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PRICE INDEXES OF ARTICLES PRODUCED BY MANUFACTURING INDUSTRY
NOVEMBER 1976

SUMMARY OF MOVEMENTS

Index	Percentage change between –		
	October 1976 and November 1976	Three months ended August 1976 and three months ended November 1976	November 1975 and November 1976
All Manufacturing Industry	+0.7	+1.8	+9.9
Selected sub-divisions (see paragraph 7) –			
Food, beverages and tobacco –			
Total	+0.1	+2.5	+8.1
Excluding meat and abattoir by-products, and raw sugar	+0.6	+2.1	+9.6
Clothing and footwear	+0.4	+3.1	+14.2
Wood, wood products and furniture	+1.7	+1.6	+13.5
Glass, clay and other non-metallic mineral products	+1.0	+1.9	+11.6
Fabricated metal products	+1.0	+2.2	+13.3
Transport equipment	+0.2	+2.2	+11.4
Other industrial machinery and equipment and household appliances	+0.4	+1.5	+10.4

EXPLANATORY NOTES

Introduction

This bulletin contains a set of price indexes relating to articles produced by manufacturing industry, for the years 1968-69 to 1975-76 and the months October 1975 to November 1976. A supplement to this bulletin is being prepared which will contain *monthly* index numbers from July 1968 to December 1974.

Interpretation

2. Prices of the articles included in these indexes are affected by many different influences. In the Food, beverages and tobacco Sub-division, for example, some items are subject to considerable short-term fluctuations which do not necessarily indicate changes in trend; in order to isolate some of the more uneven price

movements a special grouping 'Food, beverages and tobacco, excluding meat and abattoir by-products, and raw sugar' is also published.

Scope and composition

3. The composition of the indexes presented in this publication is based on articles produced by establishments classified to Division C, Manufacturing, of the Australian Standard Industrial Classification (ASIC). The indexes are on a *net sector basis;* that is, they relate in concept only to those articles which are produced in defined 'sectors' of Australian manufacturing industry for sale or transfer to other sectors or for export or for use as capital equipment. Articles which are sold or transferred to other establishments within the sector for further processing (as materials, components, fuels, etc) are excluded. Capital equipment produced is within the scope of the index even if sold or transferred to other manufacturing establishments in the sector.

4. This publication includes a *net* index for the Manufacturing Division of ASIC and *net* indexes for selected sub-divisions, as described in the following two paragraphs.

5. The *All Manufacturing Industry Index* represents price movements of goods which are produced by establishments in Division C, Manufacturing, for sale or transfer to establishments outside Manufacturing Division or for use as capital equipment. Articles sold or transferred by establishments in Manufacturing Division to other establishments in that division for further processing are outside the scope of this index. In other words, the pricing and weights for the All Manufacturing Industry Index reflect sales and transfers of articles *at the point of exit from Manufacturing Division.*

6. Indexes are also shown for *selected sub-divisions within the Manufacturing Division.* For the selected sub-divisions, only a minor proportion of sales and transfers is to other Manufacturing sub-divisions. Therefore the relevant components of the All Manufacturing Industry Index are considered representative for the purpose of compiling net indexes for these sub-divisions. These indexes reflect movements in prices of articles produced primarily by the respective sub-divisions for sale or transfer outside the Manufacturing Division or to other sub-divisions within Manufacturing or for use as capital equipment. In each of the remaining sub-divisions there is a significant proportion of sales to other sub-divisions. To compile net indexes for these sub-divisions it is necessary to establish weights appropriate to each sub-division and to price some additional items. As this work is completed the scope of the publication will be expanded progressively to include indexes on a *net* basis for all 12 sub-divisions of Manufacturing. Articles produced in these remaining sub-divisions and sold outside Manufacturing Division are, of course, already included in the index for All Manufacturing Industry.

Method of calculation

7. The indexes are *fixed weights* indexes and are calculated by the method known as the *weighted arithmetic mean of price relatives.*

Derivation of items and weights

8. The items included in these indexes were selected on the basis of values of articles produced in 1971-72, by establishments classified to the Manufacturing Division of ASIC. The selection was made from data reported in the 1971-72 Census of Manufacturing Establishments.

9. The selected items were allocated weights in accordance with estimated *net* sector production (see paragraph 3) in the year 1971-72 valued at the relevant prices applying in the *reference base year 1968-69.* Many of the selected items carry not only the weight of directly priced articles but also the weight of unpriced articles whose prices are considered to move similarly to those of directly priced articles.

Weighting patterns and classifications

10. The selected items have been combined into the published industry groupings using the Australian Standard Industrial Classification (ASIC). In the case of Sub-division 21-22, 'Food, beverages and tobacco', an index series is also published for the special grouping 'Food, beverages and tobacco, excluding meat and abattoir by-products, and raw sugar', in order to isolate some of the more uneven price movements which frequently occur in this Sub-division.

11. The articles included in the index have been combined according to the ASIC groups to which they are primary (i.e. the group in which each article is typically produced). Percentage contributions of articles to the *All Manufacturing Industry index aggregate* were shown in the Appendix to the initial issue of this publication. Percentage contributions of articles to each of the *selected sub-division index aggregates* may be obtained on application to the ABS.

Prices

12. Most of the prices used in these indexes relate to the mid-point of the month. Prices are generally obtained, by way of mailed questionnaires, from principal manufacturers of the goods concerned, but in some cases prices collected in connection with other indexes are used (adjusted to the correct pricing basis as far as possible). Prices are manufacturers' selling prices exclusive of excise and sales tax, and reflect the effects of subsidies and bounties paid to manufacturers.

13. The prices reflect industry selling practices. For example, if costs such as handling and distribution are included in the manufacturer's selling price this is the price used in the index. Where handling and distribution charges are paid separately by the purchaser the prices used exclude such charges.

14. Price series relate to *goods of fixed specifications* with the aim of incorporating in the index price changes for representative articles of *constant quality*. Consistent with this approach, prices in general relate to a standard representative set of transactions (in terms of quantity discounts, delivery arrangements, destination, etc) in order to avoid variations in price that are attributable solely to a changing mix of transactions over time.

Model pricing

15. Transactions which involve unique or complex products present special problems in the measurement of price change. Examples are fabricated structural steel, and metal working machinery. A technique, known as model pricing, is used to measure price change in cases where the same (i.e. constant quality) items are not produced and sold repetitively over time. A particular product of some recent period which is typical of a firm's output is specified in detail, and becomes the 'model'. A price is reported for this model at each index point of time. Although the model product may not be regularly sold in the market place, it does provide a consistent measure of price change in a field where the items actually sold vary over time in terms of design and quality.

Specification and continuity of standards

16. As indicated above, price series used in these indexes relate to goods of fixed specifications in order to measure price changes for representative products of constant quality. As long as the articles and standards originally specified remain available and representative, there is no difficulty in compiling continuous price series.

17. When a significant change in specifications occurs, the prices of the new article must be suitably adjusted to make them comparable with prices for the old standard before they are used in the index.

18. In those cases where both the old and the new articles have been selling in reasonable quantities, side by side in the same market, over a reasonable period of time, the common practice is to neutralise the price difference by the simple device of 'splicing' the price series for the new article to the price series for the old. The level of the price series is not affected at the point of splicing. A continuous price series is built up using the old article for measuring price changes up to the time of the splice and the new article thereafter.

19. In some cases, simple splicing of the prices of the new article to the existing price series is not a satisfactory way of neutralising changes in quality. This situation occurs, e.g. when the price of a new model of an article reflects not only the extent of modifications but also a degree of price change, upwards or downwards, for reasons quite distinct from these modifications. In these circumstances a simple splicing of the old and new prices would eliminate the elements of pure price change as well as the elements of change in quality. It is necessary in such cases to assess the degree of pure price change involved and reflect this in the price series before splicing.

20. Such assessments must of necessity be a matter of judgment, but they are made only after careful consideration of as much relevant information as can be obtained, including details of physical change (e.g. volume, size, material content), price changes for similar items, and detailed cost and price data concerning components or features of manufactured goods.

Discounts

21. Discounts also pose special problems. For the purpose of these indexes the aim is to determine *actual transaction prices.* It has therefore been necessary to obtain information about both 'special' and normal 'trade' discounts. Where special discounts are identified, their effects are reflected in the indexes. However, because of the forms which special discounts may take and the ways in which they may be applied, it is not always feasible to measure them even on an approximate basis. Significant changes in special discounts, to the extent that they are determined, will be incorporated in the indexes. This may sometimes be on a partly estimated basis.

Index numbers

22. The indexes have been compiled for each month from July 1968 and for financial years from 1968-69, on the reference base year 1968-69. Index numbers for financial years are simple averages of the relevant monthly index numbers.

23. Index numbers for the years from 1968-69 to 1975-76 and the months October 1975 to November 1976, are shown in Table 2 in this bulletin. Percentage changes are shown in Table 1.

24. All index numbers for the current month and the previous month are preliminary and subject to revision. Figures for earlier months will generally not be revised where the changes would have a minor effect.

Percentage changes

25. The following example illustrates the method of calculating percentage changes:

All Manufacturing Industry Index

Index number as at November 1976 192.9 (see Table 2)

Index number as at October 1976 191.5 (see Table 2)

Percentage change = $\frac{192.9 - 191.5}{191.5} \times 100 = +0.7\%$

Related publications

26. Users may also wish to refer to the following price indexes which are available on request:

. *Price Index of Materials used in Manufacturing Industry* (Reference No. 9.13)

. *Price Index of Materials Used in Building Other than House Building* (Reference No. 9.6)

. *Price Index of Materials Used in House Building* (Reference No. 9.9)

. *Price Index of Electrical Installation Materials* (Reference No. 9.5)

. *Price Indexes of Metallic Materials* (Reference No. 9.10)

27. Other ABS publications which may be of interest include:

. *Wage Rates Indexes, Preliminary* (Reference No. 6.37)

. *Wage Rates and Earnings* (Reference No. 6.16)

. *Average Weekly Earnings* (Reference No. 6.18)

Symbols used

p – preliminary, subject to revision
r – revised

TABLE 1. PRICE INDEXES OF ARTICLES PRODUCED BY MANUFACTURING INDUSTRY (a)
PERCENTAGE CHANGES

	All Manufacturing Industry Index (c)	*Selected net sub-division indexes (b)* — Food, beverages and tobacco (21-22): Total	Food, beverages and tobacco (21-22): Excluding meat and abattoir by-products, and raw sugar	Clothing and footwear (24)	Wood, wood products and furniture (25)	Glass, clay and other non-metallic mineral products (28)	Fabricated metal products (31)	Tranport equipment (32)	Other industrial machinery and equipment and household appliances (33)
	%	%	%	%	%	%	%	%	%
				Percentage change from previous year –					
1973-74	+11.5	+11.8	+9.8	+14.0	+18.9	+8.4	+13.7	+7.7	+10.5
1974-75	+17.5	+7.1	+17.1	+18.0	+27.7	+22.1	+28.7	+21.1	+20.0
1975-76	+12.5	+6.9	+11.1	+14.8	+15.7	+15.7	+18.5	+16.3	+12.8
				Percentage change from previous month –					
1975-76									
October	+1.2	+1.3	+0.4	+0.5	+0.9	+1.0	+2.3	+1.8	+1.0
November	+0.6	+1.0	+0.6	+0.3	+1.3	+1.6	+1.3	+0.6	+0.7
December	+0.7	+0.6	+1.4	+0.7	+2.1	+0.4	+0.5	+1.0	+1.4
January	+0.9	+1.0	+1.3	+2.1	+0.4	+1.6	+0.6	+1.1	+0.6
February	+0.9	+1.2	+0.7	+2.0	+0.9	+0.9	+1.1	+0.7	+0.4
March	+1.1	+0.2	+0.4	+1.4	+1.1	+1.2	+3.2	+0.8	+1.3
April	+1.2	+1.0	+0.7	+0.2	+1.9	+0.8	+1.1	+1.3	+1.2
May	+0.9	–0.4	+0.5	+1.2	+2.2	+2.0	+1.0	+0.9	+1.8
June	+0.6	–0.1	+0.7	+0.7	+0.5	+0.9	+1.1	+1.9	+0.7
1976-77									
July	+0.7	+1.6	+0.9	+1.0	+0.9	+0.4	+0.6	+0.5	+0.7
August	+0.9	+1.3	+0.8	r+3.0	. .	+0.5	+0.5	+0.4	+0.9
September	+0.4	+0.7	+0.3	r+0.5	. .	+0.6	+0.5	+1.1	+0.5
October p	+0.5	+0.5	+1.0	+0.1	+1.1	+0.7	+1.3	+0.9	+0.1
November p	+0.7	+0.1	+0.6	+0.4	+1.7	+1.0	+1.0	+0.2	+0.4
				Percentage change from corresponding month of previous year –					
1975-76									
October	+13.0	+5.0	+11.9	+13.2	+14.5	+18.3	+19.8	+17.1	+12.8
November	+13.3	+9.5	+10.6	+13.0	+14.6	+16.9	+19.3	+15.8	+11.9
December	+11.4	+4.0	+10.2	+13.8	+16.4	+15.8	+19.2	+15.5	+12.4
January	+11.2	+6.7	+9.7	+14.9	+16.2	+15.1	+15.3	+15.8	+11.9
February	+11.9	+9.0	+9.7	+15.3	+15.3	+13.8	+15.6	+16.1	+11.6
March	+11.5	+7.3	+9.3	+16.4	+16.2	+13.5	+18.6	+14.6	+12.1
April	+12.5	+9.2	+9.7	+15.4	+16.2	+12.8	+19.0	+14.8	+13.0
May	+12.8	+9.4	+9.0	+15.5	+15.7	+14.3	+19.9	+15.6	+13.9
June	+12.3	+8.5	+8.7	+15.4	+14.5	+14.0	+19.6	+15.1	+12.5
1976-77									
July	+11.8	+9.2	+9.1	+13.8	+14.4	+13.2	+18.5	+13.9	+12.3
August	+11.3	+9.4	+9.1	r+15.6	+13.6	+12.4	+16.3	+12.1	+12.2
September	+10.5	+9.9	+9.0	r+14.5	+12.9	+12.7	+14.8	+13.0	+11.8
October p	+9.8	+9.1	+9.7	r+14.1	+13.2	+12.3	+13.6	+11.9	+10.9
November p	+9.9	+8.1	+9.6	+14.2	+13.5	+11.6	+13.3	+11.4	+10.4

For footnotes see Table 2.

TABLE 2. PRICE INDEXES OF ARTICLES PRODUCED BY MANUFACTURING INDUSTRY (a)
(Base of each index : Year 1968-69 = 100.0) (d)

	All Manufacturing Industry Index (c)	*Selected net sub-division indexes (b)*							
		Food, beverages and tobacco (21-22)							
		Total	*Excluding meat and abattoir by-products, and raw sugar*	*Clothing and footwear (24)*	*Wood, wood products and furniture (25)*	*Glass, clay and other non-metallic mineral products (28)*	*Fabricated metal products (31)*	*Transport equipment (32)*	*Other industrial machinery and equipment and household appliances (33)*
1969-70	103.9	105.1	101.6	102.5	104.5	102.9	102.7	102.4	103.2
1970-71	108.5	111.4	106.3	107.2	112.1	108.1	107.5	105.5	106.7
1971-72	113.9	117.3	112.3	112.8	118.4	114.7	116.5	111.3	114.0
1972-73	120.7	127.7	117.9	119.9	125.1	119.6	125.1	116.0	119.8
1973-74	134.6	142.8	129.5	136.7	148.8	129.6	142.3	124.9	132.4
1974-75	158.1	153.0	151.7	161.3	190.0	158.3	183.2	151.2	158.9
1975-76	177.8	163.5	168.5	185.2	219.9	183.2	217.1	175.8	179.2
1975-76									
October	174.4	160.5	164.6	180.0	212.1	177.5	211.7	172.0	174.9
November	175.5	162.1	165.6	180.5	214.9	180.3	214.4	173.1	176.2
December	176.7	163.1	167.9	181.8	219.5	181.1	215.5	174.9	178.6
January	178.3	164.8	170.0	185.6	220.4	184.0	216.8	176.8	179.6
February	179.9	166.8	171.2	189.3	222.3	185.6	219.2	178.0	180.4
March	181.8	167.1	171.8	192.0	224.8	187.9	226.2	179.5	182.7
April	184.0	168.7	173.0	192.4	229.0	189.4	228.7	181.9	184.9
May	185.6	168.1	173.8	194.7	234.1	193.2	231.1	183.6	188.2
June	186.8	168.0	175.0	196.0	235.2	195.0	233.7	187.0	189.6
1976-77									
July	188.1	170.7	176.6	198.0	237.2	195.8	235.2	188.0	191.0
August	189.7	173.0	178.1	r204.0	237.3	196.8	236.4	188.7	192.8
September	190.5	174.2	178.7	r205.0	237.4	198.0	237.5	190.8	193.7
October p	191.5	175.1	180.5	r205.3	240.0	199.4	240.5	192.5	193.9
November p	192.9	175.3	181.5	206.2	244.0	201.3	243.0	192.9	194.6

(a) For a full description of Division C, 'Manufacturing' and the selected sub-divisions see Australian Standard Industrial Classification (ASIC), Preliminary Edition, 1969. (b) Indexes for the remaining sub-divisions of Manufacturing Division are in process of development. The indexes are on a 'net sub-division' basis; see paragraphs 3 and 6. ASIC sub-division codes are shown in brackets at the head of the columns. (c) This index is on a 'net division' basis and relates in concept only to articles which are produced in the Manufacturing Division of ASIC (Division C) for sale or transfer outside the Division; see paragraphs 3 and 5. (d) Figures are shown to one decimal place to avoid distortions that would occur in rounding the index numbers to the nearest whole number.

D. V. YOUNGMAN
Acting Australian Statistician

Australian Bureau of Statistics
Belconnen, A.C.T. 2616