

PRICES

INTRODUCTION

As part of the interactive process between suppliers and consumers of goods and services, decisions about whether to enter into business transactions can be identified at the production stage, or at the point of wholesaling or retailing. Insofar as price is a factor influencing these decisions the "price mechanism" is said to operate.

For the purposes of economic planning and decision making, whether by individuals, government and its agencies, or private enterprise, prices and price movements are a constant subject of study and measurement. Included in a range of available techniques of measurement is the method of calculating indexes. This chapter outlines particular applications of the index method, namely, movements in retail and wholesale prices, with special reference to those indexes currently produced by the Australian Statistician.

RETAIL PRICE INDEXES

General background

It must be emphasised that retail price indexes are designed to measure the extent of changes in price levels only. While they may be used to indicate the effect of price change on the cost of living, they do not in fact measure the absolute cost of living nor the extent of changes in the cost of living. They measure, as nearly as may be, the proportionate change in the aggregate cost of specified quantities and qualities of the items included in the index.

Retail price indexes are sometimes used as a measure of change in the "purchasing power of money". Strictly speaking, such a measure relates only to purchasing power over the list of items in the index combined in their specified proportions. The validity of its use in any broader sense or in dealing with a particular problem is a question for judgment by prospective users on the facts of the case and in the light of the definition of the index.

Retail price indexes may also be used by industrial tribunals and other authorities for the adjustment of wages and salaries. The Australian Statistician has an important function in stating explicitly what such indexes measure and how they are constructed, in order that authorities using them may be fully informed as to their suitability for particular purposes.

Retail price index numbers for Australian cities are compiled by the Australian Statistician. The retail price index at present prepared by the Australian Statistician is known as the Consumer Price Index.

Past retail price indexes

Information concerning past retail price indexes can be found on pages 631-2 of the *Victorian Year Book* 1977.

Consumer Price Index*Introduction*

This retail price index was first compiled in 1960, retrospective to September quarter 1948. It replaced both the 'C' Series Retail Price Index and the Interim Retail Price Index in the official statistical publications of the Australian Bureau of Statistics.

The incidence of change in the pattern of household expenditure has been such as to make it necessary to construct not one but a series of new indexes introducing additional items and changes in weighting patterns at short intervals. The Consumer Price Index, therefore, consists of a sequence of nine short-term retail price indexes, chain-linked at June quarter 1952, June quarter 1956, March quarter 1960, December quarter 1963, December quarter 1968, December quarter 1973, September quarter 1974, and September quarter 1976 into one series with reference base year 1966-67 = 100.0.

Composition and weighting pattern

The Consumer Price Index covers a wide range of commodities and services and with the ninth series has been arranged in the following eight major groups: food, clothing, housing, household equipment and operation, transportation, tobacco and alcohol, health and personal care, recreation. The structure of the ninth series was derived from the Household Expenditure Survey 1974-75, having in mind the past general description of the Consumer Price Index as a measure of variations in prices of goods and services affecting a high proportion of expenditure of wage earner households in the aggregate.

Special tabulation of data from the Household Expenditure Survey 1974-75 for a target group of households substantially supplied the basic weighting pattern for each of the seven cities for which index numbers are compiled. The target group related to metropolitan wage and salary earner households (households which derived at least 75 per cent of total income from wages and salaries) with a total income of more than the minimum adult wage (in the respective capital cities) but excluding the top 10 per cent of such households. The households included had average weekly total household incomes which ranged from approximately \$60 to \$370 in 1974-75.

Groups and sub-groups at September quarter 1976 are shown in the following table. The Consumer Price Index is essentially a combination of selected items under various headings, and the percentage contribution to the index aggregate for groups and sub-groups, and for the items themselves, should not be regarded as dissecting actual household expenditure into its various components. The percentage contributions shown are in proportion to expenditure in 1974-75, valued at relevant prices at September quarter 1976. They indicate the relative influence given to the various components in measuring the degree of price change from the beginning of the current linked series.

AUSTRALIA—CONSUMER PRICE INDEX: COMPOSITION AND
WEIGHTING PATTERN AT SEPTEMBER QUARTER 1976:
SIX STATE CAPITAL CITIES COMBINED

Group, sub-group	Percentage contribution to total index aggregate		Group, sub-group	Percentage contribution to total index aggregate	
	Sub-group, etc.	Group		Sub-group, etc.	Group
FOOD		21.0	HOUSEHOLD EQUIPMENT AND OPERATION		14.8
Dairy produce	2.1		Fuel and light	2.2	
Cereal products	2.4		Furniture and floorcoverings	3.2	
Meat and seafoods—			Appliances	1.9	
Beef and veal	2.0		Drapery	1.1	
Lamb and mutton	0.9		Household utensils and tools	1.5	
Pork	0.3		Household supplies and services	3.3	
Poultry	0.5		Postal and telephone services	1.5	
Other meat	0.8				
Fish	0.4				
Fruit and vegetables—			TRANSPORTATION		18.5
Fresh fruit and vegetables	2.0		Private transport—		
Processed fruit and vegetables	0.9		Motor vehicle purchase	5.5	
Soft drinks, ice-cream, and confectionery	2.1		Motor vehicle operation	10.8	
Meals out, take-away food	4.4		Public transport fares	2.1	
Other food	2.2				
CLOTHING		10.1	HEALTH AND PERSONAL CARE		4.0
Men's and boys'	2.9		Health services	1.5	
Women's and girls'	4.5		Personal care products	1.8	
Piecegoods and other clothing	0.5		Personal care services	0.7	
Footwear	1.7				
Clothing and footwear services	0.5		RECREATION		7.9
HOUSING		13.5	Books, newspapers, magazines	1.4	
Rent—			Other recreation goods	3.2	
Privately-owned dwellings	4.8		Holiday accommodation	0.9	
Government-owned dwellings	0.5		Other recreation services	2.3	
Home ownership—					
Local government rates and charges	1.8		TOBACCO AND ALCOHOL		10.2
House price, repairs, and maintenance	6.5		Alcoholic beverages	7.0	
			Cigarettes and tobacco	3.2	
			ALL GROUPS	100.0	100.0

As explained earlier, substantial changes in the pattern of expenditure of wage-earner households make it necessary to construct indexes with additional items and changes in the weighting patterns at intervals. These indexes are "linked" to form a "chain" of fixed weight aggregative indexes. Under this method, average percentage price movements are assessed on one pattern up to the time of the link and on another pattern thereafter.

Linking ensures that the series reflects only price variations and not differences in the cost of old and new combinations and lists of items. The introduction of new items and weights by linking does not of itself affect the level of the Consumer Price Index.

The principal changes in composition and weighting which have been effected at link dates are:

- (1) June quarter 1952—introduction of private motoring; changed proportions in modes of house occupancy; changed weights for fuel and light and fares.
- (2) June quarter 1956—changed proportions in modes of house occupancy; changed weights for fuel and light, fares, and private motoring.
- (3) March quarter 1960—introduction of television.
- (4) December quarter 1963—introduction of furniture; changed proportions in modes of house occupancy; changed weights for fuel and light, fares, and motoring.
- (5) December quarter 1968—changed proportions in modes of house occupancy; introduction of poultry, rented privately owned flats, heating oil, briquettes, and health services (by dentists, doctors, hospitals, and health insurance funds).
- (6) December quarter 1973—changed weights for all items; items fried chicken, meat pies, hamburgers, and sandwiches added to the Food Group forming a new sub-group, snacks, take away food; a new sub-group, recreational

goods and services added to the Miscellaneous Group, this sub-group also includes radio and television operation and cinema admission, as well as new items: camera, film, film processing, and phonograph records; weights for the motoring section took account of data from the 1971 Survey of Motor Vehicle Usage; local weights for individual cities were used for hairdressing, dry cleaning, cinema admission, and health services.

(7) September quarter 1974—radio and television licences deleted following abolition of radio and television licences with effect from 18 September 1974.

(8) September quarter 1976—a new group and sub-group structure, more consistent with international convention, was adopted. The main changes were the subdivision of the former Miscellaneous Group into four groups: Transportation, Health and Personal Care, Recreation, Tobacco and Alcohol; transfer of dry cleaning and shoe repairs to the Clothing Group; transfer of postal and telephone services to the Household Equipment and Operation Group; and transfer of drapery sub-group from the former Clothing and Drapery Group to the Household Equipment and Operation Group. The new series added the following to the directly represented areas of expenditure:

Food Group—meals out, fresh and frozen fish, cakes, oils and fats, fresh fruit and fresh vegetables; Household Equipment and Operation Group—fertiliser, seeds, etc., insurance of dwelling and contents, travel goods, repairs to household goods; Transportation Group—motor vehicle comprehensive and third party property insurance, taxi and air fares, motor cycle purchase price; and Recreation Group—books, sound equipment, sports equipment, caravans, bicycles, toys, games, holiday accommodation, television hire, spectator admission, charges for sports services.

The sets of weights used for the different periods covered by the Consumer Price Index have been derived from the analysis of statistics of production and consumption, censuses of population and retail establishments, the Survey of Motor Vehicle Usage, the continuing Survey of Retail Establishments, from information supplied by manufacturing, commercial, and other relevant sources, from special surveys, and from the Household Expenditure Survey 1974-75.

All groups index numbers, and group index numbers for each of the eight major groups are compiled and published regularly for the six State capital cities separately and combined, and for Canberra. The separate city indexes measure price movements within each city individually. They enable comparisons to be made between cities about differences in the degree of price movement, but not about differences in price level. Similarly, the separate group indexes measure price movement of each group individually. They enable comparisons to be made about differences in the degree of price change in the different groups, but do not show the comparative cost of the different groups.

AUSTRALIA—CONSUMER PRICE INDEX: ALL GROUPS: SIX STATE CAPITAL CITIES AND CANBERRA

(Base of index for each city and for six State capital cities combined:
year 1966-67 = 100.0) (a)

Year	Six capitals (b)	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Canberra
1967-68	103.3	103.2	103.7	103.3	102.9	102.9	104.6	102.6
1968-69	106.0	106.2	106.2	105.5	105.3	105.5	106.1	104.4
1969-70	109.4	110.6	108.7	108.4	108.2	109.4	108.5	107.4
1970-71	114.6	116.8	113.1	114.2	112.5	114.1	112.6	113.0
1971-72	122.4	126.3	119.7	121.6	119.2	120.7	119.9	119.4
1972-73	129.8	133.9	127.2	128.6	126.5	127.3	126.7	126.3
1973-74	146.6	151.3	144.0	146.1	143.9	140.6	142.6	142.8
1974-75	171.1	176.1	167.9	168.7	169.7	166.1	166.7	164.9
1975-76	193.3	199.0	189.5	190.9	190.5	189.6	190.0	187.3
1976-77	220.0	223.4	216.6	218.0	220.1	219.4	217.7	212.9

(a) Figures after the decimal point have limited significance. They are inserted to avoid the distortions that would occur in rounding.

(b) Weighted average of six State capital cities.

MELBOURNE—CONSUMER PRICE INDEX

(Base of each index: year 1966-67 = 100.0 except Health and Personal Care: December quarter 1968 = 100.0 Recreation: September quarter 1976 = 100.0)

Year	Food	Clothing	Housing	Household equip- ment and operation	Transport- ation	Tobacco and alcohol	Health and personal care	Recrea- tion	All groups
1967-68	106.0	102.1	103.8	102.0	101.5	102.6			103.7
1968-69	107.3	104.2	107.9	103.9	107.2	106.1			106.2
1969-70	109.1	107.4	112.2	104.4	110.7	108.6	102.5		108.7
1970-71	112.7	111.5	117.8	106.7	115.0	117.6	105.1		113.1
1971-72	116.8	117.9	124.9	110.9	122.6	127.2	119.2		119.7
1972-73	125.9	125.4	133.1	114.1	128.6	134.9	126.6		127.2
1973-74	148.8	142.3	148.3	124.8	139.0	146.9	151.0		144.0
1974-75	161.7	172.0	180.6	147.2	164.4	173.7	188.1		167.9
1975-76	177.8	200.4	214.0	169.5	194.1	214.0	149.3		189.5
1976-77	198.9	232.4	242.6	188.0	216.8	229.3	(a)266.1	103.7	216.6

(a) Note effects of arrangements concerning Medibank on net prices payable by households for medical and hospital services.

From September quarter 1976 the new group, Household Equipment and Operation, and the new Transportation and Tobacco and Alcohol groups were recalculated on the base year 1966-67 = 100. The new group, Health and Personal Care, was recalculated to the base December quarter 1968 = 100. The other group, Recreation, has a base September quarter 1976 = 100.

Long-term price movements

The index numbers shown in the following table give only a broad indication of long-term trends in retail price levels. They are derived by linking a number of indexes that differ markedly in scope.

The successive indexes used are: from 1901 to 1914, the 'A' Series Retail Price Index; from 1914 to 1946-47, the 'C' Series Retail Price Index; from 1946-47 to 1948-49, a composite of the Consumer Price Index Housing Group (partly estimated) and the 'C' Series Retail Price Index, excluding rent; and from 1948-49 onwards, the Consumer Price Index.

AUSTRALIA—RETAIL PRICE INDEX NUMBERS, 1901 TO 1976 :
SIX STATE CAPITAL CITIES COMBINED

(Base: year 1911 = 100)

Year	Index number	Year	Index number	Year	Index number	Year	Index number
1901	88	1921 (a)	168	1941	167	1961	471
1906	90	1926	168	1946	190	1966	517
1911	100	1931	145	1951	313	1971	621
1916 (a)	132	1936	141	1956	419	1976	1083

(a) November.

The prices of food and groceries in March 1977 shown in the following table are averages of prices for specified grades, qualities, brands, etc., charged by a number of selected retailers in Melbourne. The specified grades, etc., and the retailers have been selected as representative to measure price change over time. Prices of potatoes and onions are collected weekly and averaged to arrive at monthly prices, while prices of the other items are collected as at the mid-point of each month. The prices are approximate indicators of price levels and changes therein. They do not purport to be the actual averages of all retail sales of these items.

Past average retail prices in Melbourne of selected commodities in selected years can be found on page 637 of the *Victorian Year Book 1977*.

**MELBOURNE—AVERAGE RETAIL PRICES OF SELECTED
COMMODITIES, MARCH 1977**

Item	Unit	Price	Item	Unit	Price
		cents			cents
Bread, ordinary white, delivered	900 g	46.0	Salmon, imported pink	220 g can	98.9
Flour, self-raising	1 kg pkt	44.1	Tomato sauce	300 ml bot.	35.6
Breakfast cereal, corn based	500 g pkt	63.1	Spaghetti (in tomato sauce)	440 g can	33.0
Biscuits, dry	225 g pkt	38.0	Prepared baby food	125 g can	16.7
Tea	250 g pkt	64.6	Beef, rib (without bone)	lb	77.5
Sugar	2 kg pkt	56.3	Beef, steak, rump	lb	141.3
Peaches	822 g can	56.3	Beef, steak, chuck	lb	58.5
Potatoes	lb	9.1	Beef, silverside, corned	lb	78.7
Onions	lb	20.1	Sausages	lb	51.9
Butter	500 g	86.6	Pork, leg	lb	126.0
Margarine, table poly-unsaturated	500 g pkt	79.1	Pork, chops	lb	129.4
Eggs	doz 55 g	107.6	Lamb, leg	lb	86.3
Milk, fresh, bottled, delivered	2x600 ml	43.0	Lamb, chops, loin	lb	99.3
Bacon, rashers, pre-pack	250 g	117.3	Lamb, chops, forequarter	lb	71.1

WHOLESALE PRICE INDEXES

General background

Earlier indexes of wholesale prices compiled by the Australian Bureau of Statistics were the Melbourne Wholesale Price Index and the Wholesale Price (Basic Materials and Foodstuffs) Index.

New series of wholesale price index numbers are being developed. In the following section particulars are given of indexes recently developed relating to building and materials used in, and articles produced by, manufacturing industry.

Specific indexes

Melbourne Wholesale Price Index

Past wholesale prices information can be found on page 638 of the *Victorian Year Book 1977*.

Wholesale Price (Basic Materials and Foodstuffs) Index

Past wholesale prices information can be found on page 638 of the *Victorian Year Book 1977*.

Price Indexes of Materials used in Building

Prices for use in these indexes are collected at the mid-point of the month to which the index refers, or as near to it as practicable. They relate to specified standards of each commodity and are obtained in all State capital cities from representative suppliers of materials used in building.

Price Index of Materials used in Building Other than House Building

This Index measures changes in the wholesale prices of selected materials used in the construction of buildings other than houses and low-rise flats (in general those up to three storeys). Since the weights are based on an average materials usage over a range of types of building within the defined area, the Index is not necessarily applicable to any specific building or type of building included in that area.

**MELBOURNE—WHOLESALE PRICE INDEX OF MATERIALS
USED IN BUILDING OTHER THAN HOUSE BUILDING**
(Base of each index: year 1966-67 = 100.0)

Group	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77
Concrete mix, cement, sand, etc.	124.9	129.6	135.6	162.6	191.8	216.2
Cement products	122.6	133.4	145.0	176.7	215.3	237.3
Bricks, stone, etc.	123.0	130.8	146.0	169.3	189.8	205.4
Timber, board, and joinery	118.7	127.7	156.7	189.9	212.0	238.1
Steel and iron products	128.4	136.4	155.5	197.8	239.6	272.3
Aluminium products	125.0	134.5	149.6	174.2	194.1	217.1
Other metal products	118.6	123.1	153.2	152.7	164.3	183.5
Plumbing fixtures	136.4	149.8	167.7	210.2	249.9	267.5
Miscellaneous materials	115.5	123.6	133.6	164.8	187.6	203.0
Electrical installation materials	114.7	120.5	138.3	157.4	177.4	199.6
Mechanical services components	128.0	132.8	144.3	181.4	201.6	225.6
All groups	123.9	131.2	148.0	180.6	209.4	234.8

Price Index of Materials used in House Building

This Index measures changes in the prices of selected materials used in the construction of houses. Its composition is in accordance with the usage of materials in actual houses which were selected as representative for the purpose. The Index does not purport to represent buildings of any kind other than houses. The house building construction types included are those which have brick, brick veneer, timber, or asbestos cement sheeting as the principal material for the outer walls.

**MELBOURNE—WHOLESALE PRICE INDEX OF MATERIALS
USED IN HOUSE BUILDING**
(Base of each index: year 1966-67 = 100.0)

Group	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77
Concrete mix, cement, and sand	122.0	127.2	132.8	159.7	189.4	213.1
Cement products	138.2	141.5	160.6	205.2	241.1	279.1
Clay bricks, tiles, etc.	123.5	132.0	148.7	172.4	192.3	209.4
Timber, board, and joinery	114.5	125.3	158.7	190.5	207.3	233.5
Steel products	126.4	135.3	154.5	196.5	231.9	269.4
Other metal products	119.4	124.8	147.1	168.5	185.4	206.2
Plumbing fixtures, etc.	120.5	131.2	146.4	177.4	204.6	218.7
Electrical installation materials	119.6	125.3	145.3	165.9	181.0	200.3
Installed appliances	104.3	106.8	115.1	145.3	166.8	181.9
Plaster and plaster products	119.2	120.4	124.2	151.4	168.1	175.8
Miscellaneous materials	116.5	124.7	135.8	161.6	186.7	208.2
All groups	118.9	126.5	147.8	178.4	200.1	223.6

Price Indexes of Metallic Materials

Each of the two indexes in this monthly series is compiled on the reference base year 1968-69 = 100.0. Separate indexes have not been calculated for each State capital city.

In the main, prices are collected at the mid-point of each month. Prices collected are, as far as possible, those normally charged to representative manufacturers for goods delivered into their stores.

Price Index of Metallic Materials used in Manufacture of Fabricated Metal Products

This Index comprises important metallic materials selected and combined in accordance with a weighting pattern reflecting value of usage as reported at the 1968-69 Census of Manufacturing Establishments for establishments classified to the Fabricated Metal Products Sub-division of Manufacturing Industry

(Australian Standard Industrial Classification, Sub-division 31). Index numbers are compiled on an Australia-wide basis for four groupings and an All Groups combination as shown in the following table :

**AUSTRALIA—WHOLESALE PRICE INDEX OF METALLIC MATERIALS
USED IN MANUFACTURE OF FABRICATED METAL PRODUCTS**

(Base of each index: year 1968-69 = 100.0)

Group	Value weight	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77
	per cent						
Iron and steel	83.2	116.2	122.6	131.7	161.1	200.2	227.8
Aluminium	8.9	106.8	109.2	118.2	141.9	158.0	176.9
Copper and brass	5.7	106.2	106.6	138.1	131.1	137.5	158.1
Other metallic materials	2.2	83.6	98.7	151.3	192.4	207.8	231.2
All groups		100.0	114.1	120.0	158.4	193.1	219.4

Price Index of Materials used in Manufacturing Industry

This Index is based on materials used by establishments classified to Division C, Manufacturing, of the Australian Standard Industrial Classification (ASIC). The index is on a net basis, i.e., it relates in concept only to those materials which are used by establishments within the Manufacturing Division in Australia and which have been produced by establishments outside that Division. Such outside establishments are either Australian establishments classified to other divisions of Australian industry (e.g., mining or agriculture) or are overseas establishments (including overseas manufacturing establishments).

Materials purchased by establishments classified to the Australian Manufacturing Division from other establishments in that Division are outside the scope of the Index and are excluded, but similar materials when purchased from overseas are included. A material which undergoes transformation at a number of stages during manufacturing will be, at each stage, an input to particular manufacturing industries. However, in keeping with the scope and net basis of this Index, the material is priced only at the stage it first enters manufacturing. The pricing and weights for the Index reflect usage of materials at the point of entry to the Manufacturing Division.

The items included in the Index were selected on the basis of values of materials used in 1971-72 by establishments classified to the Manufacturing Division of ASIC. The selected items were allocated weights in accordance with estimated manufacturing usage in the year 1971-72.

The following table shows index numbers for index groups based on ASIC, using industry of origin and distinguishing home produced and imported materials :

**AUSTRALIA—PRICE INDEX OF MATERIALS USED IN MANUFACTURING
INDUSTRY : GROUP INDEX NUMBERS BASED ON INDUSTRY OF ORIGIN**

(Base of each index: year 1968-69 = 100.0)

Group	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77
Home produced materials—						
Agriculture	103.5	125.2	147.9	132.2	132.3	152.5
Forestry and fishing	120.9	130.9	157.3	187.8	213.7	245.2
Mining	97.1	100.4	119.0	129.0	163.3	189.1
Electricity	101.7	103.7	109.9	124.6	137.9	148.8
Total home produced materials	102.0	117.2	137.6	131.6	142.0	163.1
Imported materials—						
Agriculture	95.5	105.2	130.6	149.3	166.5	258.6
Mining	112.0	109.1	196.3	357.8	423.6	479.5
Manufacturing	103.3	104.4	113.1	149.5	162.6	182.1
Total imported materials	104.1	105.1	127.1	181.5	202.9	233.2
All groups	102.5	113.9	134.7	145.1	158.6	182.2

It should be noted that "industry of origin" in some instances may not be identical with the industry from which manufacturers directly purchase their materials. For example, some manufacturers purchase natural gas from establishments classified to ASIC Division B (Mining), while other manufacturers purchase this item from establishments classified to ASIC Division D (Electricity, Gas, and Water). However, for the purposes of this Index, the index item "Gas", which covers both natural gas and town gas, is included in the category "Home produced—Mining".

Index numbers in the following table are in groups based on the Standard International Trade Classification (SITC). This is a commodity-based classification.

AUSTRALIA—PRICE INDEX OF MATERIALS USED IN MANUFACTURING
INDUSTRY : GROUP INDEX NUMBERS BASED ON STANDARD
INTERNATIONAL TRADE CLASSIFICATION
(Base of each index: year 1968–69 = 100.0)

Group	1971–72	1972–73	1973–74	1974–75	1975–76	1976–77
Home produced and imported materials—						
Food, live animals, and tobacco	104.7	122.8	145.9	132.4	132.5	154.9
Raw materials (excluding fuels)	100.8	115.9	140.7	149.3	163.0	191.5
Electricity, gas, and fuels	99.1	99.1	126.2	179.5	229.0	254.8
Imported manufacturing materials—						
Chemicals	95.6	91.4	96.3	141.9	149.4	160.3
Metal manufactures, machinery, transport, equipment, and parts	114.9	119.3	118.6	148.7	179.6	211.6
Other manufactured goods	97.5	97.4	106.1	137.4	148.4	164.5
All groups	102.5	113.9	134.7	145.1	158.6	182.2

The measurement of price change in this field is particularly subject to index number problems arising from the combination of disparate price movements with marked changes in the relative importance of some items. The effect of these on the continuing representativeness of the measures will be most marked for some of the groupings into which the All Groups index is disaggregated. This has been particularly so in the case of the commodity group "Electricity, gas, and fuels" where marked changes in the usage of items have occurred together with extremely disparate price movements, such as the significant decreases in the price of gas associated with the increasing usage of natural gas and the large increases in prices of imported crude petroleum since late 1973.

In concept, pricing for the new index is at the point at which the materials physically enter the manufacturing sector. Therefore, as far as possible, prices are on a "delivered into store" basis.

Transfers which do not take place on the open market present problems in the measurement of price change. An example is where a vertically-integrated enterprise extracts a mineral (mining activity) and also processes it (manufacturing activity). Since the material is transferred from one part of the enterprise to another there is usually no transaction price. In such instances various methods of imputing movements in market prices have been adopted. Depending on circumstances and the availability of data, these methods include using movements in opportunity cost (based, for example, on the price of the material in an established market) or movements in cost based on expenses actually incurred in obtaining the material. Imputations of this kind enter partly into price series for items such as iron ore, bauxite, nickel, and coal.

In the case of seasonally produced items such as fruit and vegetables, where deliveries do not occur over the whole year, the previous season's prices are in general repeated for the months outside the selling season until the subsequent season's prices become operative.

Prices collected are mainly monthly average prices rather than prices relating to the mid-point of the month. This is because there is a high frequency of price change for many of the materials included in the Index, and prices at one point of time within a month are not always representative of the average prices for a whole month.

Price series for electricity and gas are based on the average realised cost per unit of actual monthly sales to "industrial" users by selected major suppliers and are, therefore, subject to fluctuations because of changing usage patterns.

Price Indexes of Articles Produced by Manufacturing Industry

The composition of these indexes 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.

A net index is provided for the Manufacturing Division of ASIC and also net indexes for selected sub-divisions.

The Manufacturing Division Index represents price movements of goods which are produced by establishments in Division C, Manufacturing, for sale or transfer to establishments outside the Manufacturing Division or for use as capital equipment. Articles sold or transferred by establishments in the 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 Manufacturing Division Index reflect sales and transfers of articles at the point of exit from the Manufacturing Division.

For the selected sub-divisions within the Manufacturing Division only a minor proportion of sales and transfers is to other Manufacturing sub-divisions, so that the relevant components of the Division Index are representative for the purpose of compiling net indexes for these sub-divisions, i.e., 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. 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 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 the Manufacturing Division.

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

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.

The selected items were allocated weights in accordance with estimated net sector production 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.

Items have been combined into the published industry groupings using the ASIC. In the case of Sub-division 21-22, "Food, beverages and tobacco", an index series is also published for the special groupings "Food, beverages and tobacco, excluding meat and abattoir by-product, and raw sugar", in order to isolate some of the more uneven price movements which frequently occur in this Sub-division. 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).

Most of the prices used in these indexes relate to the mid-point of the month. Prices are manufacturers' selling prices exclusive of excise and sales tax, and reflect the effects of subsidies and bounties paid to manufacturers.

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.

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.

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.

Price series used in these indexes relate to goods of fixed specifications in order to measure price changes for representative products of constant quality.

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.

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.

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.

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 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.

The following table presents index numbers for the Manufacturing Division of ASIC and for selected net sub-divisions:

AUSTRALIA—PRICE INDEX OF ARTICLES PRODUCED BY
MANUFACTURING INDUSTRY: INDEXES FOR MANUFACTURING
DIVISION AND SELECTED NET SUB-DIVISIONS OF MANUFACTURING

(Base of each index: year 1968-69 = 100.0)

Manufacturing Division and sub-division	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77
Manufacturing Division	113.9	120.7	134.6	158.1	177.8	196.9
Selected net Sub-divisions (a)						
Food, beverages, and tobacco (21-22)	117.3	127.7	142.8	153.0	163.5	180.0
Clothing and footwear (24)	112.8	119.9	136.7	161.3	185.2	208.1
Wood, wood products, and furniture (25)	118.4	125.1	148.8	190.0	219.9	246.8
Paper, paper products, and printing (26)	117.5	122.9	134.6	168.5	196.3	212.8
Chemical, petroleum, and coal products (27)	104.1	106.0	111.6	142.4	168.2	182.4
Glass, clay, and other non-metallic mineral products (28)	114.7	119.6	129.6	158.3	183.2	202.5
Basic metal products (29)	109.3	113.2	129.4	151.9	174.0	200.6
Fabricated metal products (31)	116.5	125.1	142.3	183.2	217.1	244.9
Transport equipment (32)	111.3	116.0	124.9	151.2	175.8	195.0
Other industrial machinery and equipment and household appliances (33)	114.0	119.8	132.4	158.9	179.2	199.4

(a) ASIC sub-division codes are shown in brackets.

NOTE. A full description of the Manufacturing Division and selected sub-divisions is available in *Australian Standard Industrial Classification (Preliminary Edition)*, 1969.

*Price Indexes of Copper Materials used in
Manufacture of Electrical Equipment*

The construction of these special purpose wholesale price indexes is based on information supplied by the Electricity Supply Association of Australia and the Australian Electrical Manufacturers' Association, whose members use measures of this type for the price adjustment of contracts.

Four copper materials—busbar, paper covered strip, polyvinyl chloride, cable, and enamelled winding wire—have been combined into five separate indexes in accordance with weighting patterns reflecting value of usage in each of five selected activities of the Electrical Machinery Equipment and Supplies Class of Manufacturing Industry (Australian Standard Industrial Classification, Class 3326). The indexes, each of which has separate weighting patterns for the four copper materials, have been compiled on an Australia-wide basis for the five selected manufacturing activities and are shown in the following table:

AUSTRALIA—WHOLESALE PRICE INDEXES OF COPPER MATERIALS
USED IN MANUFACTURE OF ELECTRICAL EQUIPMENT :
INDEX NUMBERS FOR SELECTED ACTIVITIES
(Base of each index: year 1968-69 = 100.0)

Copper materials used in manufacture of—	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77
Electric motors and motor control equipment	104.8	110.4	136.0	133.1	139.7	156.7
High voltage and low voltage switch gear	104.9	111.2	148.0	137.1	145.3	167.3
Distribution transformers	101.3	105.7	130.1	122.4	128.1	145.6
Power transformers	95.2	98.3	128.0	116.3	122.4	144.3
General transformers	104.0	109.4	137.0	128.9	135.3	153.4

Price Index of Electrical Installation Materials

The items in this Index have been selected as representative of materials used in electrical installation in structures such as hospitals, schools, factories, and multi-storeyed commercial buildings and flats.

In general, the weights for the Index were derived from information relating to the values of materials used in selected representative projects in Sydney and Melbourne during the three years 1960-61 to 1962-63. The projects selected for this purpose had a minimum electrical materials and labour content of \$10,000.

The items are priced at the middle of the month for which index numbers are published. The basis of pricing is the price to electrical contractors, delivered on site or into store, in the metropolitan areas of Sydney and Melbourne. The price series used relate to specific standards for each item and in some cases are combinations of prices for different makes, types, etc.

AUSTRALIA—WHOLESALE PRICE INDEX OF ELECTRICAL
INSTALLATION MATERIALS

(Base of each index: year 1959-60 = 100.0)

Group	Value weight	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77
	per cent						
Conductors	40	126.7	133.5	165.1	168.2	178.1	197.5
Conduit and accessories	25	120.9	126.8	138.5	169.6	199.0	227.8
Switchboard and switchgear material	35	137.7	144.2	156.6	192.3	224.5	252.8
All groups	100.0	129.1	135.5	155.5	177.0	199.6	224.4

Further reference, 1977

EXPORT PRICE INDEX

For the period from July 1959 to June 1969 changes in the level of export prices of selected major groups of items were indicated by a fixed weights index which made no allowance for variations in quantities exported (see pages 223-4 of the *Victorian Year Book* 1970). Since June 1969 the Index has been compiled on an interim basis which incorporates a re-weighting of the items contained in the previous series and the inclusion of some additional items.

In the interim series, weights have been derived from values of exports for the year 1969-70 and the group weights have been adjusted to reflect the proportion that the value of wool bore to the value of all exports in that year.

In addition to the twenty-nine items of the previous index, the interim index includes a further four items, namely, iron ore, bauxite, alumina, and mineral sands. Pending re-grouping in the final index these items are not attached to any of the previous single groups whose item content is therefore unchanged. The four new items are incorporated in the All Groups index number, but only from the link date of June 1969. The thirty-three items contained in the interim series constituted 74 per cent of the total value of Australian exports (merchandise and non-merchandise) in 1969-70.

The price series used in these indexes relate generally to specified standards for each commodity and in most cases are combinations of prices for a number of representative grades, types, etc. For some commodities, price movements in the predominant market or markets are used, while for other commodities average realisations in all export markets are used. As nearly as possible, prices used are on the basis f.o.b. at the main Australian ports of export.

Index numbers for each of the groups of the previous index and for All Groups are shown in the following table (linked at June 1969). The Index is published monthly and the index figures in the table are simple averages of the twelve monthly index numbers in each respective year.

AUSTRALIA—EXPORT PRICE INDEX NUMBERS

(Base of each index: year 1959-60 = 100.0)

Year	Wool	Meats	Dairy produce	Cereals	Dried and canned fruits	Sugar	Hides and tallow	Metals and coal	Gold	All groups
1964-65	102	110	94	107	100	100	91	123	101	105
1965-66	107	120	86	107	102	84	107	122	101	107
1966-67	103	124	84	114	101	67	89	117	101	105
1967-68	95	125	79	109	95	67	67	120	104	100
1968-69	99	131	72	104	97	72	73	123	117	102
1969-70 (a)	87	148	73	96	99	93	94	143	109	103
1970-71 (a)	67	152	88	100	102	113	94	139	109	101
1971-72 (a)	72	147	135	99	103	127	96	138	126	104
1972-73 (a)	179	178	119	102	106	136	139	142	180	134
1973-74 (a)	172	201	109	184	152	176	161	196	289	160
1974-75 (a)	121	132	127	256	176	378	141	263	391	181
1975-76 (a)	127	150	122	240	162	335	151	286	359	187
1976-77	164	169	128	219	184	314	203	329	370	206

(a) Interim series.

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- 6407.0 Price Index of Materials used in Building Other than House Building (monthly)
- 6408.0 Price Index of Materials used in House Building (monthly)
- 6409.0 Price Index of Electrical Installation Material (monthly)
- 6410.0 Price Indexes of Metallic Materials (monthly)
- 6411.0 Price Index of Materials used in Manufacturing Industry (monthly)
- 6412.0 Price Indexes of Articles Produced by Manufacturing Industry (monthly)