

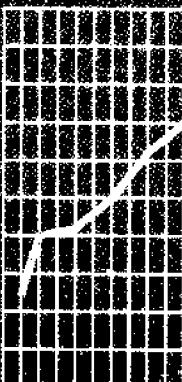


March 1997

EMBARGO: 11:30 AM (CANBERRA TIME) FRI 2 MAY 1997

# Manufacturing Production

## Australia



## NOTES

FORTHCOMING ISSUES	ISSUE	RELEASE DATE
	April 1997	2 June 1997
	May 1997	2 July 1997
	June 1997	31 July 1997

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### IN THIS ISSUE

This publication presents monthly and quarterly estimates of selected major indicators of manufacturing production for Australia.

From page 5, there are two graphs shown for each available manufactured commodity. The left hand graph shows seasonally adjusted (where available) and trend estimates over the last four years. The right hand graph presents a short-term sensitivity analysis of the trend estimates. The sensitivity analysis shows the current trend and two possible scenarios of how the trend might move if the next seasonally adjusted estimate rises or falls by the historical average monthly or quarterly movement for that series. A worked example is shown on page 25.

Revisions have been applied to the series 'M1 Red meat' and 'M2 Chicken meat' as a result of annual data reconciliation. The series 'M3 Cheese' has also been revised.

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### EFFECTS OF ROUNDING

Estimates of change shown in this publication have been calculated using unrounded estimates and may be different from, but are more accurate than, movements obtained from the rounded estimates.

\*\*\*\*\*

### SYMBOLS AND OTHER USAGES

—	nil or rounded to zero
M	manufactured commodity collected by month
n.a.	not available
n.p.	not publishable
n.y.a.	not yet available
Q	manufactured commodity collected by quarter
r	figure or series revised since previous issue

\*\*\*\*\*

### INQUIRIES

For information about other ABS statistics and services, please refer to the back of this publication.

For further information about these statistics, contact John Ridley on Sydney (02) 9268 4541.

T. J. Skinner  
Acting Australian Statistician

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## KEY POINTS

### GENERAL TRENDS

Latest trends indicate that of the 57 indicators available, 24 showed rising production trends, 17 showed falling trends while 16 were relatively stable.

### PUBLISHED PRODUCTION TREND.....

	Indicators available	Rising	Falling	Stable
January 1997 issue	58	24	20	14
February 1997 issue	57	19	17	21
March 1997 issue	57	24	17	16

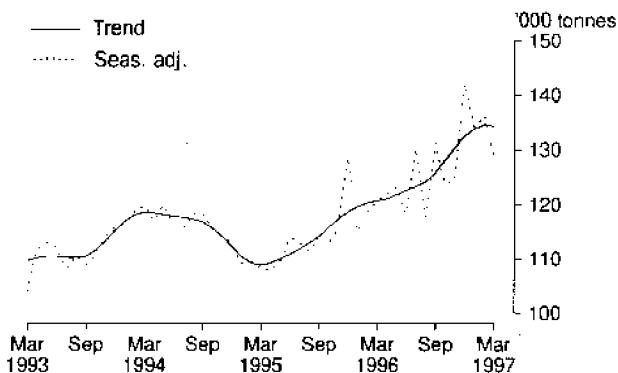
### SERIES TRENDS

Two of the more notable trends were production of flour of wheat or of meslin and production of gas. The trend for production of flour of wheat or of meslin was stable (decreasing 0.3%), after experiencing continuous growth from a low point in March 1995. This series will fall again in April 1997 unless there is a rise in the seasonally adjusted series slightly greater than the average movement for this series, which is 3%.

Gas production for March 1997 was also stable (falling slightly, by 0.1%), after rising from a low point in August 1996. This series will fall again in April 1997 unless the seasonally adjusted series rises by nearly 8% (the average movement for this series is 3%).

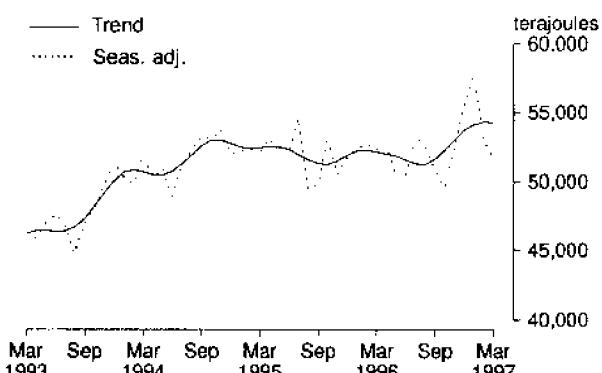
#### M5 FLOUR OF WHEAT OR OF MESLIN

(Seas. adj. series average movement 3%)



#### M49 GAS

(Seas. adj. series average movement 3%)

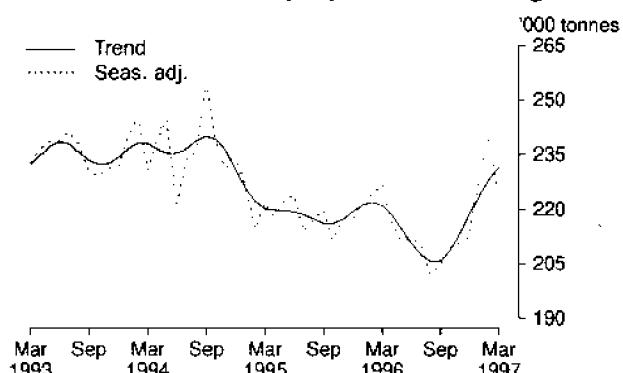


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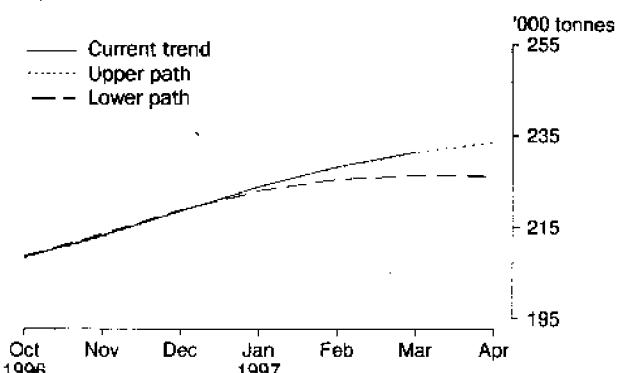
## MONTHLY PRODUCTION

### Longer term trend(a)

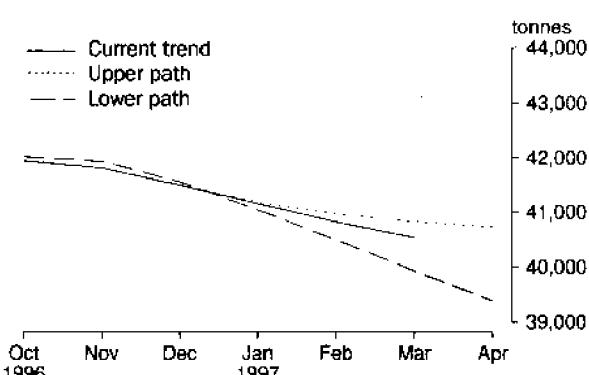
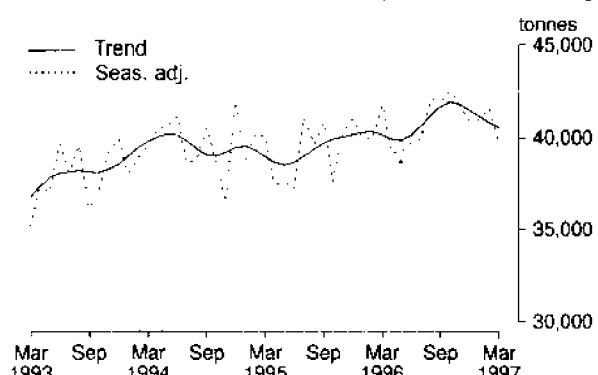
#### M1 RED MEAT (seasonally adjusted series average movement 4%)



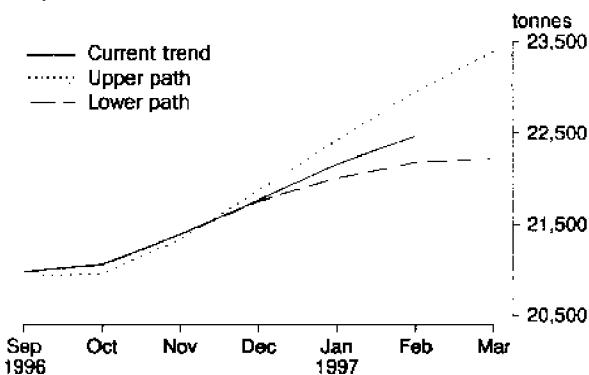
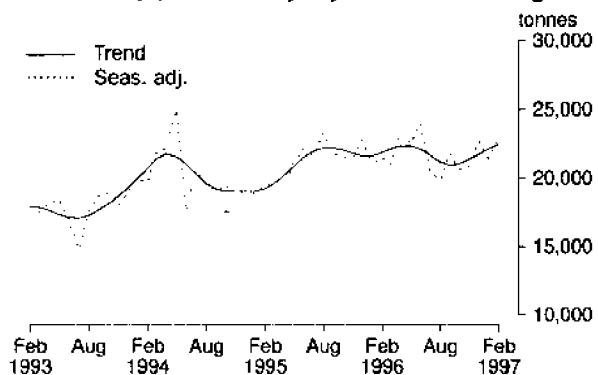
### Short-term sensitivity analysis



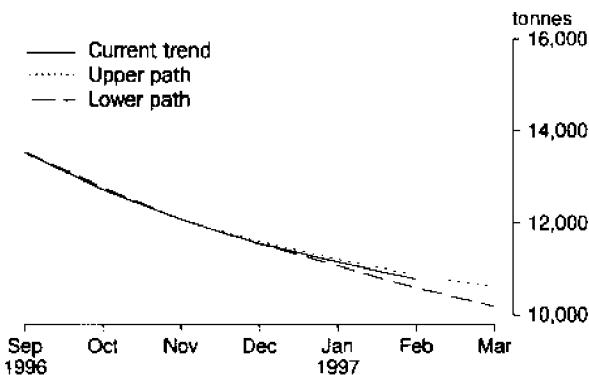
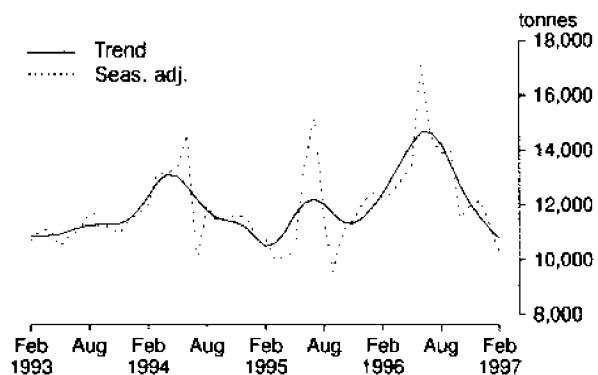
#### M2 CHICKEN MEAT (seasonally adjusted series average movement 4%)



#### M3 CHEESE(b) (seasonally adjusted series average movement 6%)



#### M4 BUTTER(b) (seasonally adjusted series average movement 7%)



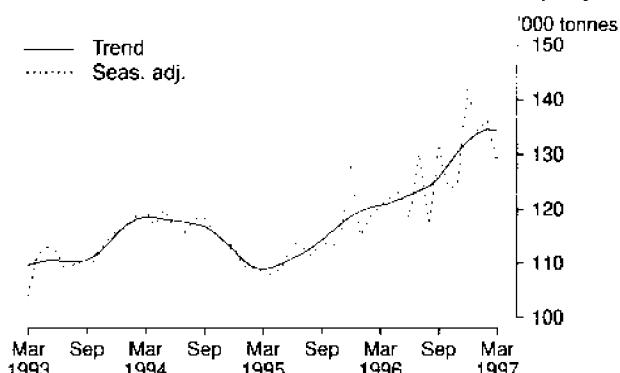
For footnotes see page 23.

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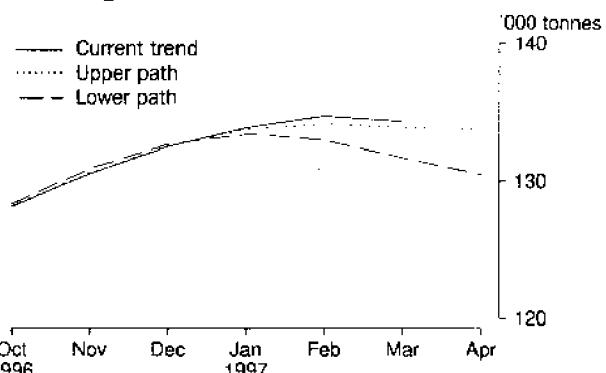
## MONTHLY PRODUCTION *continued*

### Longer term trend (a)

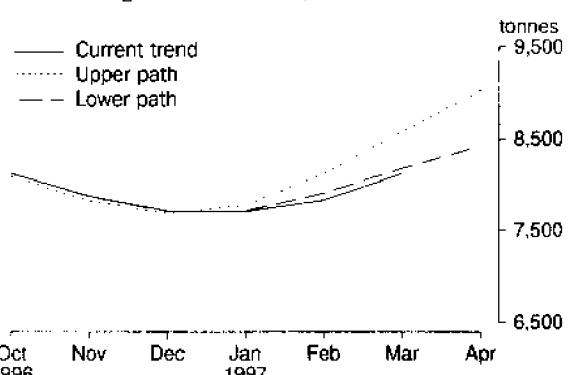
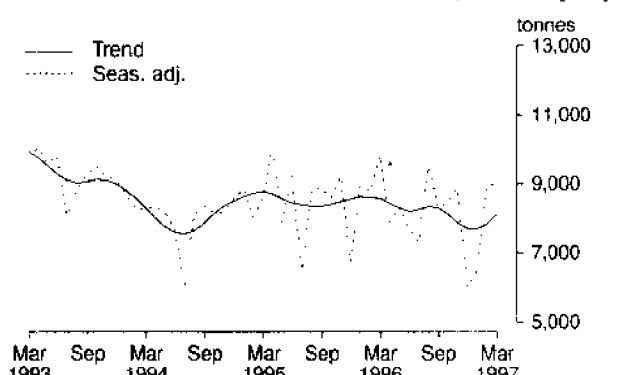
#### M5 FLOUR OF WHEAT OR OF MESLIN (seasonally adjusted series average movement 3%)



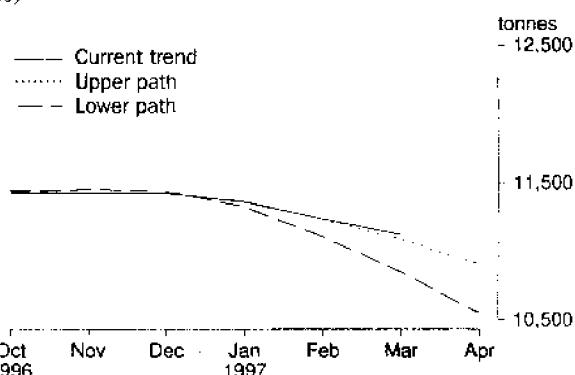
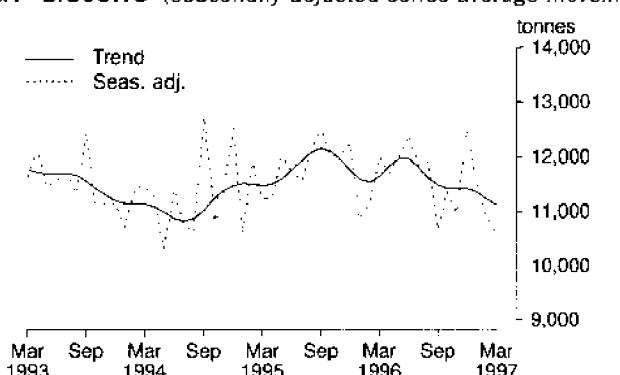
### Short-term sensitivity analysis



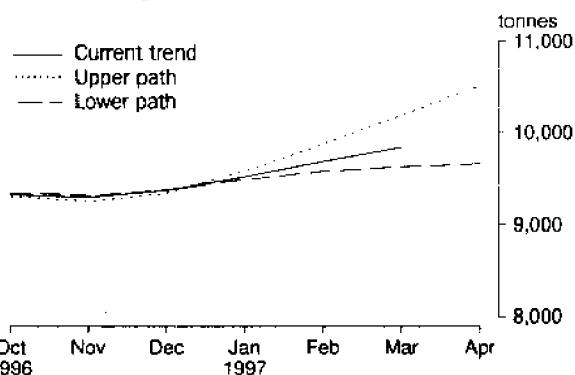
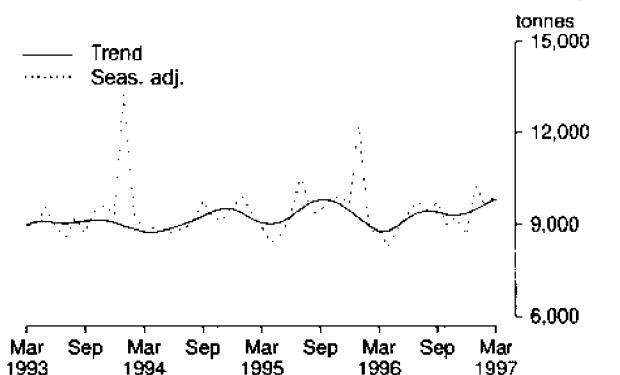
#### M6 PREPARED FOODS FROM CEREALS (seasonally adjusted series average movement 8%)



#### M7 BISCUITS (seasonally adjusted series average movement 4%)

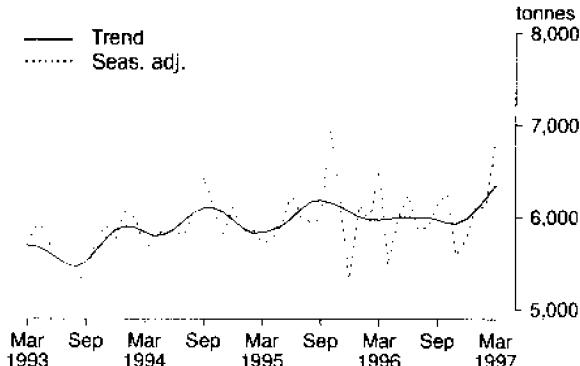


#### M8 CHOCOLATE BASED CONFECTIONERY (seasonally adjusted series average movement 7%)

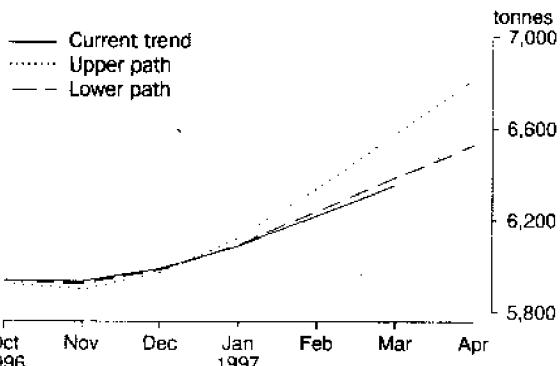
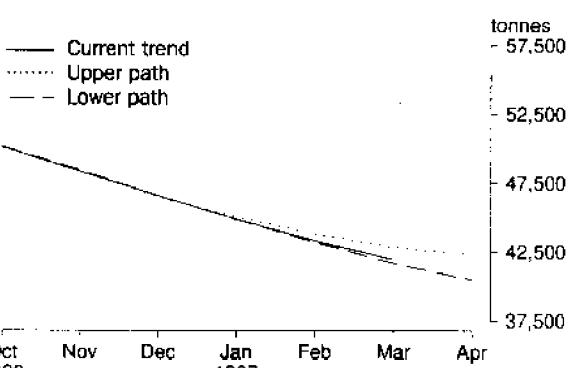
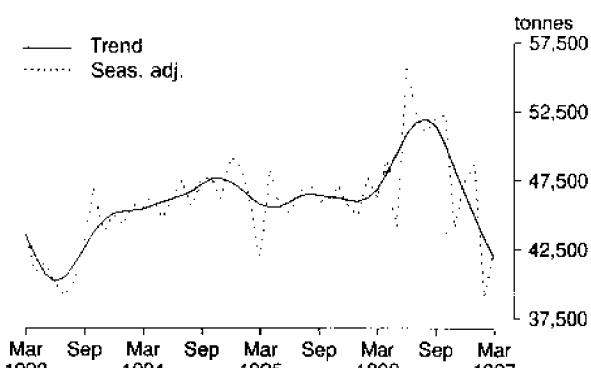
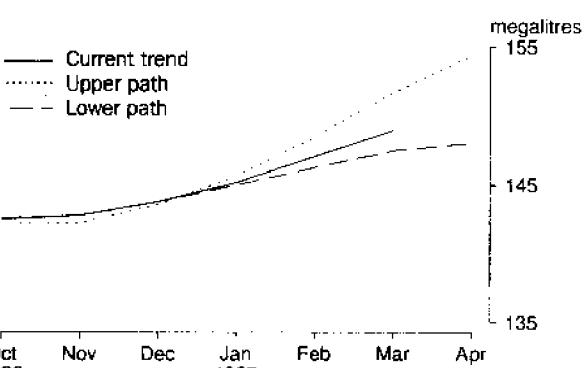
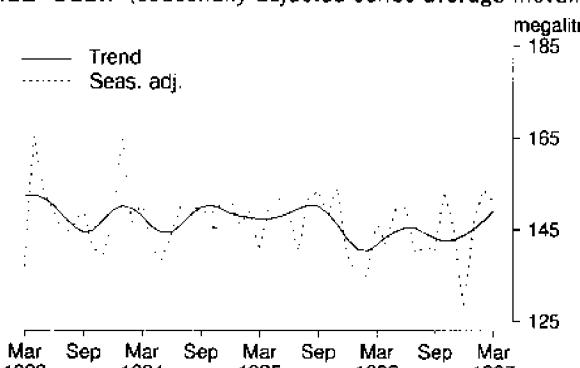
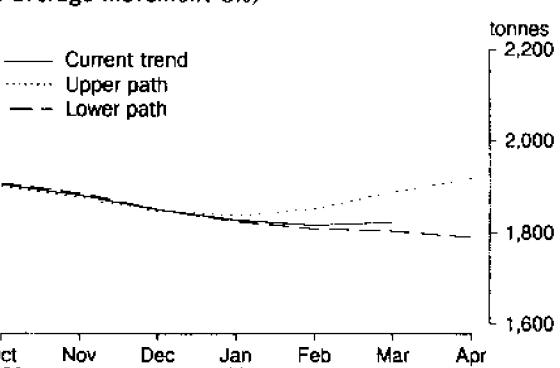
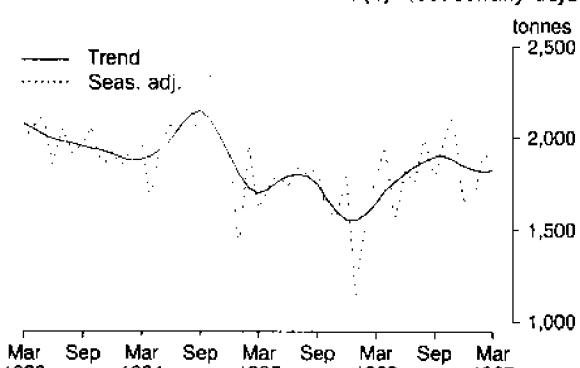


For footnotes see page 23.

## Longer term trend(a)

**M9 OTHER CONFECTIONERY** (seasonally adjusted series average movement 5%)

## Short-term sensitivity analysis

**M10 MALT** (seasonally adjusted series average movement 5%)**M11 BEER** (seasonally adjusted series average movement 5%)**M12 TOBACCO AND CIGARETTES(b)** (seasonally adjusted series average movement 8%)

For footnotes see page 23.

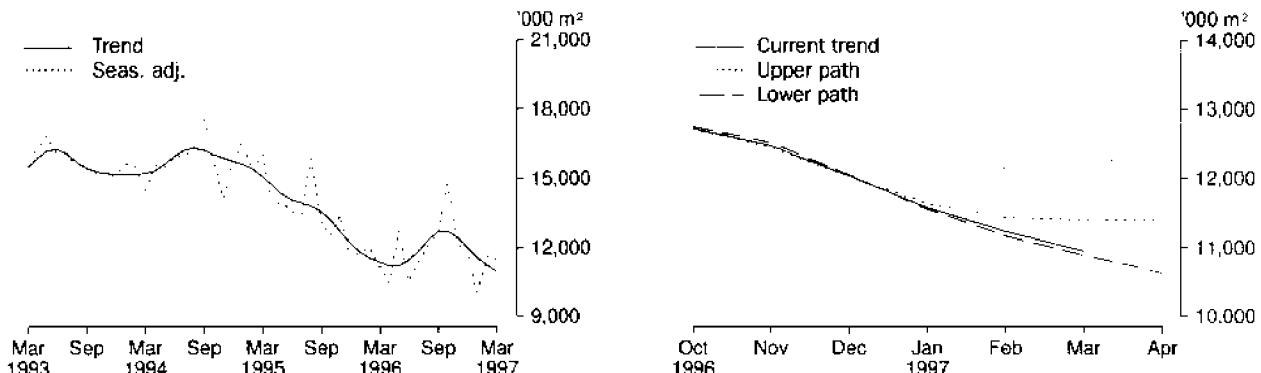
# M

## MONTHLY PRODUCTION *continued*

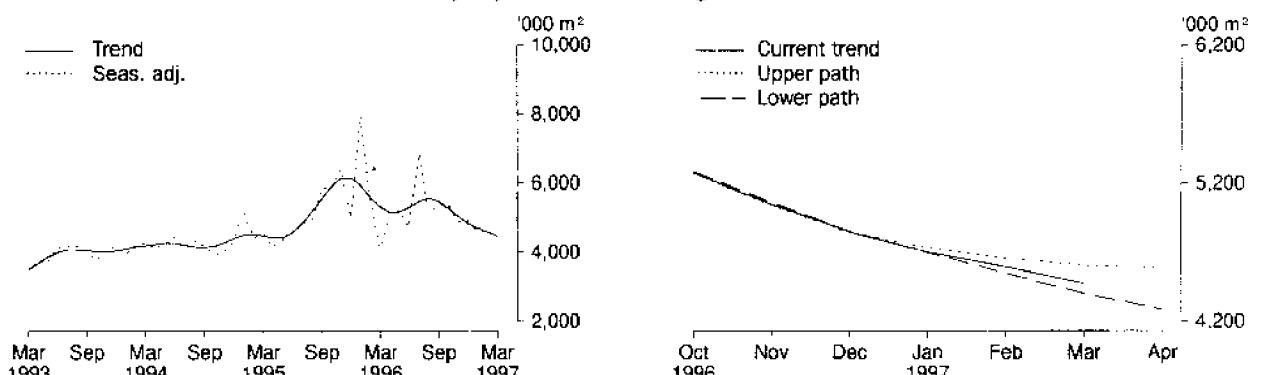
### Longer term trend (a)

### Short-term sensitivity analysis

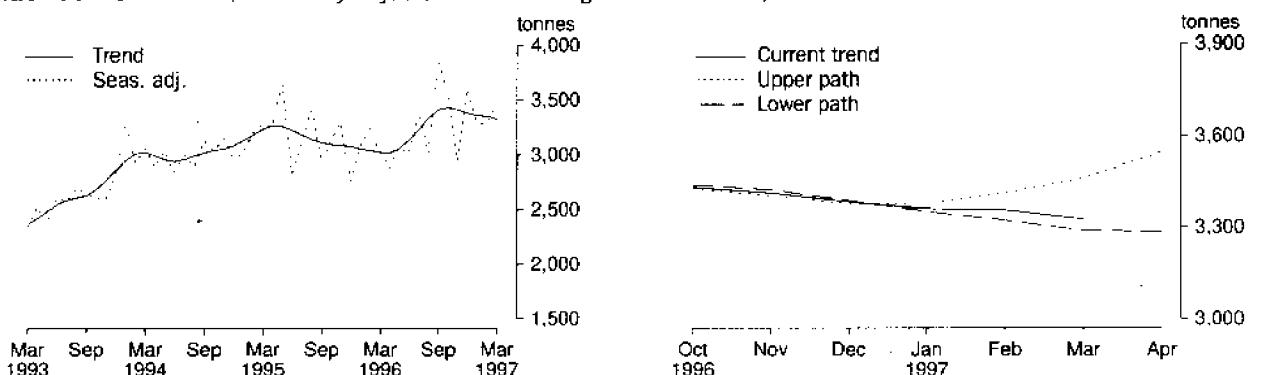
#### M13 MAN-MADE FIBRE WOVEN FABRIC (seasonally adjusted series average movement 8%)



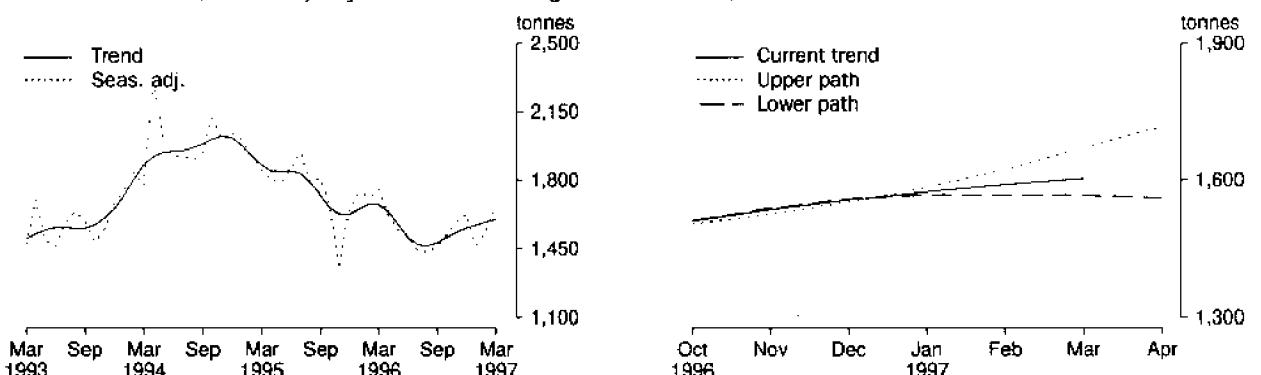
#### M14 COTTON WOVEN FABRIC (seasonally adjusted series average movement 9%)



#### M15 COTTON YARN (seasonally adjusted series average movement 9%)



#### M16 WOOL YARN (seasonally adjusted series average movement 6%)



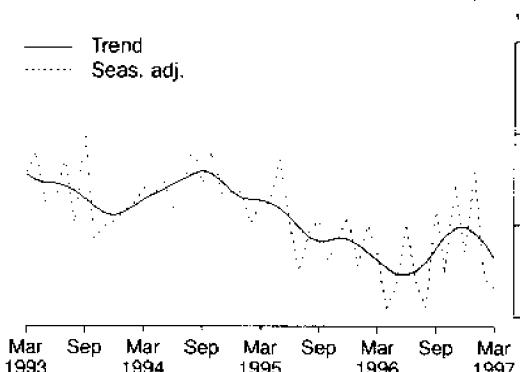
For footnotes see page 23.

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## MONTHLY PRODUCTION *continued*

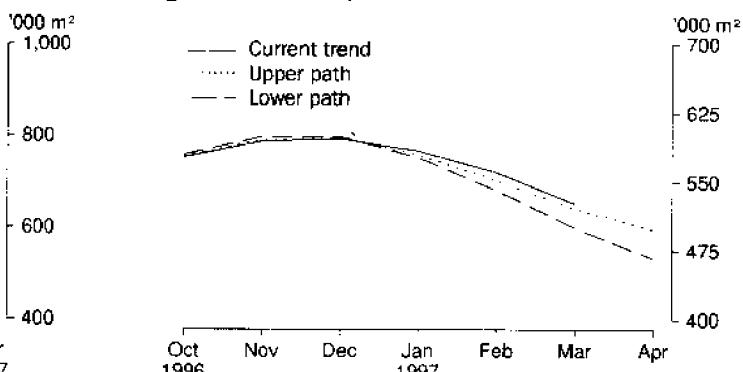
### Longer term trend (a)

#### M17 WOOL WOVEN FABRIC (seasonally adjusted series average movement 8%)

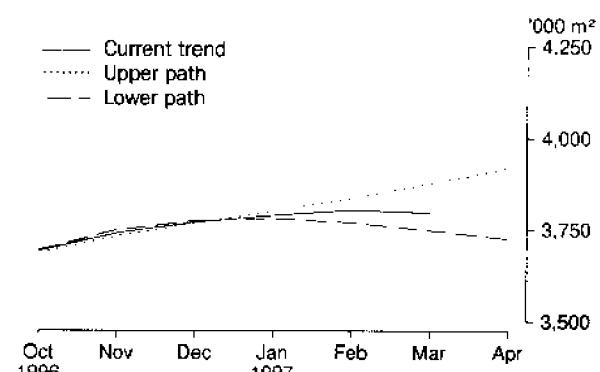
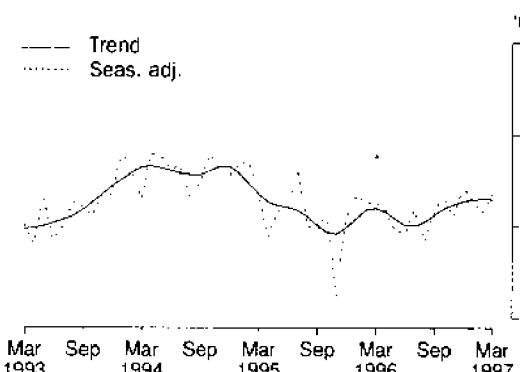


### Short-term sensitivity analysis

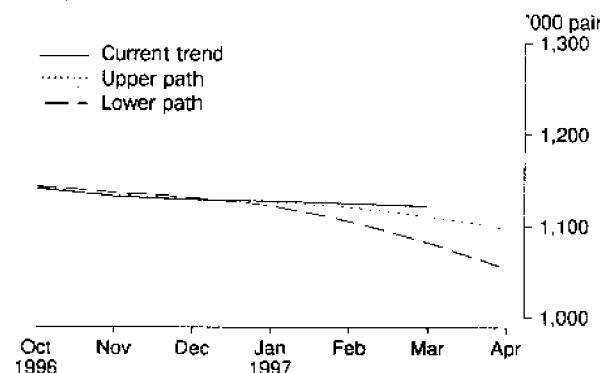
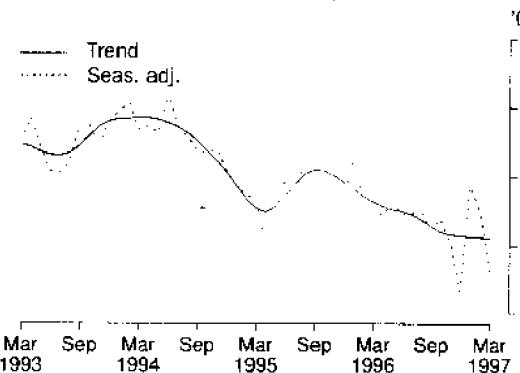
#### M17 WOOL WOVEN FABRIC (seasonally adjusted series average movement 8%)



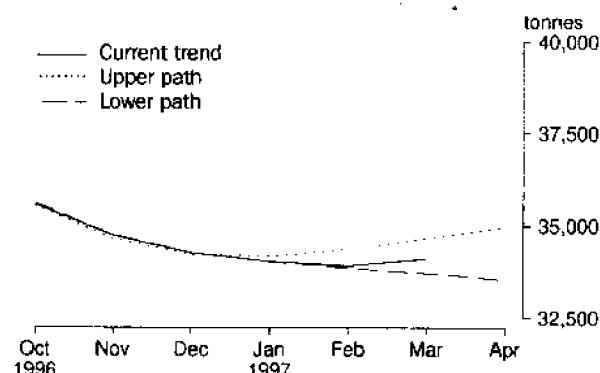
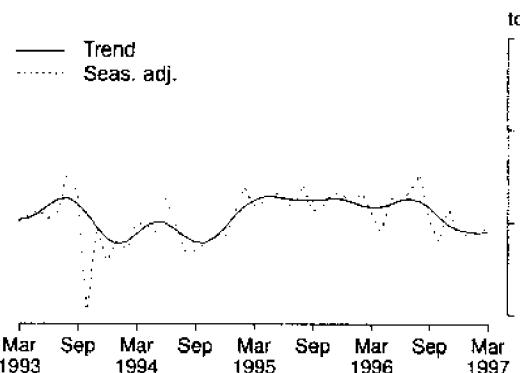
#### M18 TEXTILE FLOOR COVERINGS (seasonally adjusted series average movement 6%)



#### M19 FOOTWEAR (seasonally adjusted series average movement 4%)



#### M21 NEWSPRINT (seasonally adjusted series average movement 5%)



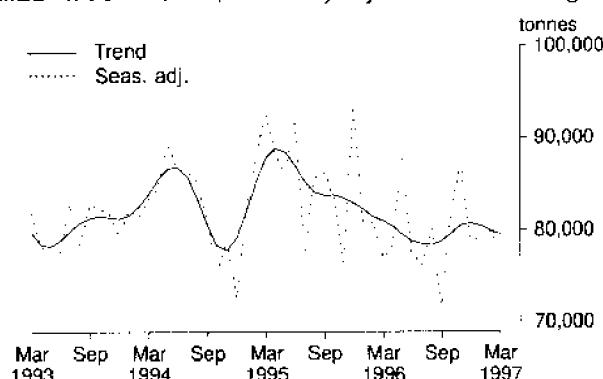
For footnotes see page 23.

# M

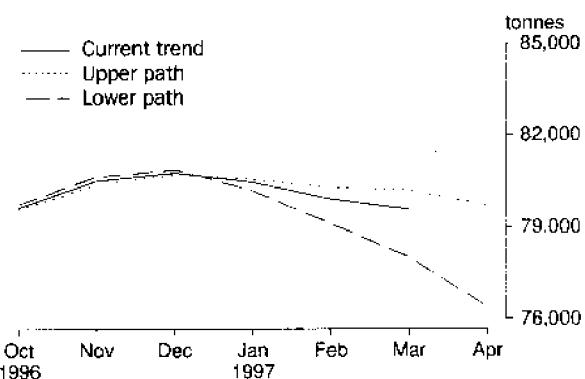
## MONTHLY PRODUCTION *continued*

### Longer term trend(a)

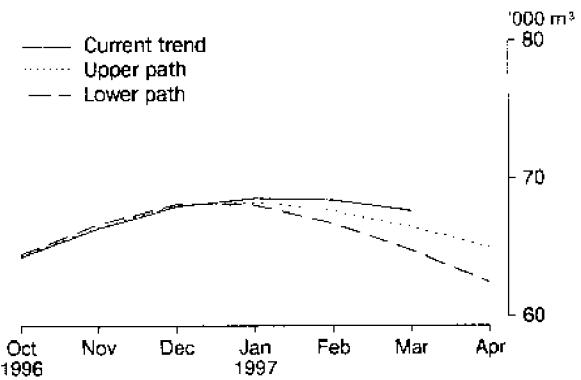
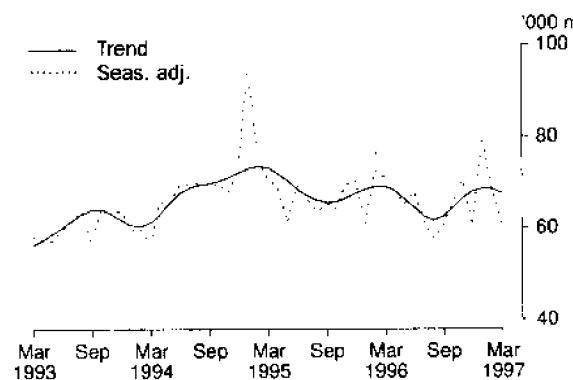
#### M22 WOOD PULP (seasonally adjusted series average movement 5%)



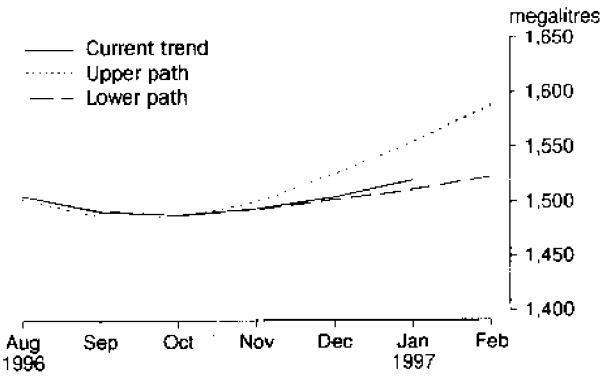
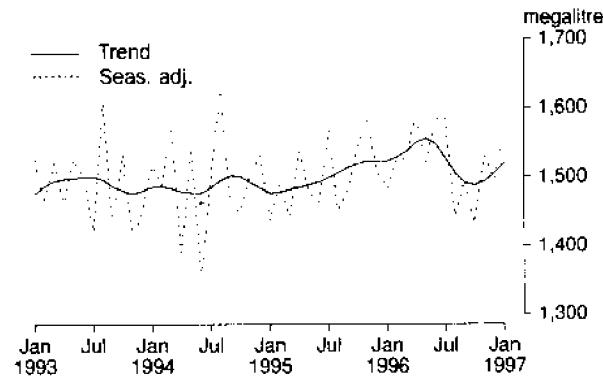
### Short-term sensitivity analysis



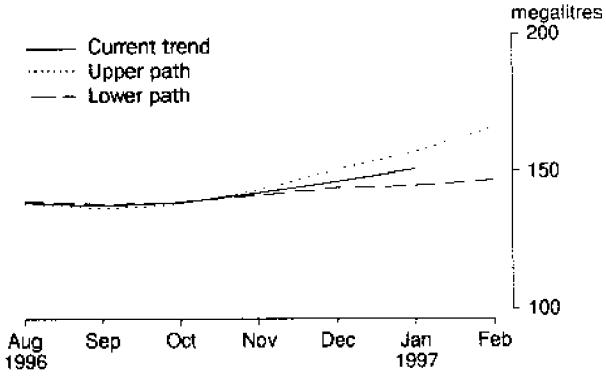
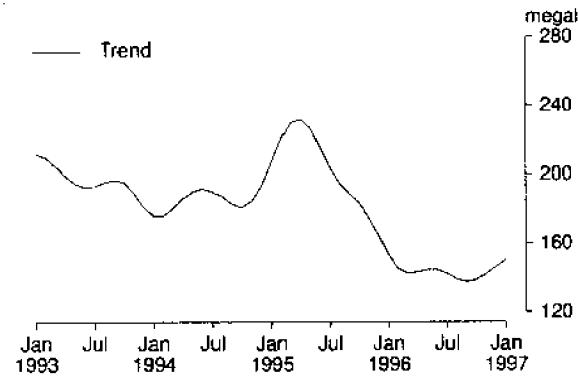
#### M23 UNLAMINATED PARTICLE BOARD (seasonally adjusted series average movement 5%)



#### M26 AUTOMOTIVE GASOLINE(b) (seasonally adjusted series average movement 5%)



#### M27 FUEL OIL(b) (seasonally adjusted series average movement 15%)



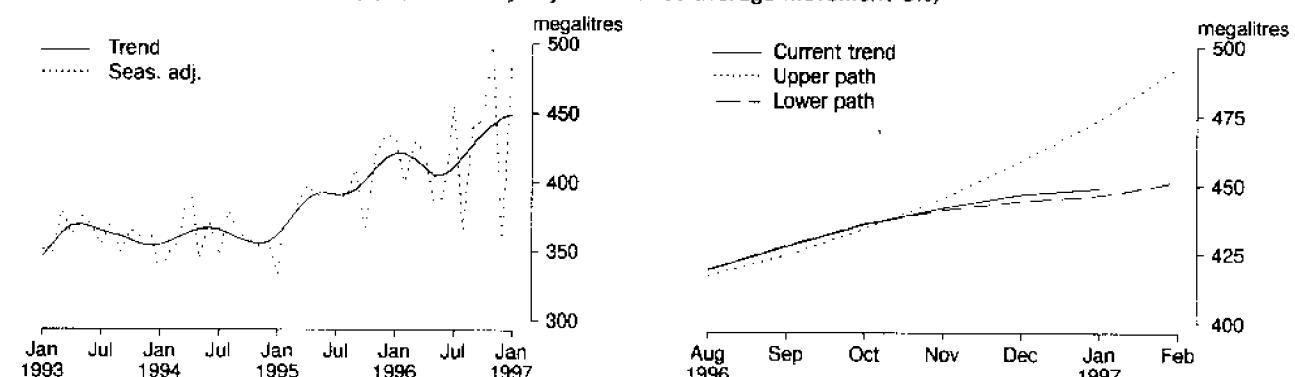
For footnotes see page 23.

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## MONTHLY PRODUCTION *continued*

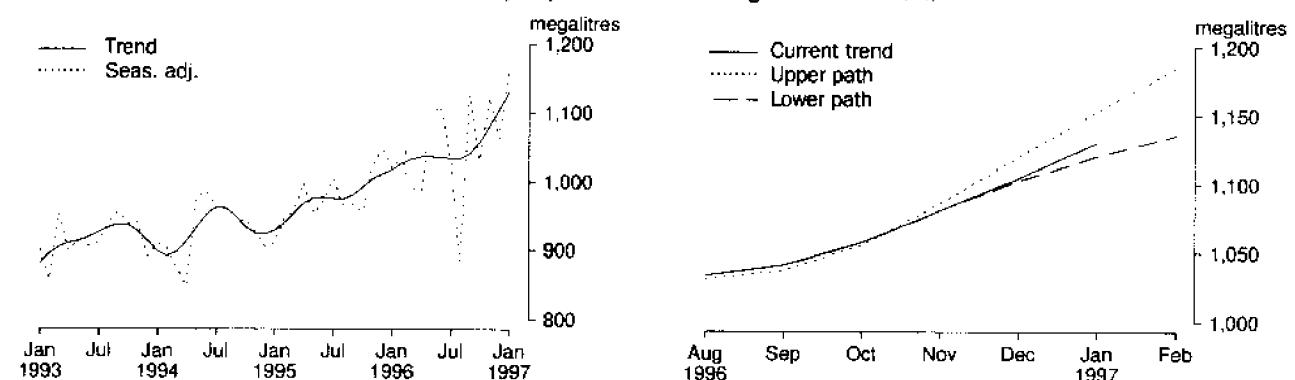
### Longer term trend(a)

#### M28 AVIATION TURBINE FUEL(b) (seasonally adjusted series average movement 9%)

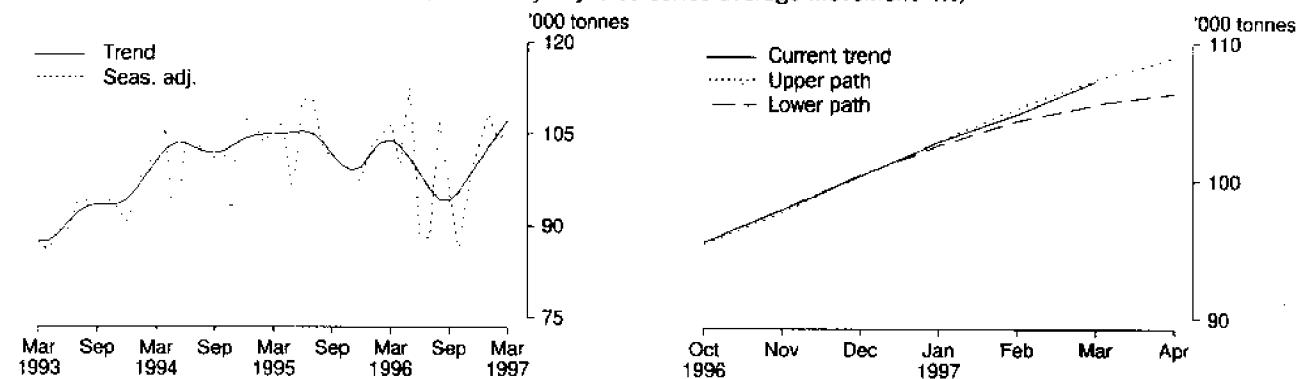


### Short-term sensitivity analysis

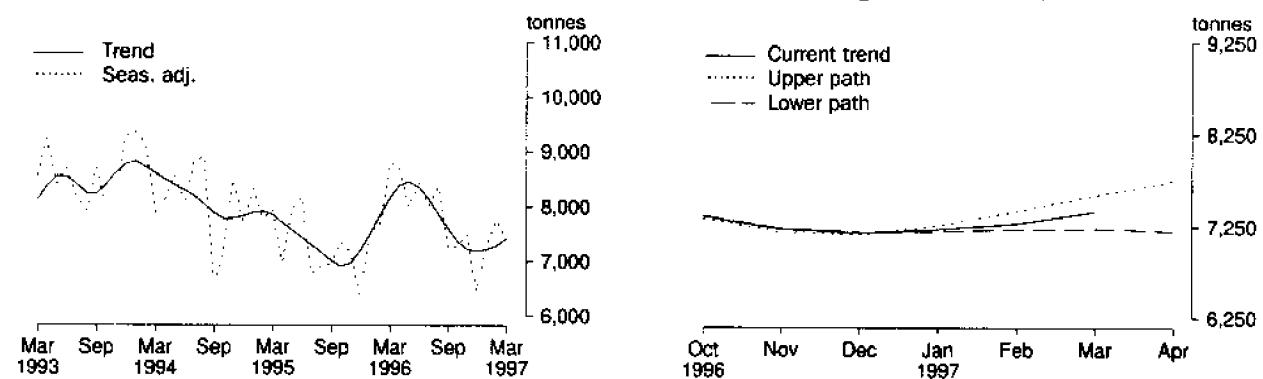
#### M29 AUTOMOTIVE DIESEL OIL(b) (seasonally adjusted series average movement 5%)



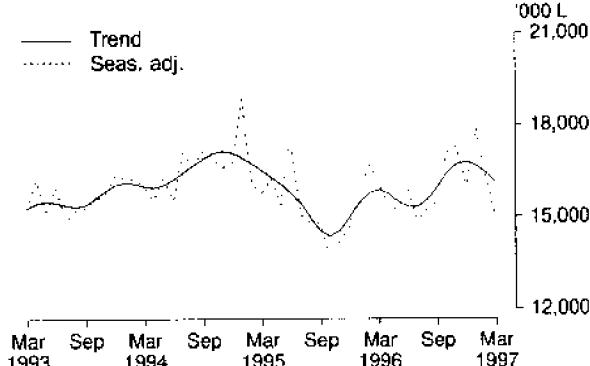
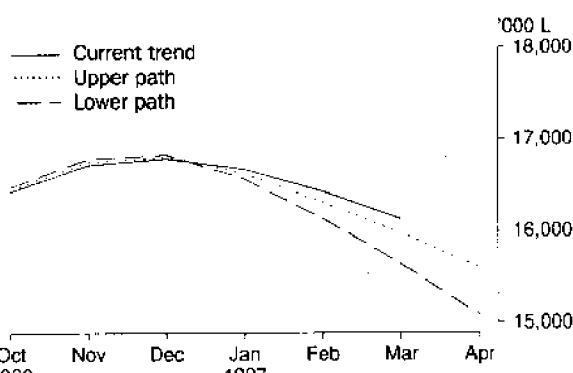
#### M30 PLASTICS IN PRIMARY FORMS (seasonally adjusted series average movement 4%)



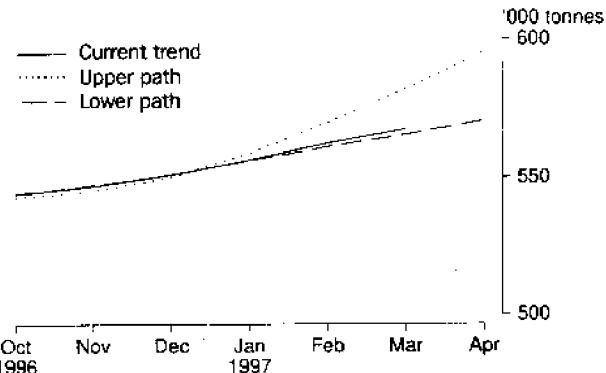
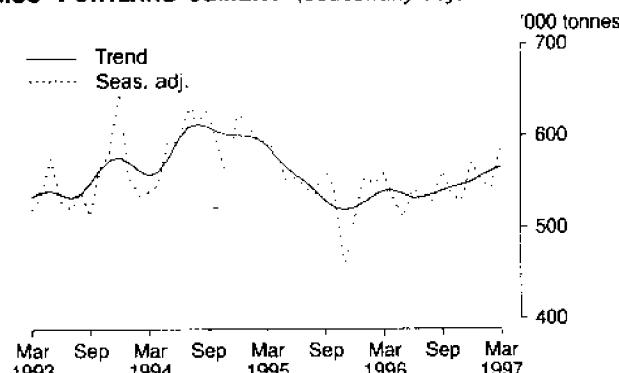
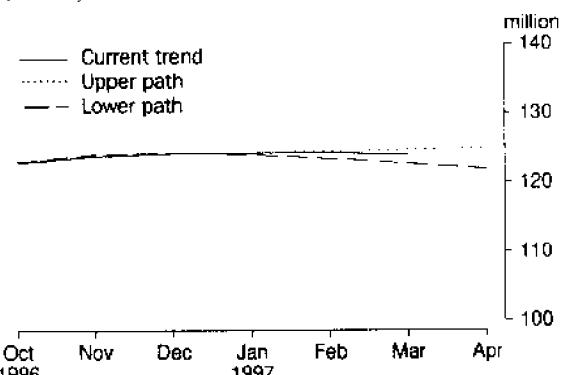
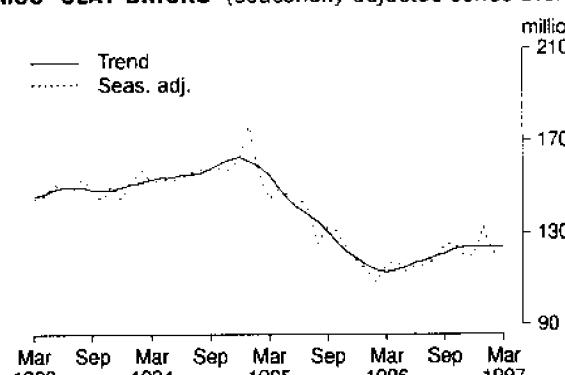
#### M31 RIGID PVC TUBES, PIPES AND HOSES (seasonally adjusted series average movement 9%)



For footnotes see page 23.

**Longer term trend (a)****M33 PAINT** (seasonally adjusted series average movement 4%)**Short-term sensitivity analysis****M34 SUPERPHOSPHATES**

Data in this series are subject to confidentiality restrictions and are, therefore, not currently publishable.

**M35 PORTLAND CEMENT** (seasonally adjusted series average movement 5%)**M36 CLAY BRICKS** (seasonally adjusted series average movement 3%)

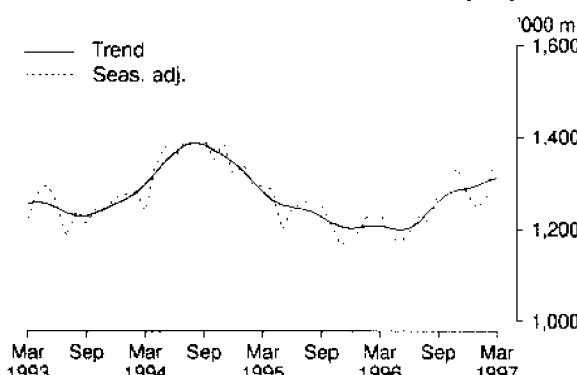
For footnotes see page 23.

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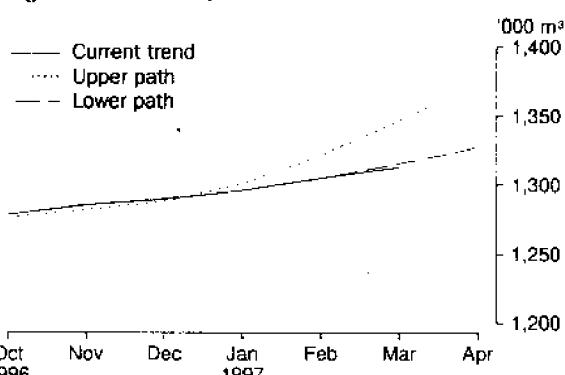
## MONTHLY PRODUCTION *continued*

### Longer term trend (a)

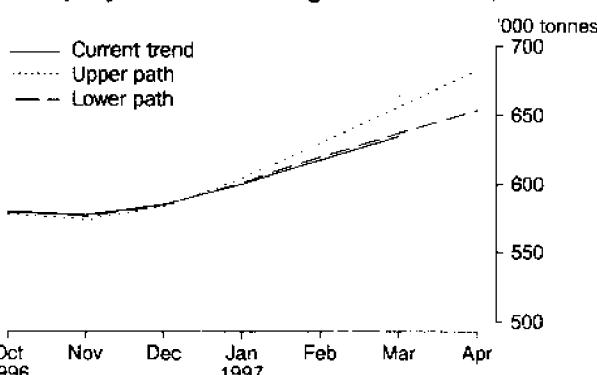
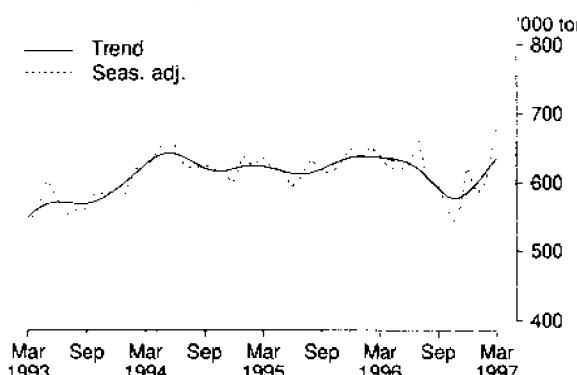
#### M37 READY MIXED CONCRETE (seasonally adjusted series average movement 4%)



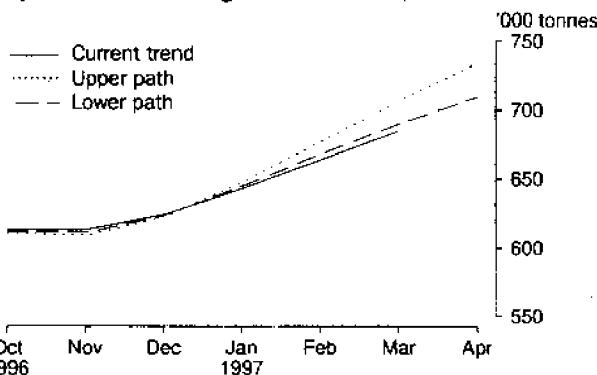
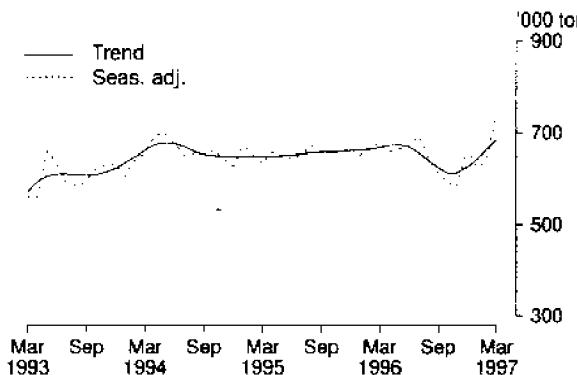
### Short-term sensitivity analysis



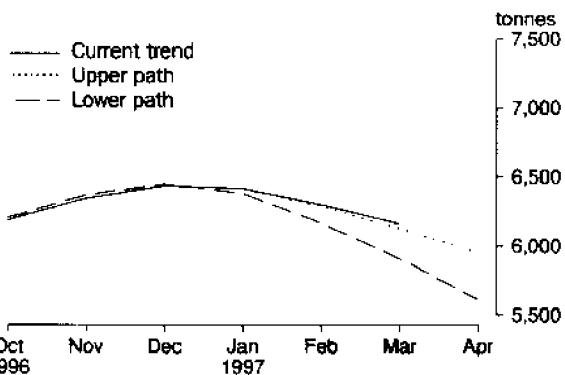
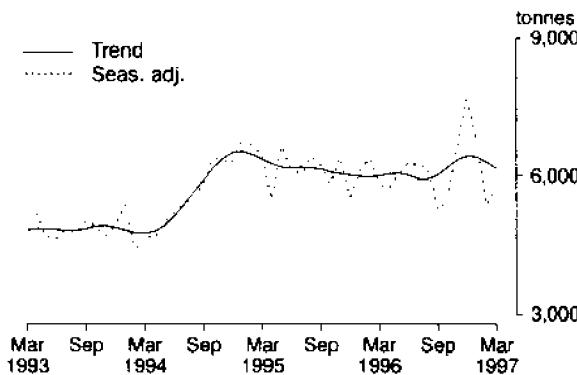
#### M38 BASIC IRON, SPIEGELEISEN AND SPONGE IRON(c) (seasonally adjusted series average movement 5%)



#### M39 BLOOMS AND SLABS OF IRON OR STEEL(c) (seasonally adjusted series average movement 4%)



#### M40 INSULATED WIRE (seasonally adjusted series average movement 7%)



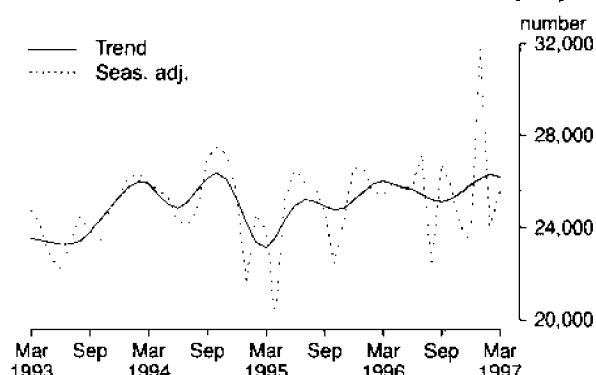
For footnotes see page 23.

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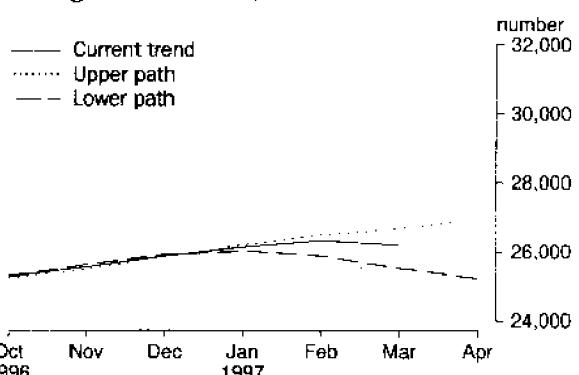
## MONTHLY PRODUCTION *continued*

### Longer term trend(a)

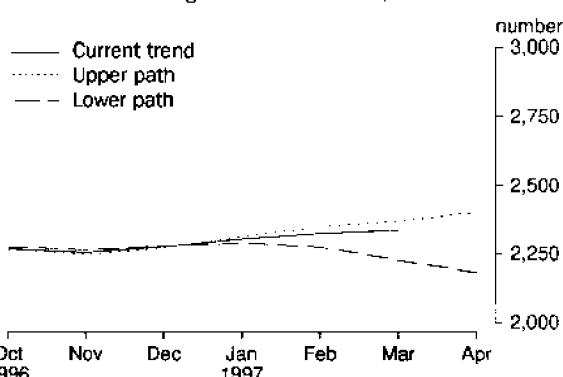
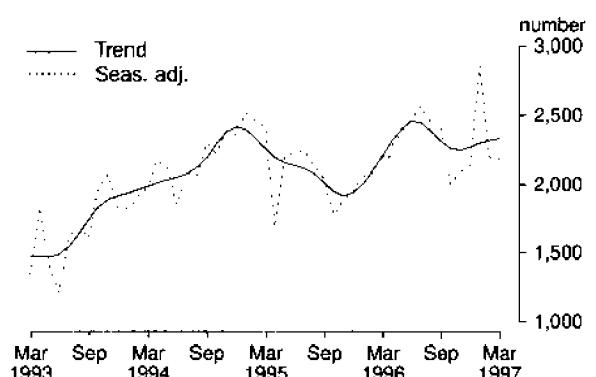
#### M41 CARS AND STATION WAGONS (seasonally adjusted series average movement 8%)



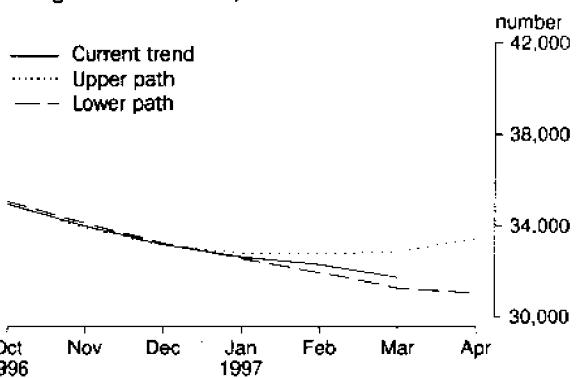
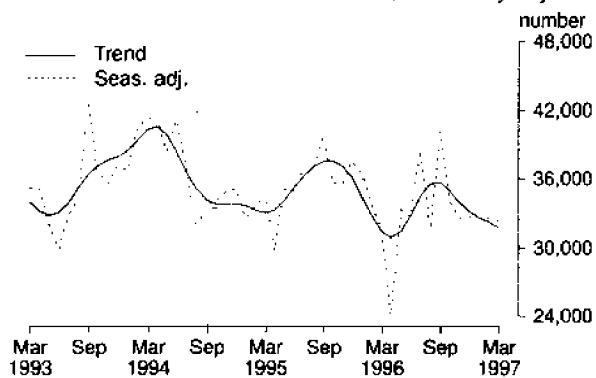
### Short-term sensitivity analysis



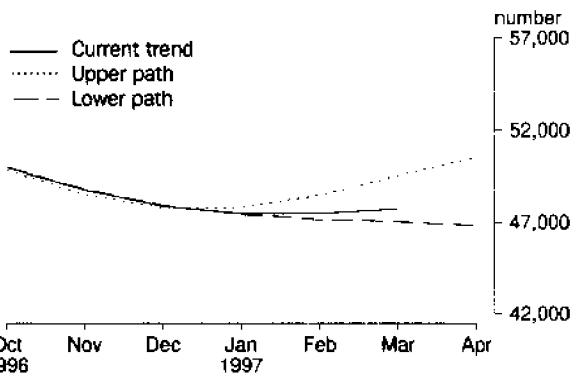
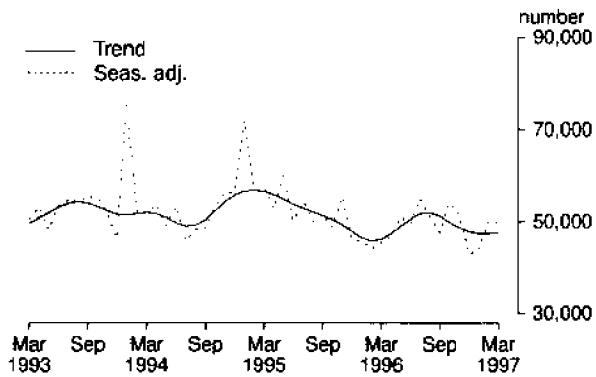
#### M42 VEHICLES FOR GOODS AND MATERIALS (seasonally adjusted series average movement 11%)



#### M44 DOMESTIC REFRIGERATORS (seasonally adjusted series average movement 8%)



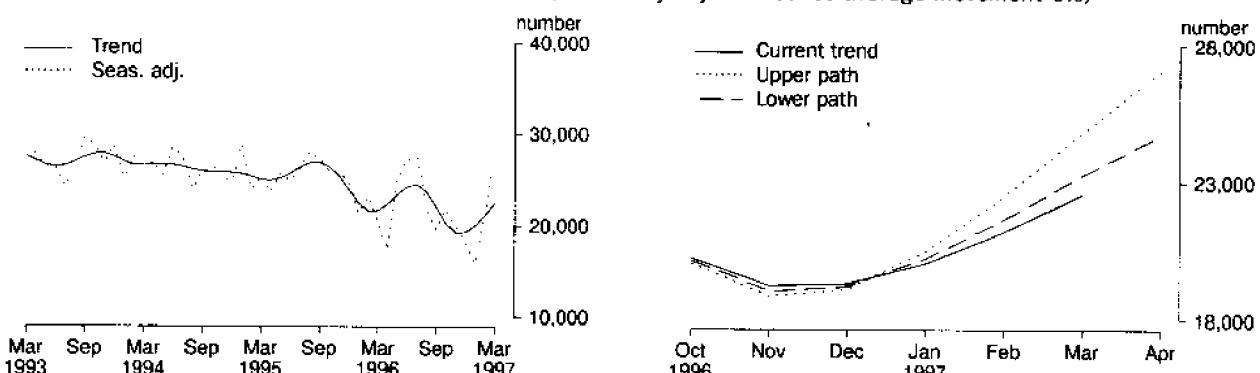
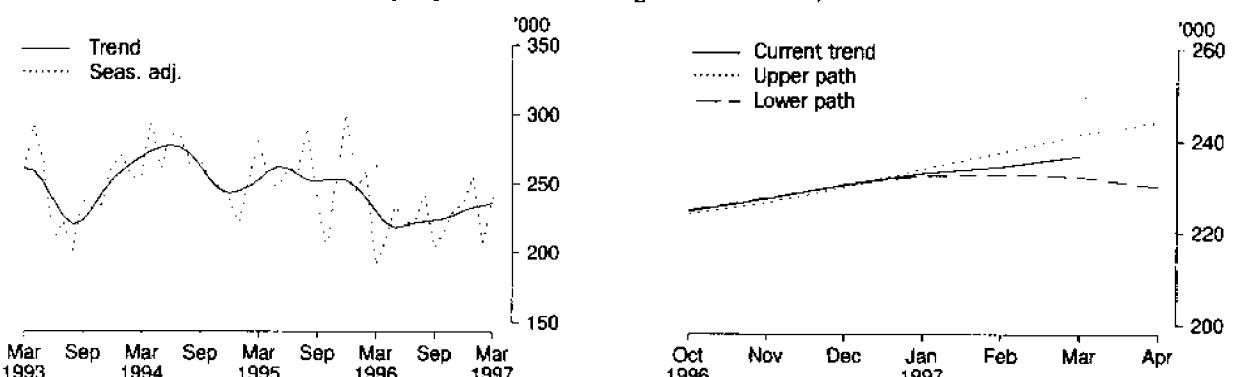
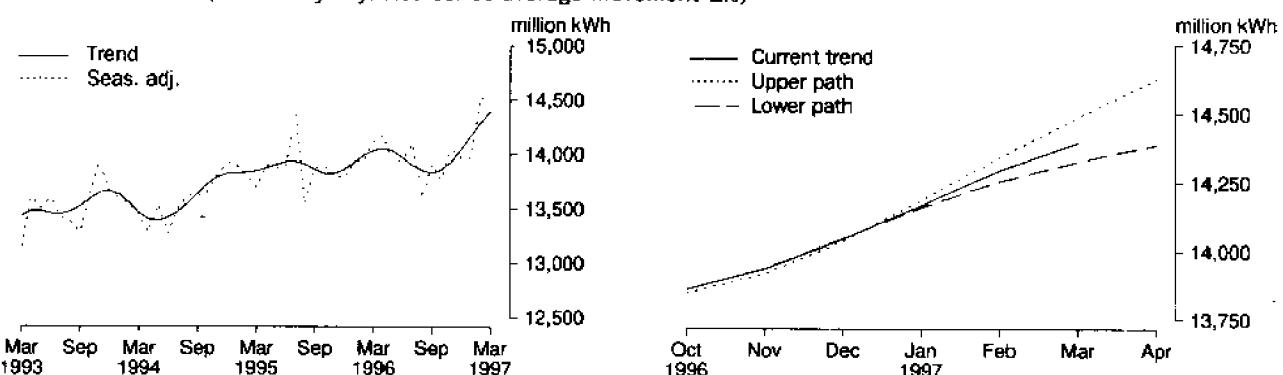
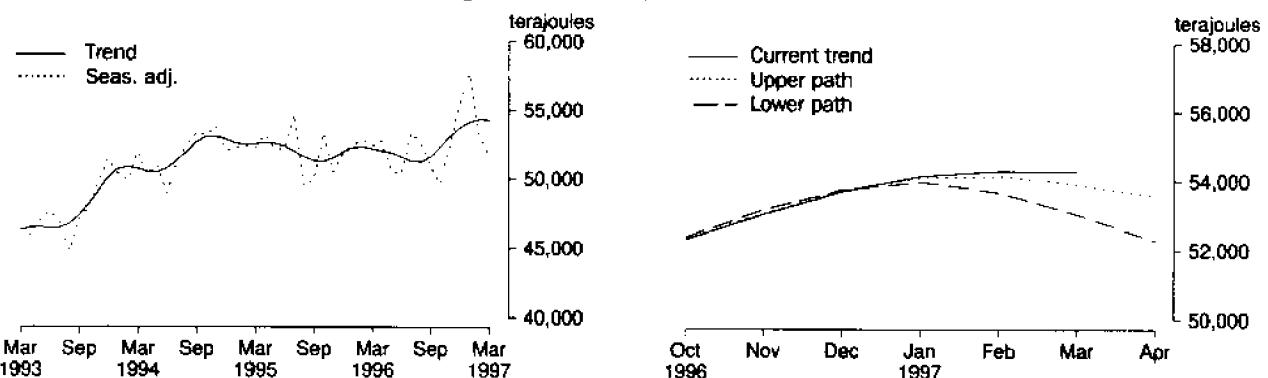
#### M45 WATER HEATERS (seasonally adjusted series average movement 7%)



For footnotes see page 23.

## Longer term trend(a)

## Short-term sensitivity analysis

**M46 DOMESTIC CLOTHES WASHING MACHINES** (seasonally adjusted series average movement 9%)**M47 ELECTRIC MOTORS** (seasonally adjusted series average movement 7%)**M48 ELECTRICITY** (seasonally adjusted series average movement 1%)**M49 GAS** (seasonally adjusted series average movement 3%)

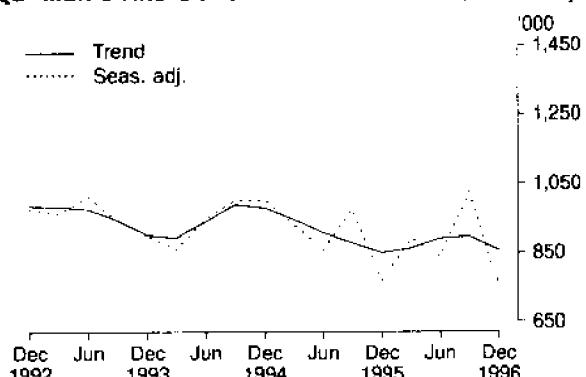
For footnotes see page 23.

# Q

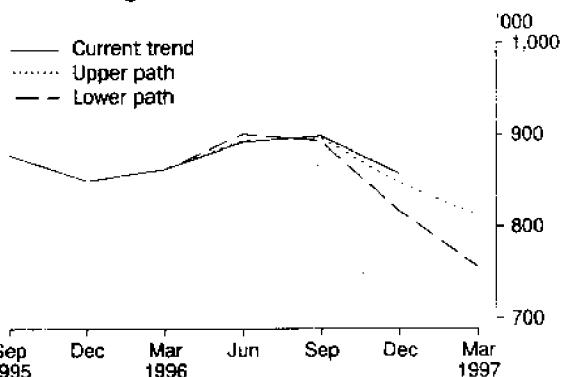
## QUARTERLY PRODUCTION

### Longer term trend (a)

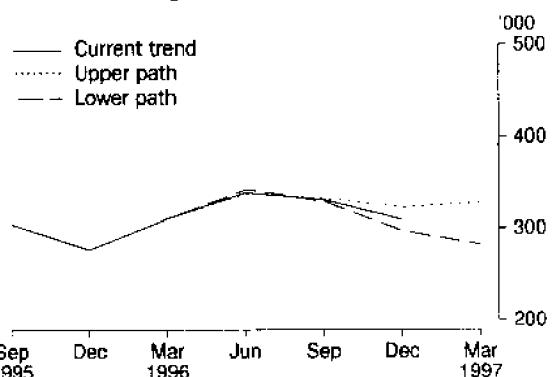
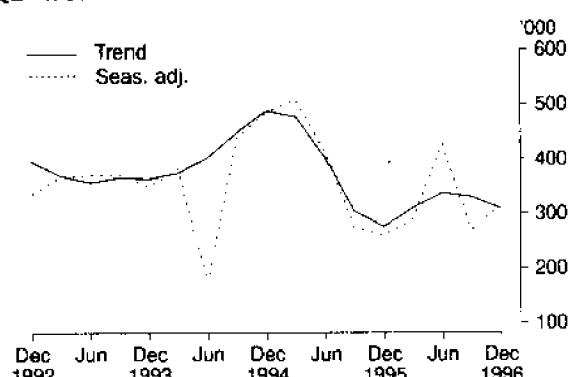
#### **Q1 MEN'S AND BOYS' LONG TROUSERS** (seasonally adjusted series average movement 7%)



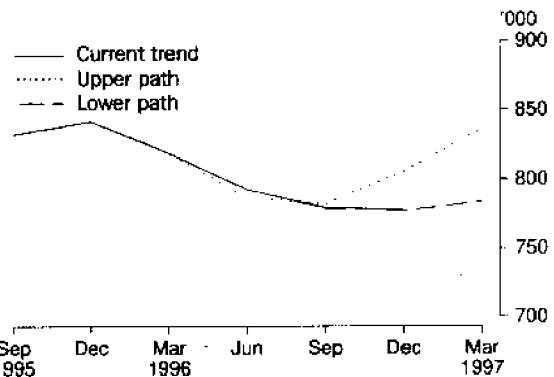
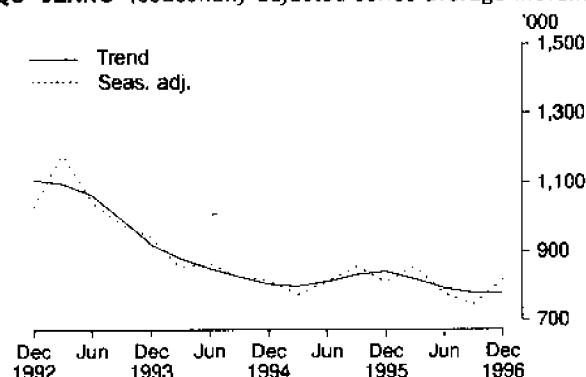
### Short-term sensitivity analysis



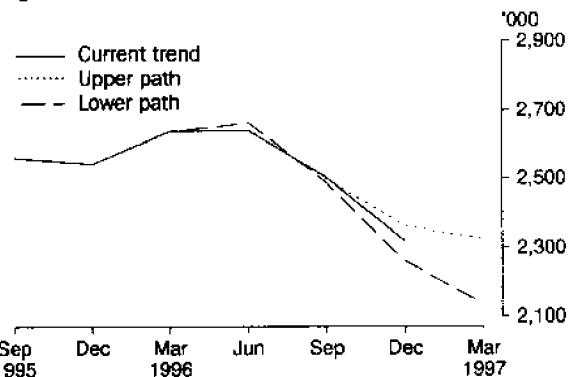
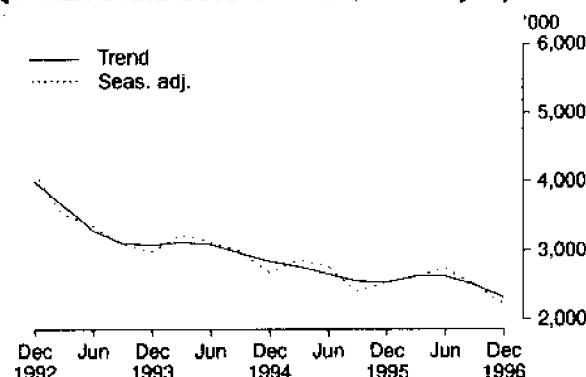
#### **Q2 WOMEN'S AND GIRLS' LONG TROUSERS** (seasonally adjusted series average movement 14%)



#### **Q3 JEANS** (seasonally adjusted series average movement 6%)



#### **Q4 MEN'S AND BOYS' SHIRTS** (seasonally adjusted series average movement 8%)



For footnotes see page 24.

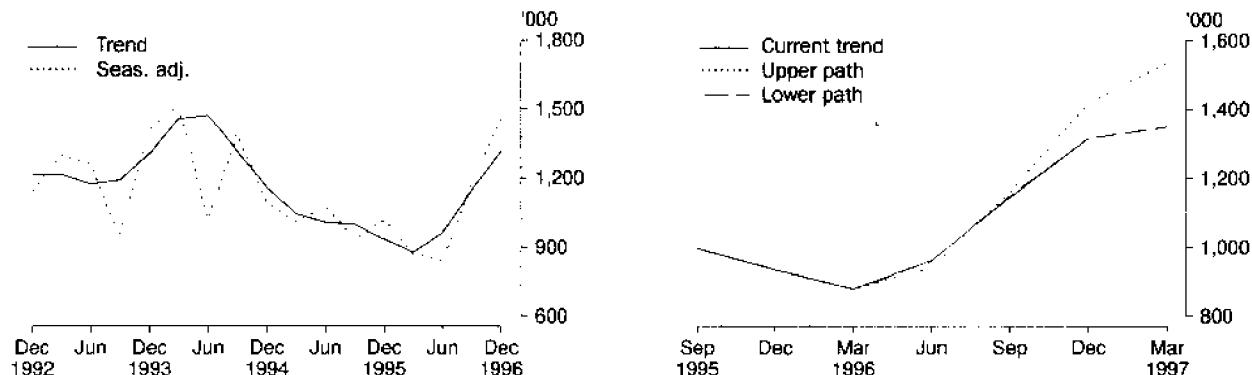
# Q

## QUARTERLY PRODUCTION *continued*

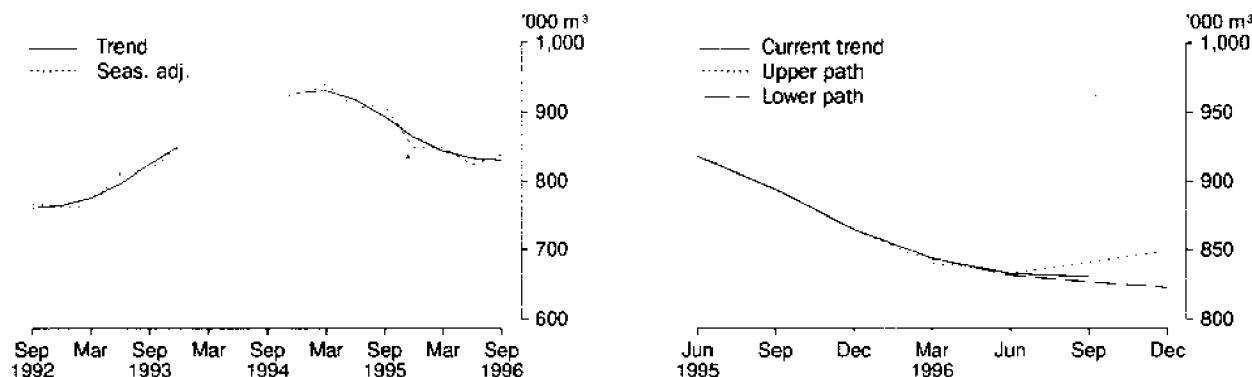
### Longer term trend(a)

### Short-term sensitivity analysis

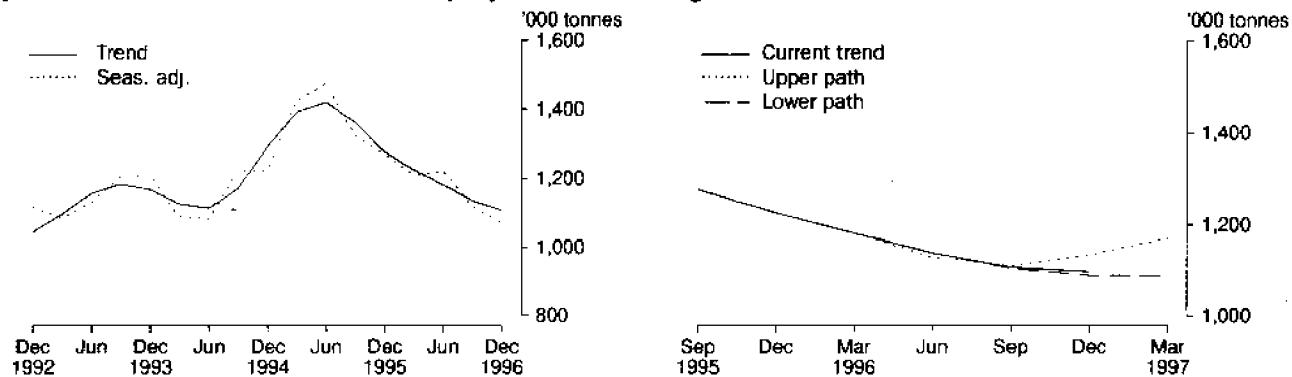
#### **Q5 WOMEN'S SHIRTS AND BLOUSES(c) (seasonally adjusted series average movement 12%)**



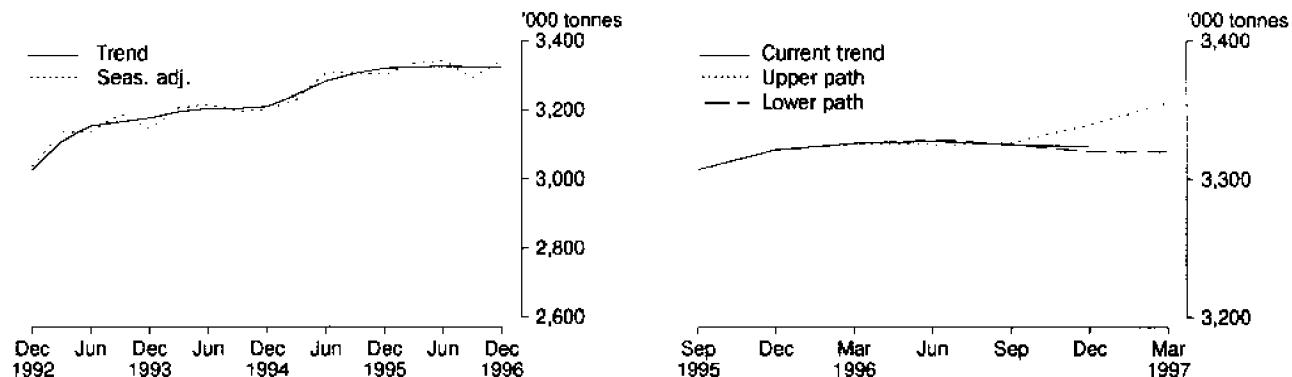
#### **Q6 UNDRESSED SAWN TIMBER(b) (seasonally adjusted series average movement 3%)**



#### **Q7 HARDWOOD WOODCHIPS (seasonally adjusted series average movement 7%)**



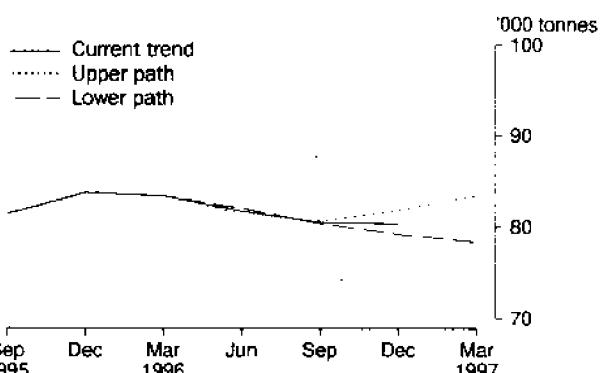
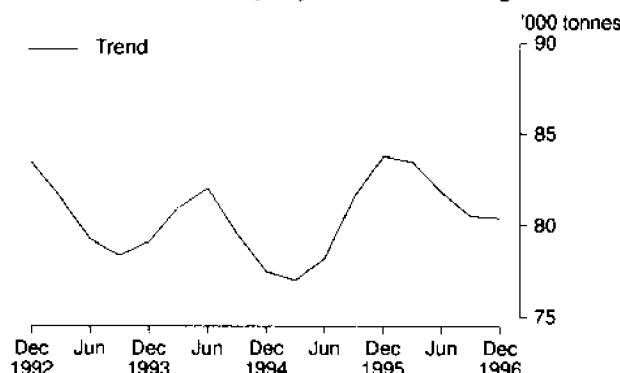
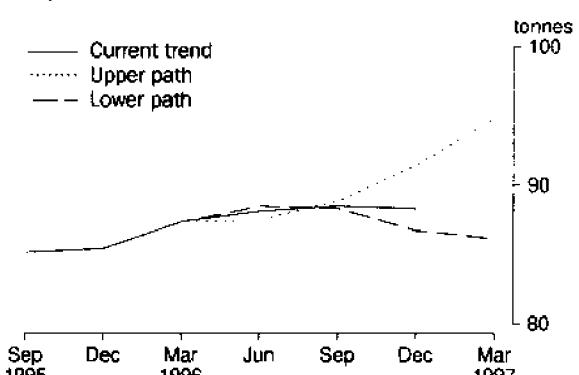
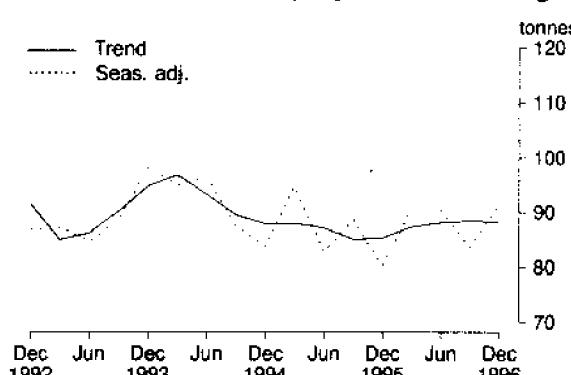
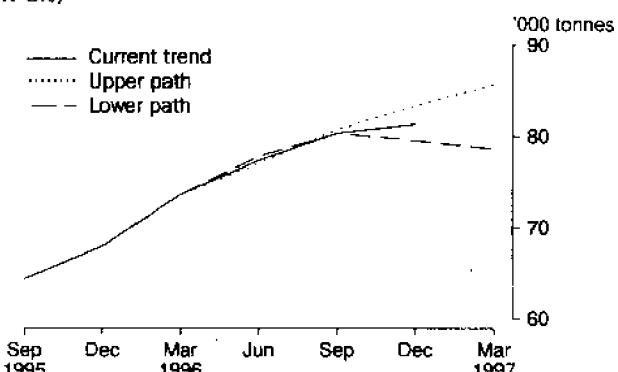
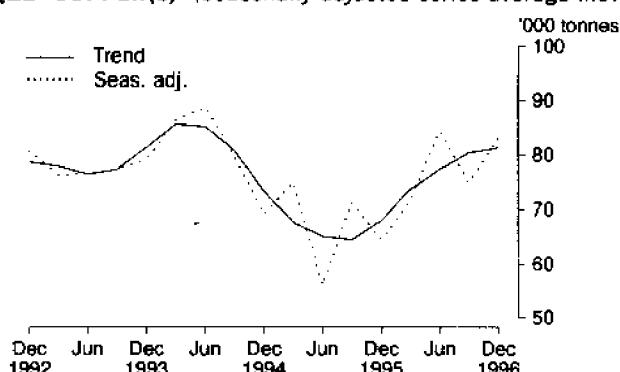
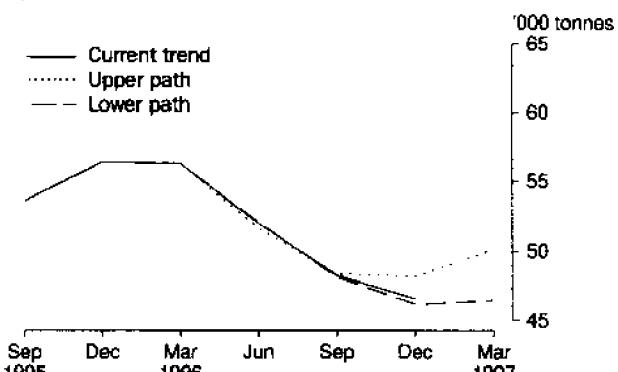
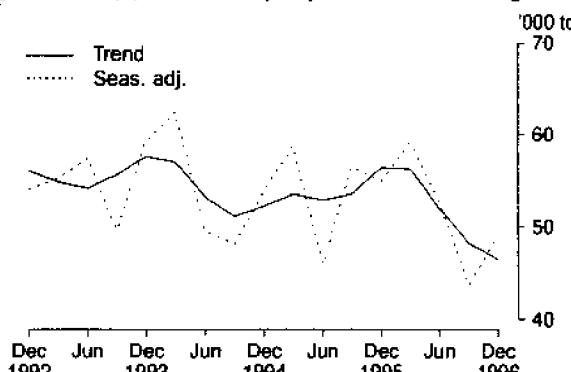
#### **Q8 ALUMINA(b) (seasonally adjusted series average movement 1%)**



For footnotes see page 24.

## Longer term trend (a)

## Short-term sensitivity analysis

**Q9 ZINC(b) (seasonally adjusted series average movement 6%)****Q10 SILVER(b) (seasonally adjusted series average movement 9%)****Q11 COPPER(b) (seasonally adjusted series average movement 8%)****Q12 LEAD(b) (seasonally adjusted series average movement 7%)**

For footnotes see page 24.

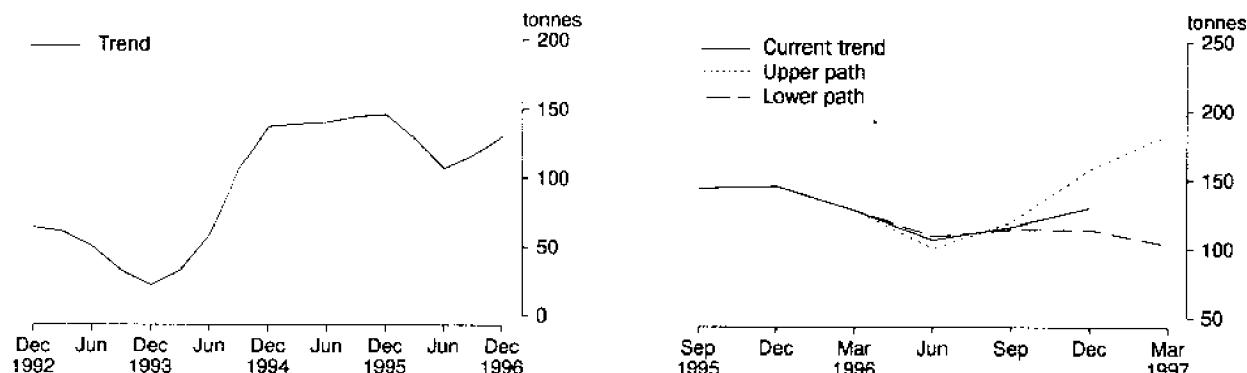
# Q

## QUARTERLY PRODUCTION *continued*

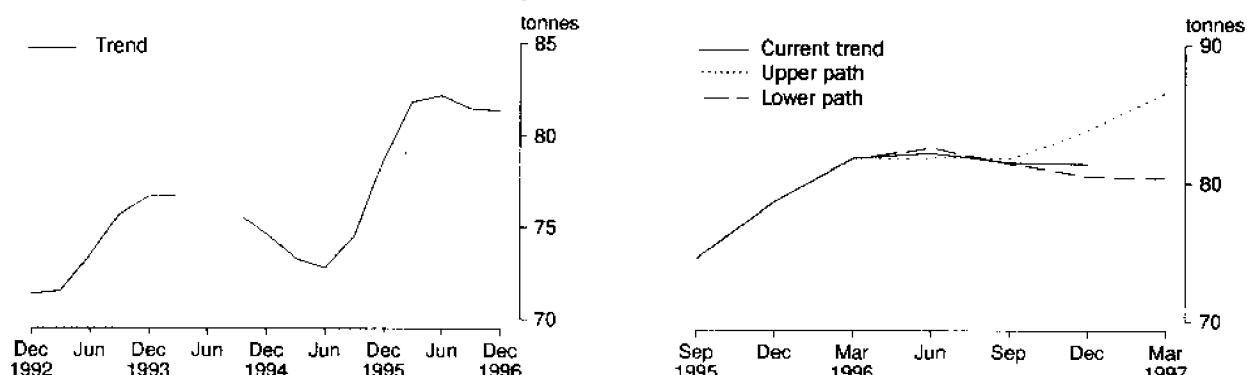
### Longer term trend(a)

### Short-term sensitivity analysis

**Q13 TIN(b)** (seasonally adjusted series average movement 52%)



**Q14 GOLD(b)** (seasonally adjusted series average movement 7%)



For footnotes see page 24.



No.	Item and unit/Series(a)	1996.....										Percentage changes between latest month shown and.....	
		1996.....					1997.....					prev. month	same month
		July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	prev. year		
<b>M16 Wool yarn</b> (tonnes)	Original	1 646	1 577	1 569	1 847	1 613	1 344	1 032	1 554	1 448	-6.9	-14.1	
	Seasonally adjusted	1 437	1 440	1 464	1 524	1 590	1 631	1 467	1 552	1 677	8.1	-4.7	
	Trend	1 475	1 469	1 484	1 511	1 537	1 559	1 575	1 590	1 604	0.8	-4.6	
<b>M17 Wool woven fabric</b> ('000 m <sup>2</sup> )	Original	487	449	566	581	723	450	470	555	469	-17.3	-24.5	
	Seasonally adjusted	473	421	633	495	692	541	717	487	461	-5.4	-14.5	
	Trend	500	520	550	577	594	597	584	561	527	-6.0	1.1	
<b>M18 Textile floor coverings</b> ('000 m <sup>2</sup> )	Original	3 784	3 684	3 791	4 434	4 079	3 429	2 449	3 762	3 661	-2.7	-5.1	
	Seasonally adjusted	3 684	3 345	3 650	3 841	3 609	3 943	3 771	3 653	3 867	5.8	2.9	
	Trend	3 513	3 555	3 622	3 691	3 740	3 771	3 789	3 803	3 795	-0.2	2.7	
<b>M19 Footwear</b> ('000 pairs)	Original	1 229	1 314	1 248	1 355	1 161	828	713	1 246	1 129	-9.4	-15.6	
	Seasonally adjusted	1 195	1 195	1 146	1 180	1 110	969	1 275	1 205	1 021	-15.3	-15.7	
	Trend	1 192	1 175	1 156	1 141	1 133	1 130	1 128	1 125	1 122	-0.3	-8.8	
<b>M21 Newsprint</b> (tonnes)	Original	38 160	39 422	33 716	31 685	36 428	33 424	34 772	34 786	34 630	-0.4	-4.1	
	Seasonally adjusted	38 449	40 315	35 018	32 976	36 886	33 245	33 867	34 100	34 439	1.0	-4.3	
	Trend	37 606	37 323	36 580	35 584	34 750	34 261	34 027	33 906	34 098	0.6	-6.8	
<b>M22 Wood pulp</b> (tonnes)	Original	74 031	85 486	71 242	75 903	92 247	75 439	81 657	76 853	80 922	5.3	2.7	
	Seasonally adjusted	76 196	80 106	71 744	81 984	87 169	78 890	79 265	79 306	78 603	-0.9	2.2	
	Trend	78 541	78 432	78 864	79 657	80 514	80 774	80 468	79 918	79 584	-0.4	-1.7	
<b>M23 Unlaminated particle board</b> ('000 m <sup>3</sup> )	Original	63	62	65	78	74	50	47	65	63	-3.6	-15.3	
	Seasonally adjusted	61	58	61	65	70	60	79	68	61	-10.9	-14.4	
	Trend	63	62	62	64	66	68	69	68	68	-1.2	-2.0	
<b>M25 Paperboard containers</b> ('000 tonnes)	Original	99 703	94 662	95 312	109 883	103 329	86 920	87 546	92 407	88 653	-4.1	-3.4	
	Seasonally adjusted	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
	Trend	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
<b>M26 Automotive gasoline(b)</b> (megalitres)	Original	1 694	1 438	1 464	1 416	1 439	1 523	1 643	n.y.a.	n.y.a.	7.9	5.3	
	Seasonally adjusted	1 585	1 443	1 495	1 432	1 530	1 496	1 563	n.y.a.	n.y.a.	4.5	5.5	
	Trend	1 528	1 506	1 492	1 488	1 494	1 505	1 520	n.y.a.	n.y.a.	1.0	-0.2	
<b>M27 Fuel oil(b)</b> (megalitres)	Original	194	93	147	119	164	139	173	n.y.a.	n.y.a.	24.4	33.5	
	Seasonally adjusted	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	
	Trend	142	139	138	139	142	146	151	n.y.a.	n.y.a.	3.0	-1.6	
<b>M28 Aviation turbine fuel(b)</b> (megalitres)	Original	443	369	447	502	481	401	505	n.y.a.	n.y.a.	26.0	11.7	
	Seasonally adjusted	456	366	440	446	499	355	490	n.y.a.	n.y.a.	38.0	13.6	
	Trend	411	419	428	436	442	447	449	n.y.a.	n.y.a.	0.6	6.7	
<b>M29 Automotive diesel oil(b)</b> (megalitres)	Original	1 078	895	1 103	1 032	1 111	1 135	1 198	n.y.a.	n.y.a.	5.6	14.2	
	Seasonally adjusted	1 029	884	1 127	1 032	1 123	1 063	1 164	n.y.a.	n.y.a.	9.5	14.3	
	Trend	1 033	1 034	1 041	1 058	1 081	1 105	1 131	n.y.a.	n.y.a.	2.3	11.1	
<b>M30 Plastics in primary forms</b> ('000 tonnes)	Original	100	108	100	96	92	94	98	100	110	9.6	1.6	
	Seasonally adjusted	88	107	96	86	96	103	108	104	105	0.9	-1.1	
	Trend	96	94	94	96	98	100	103	105	107	2.3	3.3	
<b>M31 Rigid PVC tubes, pipes and hoses</b> (tonnes)	Original	9 439	8 944	6 847	7 186	7 653	5 993	4 407	8 219	7 853	-4.4	-14.9	
	Seasonally adjusted	8 021	8 392	7 233	7 281	7 496	6 445	7 316	7 765	7 404	-4.6	-15.9	
	Trend	8 143	7 868	7 585	7 363	7 223	7 186	7 224	7 291	7 419	1.8	-9.2	
<b>M32 Polyethylene bottles up to two litres</b> (million)	Original	130	147	158	161	189	198	163	171	180	5.1	3.6	
	Seasonally adjusted	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
	Trend	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	

For footnotes see page 23.



## 1

MONTHLY PRODUCTION *continued*

No.	Item and unit/Series(a)	1996.....										1997.....			Percentage changes between latest month shown and.....	
		July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	prev. month	same month	prev. year			
<b>M48</b>	<b>Electricity (million kWh)</b>															
	Original	15 343	14 668	13 730	13 733	13 460	13 569	13 811	13 421	13 778	2.7	-1.9				
	Seasonally adjusted	14 101	13 602	13 911	13 770	14 046	13 969	13 976	14 519	14 474	-0.3	2.5				
	Trend	13 904	13 852	13 830	13 859	13 934	14 044	14 169	14 296	14 395	0.7	2.6				
<b>M49</b>	<b>Gas (terajoules)</b>															
	Original	65 895	62 709	55 103	50 582	48 591	47 218	46 011	42 818	46 489	8.6	-1.5				
	Seasonally adjusted	53 308	52 420	50 874	49 609	52 435	55 426	57 643	53 032	51 683	-2.5	-1.3				
	Trend	51 306	51 264	51 627	52 298	53 046	53 701	54 146	54 299	54 265	-0.1	4.1				

(a) Trend estimates shown may have been revised. See paragraph 14 of the Explanatory notes on page 27.

(b) Source: non-ABS. See paragraphs 2 and 6 to 8 of the Explanatory notes on page 26.

(c) This data item comprises production of BHP Steel only.

No.	Item and unit/Series(a)	1994...									Percentage changes between latest quarter shown and....		
		Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	prev. quarter	same prev. year	
<b>Q1</b>	<b>Men's and boys' long trousers ('000)</b>												
	Original	987	822	944	1 013	753	788	923	1 065	740	-30.5	-1.6	
	Seasonally adjusted	1 006	932	858	977	768	893	839	1 027	756	-26.4	-1.6	
	Trend	982	947	907	879	851	863	893	899	859	-4.4	1.0	
<b>Q2</b>	<b>Women's and girls' long trousers ('000)</b>												
	Original	380	628	443	252	202	359	458	247	243	-1.6	20.1	
	Seasonally adjusted	486	510	414	275	261	288	429	271	314	16.1	20.5	
	Trend	489	478	403	305	277	311	339	331	310	-6.5	11.9	
<b>Q3</b>	<b>Jeans ('000)</b>												
	Original	770	641	887	979	764	706	851	852	771	-9.5	0.9	
	Seasonally adjusted	817	777	813	857	810	858	779	746	817	9.5	0.9	
	Trend	806	799	812	833	842	819	793	780	778	-0.3	-7.6	
<b>Q4</b>	<b>Men's and boys' shirts ('000)</b>												
	Original	2 900	2 347	2 554	2 841	2 741	2 179	2 529	2 974	2 363	-20.5	-13.8	
	Seasonally adjusted	2 688	2 859	2 772	2 404	2 557	2 632	2 741	2 519	2 212	-12.2	-13.5	
	Trend	2 844	2 767	2 667	2 561	2 542	2 638	2 641	2 503	2 319	-7.3	-8.8	
<b>Q5</b>	<b>Women's shirts and blouses(c) ('000)</b>												
	Original	1 218	806	864	1 202	1 132	697	674	1 511	1 619	7.2	43.1	
	Seasonally adjusted	1 094	1 009	1 076	935	1 017	874	835	1 177	1 456	23.7	43.2	
	Trend	1 158	1 047	1 006	998	935	880	963	1 146	1 317	14.9	40.9	
<b>Q6</b>	<b>Undressed sawn timber(b) ('000 m<sup>3</sup>)</b>												
	Original	916	883	925	958	840	799	840	882	n.y.a.	5.0	-7.9	
	Seasonally adjusted	924	940	907	911	850	849	825	838	n.y.a.	1.6	-8.0	
	Trend	928	932	918	894	865	844	833	831	n.y.a.	-0.2	-7.1	
<b>Q7</b>	<b>Hardwood woodchips ('000 tonnes)</b>												
	Original	1 417	1 402	1 332	1 334	1 203	1 163	1 128	1 128	1 128	—	-6.2	
	Seasonally adjusted	1 424	1 477	1 324	1 269	1 211	1 224	1 120	1 073	1 136	5.9	-6.2	
	Trend	1 392	1 420	1 364	1 277	1 226	1 183	1 138	1 108	1 097	-0.9	-10.5	
<b>Q8</b>	<b>Alumina(b) ('000 tonnes)</b>												
	Original	3 203	3 203	3 299	3 348	3 297	3 311	3 336	3 334	3 337	0.1	1.2	
	Seasonally adjusted	3 204	3 232	3 308	3 307	3 302	3 337	3 345	3 293	3 344	1.6	1.3	
	Trend	3 210	3 245	3 284	3 307	3 321	3 326	3 328	3 325	3 324	—	0.1	
<b>Q9</b>	<b>Zinc(b) ('000 tonnes)</b>												
	Original	78	72	81	82	85	81	82	82	81	-1.2	-4.7	
	Seasonally adjusted	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	
	Trend	77	77	78	82	84	83	82	81	80	-0.1	-4.0	
<b>Q10</b>	<b>Silver(b) (tonnes)</b>												
	Original	79	93	89	89	75	90	97	84	85	1.2	13.3	
	Seasonally adjusted	84	95	83	89	80	91	90	84	91	9.0	13.8	
	Trend	88	88	87	85	85	87	88	89	88	-0.2	3.4	
<b>Q11</b>	<b>Copper(b) ('000 tonnes)</b>												
	Original	68	71	55	78	63	68	83	82	81	-1.2	28.6	
	Seasonally adjusted	69	75	56	71	64	72	84	75	83	11.0	29.0	
	Trend	73	68	65	64	68	74	77	80	81	1.2	19.6	
<b>Q12</b>	<b>Lead(b) ('000 tonnes)</b>												
	Original	55	53	49	57	56	54	56	44	50	13.6	-10.7	
	Seasonally adjusted	54	59	46	56	55	59	53	44	49	12.2	-10.7	
	Trend	52	54	53	54	56	56	52	48	47	-3.6	-17.4	
<b>Q13</b>	<b>Tin(b) (tonnes)</b>												
	Original	135	180	65	165	160	90	135	100	135	35.0	-15.6	
	Seasonally adjusted	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	
	Trend	136	138	140	144	145	128	107	116	130	11.5	-10.7	
<b>Q14</b>	<b>Gold(b) (tonnes)</b>												
	Original	71	74	74	75	75	85	83	81	81	0.2	7.6	
	Seasonally adjusted	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	
	Trend	75	73	73	74	79	82	82	81	81	-0.1	3.4	

(a) Trend estimates shown may have been revised. See paragraph 14 of the Explanatory notes on page 27.

(b) Source: non-ABS. See paragraphs 2 and 6 to 8 of the Explanatory notes on page 26.

(c) Improved coverage for this item has resulted in a break in series in December quarter 1996. For December quarter, this has resulted in the estimate of production being approximately 7% above what would have previously been reported. Revised estimates for previous quarters are not available.

## WHAT IF...? Revisions to Trend Estimates

### THE EFFECT OF NEW SEASONALLY ADJUSTED ESTIMATES

Each time new seasonally adjusted estimates become available, trend estimates are revised (see paragraphs 13 to 15 of the Explanatory notes, on page 27).

#### TREND REVISIONS

The example in the table below shows four illustrative scenarios and the consequent revisions to previous trend estimates of gas production.

- 1 The April seasonally adjusted estimate is the same as the March estimate.
- 2 The April seasonally adjusted estimate is higher than the March estimate by 3%.
- 3 The April seasonally adjusted estimate is lower than the March estimate by 3%.
- 4 The April seasonally adjusted estimate results in a revised March trend estimate which is identical to the new April trend estimate.

The percentage change of 3% was chosen because it currently represents the average absolute monthly percentage change for this series over the last thirty years.

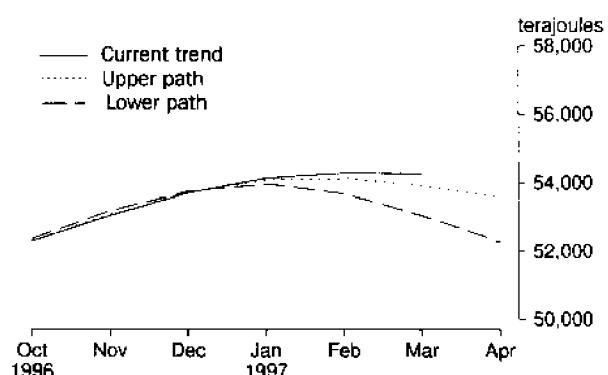
#### M49 GAS (terajoules)

##### WHAT IF NEXT MONTH'S SEASONALLY ADJUSTED ESTIMATE IS:

	TREND as PUBLISHED	1 i.e. the same as Mar 1997	2 i.e. rises by 3%	3 i.e. falls by 3%	4 i.e. same trend for Mar and Apr
1997		51 683	53 338	50 029	55 641
January	54 146	54 043	54 117	53 969	54 220
February	54 299	53 909	54 154	53 664	54 495
March	54 265	53 480	53 942	53 018	54 584
April (new)	—	52 198	53 615	52 221	54 584

Of these series, the trend as published ('Current trend'), trend scenario 2 ('Upper path') and trend scenario 3 ('Lower path') are shown in the 'Short-term sensitivity analysis' graphs, as this example shows.

#### SHORT-TERM SENSITIVITY ANALYSIS OF GAS



# EXPLANATORY NOTES

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## INTRODUCTION

**1** This publication presents monthly and quarterly estimates of production of selected major manufacturing indicators for Australia.

## SCOPE AND COVERAGE

**2** Data presented in this publication are collected from a number of different sources. The prime source is the ABS surveys of manufacturing production. Data are also obtained from surveys undertaken by the Department of Primary Industries and Energy (DPIE), the Australian Bureau of Agricultural and Resource Economics (ABARE), the Australian Dairy Corporation (ADC), the Australian Tobacco Marketing Committee (until April 1995) and from ABS agriculture collections. Scope and coverage varies slightly depending on the source of the information.

**3** Where production statistics are collected by the ABS manufacturing production surveys, they are not collected from single establishment manufacturing businesses with less than four persons employed nor from establishments predominantly engaged in non-manufacturing activities but which may carry out some manufacturing in a minor way. However, in general, the contribution of these small producers to statistical aggregates is only marginal and data contained in this publication provide reliable information for the evaluation of movements in commodity production.

**4** The statistics on meat production include data collected from abattoirs and other major slaughtering establishments and include estimates of animals slaughtered on farms and by country butchers and other small slaughtering establishments for human consumption.

**5** The statistics on chicken meat have been collected from commercial poultry slaughtering establishments. Producers in Tasmania, the Northern Territory and the Australian Capital Territory and the very small producers are excluded from the collection.

**6** Data on the production of quarterly estimates of base metal production and sawn timber are obtained from the ABARE publication *Mineral Statistics* and as unpublished data.

**7** Data on the production of fuels are obtained from the DPIE Petroleum and Fisheries Division publication *Australian Petroleum Statistics*, from July 1996. Previously, these data were obtained from ABARE.

**8** Data on the production of cheese and butter are obtained from the ADC publication *Dairystats*. Data on tobacco and cigarettes produced were obtained from the Australian Tobacco Marketing Committee until April 1995.

## COMPARABILITY WITH OTHER ESTIMATES

**9** The ABS publishes quarterly estimates of constant price manufacturing production in the publication *Indexes of Industrial Production, Australia* (Cat. no. 8125.0). These estimates are shown as index numbers and are derived mainly from estimates of manufacturers' sales and stocks.

**10** The production statistics collected monthly and quarterly referred to in paragraph 1 account, in total, for less than half of the output of the manufacturing sector. For information on general trends in the manufacturing sector, refer to the publication referred to in paragraph 9.

## **E X P L A N A T O R Y   N O T E S   *continued***

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### **SEASONALLY ADJUSTED AND TREND ESTIMATES**

**11** Seasonally adjusted statistics are shown for most of the data items contained in this publication. In the seasonal adjustment, account has been taken not only of normal seasonal factors, but also where appropriate, of 'working day' effects (arising from the varying numbers of Sundays, Mondays, Tuesdays, etc. in the month) and the influence of Easter and Australia Day which may, in successive years, affect figures for different months or quarters. Details of the methods used in seasonally adjusting these series are available on request.

**12** Seasonal adjustment procedures do not aim to remove the irregular or non-seasonal influences which may be present in any particular month or quarter, such as the non-systematic effect of strikes, holiday shutdowns, providers' inconsistent reporting periods (where, for example, a 'month' may variously represent 4 or 5 weeks production), or other factors which vary with the prevailing demand for products. Irregular influences that are highly volatile can make it difficult to interpret the movement of the series even after seasonal adjustment.

**13** The smoothing of seasonally adjusted series to create trend estimates is a means of reducing the impact of the irregular component of the series. The trend estimates have been derived by applying a 13-term Henderson weighted moving average to the monthly and a 7-term moving average to the quarterly seasonally adjusted series. The 7- and 13-term Henderson averages (like all Henderson averages) are symmetric but, as the end of a time series is approached, asymmetric forms of the average are applied. Unlike the weights of the standard 7-term Henderson moving average, the surrogate weights employed with the quarterly data have been tailored to suit the particular characteristics of individual series.

**14** While the asymmetric weights enable trend estimates for recent months or quarters to be produced, it does result in revisions to the estimates for the most recent months or quarters as additional observations become available. Generally, subsequent revisions become smaller and after 3 months or 2 quarters have little impact on the series. There will also be revisions as a result of revisions to the original estimates and annual reviews of seasonal and 'working day' factors.

**15** Users may wish to refer to the ABS Information Paper *A Guide to Interpreting Time Series — Monitoring 'Trends': an overview* (Cat. no. 1348.0) for more detailed information on smoothing of seasonally adjusted time series data.

### **RELATED PUBLICATIONS**

**16** Other ABS publications which may be of interest are

- *Australian Mining Industry* (Cat. no. 8414.0) issued annually
- *Indexes of Industrial Production, Australia* (Cat. no. 8125.0) issued quarterly
- *Information Paper: Availability of Statistics Related to Manufacturing, 1996* (Cat. no. 8205.0), released on 21 March 1996
- *International Trade, Australia: FASTTRACCS Service — Hardcopy Reports* (Cat. no. 5461.0)
- *Livestock products, Australia* (Cat. no. 7215.0) issued monthly
- *Manufacturing Industry, Australia* (Cat. no. 8221.0) issued annually
- *Manufacturing Industry, Australia: Preliminary* (Cat. no. 8201.0) issued annually

## **E X P L A N A T O R Y N O T E S** *continued*

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- *Manufacturing Production, Australia: Principal Commodities Produced, 1989-90* (Cat. no. 8365.0)
- *Stocks, Selected Industry Sales and Expected Sales, Australia* (Cat. no. 5629.0) issued quarterly

### **UNPUBLISHED STATISTICS**

**17** Additional manufacturing production data are collected by the ABS through user funded surveys and are available to users as a special data service. These series are:

domestic refrigerators  
domestic deep-freezers  
water heaters  
clothes drying machines  
domestic cooking stoves, ovens and ranges  
space heaters  
mowers  
air conditioners  
audio cassette tapes  
audio compact discs  
liquid supply or production meters  
brass bars, rods and sections  
strip for retreading rubber tyres  
gas  
semi-trailers  
mineral waters and aerated waters  
starches, wheat gluten and glucose  
ham and bacon and canned meat  
ready mixed concrete  
concrete blocks, bricks and pavers  
roof tiles  
clay bricks  
Portland cement  
mattresses and mattress supports  
knitted underwear  
foundation garments  
footwear

A more detailed breakdown of most published series is also available as a special data service.

For further information, please call John Ridley on Sydney (02) 9268 4541.

### **CURRENT PUBLICATIONS**

**18** Current publications produced by the ABS are listed in the *Catalogue of Publications and Products* (Cat. no. 1101.0). The ABS also issues, on Tuesdays and Fridays, a *Release Advice* (Cat. no. 1105.0) which lists publications to be released in the next few days. The Catalogue and Release Advice are available from any ABS office.

## APPENDIX CLARIFICATION OF TERMS

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M1 Red meat	Includes veal, pork and buffalo.
M2 Chicken meat	Expressed in the dressed weight of whole birds, pieces and giblets.
M3 Cheese	Includes fresh cheeses such as ricotta, cottage, cream and quark.
M4 Butter	Includes direct butter oil.
M5 Flour of wheat or of meslin	Excludes self-raising flour.
M6 Prepared foods from cereals	Prepared foods obtained by the swelling or roasting of cereals or cereal products.
M7 Biscuits	Sweet biscuits and other biscuits, waffles, wafers and ginger bread; excludes dog biscuits and crispbread.
M8 Chocolate based confectionery	Includes confectionery containing chocolate; excludes chocolate biscuits and chocolate intended for further manufacturing.
M9 Other confectionery	Excludes chocolate based confectionery.
M10 Malt	Includes malt flour.
M11 Beer	Includes ale and stout; excludes low alcohol beer containing less than 1.15% but more than 0.5%, by volume of alcohol.
M12 Tobacco and cigarettes	Includes those containing tobacco substitutes.
M13 Man-made fibre woven fabric	Broadwoven fabric of, or predominantly of, synthetic staple fibres and/or filament.
M14 Cotton woven fabric	Broadwoven fabric of, or predominantly of, cotton; excludes gauze.
M15 Cotton yarn	Of, or predominantly of cotton, reported on a single yarn basis; excludes sewing thread.
M16 Wool yarn	Of, or predominantly of, wool or fine animal hair.
M17 Wool woven fabric	Broadwoven woollen and worsted fabrics of, or predominantly of, wool or fine animal hair.
M18 Textile floor coverings	Consisting of carpets, carpeting (excluding underfelt), floor rugs, mats and matting of, or predominantly of, textile materials.
M19 Footwear	Includes sports and waterproof footwear; excludes thongs.
M21 Newsprint	Excludes directory paper, mechanical and printing paper.
M22 Wood pulp	Expressed as air-dried weight.
M23 Unlaminated particle board	Particle or similar boards of wood or other ligneous materials whether or not for subsequent conversions to other purposes; excludes fibreboard and fibre paperboard.
M25 Paperboard containers	Includes corrugated paperboard and solid paperboard containers.
M26 Automotive gasoline	Produced by Australian refineries from imported and indigenous petroleum.

## APPENDIX CLARIFICATION OF TERMS *continued*

<b>M27 Fuel oil</b>	Oils derived from the distillation of petroleum which are generally used for domestic heating or fuelling furnaces; produced by Australian refineries from imported and indigenous petroleum.
<b>M28 Aviation turbine fuel</b>	Produced by Australian refineries from imported and indigenous petroleum.
<b>M29 Automotive diesel oil</b>	Produced by Australian refineries from imported and indigenous petroleum.
<b>M30 Plastics in primary forms</b>	Includes liquid, paste, powder, granules, flakes, blocks, irregular shapes, lumps and similar forms.
<b>M31 Rigid PVC tubes, pipes and hoses</b>	Plastic tubes, pipes and hose of rigid polyvinyl chloride. Excludes electrical conduit.
<b>M32 Polyethylene bottles up to two litres</b>	Plastic bottles of polyethylene, up to and including two litres.
<b>M33 Paint</b>	Includes architectural, decorative and industrial enamels and clears, heavy duty coatings and wood stains; marine coatings are included from January 1995.
<b>M34 Superphosphates</b>	Expressed in terms of single super phosphate (9% P equivalent).
<b>M35 Portland cement</b>	Includes blended portland cement. Excludes both portland cement clinker and portland cement used to make blended portland cement in-house.
<b>M36 Clay bricks</b>	Saleable bricks removed from kiln; excludes firebricks and bricks for other than structural purposes.
<b>M37 Ready mixed concrete</b>	Excludes production used or for use within the same business.
<b>M38 Basic iron, spiegeleisen and sponge iron</b>	In pigs, blocks and other primary forms; includes pig iron.
<b>M39 Blooms and slabs of iron or steel</b>	Continuous cast; includes steel in the molten state.
<b>M40 Insulated wire</b>	Includes cables and other insulated electrical conductors; excludes coaxial cables and automotive low voltage wire and ignition wiring sets.
<b>M41 Cars and station wagons</b>	Cars and station wagons for less than 10 persons; excludes mini-buses, passenger mini-vans.
<b>M42 Vehicles for goods and materials</b>	Excludes off-highway trucks, fork lift trucks and semi-trailers.
<b>M43 Telephones</b>	Excludes keyphones.
<b>M44 Domestic refrigerators</b>	One and two door models, includes combination refrigerator freezers.
<b>M45 Water heaters</b>	Includes solar.
<b>M46 Domestic clothes washing machines</b>	Of a dry linen capacity not exceeding 10 kg.
<b>M47 Electric motors</b>	Includes direct current generators; excludes motors and generators for motor vehicles and aircraft.
<b>M48 Electricity</b>	Excludes purchases or transfers in of electricity.

## APPENDIX CLARIFICATION OF TERMS *continued*

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M49 Gas	Gas (including natural gas) available for issue through mains. From July 1996, includes gas production for distribution via natural gas pipelines which service a single user.
Q1 Men's and boys' long trousers	Excludes jeans and waterproof trousers and trousers made as part of a complete suit.
Q2 Women's and girls' long trousers	Excludes jeans and waterproof trousers.
Q3 Jeans	Men's, women's, boys' and girls' jeans; excludes shorts.
Q4 Men's and boys' shirts	Excludes sweatshirts and nightshirts.
Q5 Women's shirts and blouses	Excludes sweatshirts and nightshirts.
Q6 Undressed sawn timber	Expressed in terms of green off saw volumes.
Q7 Hardwood woodchips	Expressed as greenweight; excludes chips which are not sold or are used in own works.
Q8 Alumina	Aluminium oxide.
Q9 Zinc	Primary origin only.
Q10 Silver	Refined.
Q11 Copper	Primary origin only.
Q12 Lead	Includes lead content of lead from primary sources.
Q13 Tin	Primary origin only.
Q14 Gold	From primary and secondary sources.

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