



Australian
Bureau of
Statistics

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MANUFACTURING PRODUCTION, AUSTRALIA NOVEMBER 1995

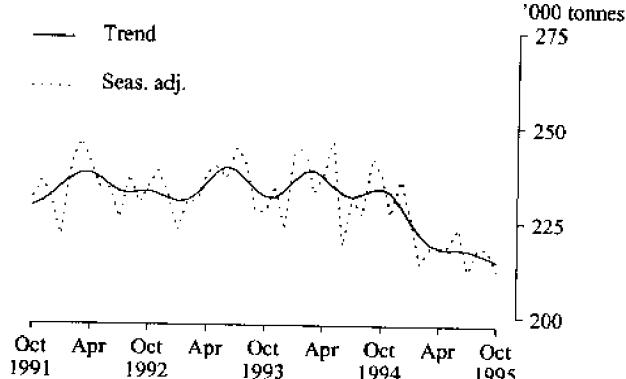
NOTES

This publication presents monthly and quarterly estimates of selected major indicators of manufacturing production for Australia. There are two graphs shown below for each 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.

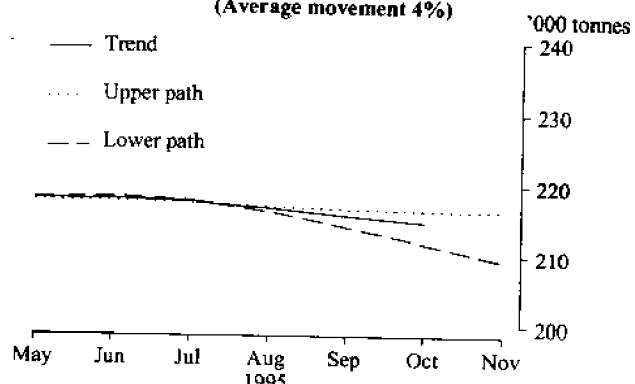
W. McLennan
Australian Statistician

PRODUCTION STATISTICS, AUSTRALIA: LONGER TERM TRENDS(a) AND SHORT TERM SENSITIVITY ANALYSIS

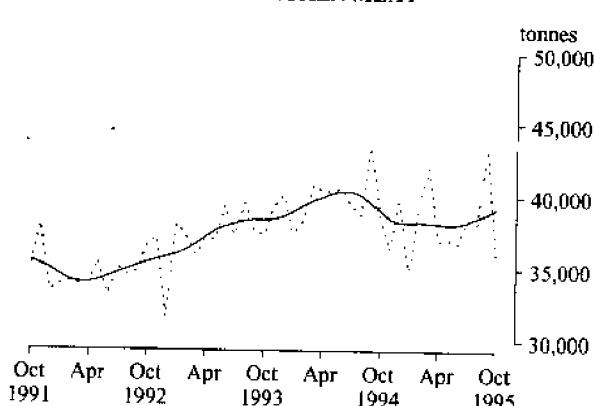
M1. RED MEAT



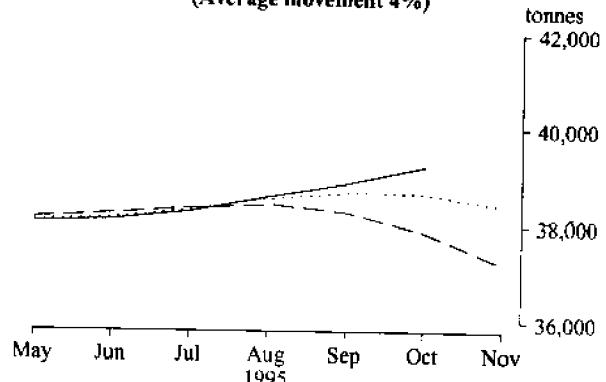
M1. RED MEAT (Average movement 4%)



M2. CHICKEN MEAT



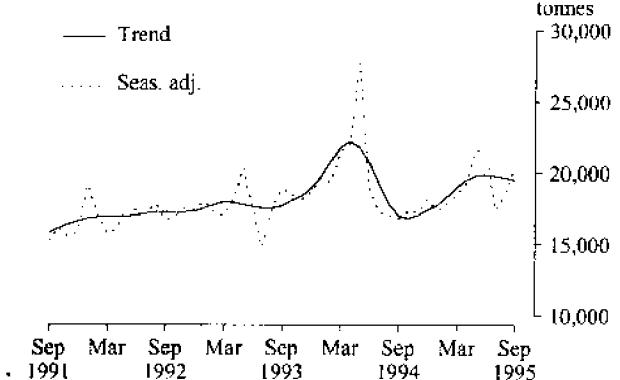
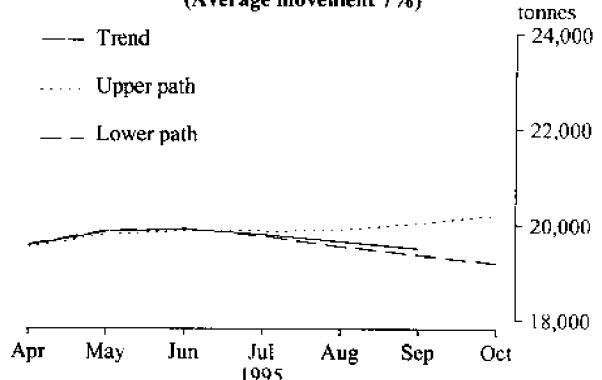
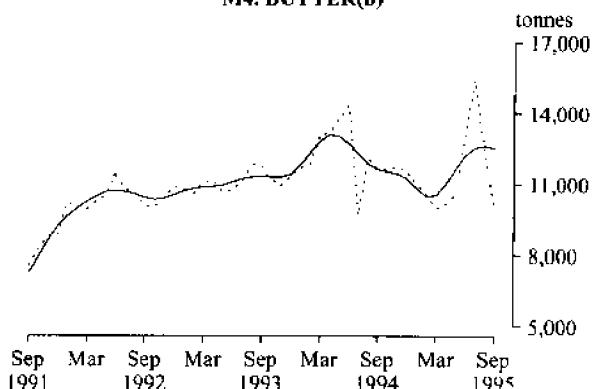
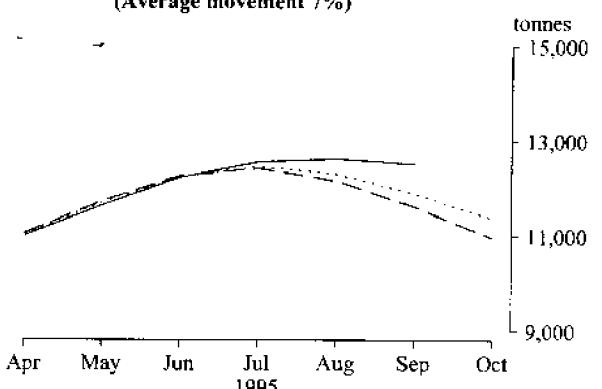
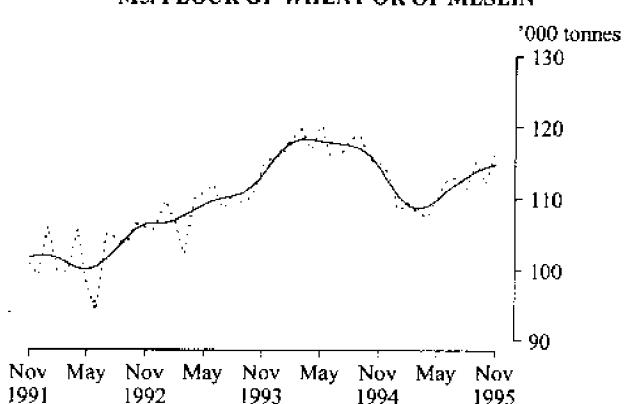
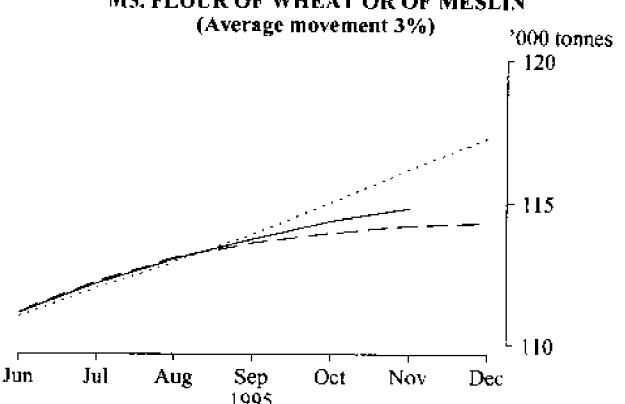
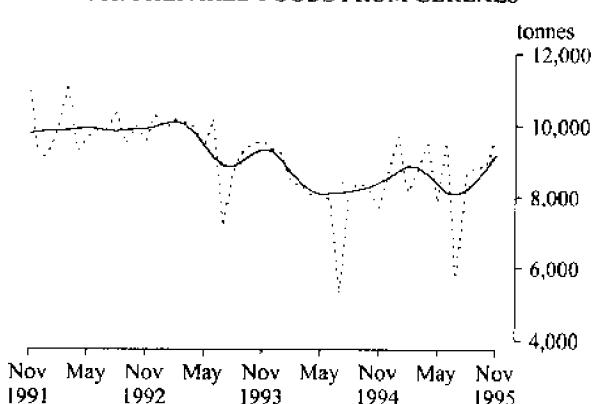
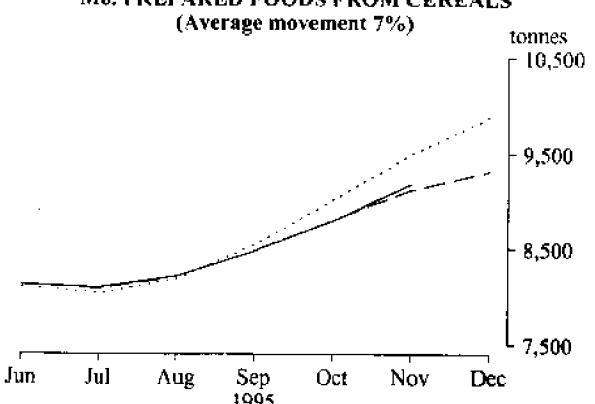
M2. CHICKEN MEAT (Average movement 4%)

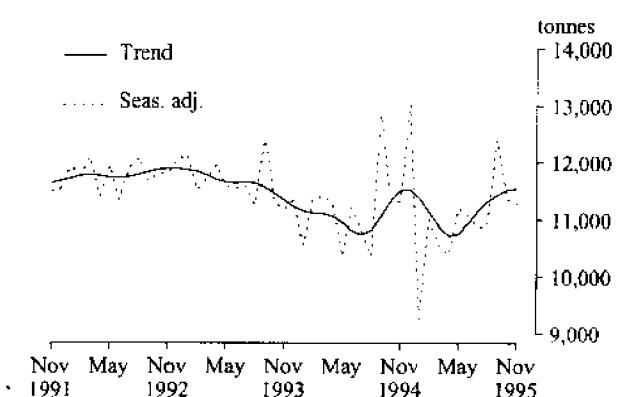
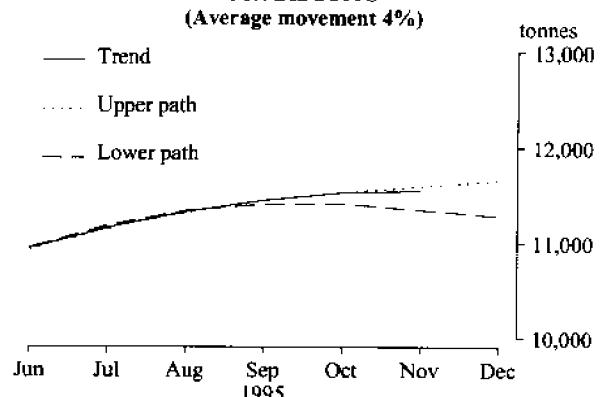
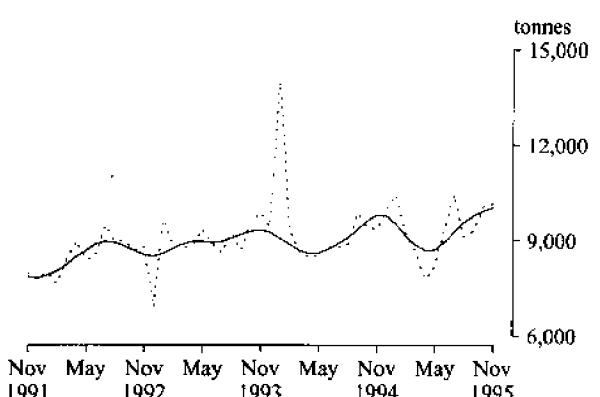
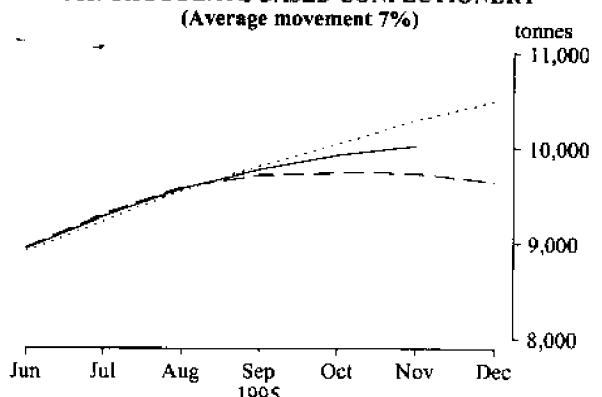
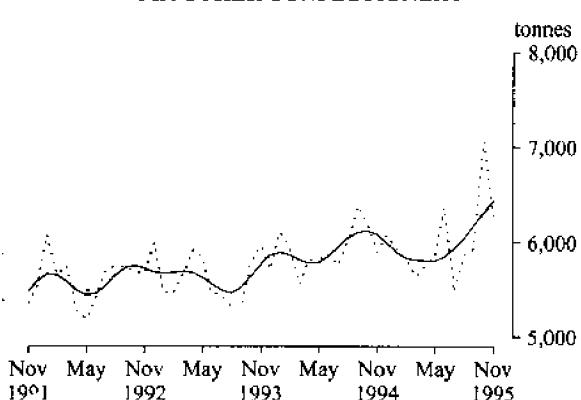
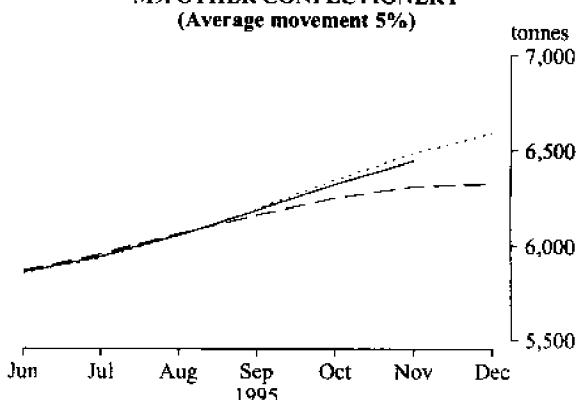
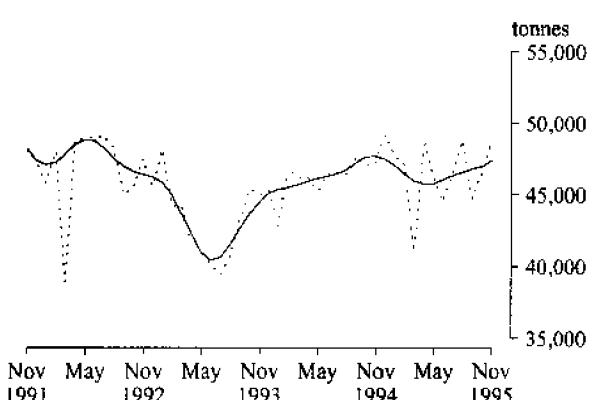
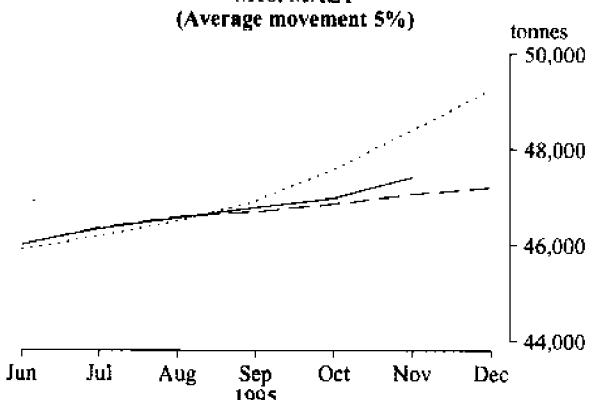


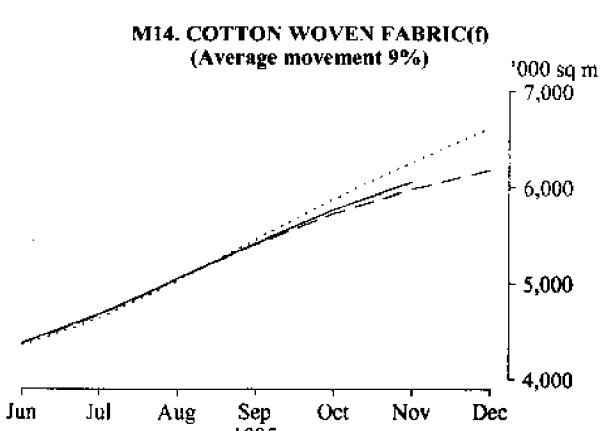
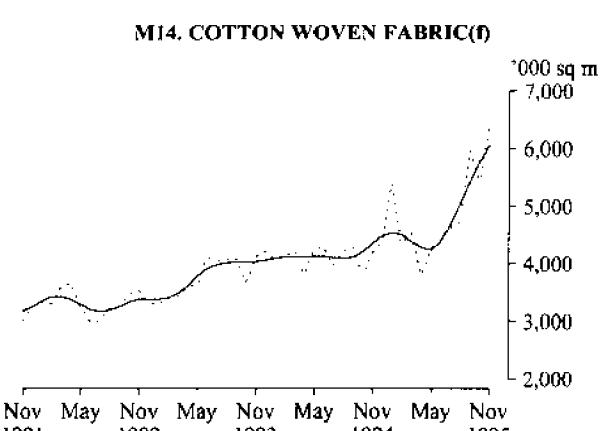
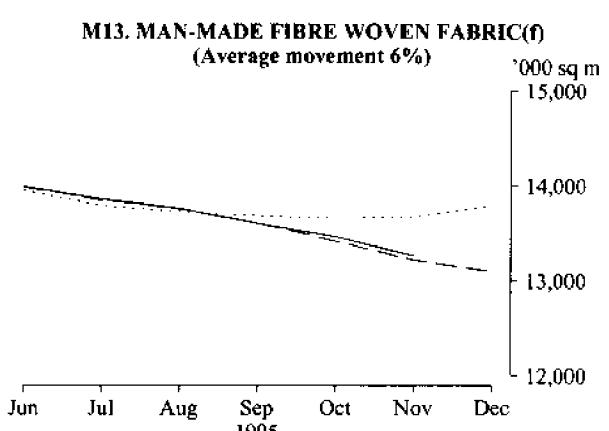
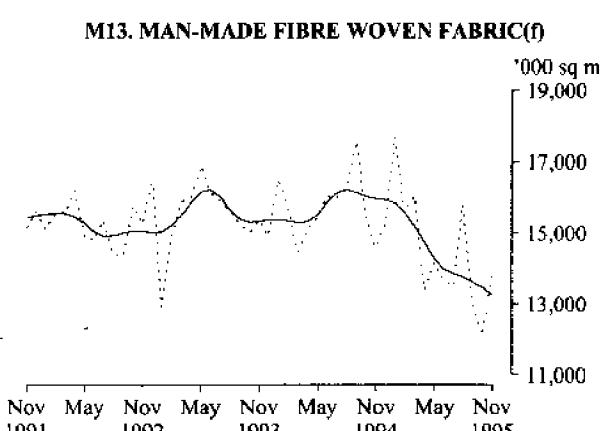
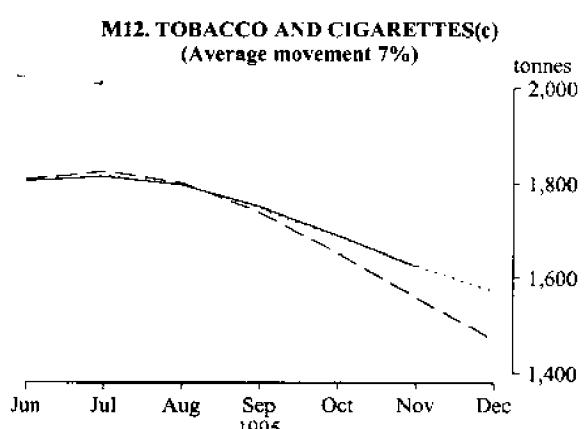
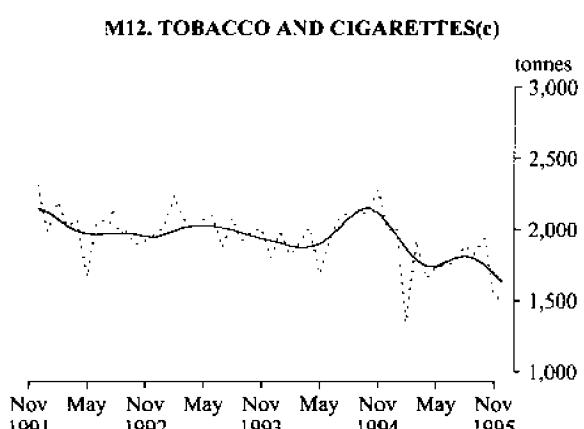
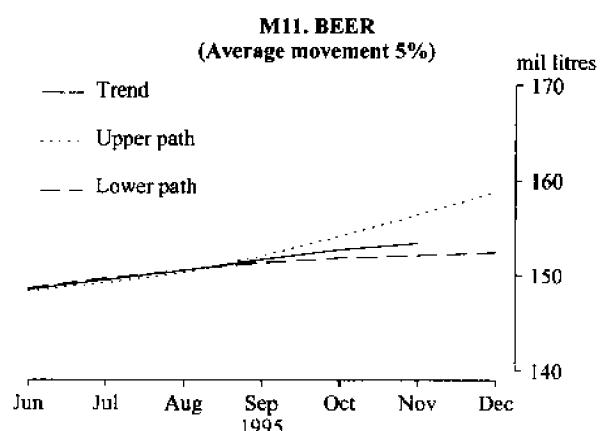
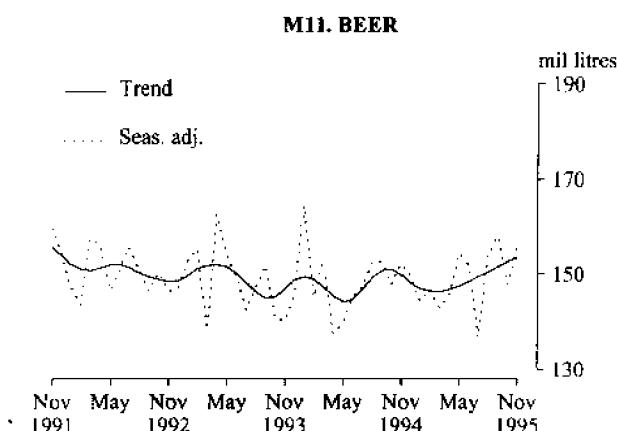
For footnotes see end of tables.

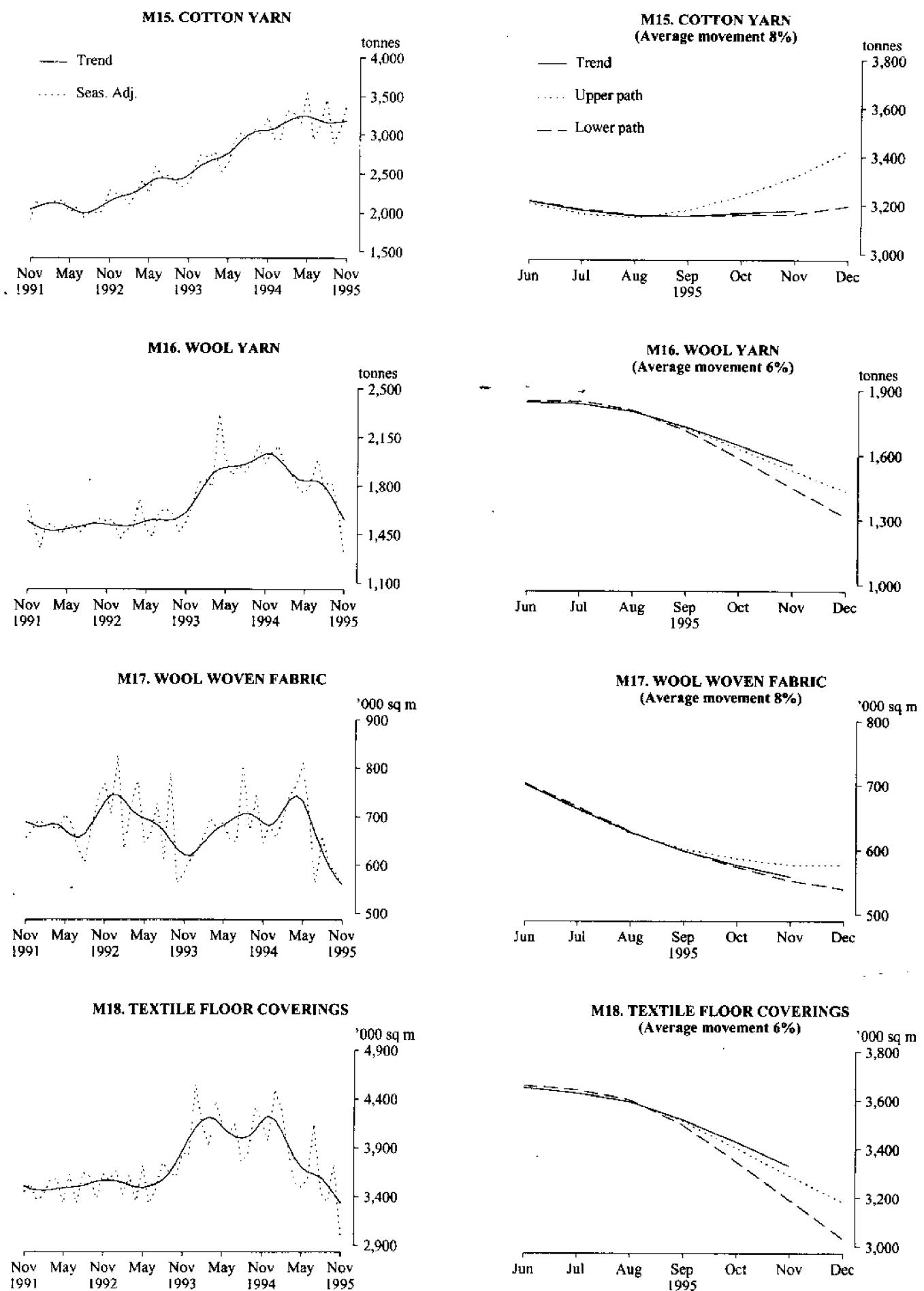
INQUIRIES

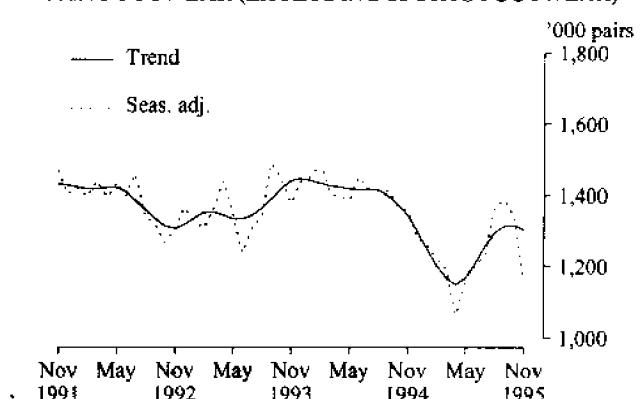
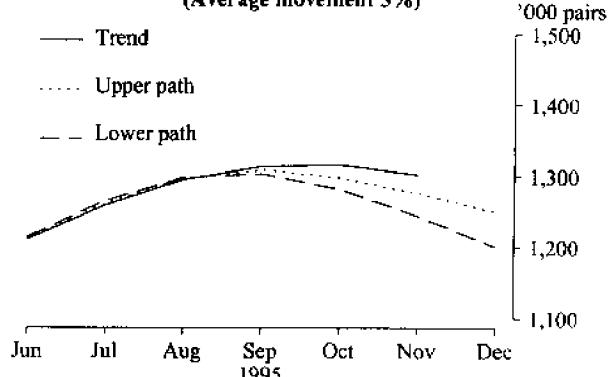
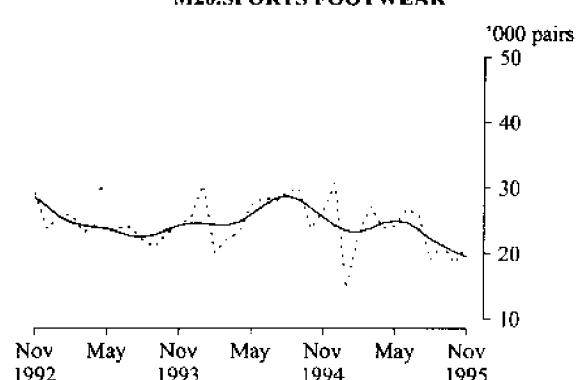
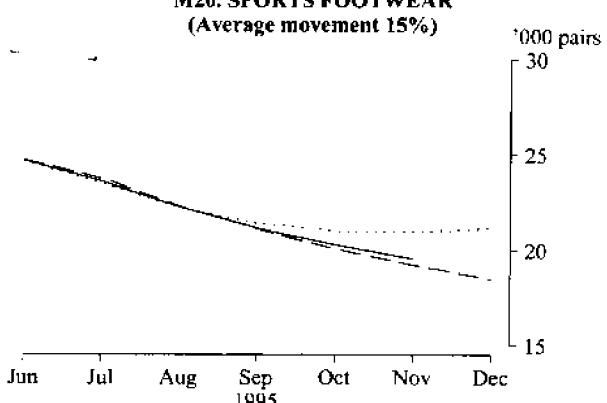
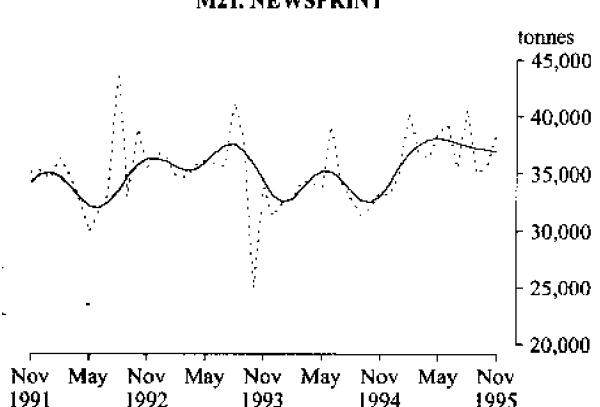
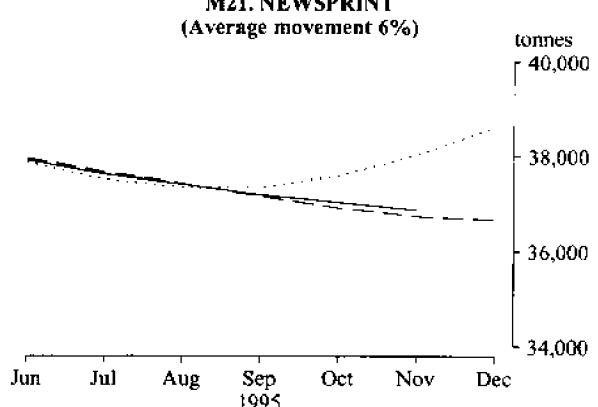
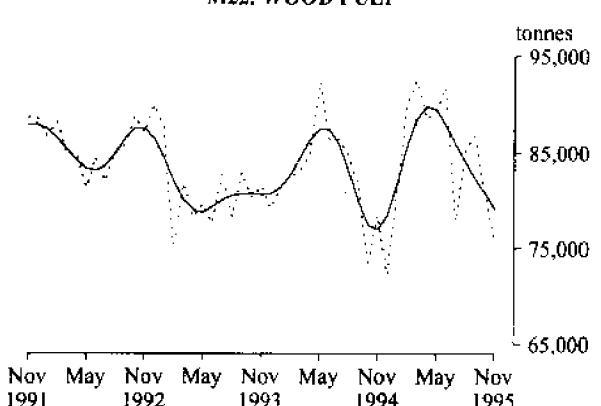
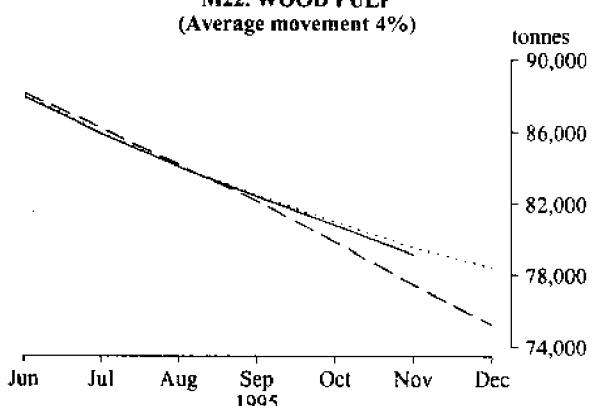
- for further information about statistics in this publication and the availability of related unpublished statistics, contact John Ridley on Sydney (02) 268 4541.
- for information about other ABS statistics and services please refer to the back page of this publication.

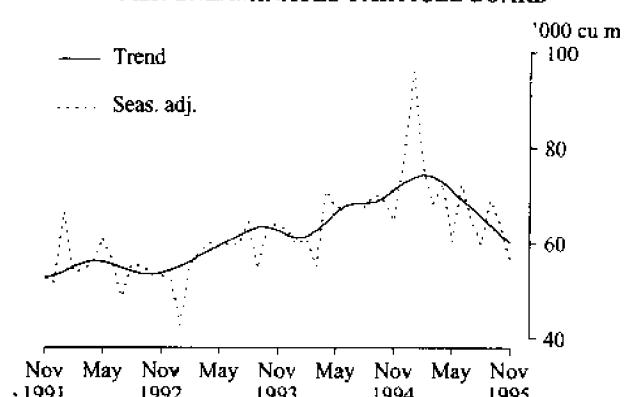
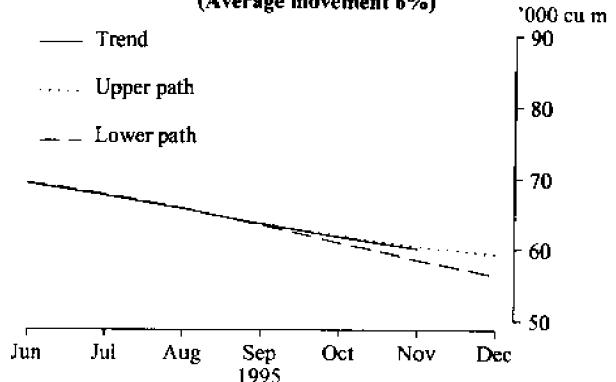
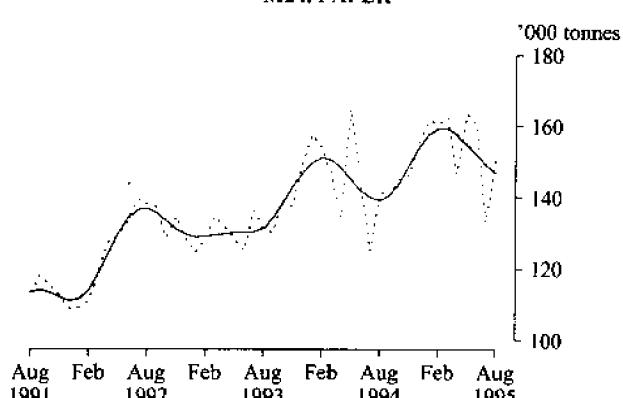
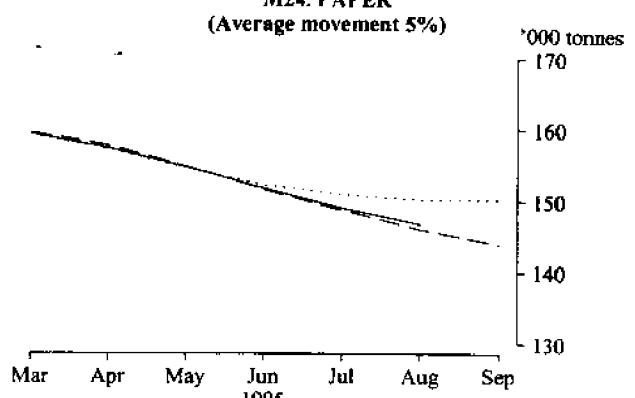
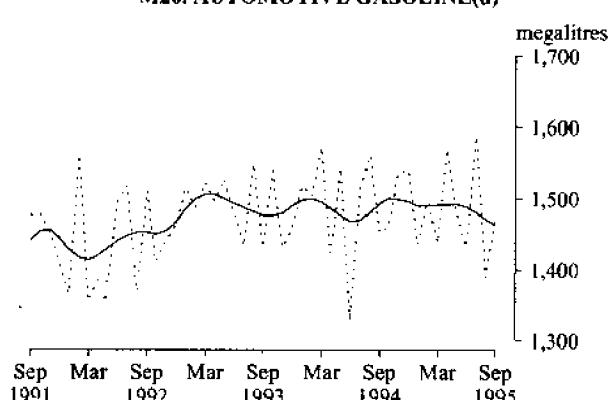
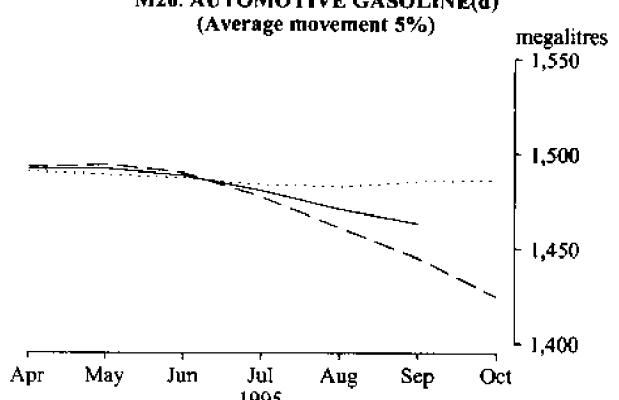
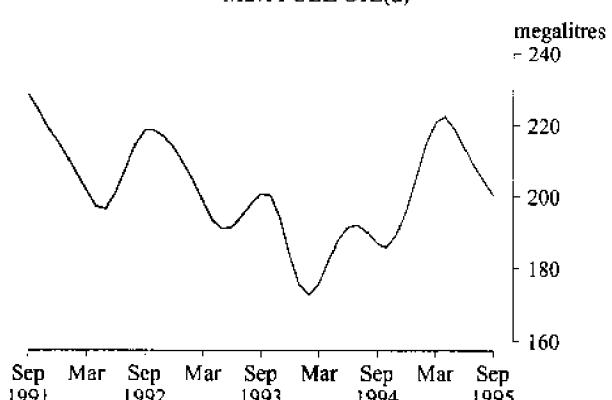
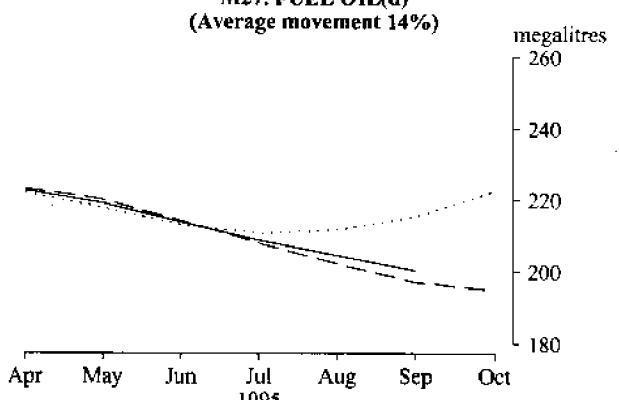
M3. CHEESE(b)**M3. CHEESE(b)
(Average movement 7%)****M4. BUTTER(b)****M4. BUTTER(b)
(Average movement 7%)****M5. FLOUR OF WHEAT OR OF MESLIN****M5. FLOUR OF WHEAT OR OF MESLIN
(Average movement 3%)****M6. PREPARED FOODS FROM CEREALS****M6. PREPARED FOODS FROM CEREALS
(Average movement 7%)**

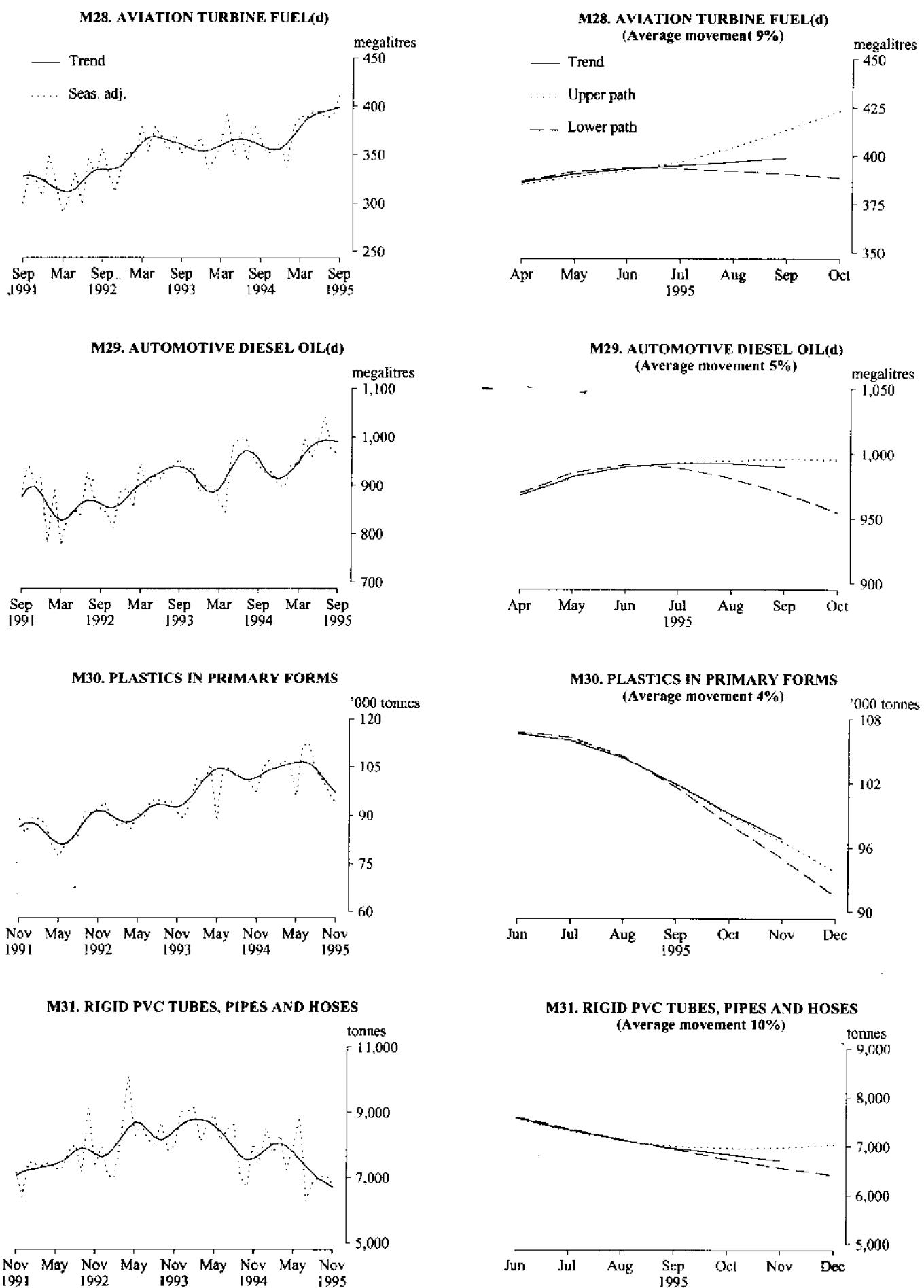
M7. BISCUITS**M7. BISCUITS**
(Average movement 4%)**M8. CHOCOLATE BASED CONFECTIONERY****M8. CHOCOLATE BASED CONFECTIONERY**
(Average movement 7%)**M9. OTHER CONFECTIONERY****M9. OTHER CONFECTIONERY**
(Average movement 5%)**M10. MALT****M10. MALT**
(Average movement 5%)

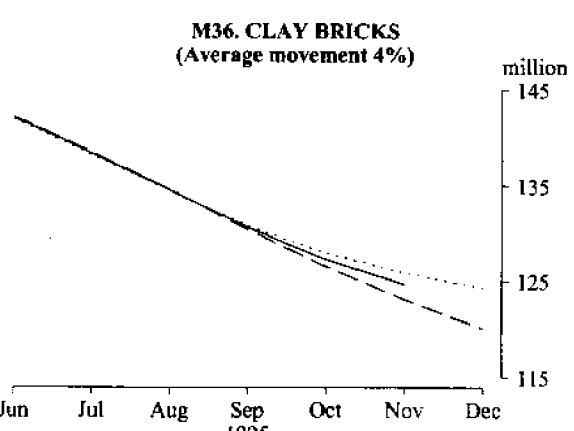
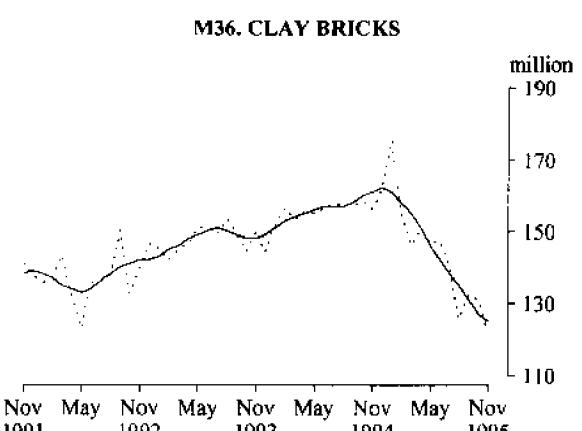
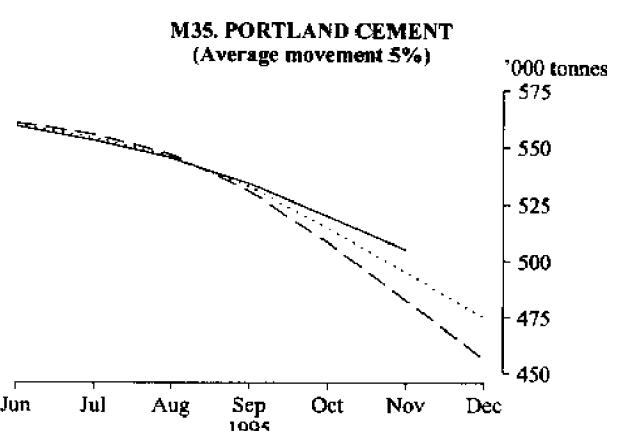
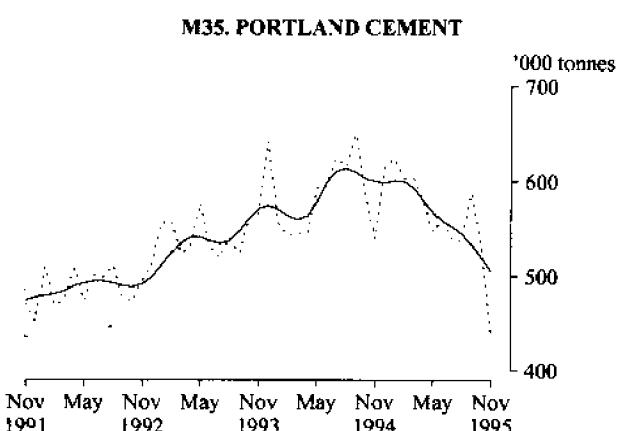
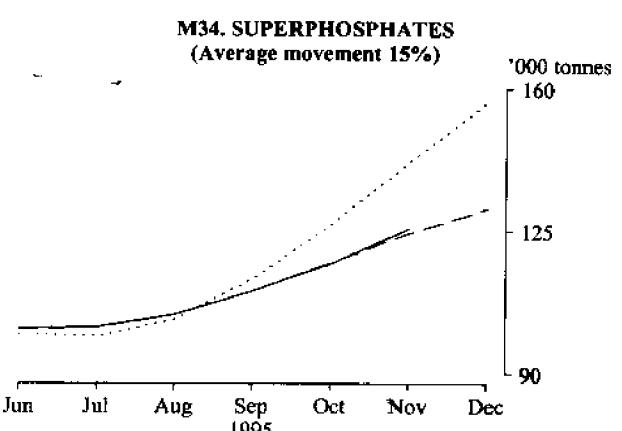
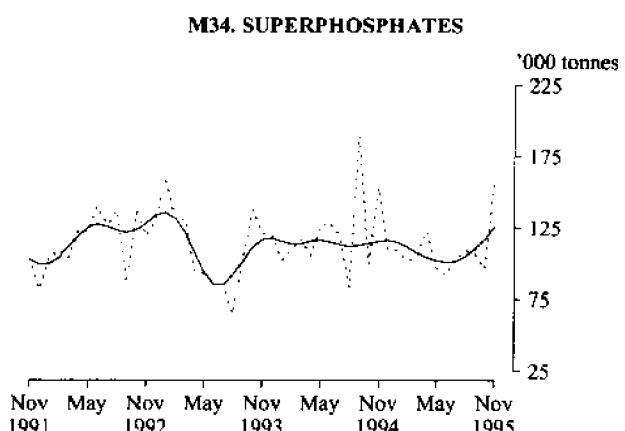
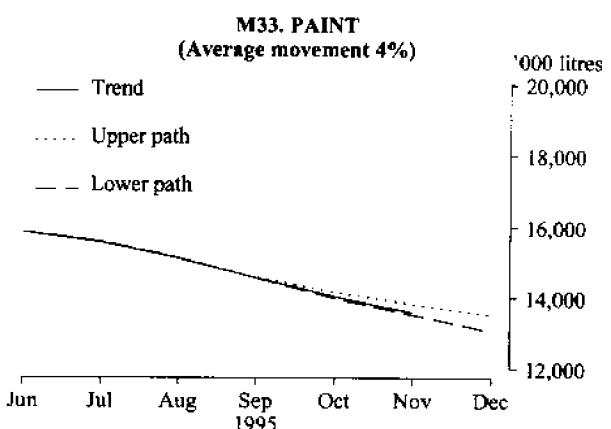
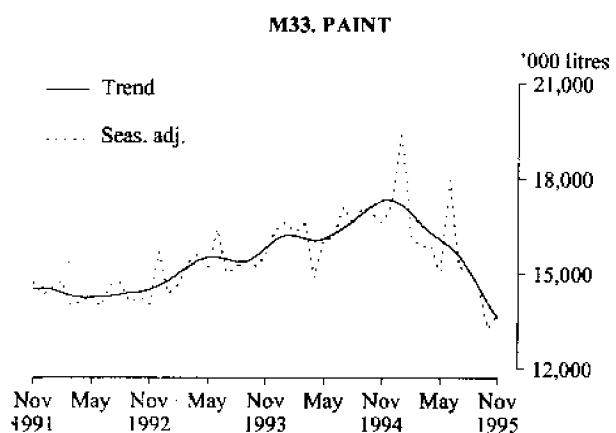


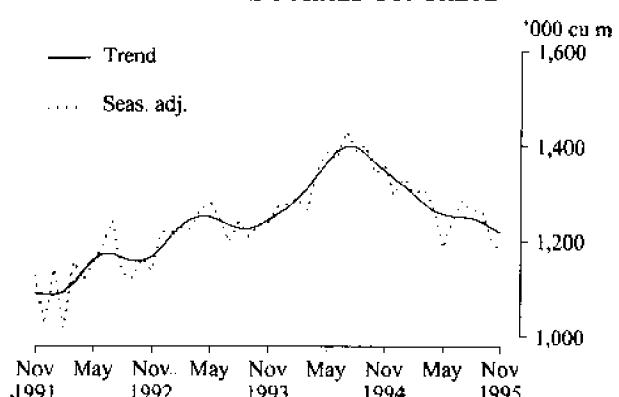
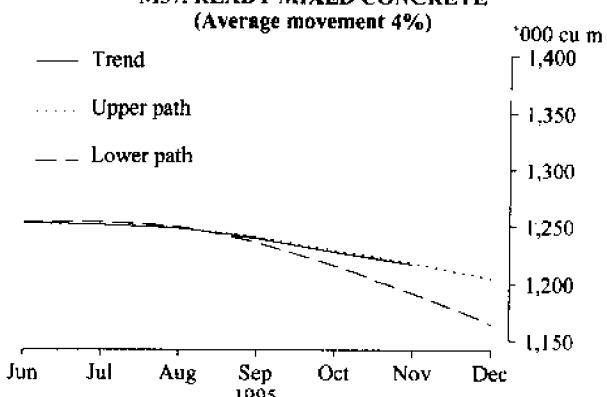
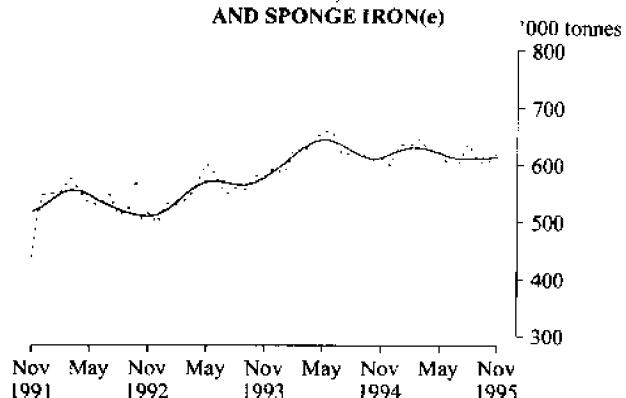
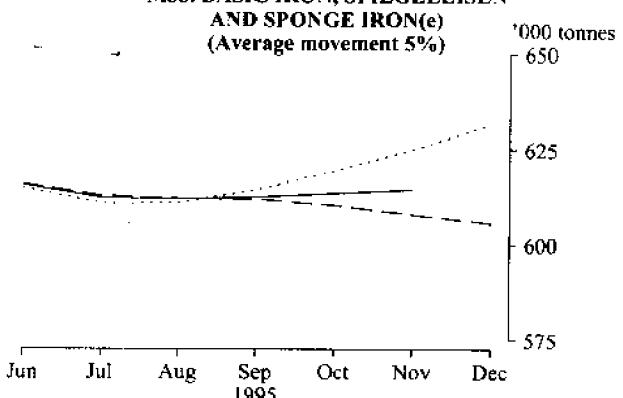
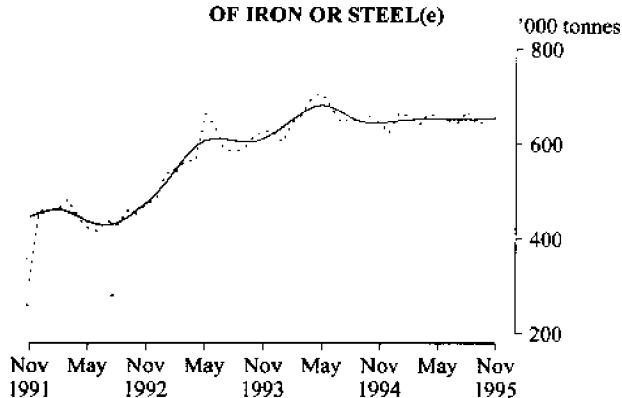
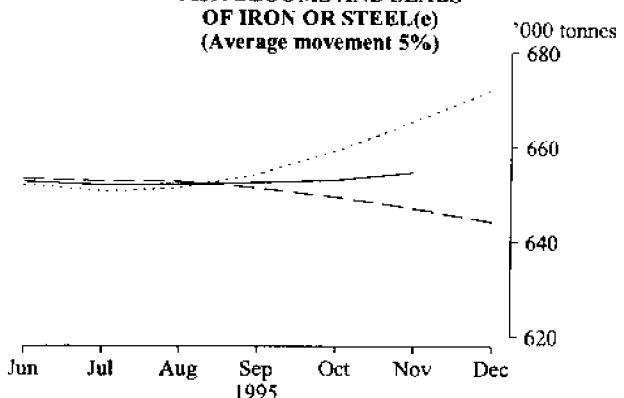
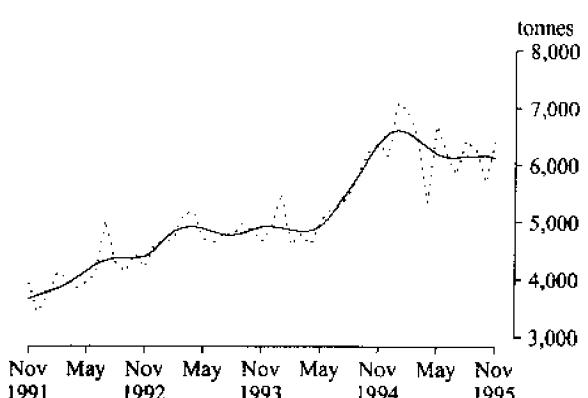
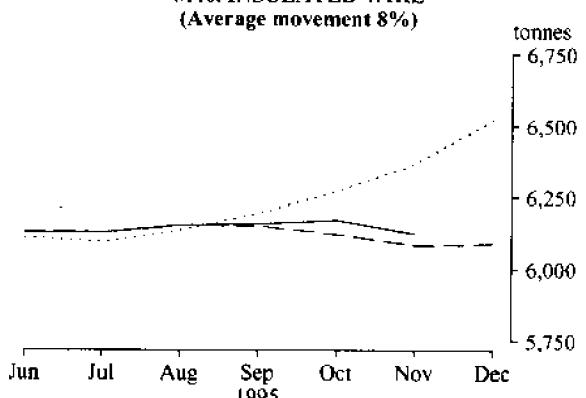


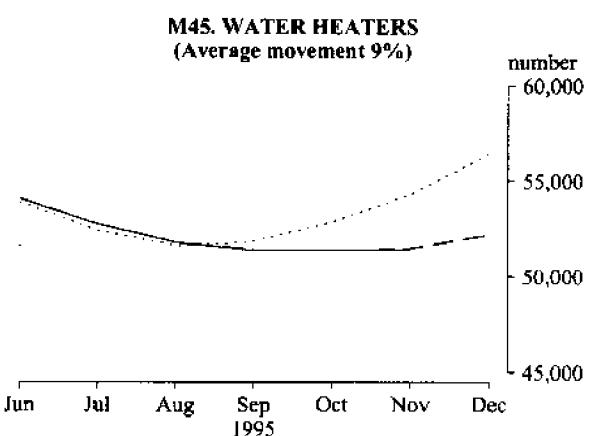
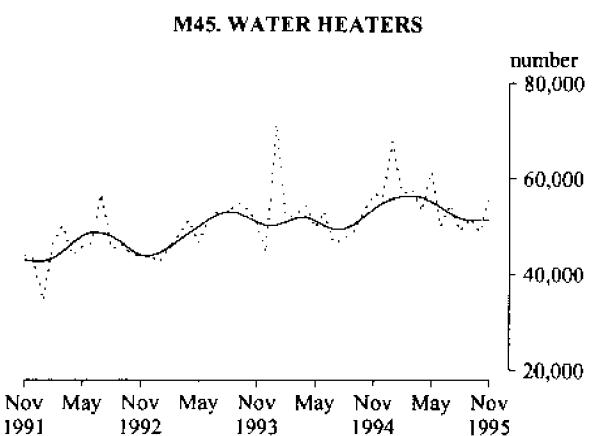
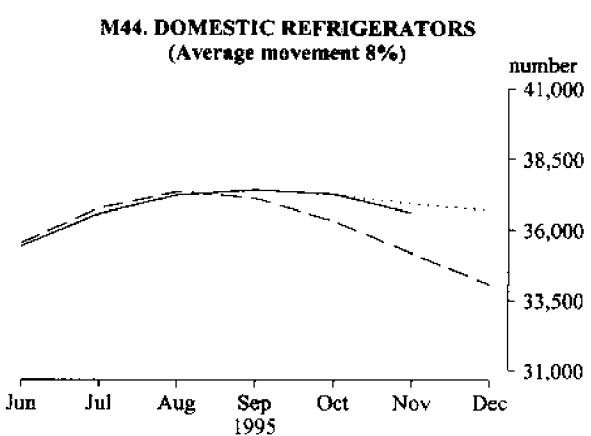
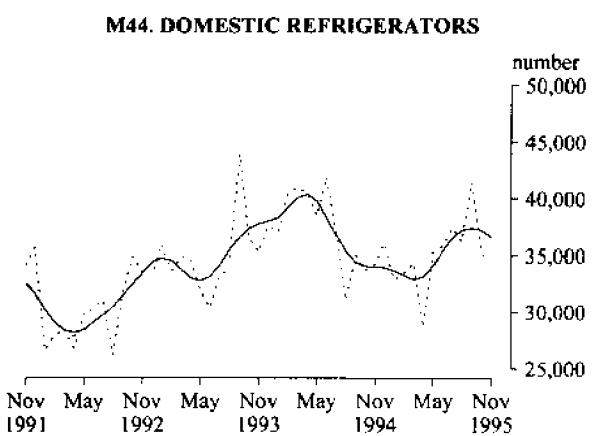
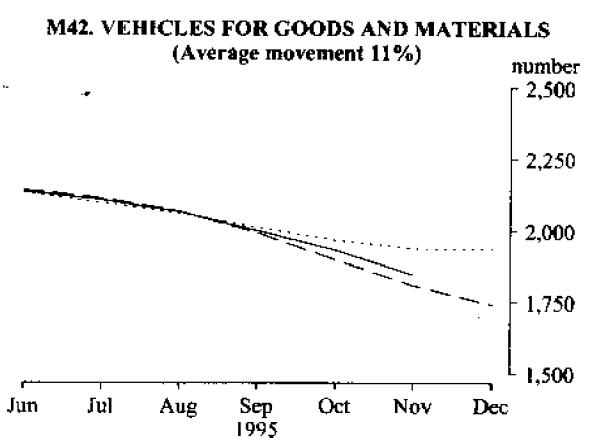
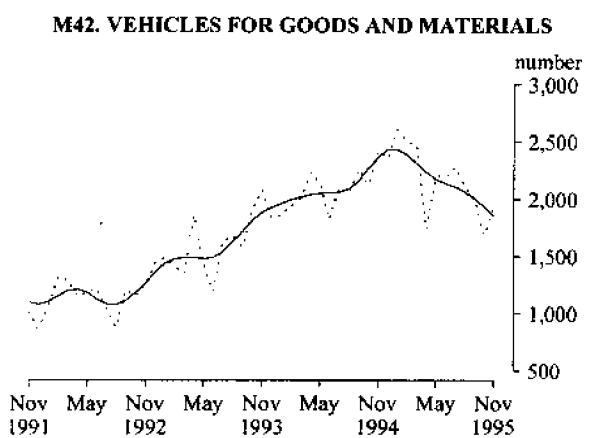
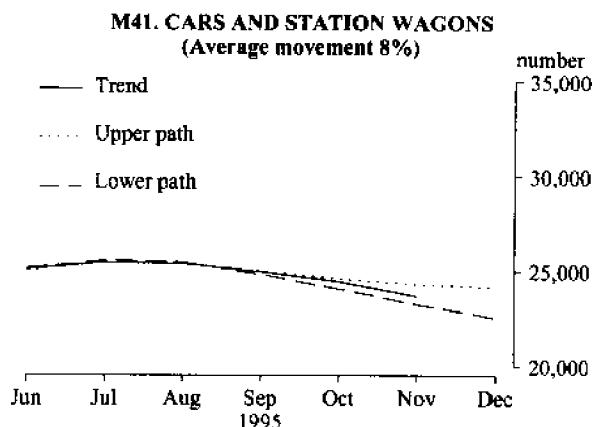
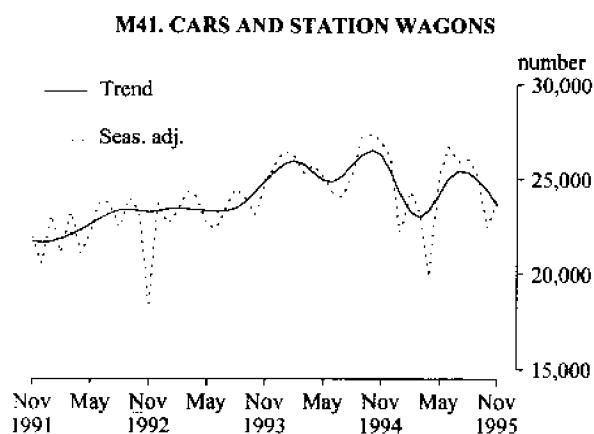
M19. FOOTWEAR (EXCLUDING SPORTS FOOTWEAR)**M19. FOOTWEAR (EXCLUDING SPORTS FOOTWEAR)
(Average movement 5%)****M20. SPORTS FOOTWEAR****M20. SPORTS FOOTWEAR
(Average movement 15%)****M21. NEWSPRINT****M21. NEWSPRINT
(Average movement 6%)****M22. WOOD PULP****M22. WOOD PULP
(Average movement 4%)**

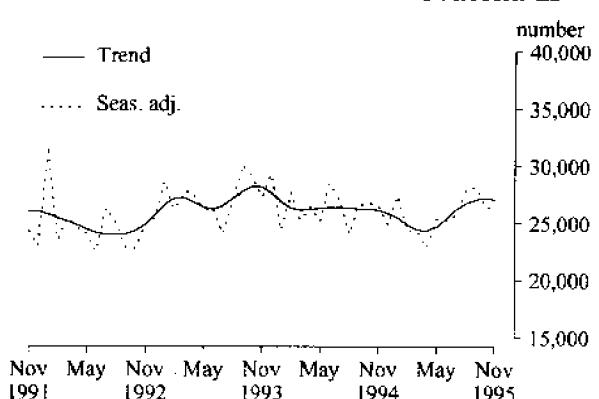
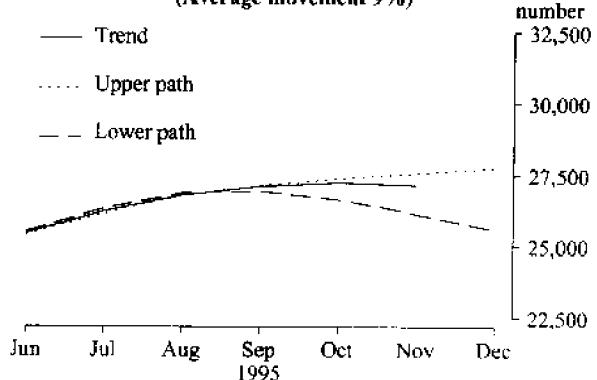
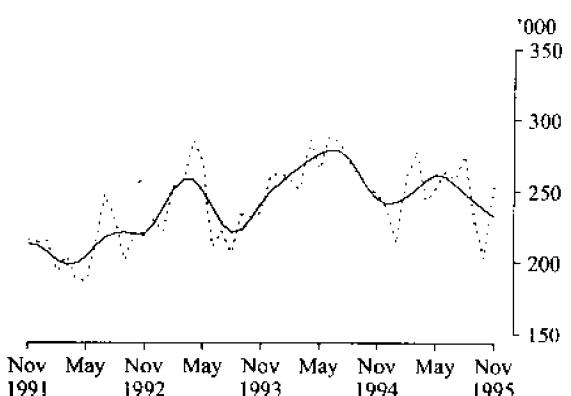
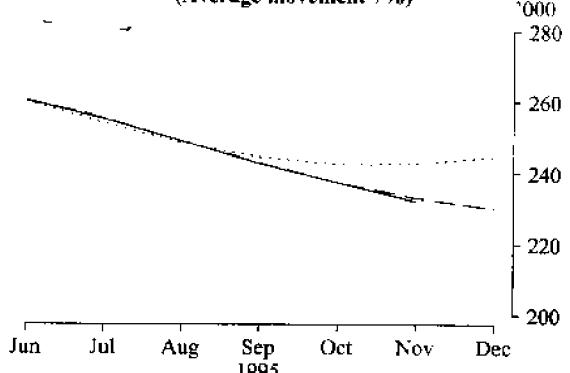
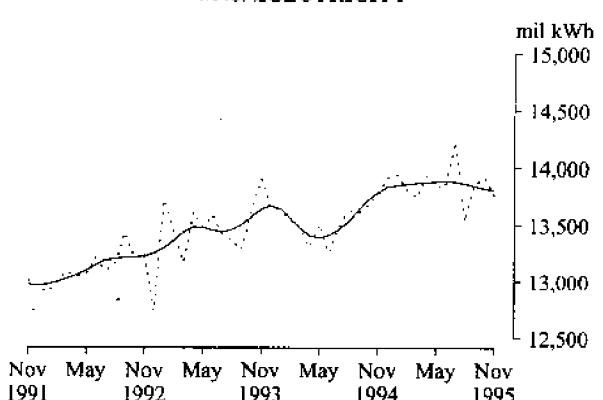
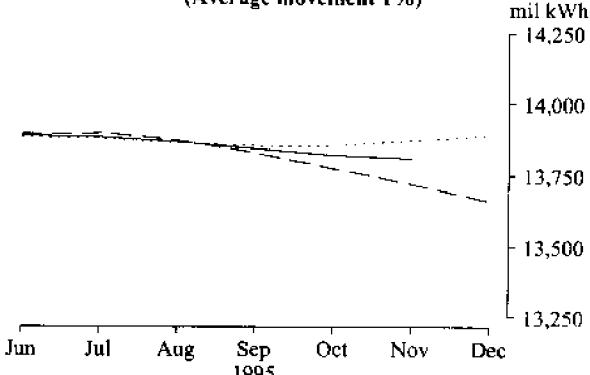
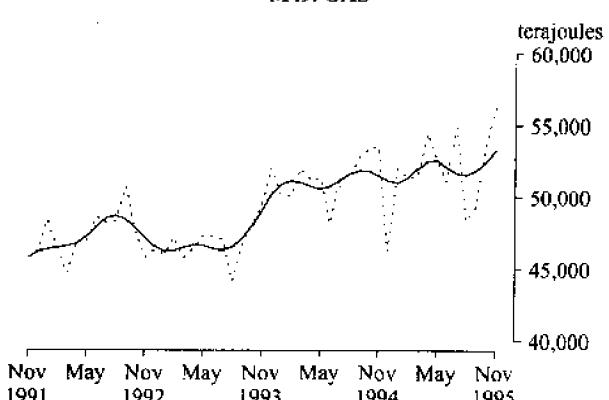
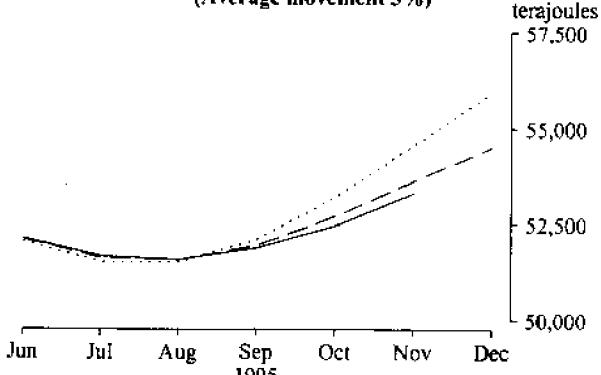
M23. UNLAMINATED PARTICLE BOARD**M23. UNLAMINATED PARTICLE BOARD
(Average movement 6%)****M24. PAPER****M24. PAPER
(Average movement 5%)****M26. AUTOMOTIVE GASOLINE(d)****M26. AUTOMOTIVE GASOLINE(d)
(Average movement 5%)****M27. FUEL OIL(d)****M27. FUEL OIL(d)
(Average movement 14%)**

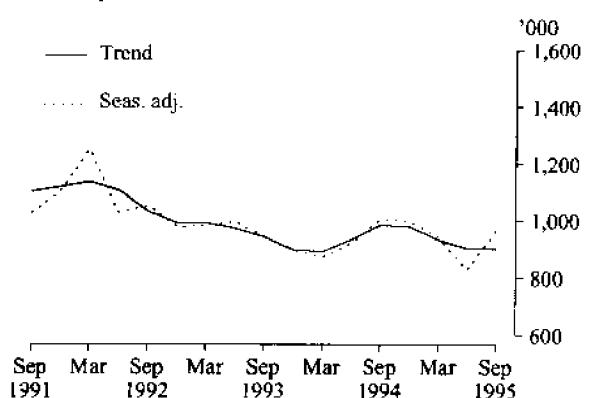
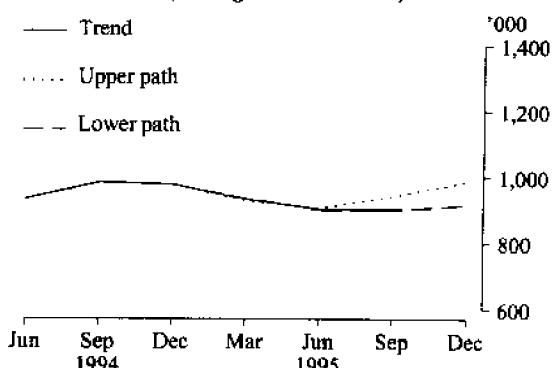
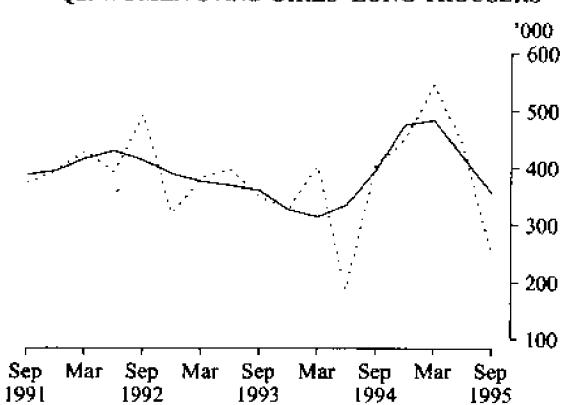
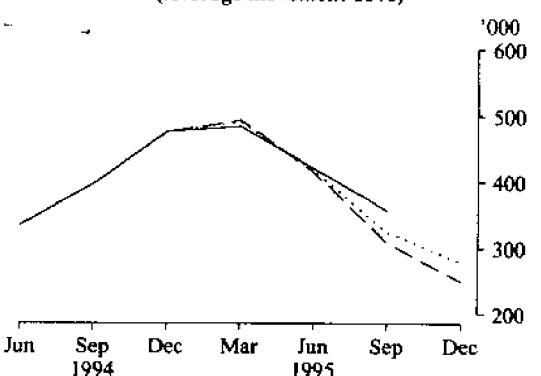
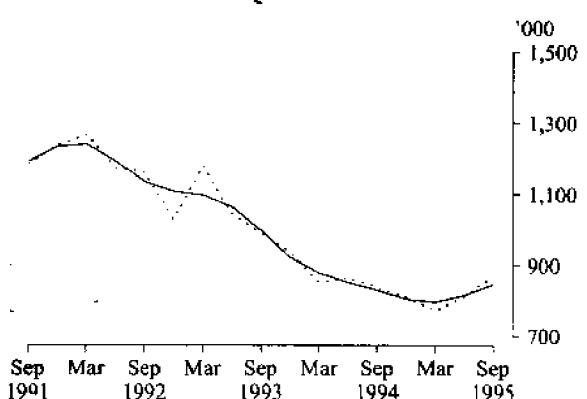
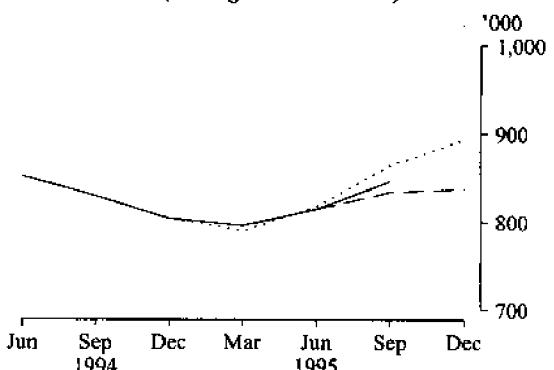
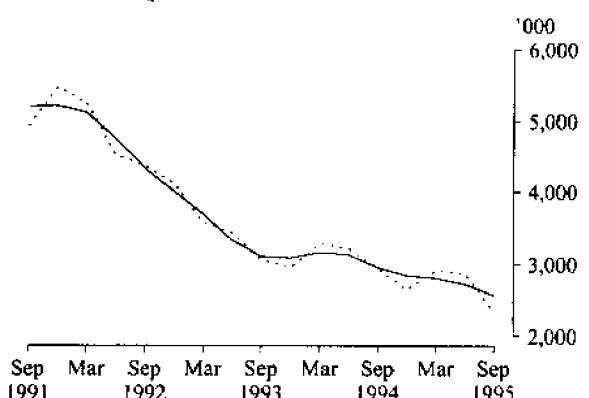
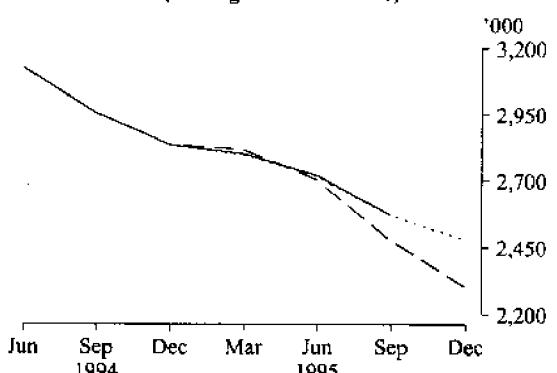


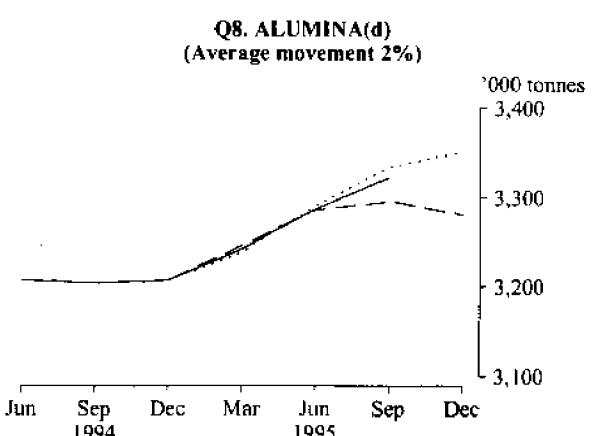
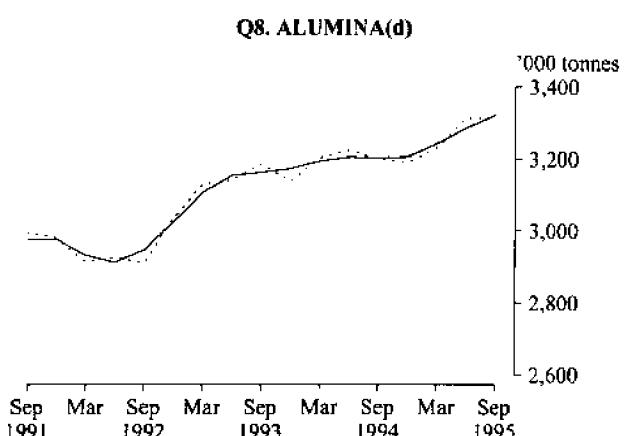
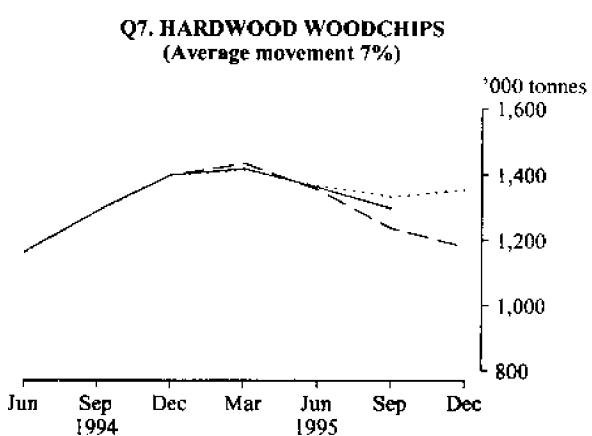
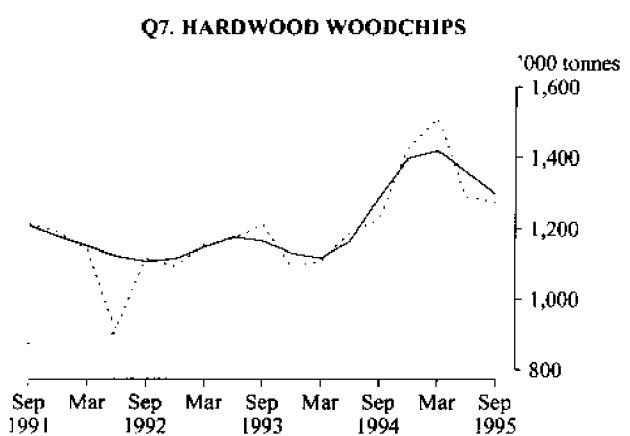
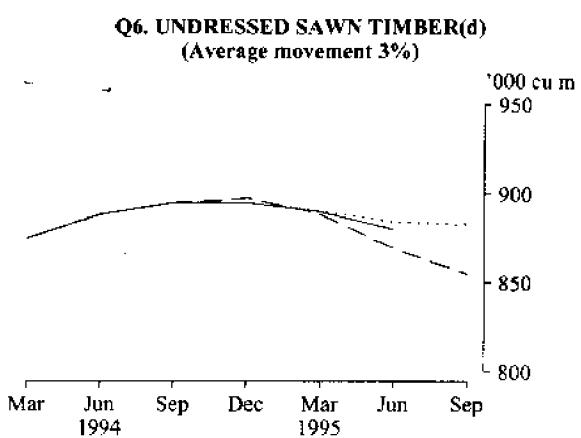
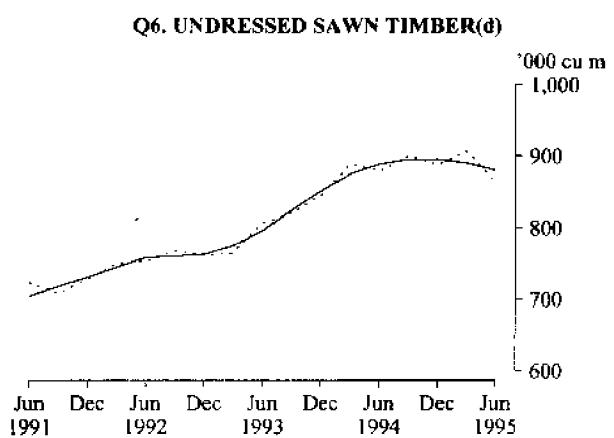
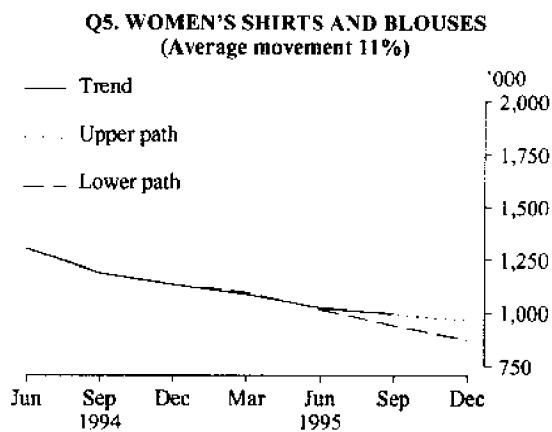
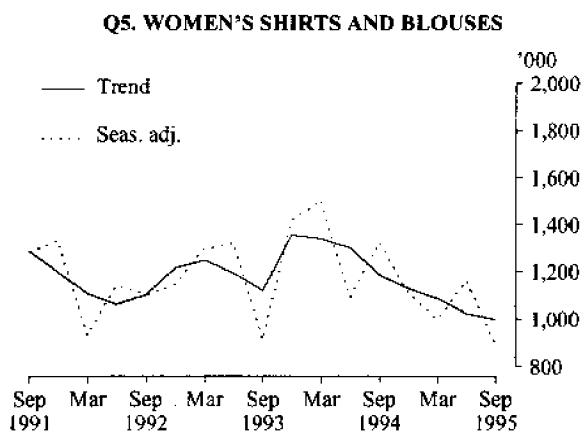


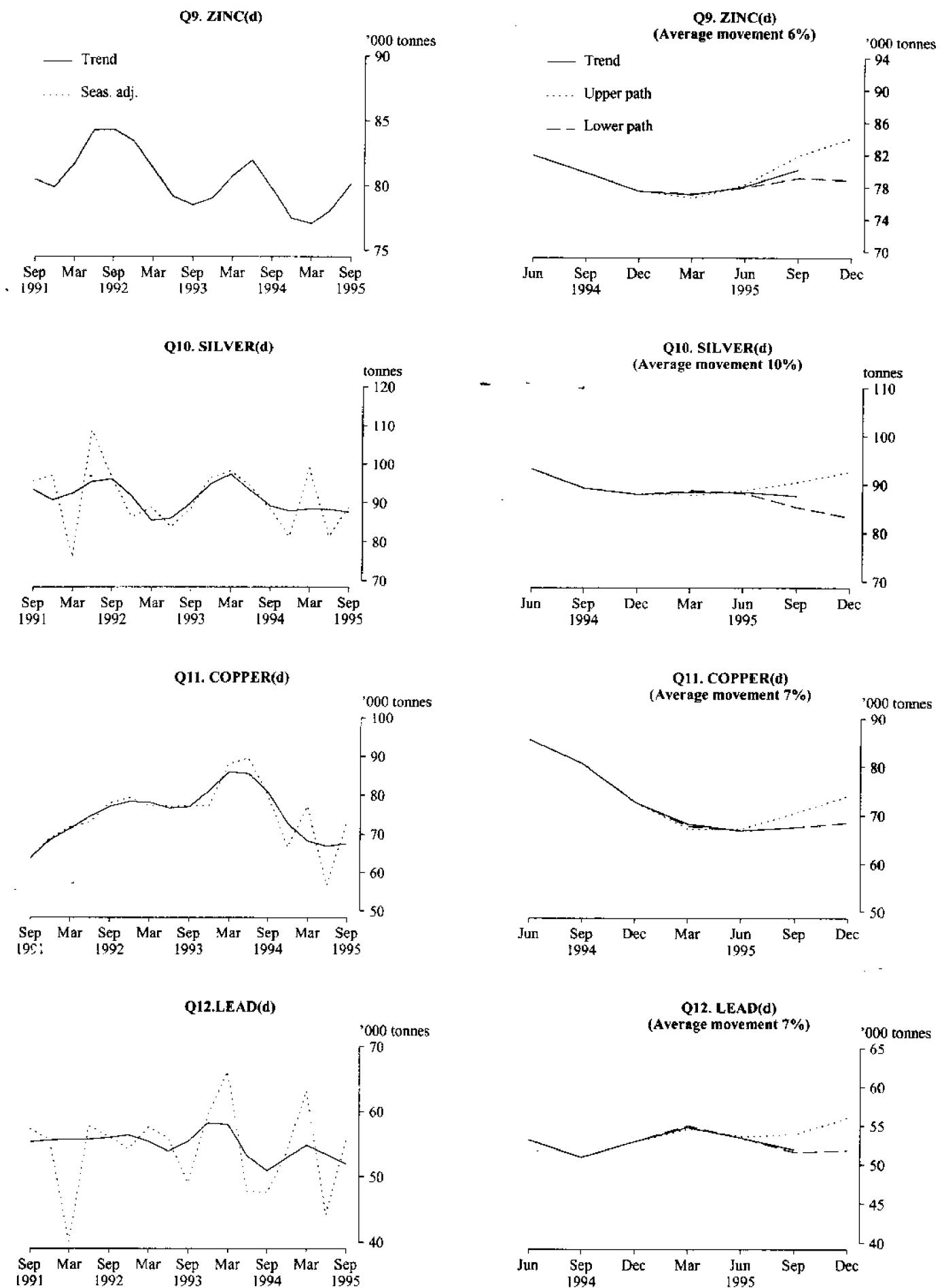
M37. READY MIXED CONCRETE**M37. READY MIXED CONCRETE
(Average movement 4%)****M38. BASIC IRON, SPIEGELEISEN
AND SPONGE IRON(e)****M38. BASIC IRON, SPIEGELEISEN
AND SPONGE IRON(e)
(Average movement 5%)****M39. BLOOMS AND SLABS
OF IRON OR STEEL(e)****M39. BLOOMS AND SLABS
OF IRON OR STEEL(e)
(Average movement 5%)****M40. INSULATED WIRE****M40. INSULATED WIRE
(Average movement 8%)**



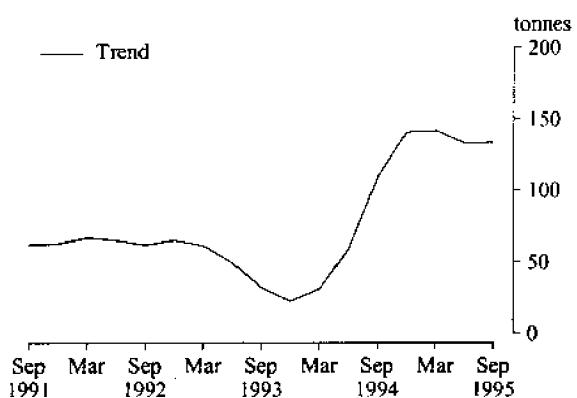
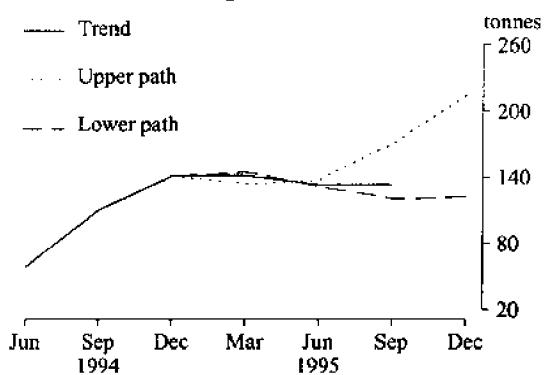
M46. DOMESTIC CLOTHES WASHING MACHINES**M46. DOMESTIC CLOTHES WASHING MACHINES**
(Average movement 9%)**M47. ELECTRIC MOTORS****M47. ELECTRIC MOTORS**
(Average movement 7%)**M48. ELECTRICITY****M48. ELECTRICITY**
(Average movement 1%)**M49. GAS****M49. GAS**
(Average movement 3%)

Q1. MEN'S AND BOYS' LONG TROUSERS**Q1. MEN'S AND BOYS' LONG TROUSERS
(Average movement 7%)****Q2. WOMEN'S AND GIRLS' LONG TROUSERS****Q2. WOMEN'S AND GIRLS' LONG TROUSERS
(Average movement 11%)****Q3. JEANS****Q3. JEANS
(Average movement 6%)****Q4. MEN'S AND BOYS' SHIRTS****Q4. MEN'S AND BOYS' SHIRTS
(Average movement 7%)**

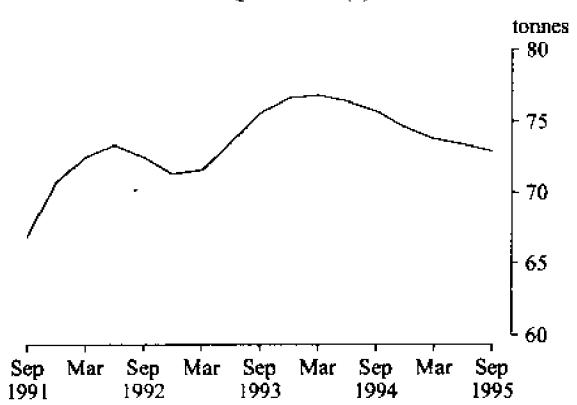
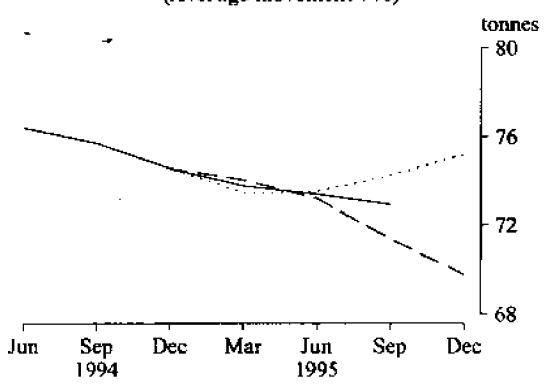




Q13. TIN(d)

Q13. TIN(d)
(Average movement 47%)

Q14. GOLD(d)

Q14. GOLD(d)
(Average movement 7%)

GLOSSARY

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
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 per cent but more than 0.5 per cent, 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	other than sports footwear; excludes thongs
M20	SPORTS FOOTWEAR	includes ski-boots
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
M24	PAPER	other than newsprint; includes paperboard, tissue and sanitary
M25	PAPERBOARD CONTAINERS	includes corrugated paperboard and solid paperboard containers
M26	AUTOMOTIVE GASOLINE	produced by Australian refineries from imported and indigenous petroleum

M27	FUEL OIL	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
M28	AVIATION TURBINE FUEL	produced by Australian refineries from imported and indigenous petroleum
M29	AUTOMOTIVE DIESEL OIL	produced by Australian refineries from imported and indigenous petroleum
M30	PLASTICS IN PRIMARY FORMS	includes liquid, paste, powder, granules, flakes, blocks, irregular shapes, lumps and similar forms
M31	RIGID PVC TUBES, PIPES AND HOSES	plastic tubes, pipes and hose of rigid polyvinyl chloride
M32	POLYETHYLENE BOTTLES UP TO TWO LITRES	plastic bottles of polyethylene, up to and including two litres
M33	PAINT	includes architectural, decorative and industrial enamels and clears, heavy duty coatings and wood stains; marine coatings are included from January 1995
M34	SUPERPHOSPHATES	expressed in terms of single super phosphate (9% P equivalent)
M35	PORTLAND CEMENT	excludes portland cement clinker and portland cement used to make blended portland cement in-house
M36	CLAY BRICKS	saleable bricks removed from kiln; excludes firebricks and bricks for other than structural purposes
M37	READY MIXED CONCRETE	excludes production used or for use within the same business
M38	BASIC IRON, SPIEGELEISEN AND SPONGE IRON	in pigs, blocks and other primary forms; includes pig iron
M39	BLOOMS AND SLABS OF IRON OR STEEL	continuous cast; includes steel in the molten state
M40	INSULATED WIRE	includes cables and other insulated electrical conductors; excludes coaxial cables and automotive low voltage wire and ignition wiring sets
M41	CARS AND STATION WAGONS	cars and station wagons for less than 10 persons; excludes mini-buses, passenger mini-vans
M42	VEHICLES FOR GOODS AND MATERIALS	excludes off-highway trucks, fork lift trucks and semi-trailers
M43	TELEPHONES	excludes keyphones
M44	DOMESTIC REFRIGERATORS	one and two door models, includes combination refrigerator freezers
M45	HOT WATER HEATERS	includes solar
M46	DOMESTIC CLOTHES WASHING MACHINES	of a dry linen capacity not exceeding 10 kg
M47	ELECTRIC MOTORS	includes direct current generators; excludes motors and generators for motor vehicles and aircraft
M48	ELECTRICITY	excludes purchases or transfers in of electricity
M49	GAS	gas available for issue through mains, including natural gas

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	excluding 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

SENSITIVITY ANALYSIS

Where seasonally adjusted series are known to be highly erratic, an analysis of how sensitive the current trend estimates are to additional data can be useful. Such analysis is referred to as 'sensitivity analysis'.

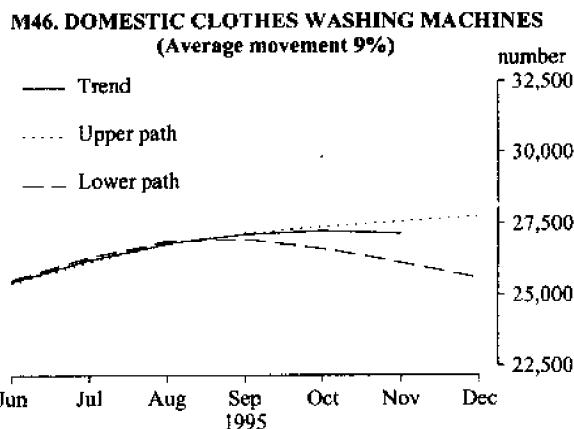
Readers should exercise care when interpreting the latest month's trend estimates because they will be revised when the next month's seasonally adjusted estimates become available. For further information, see Explanatory Notes 12 and 13.

The graph below presents the effect of two possible scenarios on the current and previous trend estimates;

Upper path The December seasonally adjusted estimate of the production of domestic clothes washing machines is higher than the November seasonally adjusted estimate by 9%.

Lower path The December seasonally adjusted estimate of the production of domestic clothes washing machines is lower than the November seasonally adjusted estimate by 9%.

The percentage change of 9% was chosen because the average monthly absolute percentage change for this series since January 1965 has been 9%.



EXPLANATORY NOTES

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 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 in a minor way some manufacturing. 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 fuels, sawn timber and quarterly estimates of base metal production are obtained from the Australian Bureau of Agricultural and Resource Economics publications *Mineral Statistics* and *Forest Products Statistics*.

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

Comparability with other estimates

8. The ABS publishes quarterly estimates of constant price manufacturing production in the publication *Quarterly Indexes of Industrial Production, Australia* (8125.0). These estimates are shown as index numbers and are derived mainly from estimates of manufacturers' sales and stocks.

9. 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 8.

Seasonally adjusted and trend estimates

10. 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. Details of the methods used in seasonally adjusting these series are available on request.

11. Seasonal adjustment procedures do not aim to remove the irregular or non-seasonal influences which may be present in any particular month, such as the effect of strikes, holiday shutdowns 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.

12. 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 seasonally adjusted series.

13. While this smoothing technique enables estimates of trend to be produced for the latest month, it does result in revisions to the estimates for the most recent months as data for subsequent months become available. Generally, subsequent revisions become smaller and after 3 months 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.

14. Users may wish to refer to the ABS Information Paper *A Guide to Interpreting Time Series - Monitoring Trends*, an overview (1348.0) for more detailed information on smoothing of seasonally adjusted time series data.

**Related publications
and services**

15. Other ABS publications and services which may be of interest are:

International Trade, Australia: FASTTRACCS Service - Hardcopy Reports (5461.0)

Stocks, Selected Industry Sales and Expected Sales, Australia (5629.0) issued quarterly

Livestock Products, Australia (7215.0) issued monthly

Quarterly Indexes of Industrial Production, Australia (8125.0)

Manufacturing Industry, Australia, Preliminary (8201.0) issued annually

Manufacturing Industry, Australia (8221.0) issued annually

Manufacturing Production, Australia: Principal Commodities Produced, 1989-90 (8365.0)

Mining Industry, Australia (8402.0) issued annually

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
- colour television receivers
- 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
- paints
- electricity
- gas
- semi-trailers
- mineral waters and aerated waters
- starches, wheat gluten and glucose
- beer
- 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

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

For further information, please call John Ridley on (02) 268 4541.

16. Current publications produced by the ABS are listed in the *Catalogue of Publications and Products, Australia* (1101.0). The ABS also issues, on Tuesdays and Fridays, a *Release 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**

n.a.	not available
n.p.	not publishable
n.y.a.	not yet available
r	figure or series revised since previous issue



For more information . . .

The ABS publishes a wide range of statistics and other information on Australia's economic and social conditions. Details of what is available in various publications and other products can be found in the *ABS Catalogue of Publications and Products* available at all ABS Offices (see below for contact details).

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Information tailored to special needs of clients can be obtained from the Information Consultancy Service available at ABS Offices (see Information Inquiries below for contact details).

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Electronic Services

A large range of data is available via on-line services, diskette, magnetic tape, tape cartridge and CD ROM. For more details about these electronic data services contact any ABS Office (see below) or e-mail us at:

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Internet	stat.info@abs.telememo.au or

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