

## V.—COMPARISONS BETWEEN INDEX-NUMBERS IN AUSTRALIA.

1. **General.**—Any comparisons which can be made between the index-numbers given in the preceding pages are, owing to certain considerations, subject to qualification. In the first place it should be noticed that the import and export value index-numbers, and also the retail price (Cost of Living) index-numbers (except in the case of Sydney, and then only for a restricted list of commodities) are available for the Commonwealth period (since 1901) only. Secondly, the wholesale price index-numbers, although available since 1871, refer to Melbourne prices only. The only general comparison that can be made for any lengthy period is, therefore, between the Sydney retail price index-number and the Melbourne wholesale price index-number. The import and export value index-numbers, which relate to the whole Commonwealth, can be compared with these for the years 1901 to 1912.

For special purposes it may, of course, be essential that the index-numbers should relate to special groups or lists of commodities or services. For example, if it be desired to compare changes in import and export values of food and groceries with the wholesale and retail prices of the same class of commodities in Melbourne, reference would, of course, be made to the index-numbers for these special groups, and although such are not ordinarily necessary, specific questions may arise which demand such comparisons.

2. **Index-Numbers and Graphs.**—In the subjoined table comparisons are shewn between the following index-numbers:—

- (i.) Import and export values for the whole Commonwealth, 1901 to 1911.
- (ii.) Wholesale prices in Melbourne, 1901 to 1912.
- (iii.) Retail prices and house rent in Melbourne, 1901 to 1912.
- (iv.) Retail prices in Sydney, 1901 to 1912, based on a restricted list of only 18 commodities (the data being obtained from State Official publications).
- (v.) Retail prices in Sydney, 1901 to 1912, based on prices of 46 commodities.
- (vi.) Retail prices and house rent in Sydney, 1901 to 1912.

In addition, a special comparison is made between the index-numbers based on import and export values, and on wholesale and retail prices of food and groceries in Melbourne.

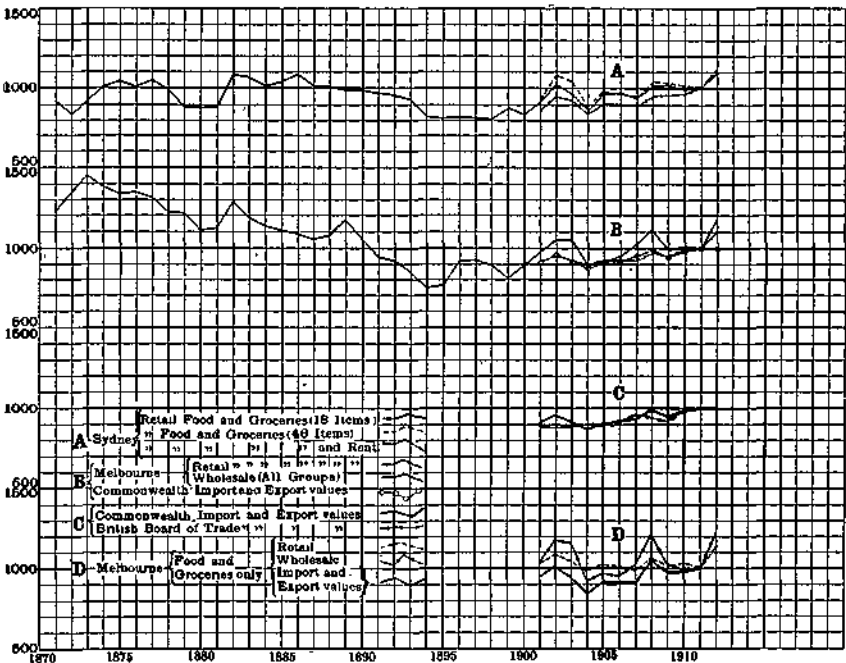
Price-Indexes in Australia, Comparison between different Index-Numbers, 1901-1912

YEAR.	Import and Export Values.		Wholesale Prices in Melbourne.		RETAIL PRICES.				
					Melbourne.		Sydney.		
	All Groups.	Food & Groceries only.	All Groups.	Food & Groceries only.	All Groups.	Food & Groceries (18 Commodities.)†	Food & Groceries (40 Commodities.)		
1901 ..	911	949	974	1,034	916	1,032	866	916	927
1902 ..	959	1,005	1,061	1,176	951	1,085	950	1,023	1,078
1903 ..	918	943	1,049	1,160	927	1,041	929	966	1,040
1904 ..	870	843	890	914	899	960	846	868	886
1905 ..	907	912	910	966	924	1,018	909	976	982
1906 ..	921	910	948	956	924	1,010	906	976	974
1907 ..	935	905	1,021	1,024	922	939	898	942	946
1908 ..	993	1,053	1,115	1,218	976	1,064	956	1,010	1,041
1909 ..	952	974	998	1,025	953	1,015	959	1,018	1,023
1910 ..	989	976	1,003	988	992	1,026	965	997	1,011
1911 ..	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1912* ..	†	†	1,174	1,226	1,100	1,145	1,099	†	1,119

\* First nine months only. † Not available. ‡ Computed from data published in State Official documents.

These index-numbers are shown in the following graphs. The Melbourne wholesale price and the Sydney retail price index-numbers have been plotted as far back as 1871. The actual index-numbers prior to 1901 have been given on pages 48 and 40 respectively, and are not repeated in the above table.

PRICE-INDEXES, COMPARISONS BETWEEN INDEX-NUMBERS IN AUSTRALIA, 1871 TO 1912.



3. **General Comparisons.**—In making comparisons between these particular index-numbers, it is to be borne in mind that the figures do not, of course, directly indicate the relation between the different prices themselves, that is between wholesale and retail prices, etc.; what they shew is the relative increase or decrease in each set of price-indexes in relation to those of the basic year (1911). Though the retail price is of course higher than the wholesale, the index-number may for any year be greater for wholesale than for retail prices.

Comparing the first two graphs on page 72, the course of retail prices (in Sydney) is shewn in relation to wholesale prices (in Melbourne). The first noticeable feature is that in the early years, from 1871 to about 1891, the price-index was much higher for the wholesale than for the retail prices. Up to the year 1890-1, the wholesale price index-number was uniformly greater than 1000—that is, wholesale prices were higher than in 1911—whereas in the case of retail prices it may be seen that during several of the early years the index-number was less than 1000—that is, retail prices in these years were less than in 1911. Even during the early years there is, however, considerable similarity in the general trend of the two graphs, and this similarity is more marked during the latter half of the period under review. It may be seen, for example, that in both graphs prices were falling from 1877 to 1880, and that there was a sudden rise in 1882, followed by a general downward movement until 1894. Again, from 1900 to 1902 prices were rising, with a sudden fall in 1904.

Broadly speaking, it appears that the fluctuations in prices are more violent and more frequent in the case of wholesale than retail prices. This is, perhaps, more clearly seen by reference to graphs B or D, and by comparing, for the period 1901 to 1912, the Melbourne wholesale price-indexes with the Melbourne retail price-indexes. Graph B includes all groups (as well as house-rent in the retail price-indexes), while graph D refers to food and groceries only. In both cases it may be seen that the fluctuations are more marked in regard to wholesale than retail prices. The reasons for this difference, which has been observed to exist generally, and not merely in Australia, are not immediately apparent, and will be made the subject of further investigation by this Bureau. Quite a large number of explanations have been put forward. For example, it has been stated to be due to the fact that a variation in the wholesale price of a raw material may be substantial in itself, but yet may not be large enough to necessitate a change in the retail price of the manufactured commodity; that is to say, the cost of the labour element in the retail price of a commodity may be comparatively large, or, again, there may be a disinclination on the part of shopkeepers to vary prices until the urgent necessity therefor arises. It is stated, moreover, that retail dealers in certain branches of trade purchase their stock at contract or standard prices, which do not reflect all the movements in the prices of raw materials.

A reference to graph A will shew that the price-indexes, based on 18 commodities only, shewn by the continuous line, run in many places very close to those based on the 46 commodities shewn by the broken

line, though the former are generally too low. The lowest of the three lines in this graph shows the index-numbers not only for the 46 commodities, but the commodities together with the house rent. From this it may be seen that the inclusion of house-rent, which had uniformly increased during the twelve years 1901 to 1912, generally has the effect of making the graph more free from sudden change, and results in a greater increase in the cost of living in the later, as compared with the earlier, years.

Graph B, from 1901 to 1912, shows that there is a remarkably close agreement between the index-numbers computed from import and export values, and those based on retail prices and house rents in Melbourne. It shows, moreover, that *the increase in the cost of living has advanced at a greater rate than wholesale prices*; it is shown below that *the greater rate of increase in cost of living is entirely due to house rent*. The average price-level for import and export values in 1901-5, as compared with 1911 (= 1000) was 913, as against 923 for retail prices and rent, and 975 for wholesale prices. The corresponding averages for the years 1906-10, as compared with 1911; were 958, 953, and 1016, respectively. During the years 1901 to 1912 at any rate, therefore, cost of living in Melbourne has closely followed the index-numbers based on import and export values, both having increased to a greater extent than wholesale prices.

That the increase in cost of living (retail prices and house rent) in Melbourne has been greater than the increase in Melbourne wholesale prices is shown by the subjoined statement.

**Index-Numbers, shewing Comparison between Wholesale and Retail Prices in Melbourne, 1901 to 1912.\***

PARTICULARS.	WHOLESALE PRICES.		RETAIL PRICES, ETC.	
	All Groups.	Groceries and Food only.	All Groups, including House Rent.	Groceries and Food only.
Average in 1901-5 ..	1,000	1,000	1,000	1,000
Index-Number for 1911-12	1,115	1,060	1,138	1,040
Average in 1906-10 ...	1,000	1,000	1,000	1,000
Index-Number for 1911-12	1,070	1,068	1,102	1,050

\* First nine months only of year 1912.

The above figures show that, taking all groups together, wholesale prices had increased from 1000 in 1901-5 to 1115 in 1911-12; that is, an increase of 11.5 per cent., as against a corresponding increase for

retail prices and house rent of 13.8 per cent. Similarly comparing prices in 1906-10 with those in 1911-12, the wholesale index-number increased 7 per cent., as against 10.2 per cent. in the case of retail prices and rent. Turning, however, to the index-numbers for retail prices of groceries and food alone (last column), it is seen that retail prices had not increased in 1911-12 as much as the wholesale prices, either for groceries and food alone, or for all groups combined. It appears, therefore, that, *although cost of living in Melbourne has increased at a greater rate than wholesale prices, retail prices of food and groceries alone have not increased so much as wholesale prices, the greater increase in the cost of living being entirely due to advance in house rent.*

In graph C the index-numbers computed from import and export values for the whole Commonwealth are shewn in relation to index-numbers published by the Labour Department of the Board of Trade, England. The items included in these two sets of figures are almost uniform, prices in both cases being computed from the import and export values. It may be seen that the general trend of the graphs is, for the most part, identical, with the exception of the years 1902 and 1908, when prices were high in Australia owing to the droughts, and of the year 1904, when low prices prevailed in Australia.

The last graph (D) has already been referred to. It relates to groceries and food only, and shews clearly the connection between wholesale and retail prices in Melbourne, and import and export values for the whole Commonwealth. The large increases in 1902 and 1908 and the low prices prevailing in 1904 are seen in all the graphs. The average value of the index-numbers during the years 1901-5 were 1050, 1031, and 930 for wholesale, retail, and import and export prices, respectively, the corresponding levels for the next five years being 1042, 1021, and 964, respectively.

## VI.—COMPARISONS BETWEEN INDEX-NUMBERS FOR AUSTRALIA AND OTHER COUNTRIES.

**1. General.**—In several of the more important countries of the world, index-numbers have been computed on some system for a number of years. It is, therefore, possible to make some comparisons between the course of prices in Australia and other countries, but such comparisons are subject, however, to certain qualifications, inasmuch as there is no uniformity either in the list of commodities included or in the methods adopted for the collection of the data. Moreover, as already pointed out, the methods and technique adopted in the computation of the index-numbers in other countries are ordinarily far from satisfactory, and the results obtained are of limited accuracy, and are not reversible. This lack of reversibility becomes of special importance when it is desired to compare the various index-numbers by taking a common period as the base period throughout, as in the present case. For the index-numbers in different countries being originally computed with various periods or years as base, their reduction to a common period or year as base does not give the same results as would have been obtained had they been originally computed with the common period as base.