.8	84.8	86.7	77.5	90.0	85.9	87.1
Mar.	81.5	90.5	87.0	88.3	80.4	91.0	86.7	88.5
June	83.1	93.3	88.4	90.7	83.3	92.9	88.4	90.5
1987-88 — Sept.	84.1	95.7	89.4	92.7	86.8	95.1	89.9	92.8
Dec.	92.0	95.9	90.9	94.5	89.9	96.3	91.0	94.4
Mar.	91.7	98.1	91.9	96.0	91.4	96.7	91.5	95.0
June	89.2	96.3	91.6	94.3	91.2	97.7	92.3	95.7
1988-89 — Sept.	90.6	99.3	92.6	96.7	90.9	99.3	93.6	96.9
Dec.	92.0	102.9	96.3	100.0	91.4	101.0	95.0	98.4
Mar.	91.8	100.6	95.4	98.2	92.4	102.1	96.3	99.5
June	91.9	103.2	96.9	100.2	93.3	101.9	97.5	99.7
1989-90 — Sept.	96.8	101.3	99.4	100.2	95.1	101.1	98.8	99.7
Dec.	95.2	99.5	99.5	98.7	98.3	100.2	100.0	99.8
Mar.	103.0	100.3	100.4	100.8	101.9	99.4	100.4	100.0
June	105.0	98.9	100.7	100.3	104.7	99.2	100.8	100.5
1990-91 — Sept.	104.7	99.4	100.5	100.5	105.7	98.9	101.4	100.5
Dec.	105.7	98.5	102.5	100.4	105.1	98.2	102.0	100.0
Mar.	103.1	97.5	102.5	99.2	105.0	97.5	102.7	99.6
June	105.9	96.8	102.5	99.3	105.6	96.9	103.1	99.4
1991-92 — Sept.	106.5	97.2	103.6	99.8	106.5	96.6	103.5	99.4
Dec.	106.6	96.0	103.9	99.1	107.5	96.2	103.7	99.3
Mar.	107.9	96.3	103.5	99.5	108.3	95.9	104.0	99.3
June	108.6	96.0	103.5	99.4	108.7	96.1	103.9	99.5
1992-93 — Sept.	108.5	97.1	104.9	100.3	107.9	97.1	103.7	100.0
Dec.	105.7	99.0	102.3	100.7	107.7	98.4	104.3	101.0
Mar.	107.3	99.8	105.1	101.9	108.3	99.8	105.2	102.1
June	111.1	102.0	107.8	104.5	108.3	101.7	106.1	103.6
1993-94 — Sept.	104.9	103.4	104.6	103.9	107.0	104.1	106.8	105.0
Dec.	104.2	108.0	107.8	107.3	104.9	106.4	107.1	106.2

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	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	83.3	87.3	91.4	88.7	67.7	75.3	79.6
1977-78	86.4	84.7	91.0	85.6	69.5	78.2	76.8
1978-79	87.7	90.4	96.0	88.5	73.2	82.3	78.9
1979-80	88.4	92.5	98.8	91.4	78.1	84.5	84.1
1980-81	89.4	92.1	100.8	94.7	80.1	84.2	86.3
1981-82	89.8	94.1	100.5	96.1	82.1	87.1	88.2
1982-83	89.4	86.6	93.9	84.8	77.8	84.6	75.9
1983-84	89.1	90.5	101.1	89.1	81.1	87.7	76.5
1984-85	90.2	99.7	104.6	93.5	88.3	89.9	82.6
1985-86	90.1	99.0	116.7	105.4	89.7	87.7	94.4
1986-87	92.9	102.8	108.3	95.6	93.1	92.0	86.8
1987-88	97.2	102.1	109.0	107.0	99.4	99.0	91.3
1988-89	99.6	103.9	112.3	111.7	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	89.5
1991-92	104.4	103.7	86.9	88.5	92.8	104.3	85.4
1992-93	112.3	92.1	88.2	82.9	88.1	104.6	93.1
1977-78 — Sept.	86.1	89.3	97.7	87.8	72.4	76.6	77.0
Dec.	92.0	89.3	88.3	91.3	73.1	79.7	83.3
Mar.	84.0	74.1	82.1	72.7	64.1	75.5	71.2
June	83.4	86.0	95.7	90.4	68.3	81.0	75.6
1978-79 — Sept.	86.5	97.2	97.2	94.1	72.7	84.8	77.7
Dec.	95.0	90.2	96.9	95.8	75.7	83.6	80.0
Mar.	85.4	84.5	88.6	78.1	69.0	77.4	77.4
June	83.7	89.7	101.3	86.1	75.5	83.3	80.3
1979-80 — Sept.	88.5	93.0	102.2	95.6	80.7	81.4	88.1
Dec.	92.3	98.7	104.8	90.4	80.1	91.8	83.0
Mar.	85.8	83.1	91.9	85.1	74.2	81.1	75.8
June	86.9	95.3	96.3	94.5	77.2	83.6	89.6
1980-81 — Sept.	90.0	92.1	110.5	101.6	81.6	83.6	87.5
Dec.	99.3	97.2	104.0	98.4	82.7	84.7	90.8
Mar.	86.5	77.4	90.4	82.8	75.6	82.2	83.0
June	81.9	101.5	98.3	96.0	80.3	86.4	83.8
1981-82 — Sept.	87.3	98.7	114.9	103.5	84.0	87.6	87.2
Dec.	96.9	96.8	101.9	101.8	85.4	90.9	96.2
Mar.	86.4	85.5	86.5	85.3	76.1	79.8	82.0
June	88.5	95.3	98.7	93.9	82.8	90.0	87.2
1982-83 — Sept.	91.6	97.2	105.8	90.9	80.2	87.2	81.3
Dec.	95.8	91.6	88.3	85.9	80.9	86.2	80.7
Mar.	85.4	75.5	80.0	71.4	71.9	78.1	63.4
June	84.8	82.2	101.3	91.1	78.1	86.8	78.3
1983-84 — Sept.	86.4	90.2	106.9	88.1	80.0	87.6	82.0
Dec.	94.0	85.5	100.4	95.6	83.9	91.1	78.1
Mar.	86.6	80.3	93.3	82.2	76.4	91.7	72.4
June	89.5	105.8	103.7	90.6	84.1	80.5	73.3
1984-85 — Sept.	92.0	113.9	113.4	97.4	90.7	91.0	80.7
Dec.	93.1	97.2	104.5	96.3	88.0	88.6	80.7
Mar.	86.9	83.1	90.1	84.4	82.1	90.0	76.6
June	88.6	104.4	110.5	95.8	92.3	90.1	92.5
1985-86 — Sept.	89.3	84.5	130.4	116.2	92.9	88.6	101.3
Dec.	93.1	102.8	116.8	111.8	98.3	89.3	98.3
Mar.	89.2	83.1	103.9	92.8	82.4	88.0	87.5
June	88.7	125.7	115.8	100.9	85.2	84.9	90.5
1986-87 — Sept.	90.8	120.5	112.4	97.5	89.5	89.2	89.3
Dec.	99.1	97.9	114.5	100.3	98.9	94.7	92.9
Mar.	89.2	83.1	101.5	85.6	86.9	88.5	77.5
June	92.4	109.7	104.9	98.9	96.9	95.6	87.6
1987-88 — Sept.	99.2	115.5	120.2	108.8	99.3	97.1	88.2
Dec.	102.0	99.8	114.1	112.6	104.5	100.1	96.1
Mar.	97.7	93.9	95.4	91.5	97.2	100.3	92.7
June	90.0	99.2	106.2	115.0	96.4	98.5	88.0
1988-89 — Sept.	96.8	103.8	119.8	118.6	107.6	101.0	104.2
Dec.	108.7	110.6	111.3	124.6	117.2	101.4	107.4
Mar.	97.7	86.1	98.6	95.6	95.5	98.8	100.3
June	95.3	114.9	119.4	108.1	105.0	102.4	97.7
1989-90 — Sept.	99.8	103.1	126.8	103.6	106.0	97.6	106.6
Dec.	106.4	95.6	102.2	106.2	105.6	97.1	104.9
Mar.	99.3	88.1	83.1	95.1	93.0	100.0	94.7
June	94.6	113.3	87.9	95.1	95.4	105.3	93.8
1990-91 — Sept.	102.1	95.3	103.0	104.5	101.7	104.2	97.7
Dec.	106.7	102.5	97.7	96.0	100.3	104.5	95.0
Mar.	100.7	86.7	82.8	80.5	92.5	102.6	82.4
June	96.8	119.1	85.8	82.3	93.9	106.0	82.7
1991-92 — Sept.	101.3	103.8	92.6	92.8	99.8	105.5	88.9
Dec.	107.5	98.2	87.9	98.3	97.2	103.8	85.3
Mar.	104.7	92.6	81.6	82.9	86.4	101.6	78.2
June	103.9	120.1	85.4	79.8	87.8	106.1	89.3
1992-93 — Sept.	109.7	90.0	91.8	80.9	92.3	104.8	90.9
Dec.	119.9	98.5	87.3	92.3	92.3	105.1	90.5
Mar.	106.6	73.6	90.7	75.6	82.6	104.8	90.3
June	112.8	106.4	83.1	82.9	85.2	103.7	100.8
1993-94 — Sept.	116.0	79.9	103.7	84.5	92.2	111.9	101.3
Dec.	125.3	85.4	88.4	84.5	100.6	113.5	105.6

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	87.0	78.1	79.5
1978-79	68.1	85.8	81.0	90.5	84.5	82.9
1979-80	74.4	90.7	88.1	93.2	85.6	86.4
1980-81	77.9	94.6	83.4	99.1	88.2	88.2
1981-82	77.8	98.2	88.5	103.4	92.1	90.4
1982-83	67.3	83.9	84.2	86.5	83.8	82.9
1983-84	74.7	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	88.5	89.4	86.3	82.9	90.1
1986-87	82.7	87.1	84.3	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	106.2	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	84.5	99.0	98.2	96.4
1992-93	104.4	82.1	88.2	116.4	97.5	99.5
1977-78 — Sept.	64.4	83.3	80.0	90.4	89.1	81.4
Dec.	63.8	82.6	81.6	95.4	76.5	83.0
Mar.	62.7	73.9	72.7	73.5	67.2	73.3
June	64.7	83.5	84.0	88.5	79.6	80.4
1978-79 — Sept.	65.9	86.3	82.2	89.6	87.8	83.2
Dec.	69.0	90.4	81.0	97.8	87.6	86.6
Mar.	67.1	78.9	71.8	82.2	77.2	77.7
June	70.4	87.7	88.8	92.5	85.3	83.9
1979-80 — Sept.	75.1	95.3	94.0	96.5	92.2	88.7
Dec.	73.2	96.2	96.7	98.7	89.9	90.2
Mar.	77.6	83.3	75.8	85.9	77.8	81.4
June	71.5	88.1	85.9	91.7	82.4	85.3
1980-81 — Sept.	75.6	91.1	84.0	100.6	90.5	89.0
Dec.	81.0	100.4	86.4	103.6	95.8	93.2
Mar.	75.5	90.4	73.2	89.7	78.2	82.3
June	79.4	96.4	90.0	102.3	88.4	88.2
1981-82 — Sept.	82.2	101.9	90.6	108.5	95.5	92.8
Dec.	78.0	105.1	89.8	109.7	101.7	95.2
Mar.	73.4	91.1	75.5	94.7	84.9	83.2
June	77.7	94.5	97.9	100.8	86.1	90.2
1982-83 — Sept.	75.1	95.0	101.3	106.0	94.6	91.2
Dec.	62.4	84.0	85.2	87.8	86.8	84.8
Mar.	59.7	72.4	68.5	71.5	74.3	73.4
June	72.0	84.0	81.6	80.8	79.3	82.3
1983-84 — Sept.	78.0	79.6	87.8	85.0	85.1	84.9
Dec.	74.0	82.7	83.7	87.7	91.1	87.1
Mar.	68.9	77.5	72.5	73.3	83.6	79.4
June	77.7	86.5	86.7	81.9	83.9	85.4
1984-85 — Sept.	85.0	85.9	92.3	87.2	100.7	91.4
Dec.	85.1	87.5	88.3	87.0	101.3	90.1
Mar.	73.5	73.8	80.1	82.6	85.1	82.3
June	82.4	79.6	100.2	88.7	77.0	90.0
1985-86 — Sept.	85.0	94.3	97.0	84.8	79.0	92.6
Dec.	87.4	91.0	96.2	93.5	90.6	94.9
Mar.	78.8	79.9	76.4	80.5	69.8	83.8
June	77.0	88.8	87.8	86.3	92.1	88.9
1986-87 — Sept.	84.3	91.2	97.9	98.9	95.7	93.3
Dec.	82.3	92.4	79.5	90.1	97.0	93.3
Mar.	79.9	78.2	73.5	92.1	85.0	84.9
June	84.3	86.7	86.4	93.7	103.1	92.7
1987-88 — Sept.	87.2	97.5	90.9	102.7	107.3	98.3
Dec.	89.4	105.3	90.2	93.5	110.0	99.7
Mar.	80.7	93.3	74.9	96.5	96.6	92.2
June	85.8	101.1	94.4	101.7	95.3	95.6
1988-89 — Sept.	87.5	115.0	91.1	107.8	106.2	101.9
Dec.	91.3	111.0	96.1	110.0	114.7	106.9
Mar.	86.4	100.9	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	108.2	102.3	105.8	106.3	103.6
Dec.	102.6	101.4	102.3	104.8	106.0	103.5
Mar.	94.6	95.0	93.4	92.1	87.3	94.7
June	102.5	95.4	101.9	97.3	100.4	98.2
1990-91 — Sept.	102.3	97.2	101.6	102.6	99.4	101.6
Dec.	104.0	95.5	98.5	104.1	113.0	102.3
Mar.	101.4	83.8	77.8	93.6	92.0	92.4
June	102.8	88.2	91.5	102.8	96.7	96.1
1991-92 — Sept.	109.3	87.5	88.9	103.3	104.9	99.2
Dec.	103.2	93.3	86.3	104.2	110.3	99.7
Mar.	99.3	82.7	76.3	88.8	90.1	91.5
June	103.6	79.0	86.3	99.7	87.4	95.3
1992-93 — Sept.	102.1	81.3	86.2	117.9	101.7	99.0
Dec.	104.0	84.9	86.2	124.0	99.1	102.7
Mar.	99.1	81.3	83.3	112.0	88.3	94.9
June	112.5	80.8	96.9	111.8	100.7	101.2
1993-94 — Sept.	113.5	90.8	104.1	111.1	109.0	105.5
Dec.	130.2	95.7	97.9	132.3	108.0	111.9

TABLE 10. 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
1977-78 — Sept.	86.5	85.5	92.3	83.1	69.8	76.5	75.0
Dec.	85.6	84.1	85.3	86.2	69.6	77.3	79.4
Mar.	86.7	83.1	90.5	81.8	68.9	79.0	75.9
June	86.7	85.5	95.5	90.5	69.1	80.1	75.9
1978-79 — Sept.	87.0	93.4	90.8	89.2	70.0	84.6	75.9
Dec.	88.3	85.0	93.7	90.5	72.1	81.1	76.3
Mar.	88.1	94.9	97.9	87.7	74.0	81.1	82.7
June	87.0	88.8	101.5	86.0	76.1	82.3	80.5
1979-80 — Sept.	89.1	89.3	94.7	90.5	78.0	80.9	85.8
Dec.	85.6	93.4	102.3	85.5	76.5	89.3	79.2
Mar.	88.8	93.4	102.0	95.7	79.6	85.3	81.0
June	90.3	93.9	96.5	94.6	77.5	82.5	89.9
1980-81 — Sept.	90.4	87.9	101.2	96.1	78.9	82.8	85.0
Dec.	92.2	93.0	102.3	93.1	79.1	82.3	87.0
Mar.	89.6	87.4	100.9	92.9	81.0	86.5	88.7
June	84.9	99.1	98.6	96.1	80.3	85.3	83.8
1981-82 — Sept.	87.7	93.9	104.4	97.9	81.7	86.7	84.8
Dec.	90.1	93.9	100.5	96.4	81.8	88.7	92.4
Mar.	89.5	96.8	97.0	95.9	81.6	84.0	87.7
June	91.6	92.1	98.8	94.2	82.6	88.7	87.1
1982-83 — Sept.	92.0	91.6	95.3	85.8	78.3	86.3	78.8
Dec.	89.3	90.2	87.6	81.4	77.3	84.3	77.5
Mar.	88.6	86.4	90.0	80.3	77.2	81.7	67.8
June	87.4	77.9	101.5	91.2	77.7	85.8	78.1
1983-84 — Sept.	86.7	84.1	96.5	83.3	78.6	86.7	79.8
Dec.	87.9	86.0	99.7	90.3	79.6	89.6	75.0
Mar.	89.9	93.0	105.0	92.5	82.1	95.1	77.6
June	92.1	98.7	103.8	90.6	83.8	79.7	73.0
1984-85 — Sept.	91.7	104.6	103.1	92.7	88.5	90.8	78.6
Dec.	88.3	101.3	102.5	90.9	82.1	88.2	77.2
Mar.	89.1	99.0	101.8	95.5	88.0	89.7	82.3
June	91.8	94.4	114.0	95.1	93.0	91.1	92.9
1985-86 — Sept.	89.0	77.7	118.7	110.7	90.7	88.5	98.8
Dec.	88.2	106.9	114.4	105.3	91.7	88.8	94.1
Mar.	91.4	99.0	117.4	105.4	88.3	87.7	93.5
June	92.0	113.4	119.6	99.9	85.8	85.7	91.4
1986-87 — Sept.	90.7	111.8	102.5	93.2	87.7	89.1	87.0
Dec.	93.7	101.3	111.9	94.2	92.0	94.3	88.9
Mar.	91.2	98.7	114.7	97.5	93.1	88.2	82.3
June	96.3	98.4	108.4	97.6	97.8	96.4	89.2
1987-88 — Sept.	99.2	108.9	109.9	104.4	97.2	97.0	85.8
Dec.	96.0	102.3	111.2	105.3	97.1	99.7	92.0
Mar.	99.7	111.5	107.6	104.4	104.1	100.1	98.1
June	94.1	88.5	109.9	113.5	97.5	99.1	90.2
1988-89 — Sept.	96.7	99.0	109.9	114.0	105.2	101.0	101.0
Dec.	102.4	112.8	108.2	116.3	108.9	101.2	103.0
Mar.	99.3	101.3	110.8	109.2	101.9	100.5	105.7
June	100.1	101.6	123.6	106.6	106.6	100.9	100.4
1989-90 — Sept.	99.6	100.7	116.8	99.8	103.5	97.5	102.8
Dec.	100.2	96.7	99.3	99.0	100.6	97.2	101.1
Mar.	100.8	103.6	92.8	102.2	99.0	101.7	99.7
June	99.4	99.0	91.1	99.0	96.9	103.6	96.4
1990-91 — Sept.	101.9	95.1	95.4	101.1	96.9	104.1	93.9
Dec.	100.8	103.3	94.8	89.5	95.8	104.9	92.0
Mar.	102.0	102.0	92.2	86.2	98.1	104.4	87.0
June	101.7	103.0	89.0	85.7	95.5	104.1	84.5
1991-92 — Sept.	101.3	105.6	86.0	90.3	95.1	105.3	85.3
Dec.	101.5	98.4	85.3	91.5	93.0	104.3	82.8
Mar.	106.0	108.9	90.1	88.5	91.4	103.3	83.0
June	108.8	103.0	88.8	83.0	89.4	104.3	90.6
1992-93 — Sept.	109.8	92.5	85.6	78.8	88.0	104.4	87.6
Dec.	113.4	98.4	84.9	85.8	88.5	105.6	88.0
Mar.	107.9	86.6	99.9	80.6	87.2	106.7	95.9
June	118.2	90.8	86.4	86.1	86.9	101.9	101.9
1993-94 — Sept.	116.2	82.3	96.7	82.5	87.8	111.5	97.5
Dec.	118.7	85.6	85.8	78.6	96.5	114.1	102.6

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 manufacturing*
1977-78 — Sept.	63.6	81.3	77.3	87.1	83.4	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	83.3	80.5	90.2	80.1	81.0
1978-79 — Sept.	65.0	84.4	79.1	86.1	82.5	81.0
Dec.	67.5	85.9	77.6	91.1	84.0	82.2
Mar.	70.0	85.5	82.2	90.8	86.5	83.7
June	70.6	87.7	85.0	93.9	86.5	84.4
1979-80 — Sept.	73.4	93.0	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	86.5	87.9
June	71.6	88.2	82.3	92.6	84.2	85.7
1980-81 — Sept.	73.3	88.7	79.8	96.2	85.7	86.3
Dec.	79.9	95.7	83.2	97.6	91.1	88.8
Mar.	79.7	97.9	84.7	99.3	86.1	88.9
June	79.3	96.4	86.2	102.8	91.1	88.6
1981-82 — Sept.	79.1	99.3	85.3	103.3	90.8	89.7
Dec.	77.1	100.4	86.9	104.3	96.1	90.9
Mar.	78.2	98.6	87.8	104.8	92.7	90.1
June	77.3	94.3	93.8	100.7	89.4	90.3
1982-83 — Sept.	71.9	92.5	94.7	100.8	90.1	88.1
Dec.	61.9	80.3	82.9	84.0	82.0	81.1
Mar.	64.1	78.5	79.6	78.9	80.5	79.4
June	71.5	83.6	78.2	80.7	82.7	82.3
1983-84 — Sept.	74.3	77.4	81.9	80.7	81.3	82.0
Dec.	73.3	79.0	81.9	84.6	85.9	83.6
Mar.	74.2	84.4	83.8	80.2	90.4	85.7
June	77.0	86.0	83.3	81.8	87.1	85.3
1984-85 — Sept.	83.6	82.3	87.8	82.2	97.7	88.6
Dec.	82.2	82.3	85.4	88.2	95.1	86.9
Mar.	77.5	81.5	91.4	86.5	93.3	88.0
June	82.5	80.8	96.0	89.5	77.5	90.5
1985-86 — Sept.	83.6	90.4	92.4	79.9	76.5	89.8
Dec.	84.5	85.9	92.9	94.7	85.0	91.4
Mar.	83.0	88.0	87.3	84.3	76.5	89.5
June	77.0	90.3	83.9	87.0	93.0	89.4
1986-87 — Sept.	83.0	87.3	93.8	93.4	92.8	90.6
Dec.	79.7	87.6	76.6	91.4	90.8	89.8
Mar.	84.2	85.5	83.8	96.3	93.6	90.5
June	84.2	88.1	82.5	94.5	103.7	93.3
1987-88 — Sept.	85.8	93.4	87.4	97.0	104.4	95.7
Dec.	86.6	100.4	87.0	94.9	102.6	95.9
Mar.	85.0	101.1	84.9	100.7	106.9	98.1
June	85.6	102.8	90.0	102.6	95.7	96.3
1988-89 — Sept.	86.2	110.5	88.0	101.9	103.6	99.3
Dec.	88.7	106.3	93.0	111.5	106.6	102.9
Mar.	90.8	108.2	86.9	108.7	106.3	100.6
June	94.4	107.8	102.5	106.3	108.4	103.2
1989-90 — Sept.	99.0	104.4	99.0	103.2	103.6	101.3
Dec.	100.0	97.4	99.6	100.6	98.1	99.5
Mar.	99.3	100.7	104.2	98.6	96.6	100.3
June	101.6	97.4	97.2	97.6	101.7	98.9
1990-91 — Sept.	101.0	94.0	98.4	100.5	96.7	99.4
Dec.	101.6	92.0	96.4	99.7	104.4	98.5
Mar.	106.4	88.1	85.9	100.4	101.7	97.5
June	101.6	90.3	87.7	103.0	98.4	96.8
1991-92 — Sept.	108.1	85.0	85.9	101.4	101.7	97.2
Dec.	101.1	89.9	85.0	99.7	101.9	96.0
Mar.	104.1	86.5	83.7	95.4	99.6	96.3
June	102.3	81.0	83.0	99.8	89.3	96.0
1992-93 — Sept.	101.1	79.2	83.0	115.6	98.3	97.1
Dec.	102.0	81.6	85.2	118.7	91.6	99.0
Mar.	103.8	84.9	91.2	120.3	97.4	99.8
June	111.0	82.9	93.3	111.8	103.3	102.0
1993-94 — Sept.	112.4	88.5	100.1	109.1	105.0	103.4
Dec.	127.7	92.0	96.8	126.8	99.9	108.0

TABLE 11. 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	*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	86.1	86.0	83.1	69.8	78.0	75.9
	Dec.	86.4	84.7	88.3	83.1	69.8	78.3	77.1
	Mar.	86.4	85.7	90.4	84.8	69.3	79.7	76.8
	June	86.7	87.6	91.5	87.1	69.5	82.0	75.7
1978-79 —	Sept.	87.4	90.0	92.7	89.0	70.5	83.2	75.9
	Dec.	87.6	91.9	94.5	88.8	72.2	83.2	77.8
	Mar.	88.0	91.4	96.6	87.5	74.4	82.1	80.5
	June	87.8	91.4	98.0	86.6	76.3	82.4	82.7
1979-80 —	Sept.	87.4	92.4	98.9	86.8	77.5	84.8	82.1
	Dec.	87.4	93.2	99.5	89.0	78.2	86.5	81.7
	Mar.	88.3	94.7	99.5	92.0	78.5	86.5	83.3
	June	89.8	93.7	99.5	94.3	78.7	84.6	85.3
1980-81 —	Sept.	91.3	91.9	99.8	94.3	79.1	83.4	87.3
	Dec.	90.9	91.4	100.3	92.9	79.7	84.5	87.3
	Mar.	88.8	93.2	100.6	93.3	80.6	85.7	85.9
	June	87.3	95.6	100.6	94.7	81.1	87.2	85.9
1981-82 —	Sept.	87.3	96.6	101.0	96.2	81.7	87.8	86.9
	Dec.	88.8	96.6	100.3	96.5	82.1	87.8	89.0
	Mar.	90.6	95.6	98.9	95.0	82.3	87.9	89.0
	June	91.2	94.7	96.3	91.4	81.3	87.8	85.7
1982-83 —	Sept.	91.1	93.2	92.7	85.7	79.6	86.8	80.0
	Dec.	90.0	90.0	90.4	82.0	77.8	85.2	74.9
	Mar.	88.3	86.1	91.9	82.1	77.3	84.3	73.4
	June	87.3	82.8	95.4	84.6	77.9	85.4	75.3
1983-84 —	Sept.	87.1	83.3	98.6	87.0	78.8	89.0	77.4
	Dec.	88.1	88.1	100.6	88.6	80.2	91.0	77.6
	Mar.	90.1	94.2	102.1	90.3	82.5	90.2	75.5
	June	91.0	98.5	103.3	91.4	84.2	88.3	74.5
1984-85 —	Sept.	91.0	99.2	106.0	86.3	81.2	88.4	76.5
	Dec.	89.7	103.5	101.3	91.1	85.9	88.9	78.7
	Mar.	89.4	98.2	104.3	94.7	88.6	89.8	84.7
	June	89.6	91.6	110.9	99.0	90.6	89.7	91.6
1985-86 —	Sept.	89.4	90.6	115.1	104.5	92.0	89.4	96.3
	Dec.	89.4	96.2	117.5	106.6	90.5	88.2	96.3
	Mar.	90.1	105.8	116.2	103.9	88.1	86.9	93.4
	June	91.4	111.0	112.8	98.5	87.0	87.5	91.1
1986-87 —	Sept.	91.7	109.4	110.0	94.9	87.8	89.0	88.6
	Dec.	91.8	104.4	109.2	93.5	90.9	90.7	86.6
	Mar.	93.4	100.2	110.2	95.5	94.2	92.3	85.8
	June	95.4	100.8	110.7	99.0	96.0	94.3	86.1
1987-88 —	Sept.	97.4	105.4	10[illegible].2	101.7	97.7	97.2	88.8
	Dec.	98.0	106.8	108.8	104.1	98.9	99.2	91.9
	Mar.	96.7	102.5	108.8	106.9	99.7	99.5	93.8
	June	96.4	99.2	108.3	110.7	102.0	100.0	96.0
1988-89 —	Sept.	97.6	101.2	107.7	113.9	104.1	100.3	99.2
	Dec.	99.3	104.4	109.2	113.7	105.4	100.9	102.8
	Mar.	100.4	106.1	114.1	109.9	105.8	100.8	104.4
	June	99.9	102.1	117.3	104.6	104.4	99.3	103.1
1989-90 —	Sept.	99.7	99.8	113.0	100.7	103.1	98.1	102.1
	Dec.	99.9	100.5	102.4	99.3	101.1	98.4	101.2
	Mar.	100.1	100.2	93.3	99.9	98.6	100.5	99.7
	June	100.3	99.5	91.3	100.1	97.1	103.0	97.0
1990-91 —	Sept.	100.7	99.5	93.0	96.6	96.5	104.2	94.4
	Dec.	101.2	100.5	93.7	90.9	96.6	104.3	91.1
	Mar.	101.5	103.5	91.6	86.5	96.7	104.3	87.9
	June	101.1	103.8	88.2	86.1	96.1	104.5	85.5
1991-92 —	Sept.	101.2	103.5	86.0	88.9	94.7	104.4	83.9
	Dec.	102.5	104.8	86.2	89.8	92.9	104.1	83.9
	Mar.	105.1	104.4	87.5	87.0	91.1	103.7	85.4
	June	108.4	102.5	86.7	83.3	89.4	103.7	87.0
1992-93 —	Sept.	110.1	98.2	86.9	81.1	88.4	104.7	88.4
	Dec.	110.8	93.9	88.2	81.5	87.7	104.9	91.1
	Mar.	112.3	90.9	91.3	83.1	86.8	104.6	95.1
	June	114.5	88.0	92.4	83.1	87.4	106.1	99.0
1993-94 —	Sept.	116.9	85.7	90.7	81.7	89.8	109.2	100.9
	Dec.	118.8	85.0	87.9	80.1	93.4	112.3	101.6

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

Index numbers (Base : 1989-90 = 100.0)

	Basic metal products	*Fabricated metal products*	*Transport equipment*	*Other machinery and equipment*	*Miscellaneous manufacturing*	*Total manufacturing*
1977-78 — Sept.	63.7	80.8	80.8	87.4	80.6	79.4
Dec.	63.8	78.8	80.0	86.5	77.6	79.2
Mar.	64.1	79.1	80.8	86.5	76.6	79.4
June	64.9	81.5	81.1	87.2	79.2	80.4
1978-79 — Sept.	65.9	83.3	79.6	88.9	82.7	81.5
Dec.	67.4	84.0	79.4	91.0	85.0	82.5
Mar.	69.7	85.2	81.9	92.3	86.4	83.6
June	71.0	87.6	86.5	93.5	87.1	84.8
1979-80 — Sept.	72.9	89.9	90.5	93.8	87.1	85.9
Dec.	75.1	90.4	91.2	94.1	86.6	86.7
Mar.	75.6	88.6	88.0	94.2	85.7	86.7
June	75.0	87.5	83.6	95.1	86.0	86.6
1980-81 — Sept.	75.5	89.4	81.6	96.3	87.1	87.1
Dec.	77.4	92.7	82.8	98.3	88.5	88.0
Mar.	80.0	95.3	85.0	100.9	89.3	88.9
June	79.8	96.9	86.2	102.8	90.5	89.4
1981-82 — Sept.	78.7	97.7	86.4	104.7	92.8	89.9
Dec.	78.4	98.1	87.3	105.2	94.3	90.6
Mar.	78.2	97.4	90.5	105.3	93.8	91.0
June	75.8	93.9	93.1	103.1	91.4	89.9
1982-83 — Sept.	70.3	87.8	91.7	96.6	87.7	86.6
Dec.	65.3	82.4	86.0	88.0	84.2	82.8
Mar.	65.4	79.2	80.7	81.4	81.7	80.7
June	69.7	78.2	79.3	80.2	81.3	81.0
1983-84 — Sept.	73.3	78.4	81.1	82.1	83.7	82.6
Dec.	74.2	79.6	82.7	82.9	86.0	84.0
Mar.	74.9	81.7	83.8	82.6	88.5	85.2
June	77.8	83.4	84.7	82.3	91.2	86.2
1984-85 — Sept.	84.0	78.3	88.2	81.7	92.6	86.6
Dec.	81.8	81.5	87.5	86.4	95.4	87.6
Mar.	80.4	82.6	90.0	87.0	90.0	88.4
June	81.6	83.6	93.2	86.6	82.4	89.4
1985-86 — Sept.	83.9	86.0	93.5	86.6	78.4	90.4
Dec.	84.0	87.9	90.2	86.9	79.3	90.3
Mar.	82.3	88.6	88.2	87.5	84.1	89.9
June	80.6	88.6	86.8	88.4	88.6	89.7
1986-87 — Sept.	80.4	88.2	85.0	90.2	91.4	89.6
Dec.	81.8	86.6	82.7	93.2	93.3	90.0
Mar.	83.4	86.3	81.4	94.6	96.0	91.0
June	84.8	88.8	82.9	95.1	100.8	92.9
1987-88 — Sept.	86.1	93.6	85.4	95.5	104.6	95.1
Dec.	86.2	98.2	86.0	96.9	104.8	96.3
Mar.	85.9	101.9	86.4	98.8	102.3	96.7
June	85.8	104.8	87.7	101.6	101.3	97.7
1988-89 — Sept.	86.7	107.0	88.4	105.1	102.5	99.3
Dec.	88.6	108.3	89.6	107.9	105.5	101.0
Mar.	91.5	108.3	92.5	108.6	107.9	102.1
June	95.2	106.4	96.2	106.5	106.8	101.9
1989-90 — Sept.	98.2	103.6	99.6	103.0	103.3	101.1
Dec.	100.1	100.6	100.9	100.2	99.9	100.2
Mar.	100.8	98.6	100.0	98.5	98.0	99.4
June	100.9	97.2	99.6	98.3	98.7	99.2
1990-91 — Sept.	101.9	94.4	96.9	98.8	100.8	98.9
Dec.	102.9	91.5	93.0	99.9	101.6	98.2
Mar.	104.3	89.3	89.0	101.0	101.5	97.5
June	105.1	88.1	86.0	101.7	101.2	96.9
1991-92 — Sept.	104.8	88.0	85.0	100.9	101.5	96.6
Dec.	104.1	87.6	84.4	97.9	100.6	96.2
Mar.	103.3	85.3	83.0	97.4	98.0	95.9
June	102.3	82.1	82.2	102.7	94.7	96.1
1992-93 — Sept.	101.8	80.3	82.9	111.8	93.3	97.1
Dec.	102.4	81.2	85.3	118.4	94.7	98.4
Mar.	104.8	83.0	89.6	116.9	98.5	99.8
June	109.9	85.2	93.8	113.8	101.6	101.7
1993-94 — Sept.	116.7	87.9	96.7	114.8	103.5	104.1
Dec.	123.2	90.8	98.0	118.6	102.8	106.4

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 1990-91 Mining Census based estimates (see paragraph 7);

(b) The estimates of manufacturing quarterly gross product, used to produce the quarterly indexes, have been revised for 1990-91;

(c) The estimates of quarterly gross product for electricity, used to produce the quarterly indexes, have now been benchmarked to 1991-92 Census of Electricity and Gas Establishments based estimates (see paragraph 7);

(d) 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 revised for 1990-91; and

(e) The estimates of quarterly gross product for water and sewerage, used to produce the quarterly indexes, have been revised for 1990-91 and 1991-92.

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
Total Industrial sector		**100.0**

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. 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, an-

nual 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

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