

**ECONOMIC STATISTICS FOR
AUSTRALIAN ARBITRATION
COURTS**

J. L. K. GIFFORD

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ECONOMIC STATISTICS FOR AUSTRALIAN ARBITRATION COURTS

EXPLANATION OF THEIR USES, CRITICISM OF EXISTING
STATISTICS AND SUGGESTIONS FOR THEIR IMPROVEMENT

By

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PREFACE.

The aim of this booklet is to familiarise the advocates in arbitration courts with reasonings about wages and the effect of some of the chief economic events on wages and employment and with the uses of the economic statistics which help judges in their efforts to fix wages at the level which is best for the general community. Chapter IV. is devoted to pointing out how little utility for this purpose there is in an index of the value of production per head of those engaged in industry, an index which was proposed by the Economic Commission on the Queensland Basic Wage as a general guide for arbitration courts in varying minimum wages.

Another aim is to urge advocates and judges in arbitration courts to use their influence to have the Commonwealth statistics very much improved. At present the Commonwealth Bureau of Census and Statistics is not doing the statistical work necessary for arbitration courts, even the most important part of that work. The Bureau does not collect and publish reliable statistics of unemployment in Australia. This is discussed in Chapter II., and a suggestion made there that courts should have detailed information about unemployment promptly each month. Again, there is no adequate index number of the total cost of living published for Australia, the Commonwealth official indexes being either based on unrepresentative samples of goods or compiled by faulty methods, the faults in method being due to lack of financial resources. In that lies the importance of arousing interest in these economic statistics. If the judges of arbitration courts and the advocates of employers and employed make a strong demand for elaborate and promptly published economic statistics when they are known to be useful in the work of wage fixing, then financial resources will be made available to allow more efficient methods of collection and compilation to be adopted.

I wish to thank Mr. Reading, editor of the *Brisbane Telegraph*, for permission to use an article on unemployment which appeared in the *Telegraph* of March 16th, 1927, and which is reprinted with some additions in Chapter II.

J. L. K. GIFFORD.

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APPENDIX A.

The cost, at the base periods, of the mass units of the commodities included in the retail prices index numbers published by the Commonwealth Bureau of Census and Statistics. The mass unit of each commodity is one-millionth part of the estimated annual average consumption of that commodity in the Commonwealth in the period 1906 to 1910.

TABLE 1.

Aggregate cost of the mass units of the commodities included in the food, groceries and housing (4 and 5 rooms) index number of retail prices, at the average prices in the six capital cities in 1911. Figures supplied by the Commonwealth Statistician to the Queensland Registrar-General.

	d.	% of total.
Cost of the mass units of groceries	56,812	28.4
Cost of the mass units of dairy produce	35,050	17.5
Cost of the mass units of meat	33,003	16.5
Cost of the mass unit of housing (at average rent of 4 and 5 roomed houses)	75,084	37.6
Aggregate cost	199,949	100.0

Note.—The average rent for one city is an average of the rent of two classes of houses in this index and of six classes in the all houses index, with the rent of each class weighted in accordance with the number of houses of that class in that city. (*Labour Report*, No. 1, p. 32.)

The average for the six capital cities is compiled in this way: The cost of the mass units of the goods in each group and for all groups is computed for each city and averages are computed for the six capital cities by weighting the aggregate cost in each city by a number or weight proportional to its population in 1911. (*Labour Report*, No. 1, p. 35.)

TABLE 2.

Aggregate cost of the mass units of the commodities included in the food, groceries, housing (all houses), clothing and miscellaneous index number of retail prices, at the average prices in the six capital cities in November, 1914. Figures supplied by Commonwealth Statistician to the Queensland Registrar-General.

	d.	% of total.
Cost of the mass units of food and groceries	143,144	34.6
Cost of the mass unit of housing (at the average rent for all sizes of houses)	96,652	23.4
Cost of the mass units of clothing	100,329	24.2
Cost of the mass units of miscellaneous items	73,699	17.8
Aggregate cost	413,824	100.0

The Commonwealth Bureau of Census and Statistics housing (4 and 5 rooms) index number for 1924 for the six capital cities is 1615 on the 1911 base. If the cost of the mass unit of

housing (4 and 5 rooms) in 1911 (from Table 1 above) is increased in the proportion 1000 to 1615, we obtain a very close estimate of the average cost for the six capital cities in 1924 of the mass unit of housing (4 and 5 rooms), namely, 121,261d. The index number of housing (4 and 5 rooms) on the November, 1914, base is 1522 for the six capital cities in 1924. If we decrease 121,261d. in the proportion 1522 to 1000 we obtain 79,672d. as a very close estimate of the average cost of the mass unit of housing (4 and 5 rooms) in the six capital cities in November, 1914. This figure for housing was used in Appendix D for calculating the experimental index number of the cost of living. The writer has since obtained, through the courtesy of the Registrar-General of Queensland, the actual figure used in calculating the Commonwealth published index number of housing (4 and 5 rooms), namely, 79,640, which is shown in Table 3 below. The actual figure differs by only one twenty-fifth of one per cent. from the estimate used in Appendix D, that is, for practical purposes it is the same, and its substitution for the estimate would not affect the experimental index. Appendix D was therefore allowed to remain unaltered.

TABLE 3.

Cost of the mass units of the commodities included in the food, groceries, housing (4 and 5 rooms), clothing and miscellaneous index number at the average prices in the six capital cities in November, 1914.

	d.	% of total.
Cost of the mass units of food and groceries .	143,144	36.1
Cost of the mass unit of housing (at the average rent for 4 and 5 roomed houses)	79,640	20.1
Cost of the mass units of clothing	100,329	25.3
Cost of the mass units of miscellaneous items	73,699	18.1
Aggregate cost	396,844	100.1

APPENDIX B.

Interpolations in the housing (4 and 5 rooms) index for the six capital cities of the Commonwealth on the assumption that from November, 1915, to November, 1919, the average rent for 4 and 5 roomed houses was the same percentage above the November, 1914, level as the average rent for all houses, and that in May and August, 1922, and in the four quarters of the years 1923 to 1924, the average rent for houses with four or five rooms was the same percentage above the level of November, 1921, as the average rent for all houses.

Average Rent (all houses) Index Number.	Average Rent (4 and 5 rooms) Index Number.
Nov., 1914	1000
Nov., 1915	970
Nov., 1916	977
Nov., 1917	1000
Nov., 1918	1054
Nov., 1919	1125
Nov., 1920	1243
Nov., 1921	1287
May, 1922	1332
Aug., 1922	1342
Nov., 1922	1356
1st qr., 1923	1369
2nd qr., 1923	1402
3rd qr., 1923	1405
4th qr., 1923	1411
1st qr., 1924	1422
2nd qr., 1924	1451
3rd qr., 1924	1459
4th qr., 1924	1469

Actual index numbers are shown for November in the years 1920, 1921 and 1922.

APPENDIX C.

This appendix shows how the New Zealand retail clothing prices index has been substituted for the Australian index, and how the arithmetical average of the New Zealand fuel and light and miscellaneous indexes (weighted thus: fuel and light, 5; and miscellaneous, 14) has been substituted for the Australian miscellaneous index in the calculation of the experimental index number of the cost of living in Appendix D.

Dates of New Zealand Indexes substituted for Commonwealth Indexes of the date opposite.	New Zealand Indexes substituted for corresponding Commonwealth Indexes.		Date of Australian Indexes.
	Clothing.	Average of miscellaneous and fuel and light (Appendix E).	
July, 1914	1000	1000	Nov., 1914
August, 1915	1091	1052	Nov., 1915
August, 1916	1279	1205	Nov., 1916
August, 1917	1529	1400	Nov., 1917
Av. of Aug., 1918, and Feb., 1919	1953	1725	Nov., 1918
Av. of Aug., 1919, and Feb., 1920	2299	1954	Nov., 1919
Av. of Aug., 1920, and Feb., 1921	2535	2239	Nov., 1920
Av. of Aug., 1921, and Feb., 1922	2145	2191	Nov., 1921
Av. of Feb., 1922, and Aug., 1922	1942	2044	May, 1922
August, 1922	1882	1954	Aug., 1922
Av. of Aug., 1922, and Feb., 1923	1841	1917	Nov., 1922
February, 1923	1799	1879	1st qr., 1923
Av. of Feb., 1923, and Aug., 1923	1786	1853	2nd qr., 1923
August, 1923	1773	1826	3rd qr., 1923
Av. of Aug., 1923, and Feb., 1924	1753	1840	4th qr., 1923
February, 1924	1733	1854	1st qr., 1924
Av. of Feb., 1924, and Aug., 1924	1710	1819	2nd qr., 1924
August, 1924	1687	1783	3rd qr., 1924
Av. of Aug., 1924, and Feb., 1925	1676	1767	4th qr., 1924
February, 1925 (Jan. figure)	1664	1751	1st qr., 1925
Av. of Feb., 1925, and Aug., 1925	1655	1746	2nd qr., 1925
August, 1925 (July figure)	1646	1740	3rd qr., 1925
November, 1925	1599	1711	4th qr., 1925
February, 1926	1573	1708	1st qr., 1926
May, 1926	1555	1736	2nd qr., 1926
August, 1926	1541	1753	3rd qr., 1926
November, 1926	1541	1753	4th qr., 1926
February, 1927	1519	1743	1st qr., 1927

APPENDIX D.

Tables showing the calculations for the experimental index number of the average change in the total cost of living in the six capital cities of Australia, base, November, 1914, equals 1000, and also experimental index numbers for Sydney and Melbourne for two periods. The base for the Sydney and Melbourne indexes is the same as for the index for the six capital cities, that is, 1000 represents the aggregate cost of the market basket in the six capital cities in November, 1914.

Assumptions.

1. That the percentage change from November, 1914, onwards in the retail prices of clothing in Sydney and Melbourne and in the average retail price level of clothing in the six capital cities in the Commonwealth was the same as the percentage change from July, 1914, onwards of the New Zealand clothing index of Appendix C.
2. That the percentage change from November, 1914, onwards in the retail price level of miscellaneous items of household expenditure in Sydney and Melbourne, and in the average retail price level of the same goods in the six capital cities was the same as the percentage change from July, 1914, onwards in the average of the New Zealand miscellaneous and fuel and light indexes shown in Appendix C.

TABLE 1. INDEX FOR THE SIX CAPITAL CITIES.

The aggregates for the base period are from information supplied by the Commonwealth Bureau of Census and Statistics, which compiled the Australian official retail prices index numbers (Appendix A).

The group aggregates for the other periods are found from the aggregates at the base period by means of the following index numbers of retail prices:

The food and groceries aggregates up to 1925 by means of the published Commonwealth food and groceries index, with the average cost in the six capital cities in November, 1914, as base equals 1000.

The housing aggregates up to 1925 by means of the published Commonwealth housing (4 and 5 rooms) index, with the average cost in the six capital cities in November, 1914, as base equals 1000. For interpolations see Appendix B.

The combined aggregates for food, groceries and housing for 1926 and the first quarter of 1927 by means of the published Commonwealth food, groceries and housing (4 and 5 rooms) index, with the average cost in the six capital cities in 1911 as base equals 1000.

The clothing aggregates by means of the New Zealand clothing index, as substituted for the Commonwealth one in Appendix C, base, November, 1914.

ECONOMIC STATISTICS FOR

The miscellaneous aggregates by means of the average of the New Zealand fuel and light and miscellaneous indexes as substituted for the Commonwealth miscellaneous index in Appendix C, base, November, 1914.

The general index was then calculated from the totals of the group aggregates for the various periods, base, November, 1914.

	Nov., 1914.		Nov., 1915.		Nov., 1916.		Nov., 1917.	
	Aggre- gate.	Index.	Aggre- gate.	Index.	Aggre- gate.	Index.	Aggre- gate.	Index.
F. and Groc.	143,144	1000	183,091	1314	181,363	1267	186,517	1303
Housing . .	79,672	1000	77,282	970	77,840	977	79,672	1000
Clothing . .	100,329	1000	109,450	1091	123,321	1279	153,408	1529
Miscellaneous	73,690	1000	77,531	1063	88,097	1206	103,179	1400
Total . . .	396,844	1000	452,368	1140	476,331	1200	522,771	1317

	Nov., 1918.		Nov., 1919.		Nov., 1920.		Nov., 1921.	
	Aggre- gate.	Index.	Aggre- gate.	Index.	Aggre- gate.	Index.	Aggre- gate.	Index.
F. and Groc.	192,242	1348	229,690	1600	260,970	1804	212,130	1482
Housing . .	83,974	1054	89,631	1125	104,590	1312	107,717	1352
Clothing . .	196,943	1953	230,656	2299	254,334	2535	215,206	2146
Miscellaneous	127,131	1725	144,908	1964	166,012	2230	161,475	2191
Total . . .	599,290	1510	693,325	1747	793,846	2000	694,537	1756

	May, 1922.		Aug., 1922.		Nov., 1922.	
	Aggre- gate.	Index.	Aggre- gate.	Index.	Aggre- gate.	Index.
F. and Groc.	212,428	1484	216,004	1500	210,994	1474
Housing . .	111,461	1399	112,338	1410	114,090	1432
Clothing . .	194,830	1942	188,819	1882	184,708	1841
Miscellaneous	156,641	2044	144,008	1964	141,281	1917
Total . . .	609,367	1687	661,169	1660	651,071	1641

	1st Qr., 1923.		2nd Qr., 1923.		3rd Qr., 1923.		4th Qr., 1923.	
	Aggre- gate.	Index.	Aggre- gate.	Index.	Aggre- gate.	Index.	Aggre- gate.	Index.
F. and Groc.	209,849	1466	227,450	1589	237,333	1658	226,740	1684
Housing . .	114,668	1430	117,277	1472	117,596	1476	118,974	1482
Clothing . .	180,492	1799	179,188	1796	177,883	1773	178,877	1753
Miscellaneous	138,480	1879	136,564	1863	134,574	1826	135,606	1840
Total . . .	643,389	1621	660,485	1664	667,386	1682	656,297	1654

	1st Qr., 1924.		2nd Qr., 1924.		3rd Qr., 1924.		4th Qr., 1924.	
	Aggre- gate.	Index.	Aggre- gate.	Index.	Aggre- gate.	Index.	Aggre- gate.	Index.
F. and Groc.	222,016	1551	217,290	1518	212,990	1488	212,865	1487
Housing . .	119,030	1494	121,420	1524	122,197	1523	122,934	1543
Clothing . .	173,870	1733	171,563	1710	169,256	1687	168,151	1670
Miscellaneous	136,636	1854	134,058	1819	131,405	1783	130,226	1767
Total . . .	651,554	1642	644,334	1624	635,796	1602	634,166	1596

	1st Qr., 1925.		2nd Qr., 1925.		3rd Qr., 1925.		4th Qr., 1925.	
	Aggre- gate.	Index.	Aggre- gate.	Index.	Aggre- gate.	Index.	Aggre- gate.	Index.
F. and Groc.	216,863	1515	222,732	1556	225,881	1578	225,881	1578
Housing . .	123,492	1550	123,731	1553	123,492	1550	124,209	1569
Clothing . .	166,947	1664	166,044	1656	165,142	1648	166,426	1599
Miscellaneous	129,847	1751	128,678	1740	128,236	1740	126,090	1711
Total . . .	636,349	1604	641,185	1616	642,751	1620	636,615	1604

	1st Qr., 1926.		2nd Qr., 1926.		3rd Qr., 1926.		4th Qr., 1926.	
	Aggre- gate.	Index.	Aggre- gate.	Index.	Aggre- gate.	Index.	Aggre- gate.	Index.
F. and Groc. and Housing	251,110	1756	261,908	1810	253,110	1766	251,310	1757
Clothing . .	157,818	1573	156,012	1556	154,607	1541	154,607	1541
Miscellaneous	126,978	1700	127,941	1726	129,194	1753	129,194	1753
Total . . .	634,906	1600	645,861	1628	636,911	1606	635,111	1600

	1st Qr., 1927.	
	Aggre- gate.	Index.
F. and Groc. and Housing	249,111	1741
Clothing . .	152,400	1510
Miscellaneous	123,457	1743
Total . . .	624,968	1595

TABLE 2.

Experimental index numbers of cost of living for Sydney and Melbourne for November, 1920, and for the fourth quarter of 1926, with the average cost in the six capital cities in November, 1924, equals 1000.

Separate index numbers for food and groceries and for housing were used in compiling these indexes for the fourth quarter of 1926, instead of the combined food, groceries and housing index used in compiling the index for the six capital cities in Table 1. Otherwise the group aggregates are compiled in the same way as those in Table 1.

	Sydney.				Melbourne.			
	Nov., 1920.		4th Qr., 1926.		Nov., 1920.		4th Qr., 1926.	
	Aggre- gate.	Index.	Aggre- gate.	Index.	Aggre- gate.	Index.	Aggre- gate.	Index.
F. and Groc.	273,548	1911	232,466	1624	272,408	1903	215,718	1507
Housing . .	120,384	1511	137,356	1724	99,112	1244	128,033	1607
Clothing . .	254,334	2535	154,607	1541	254,334	2535	154,607	1541
Miscellaneous	165,013	2239	129,194	1753	165,012	2239	129,194	1753
Total . . .	818,278	2049	653,623	1647	790,861	1993	627,552	1581

APPENDIX E.

Two New Zealand retail prices index numbers (*Monthly Abstract of Statistics*) and an arithmetical average of them, with the miscellaneous index given a weight of 14 and the fuel and light index a weight of 5.

	Miscellaneous	Fuel and Light.	Average.
July, 1914	1000	1000	1000
Aug., 1915	1065	1017	1052
Aug., 1916	1221	1160	1205
Aug., 1917	1438	1293	1400
Aug., 1918	1753	1343	1645
Feb., 1919	1946	1410	1805
Aug., 1919	1997	1501	1866
Feb., 1920	2189	1625	2041
Aug., 1920	2317	1830	2189
Feb., 1921	2425	1907	2289
Aug., 1921	2343	1982	2248
Feb., 1922	2209	1924	2134
Aug., 1922	2016	1780	1954
Feb., 1923	1930	1735	1879
Aug., 1923	1861	1730	1826
Feb., 1924	1866	1822	1854
Aug., 1924	1799	1739	1783
Feb., 1925	1764	1716	1751
Aug., 1925	1743	1733	1740
Nov., 1925	1699	1743	1711
Feb., 1926	1688	1763	1708
May, 1926	1726	1763	1736
Aug., 1926	1747	1770	1753
Nov., 1926	1748	1769	1753
Feb., 1927	1734	1769	1742

APPENDIX F.

United States Bureau of Labor Statistics retail prices index numbers of house furnishings, fuel and light, and miscellaneous items (*Monthly Labor Review*, Feb., 1927, p. 181), and a simple arithmetical average of the three indexes.

	House furnishings.	Fuel and light.	Miscellaneous.	Simple arith. aver.
1913	100	100	100	100
Dec., 1914	104	101	103	103
Dec., 1915	110.6	101	107.4	106
Dec., 1916	127.8	108.4	113.3	117
Dec., 1917	150.6	124.1	140.5	138
Dec., 1918	213.6	147.9	165.8	176
June, 1919	225.1	145.6	173.2	181
Dec., 1919	263.5	156.8	190.2	204
June, 1920	292.7	171.9	201.4	222
Dec., 1920	285.4	194.9	208.2	230
May, 1921	247.7	181.6	208.8	213
Sep., 1921	224.7	180.7	207.8	204
Dec., 1921	218.0	181.1	206.8	202
Mar., 1922	206.2	175.8	203.3	195
June, 1922	202.9	174.2	201.6	193
Sep., 1922	202.9	183.6	201.1	196
Dec., 1922	208.2	186.4	200.5	198
Mar., 1923	217.6	186.2	200.3	201
June, 1923	222.2	180.6	200.3	201
Sep., 1923	222.4	181.3	201.1	202
Dec., 1923	222.4	184.0	201.7	203
Mar., 1924	221.3	182.2	201.1	202
June, 1924	216.0	177.3	201.1	198
Sep., 1924	214.9	179.1	201.1	198
Dec., 1924	216.0	180.5	201.7	199
June, 1925	214.3	176.5	202.7	198
Dec., 1925	214.3	186.9	203.5	202
June, 1926	210.4	180.5	203.3	198
Dec., 1926	207.7	188.3	203.9	200

APPENDIX G.

Number of persons engaged, horse-power of engines used, and horse-power of engines used per person engaged in "factories" in the Commonwealth (*Production Bulletins*). . . .

In All Factories.

	Persons engaged.	Horse-power of engines used.	Horse-power of engines used per person engaged.	Index.
1911	311,710	343,550	1.005	1,000
1924-5	439,949	1,260,076	2.864	2,850
1925-6	450,920	1,335,202	2.961	2,946

In All Factories, Except the Heat, Light and Power Group.

	Persons engaged.	Horse-power of engines used.	Horse-power of engines used per person engaged.	Index.
1911	304,059	230,624	.758	1,000
1924-5	426,214	613,471	1.439	1,898
1925-6	439,386	668,526	1.522	2,008

APPENDIX H.

Simple arithmetic averages of the hours of labour in certain manufacturing industries in the six capital cities in the Commonwealth (*Labour Reports*), and an average for all manufactures weighted according to the number in each industrial group in the Commonwealth at the 1911 Census. (See *Labour Report No. 2*, pp. 22 and 23, for the explanation of the weights.)

	Weights from "Labour Rep., No. 5," p. 46.	Hours, 30th April, 1914.	Hours, 31st Dec., 1925.
I. Wood, furniture, etc.	435	47.78	45.98
II. Engineering, metal works, etc.	606	47.79	47.50
III. Food, drink, etc.	561	49.18	46.40
IV. Clothing, boots, etc.	231	47.90	45.56
V. Books, printing, etc.	169	46.27	44.79
VI. Other manufactures	400	48.14	47.06
Average weighted with above weights		48.07	46.52
Index based on general average ..		1000	968
Simple arithmetic average of the averages for the six groups ..		47.84	46.22
Index based on the simple averages		1000	966

APPENDIX I.

Table showing a certain misleading index number of the physical volume of production in manufacturing industry in the Commonwealth, with the materials for its compilation.

Value added, in the later *Production Bulletins* of the Commonwealth Bureau of Census and Statistics, is taken to be the value of output minus the value of materials and fuel and light used in production.

Only factories using power or employing four or more hands are included in the statistics in the *Production Bulletins*.

	Value added, "Prod. Bul. No. 30."	Hands employed (including working proprietors, ("Prod. Bulletins").	Value added per person engaged.	Index of value added per person engaged.	Misleading manufacturing production prices index, "Commonwealth Production Bulletin, No. 30."	Misleading ind. of vol. of prod. per person engaged in manufacturing in Commonwealth, (4) + (5) X 1000.
	(1)	(2)	(3)	(4)	(5)	(6)
	£000		\$			
1908	33,956	257,494	131.9	865	886	976
1909	36,913	266,661	138.4	907	917	989
1910	42,442	286,928	147.9	970	977	993
1911	47,531	311,710	152.5	1,000	1,000	1,000
1912	53,401	327,456	163.1	1,069	1,056	1,012
1913	57,674	337,101	171.1	1,122	1,096	1,024
1914	59,004	331,728	177.9	1,166	1,128	1,034
1915	59,212	321,071	184.4	1,209	1,153	1,049
1916	60,502	316,752	191.0	1,252	1,181	1,060
1917	65,327	321,670	203.1	1,332	1,270	1,049
1918	70,087	323,049	213.6	1,401	1,328	1,055
1918-19		340,475				
1919-20	92,330	376,734	245.1	1,607	1,529	1,051
1920-21	101,778	386,639	263.2	1,726	1,666	1,036
1921-22	112,517	395,425	284.5	1,865	1,788	1,043
1922-23	123,188	412,410	298.7	1,959	1,849	1,059
1923-24	132,732	429,990	308.7	2,024	1,881	1,076
1924-25	137,977	439,949	313.6	2,056	1,904	1,080
1925-26	143,256	450,920	317.7	2,083	1,921	1,084

APPENDIX J.

Rough estimates of the relative importance in wholesale trade of the groups of commodities in the Melbourne wholesale prices index number.

Group I.—Metals and Coal.

Group I. in the Melbourne index includes only metals and coal, and the title claims no more; and if it is not to be considered representative of the price movements also of metal products, the commodities in this group are already over-weighted. It is certain also that the price movements of metals, although in the same direction usually as the price movements of metal products, are much greater, but to counteract this the price of coal is more steady. The annual average price of coal quoted in the *Labour Reports* shows a steady rise during the whole period 1906 to 1926. There is something to be said for the view that in normal times, in the absence of price quotations for a number of metal products, the group I. commodities should be considered to represent the price movements of metal products better than primary products or building materials or chemicals or groceries. In the abnormal war period and in the year 1918 to 1919 the metals in group I. fluctuated in price more than metal products as a whole. Of course, if price quotations could be obtained for metal products, it would be a very great improvement to give the extra representative weight to them even if their own relative importance in wholesale trade were not very large.

The total value of output of the metal works and machinery group of "factories" in the Commonwealth in 1924-5 was £m. 76, the total value of imports of metals and machinery £m. 46, and the total value of mineral production £m. 25. Imports of minerals were negligible for this purpose. These three items above total £m. 147, which is 17.5% of £m. 840. There should be in the index number goods with about this percentage weight to represent the price movements of this important group of commodities, but group I. commodities have only 11% weight in the Melbourne index for 1915. Coal, however, should not be increased in weight; in fact, unless it can be shown to represent fairly well the price movements of omitted commodities its percentage weight should be reduced, because only £m. 11.6 of coal was produced in the Commonwealth in 1924-5, which is only 1.4% of £m. 840.

Group II.—Textiles, Leather, Etc.

Textiles, leather, etc., forms the title for group II. in the Melbourne index in the table at the end of the *Labour Reports* giving the average annual price quotations, but the only textiles included are branbaga, cornsacks and woolpacks. The other commodities included are raw cotton and wool (presumably set there mainly to represent cotton and woollen textiles, because the production and imports of raw cotton are negligible), three kinds of

leather, and twine and tallow. The following table shows an attempt to estimate for the Commonwealth the total value of output plus imports of the commodities supposed to be represented in the Melbourne index, group II., with the idea of comparing the amount with the £m. 840, which is a rough estimate (or rather underestimate), of the total value of output plus imports:

<i>Australian Commonwealth, 1924-5.</i>	
<i>(Production Bulletin and Overseas Trade Bulletin.)</i>	
	£m.
Value of wool produced	76.3
Imports of wool . . . . .	.3
Value of raw cotton produced negligible.	
Imports of raw cotton . . . . .	.1
Value of output of certain groups of "factories"—	
Boiling down, tallow refining and bone milling	1.6
Tanneries	5.2
Wool scouring and fellmongering	8.3
Leatherware	1.4
Boots and shoes	9.8
All textiles, ropes, bags, tents, etc.	35.3
Value of imports of leather goods . . . . .	.6
Value of imports of textiles	42.3

Total value of output, plus imports of the goods supposed to be represented in Group II. of the Melbourne index . . . 181.2

£m. 181.2 is 21.6% of £m. 840, and wool production plus imports 9.1%. A similar calculation for the United States for the year 1919, using the statistics in the *Abstract of the 1919 Census* for production and *Statistical Abstract for 1919* for statistics of imports, gives 15.3%. That is, in the United States in 1919 the output of the goods supposed to be represented in the Melbourne index, group II., in the factories included in the Census investigation (those with an output of less than 500 dollars were excluded) plus the imports of the same commodities were valued in those statistical publications at 13,880 million dollars, which is 15.3% of the rough underestimate given in chapter V. of the total value of output plus imports in the United States in 1919.

Group III.—Agricultural Produce.

The value of production in Agriculture in the Commonwealth in 1924-5 was £m. 107.1; this plus the value of the imports of the principal agricultural products (*Production Bulletin*) £m. 9.6, is still only 14% of £m. 840. If we subtract from the £m. 116.7 and the £m. 840 half the value of hay produced in that year the percentage agricultural products forms of the other is just 13%. Certain proportions of such products as straw, maize and barley are also consumed on the farms, and the value of wholesale trade is sure to be more than £m. 840. Bearing these facts in mind, along with the general principle of not giving too much weight to commodities which fluctuate abnormally in price, we should have no hesitation in concluding that even in drought periods, when prices are high, agricultural products in the index number should not have as great a weight as 12%. Yet in the Melbourne index for 1915 this group of products has 38% weight, and in the Sydney index 25%.

Group IV.—Dairy Produce.

The total value of production of dairy produce as estimated in the *Commonwealth Production Bulletin* was, in 1924-5, £m. 45, and total imports £168,755. £m.45 is only 5.4% of £m. 840, but these products have 9% weight in the Melbourne index for 1915, which is clearly too much, unless we know that the price movements of dairy products are similar to the price movements of other commodities which are excluded from the index number.

Group V.—Groceries.

One way of making a rough guess at the percentage weight in wholesale trade of this group of commodities is to take the total value of output in the "factories" in the food and drink group of the *Production Bulletin*, and subtract the value of the output of bacon, butter, cheese and condensed milk and malt, and the value of the output of flour mills, because these products are included in groups III. and IV. This leaves £m. 76.7. If we add to this the total value of imports of tobacco and its preparations and of spirituous liquors and of foods stuffs of vegetable origin (this last item contains only negligible quantities of group III. products), the total £m. 87.7 is only 10.4% of £m. 840. The groceries group should not have more weight than about 10%, unless the price movements of the goods included can be considered representative of the price movements of goods excluded. This group of commodities has 11% weight in the Melbourne index for 1915.

Group VI.—Meat.

An estimate is given in *Labour Report No. 1* of the annual average consumption of beef, veal, mutton, lamb and pork in the Commonwealth in the period 1906 to 1910, pp. 20, 44 and 45, as follows:

Beef	390 m. lbs.
Veal	20 m. lbs.
Mutton	330 m. lbs.
Lamb	56 m. lbs.
Pork	37 m. lbs.

The actual figure for lamb in *Labour Report No. 1*, p. 45, is 2,000,000 lambs, but this was, after 1914, taken to be equivalent to 56,000,000 lbs. This shows the amount of veal to be about 1/21 of the total consumption of beef and veal, and the amount of lamb to be about 1/7 of the total consumption of mutton and lamb. We can use these proportions in estimating roughly the amount of beef and veal in the estimate given in the *Year Book for 1926*, p. 608, of the annual average Commonwealth production in the years 1922-3 to 1924-5 of beef and veal, and the amount of mutton and lamb in the estimate of the annual average annual production of mutton and lamb in the same period, given on p. 614, and in calculating from these estimates the value of the annual average production of meat in that period at the wholesale prices given for Melbourne for 1924 in the 1924 *Labour Report*. This will give us a figure

which we can compare with the rough estimate of the value of output plus imports in the Commonwealth in the year 1924-5, namely, £m. 840. In this way we may obtain a rough notion of the percentage weight which should be given to meat in the Melbourne wholesale prices index number.

	m. lbs.	Average price per lb. in c. Melbourne in 1924.	Value of average annual production, 1922-3 to 1924-5, £m. at Melbourne, 1924, prices.
Estimate of the annual average Commonwealth production of beef and veal, 1922-3 to 1924-5	1090		
20/21 of this assumed to be beef ..	1038	3.84	16.6
1/21 of this assumed to be veal . . .	52	3.75	.8
Estimate of the annual average Commonwealth production of mutton and lamb, from 1922-3 to 1924-5 . .	459		
6/7 of this assumed to be mutton . . .	393	6.0	9.8
1/7 of this assumed to be lamb . . .	66	8.625	2.4
As can be seen from the table in Appendix K, the cost of the mass unit of pork in 1922 and in 1926 was nearly as great as that of lamb; there is no large error in assuming that the value of pork produced was as great as the value of lamb produced.			
Therefore £m. 2.4 is set down as a rough guess of the value of pork produced on the average in the years 1922-3 to 1924-5			2.4
Total			32.

This £m. 32 is 3.8% of £m. 840. These two figures do not apply to the same period, but the periods are near enough to give us a notion of the relative size of the two quantities in the same period. They suggest that meat in an Australian wholesale prices index number should not have more weight than about 3.8% on its own account.

The prices of cattle and beef in the United States from 1890 to 1925 fluctuated in much the same way; the price movements of hogs and pork were very similar; a glance at charts 8 and 9 in the *United States Bureau of Labor Statistics' Wholesale Prices Bulletin No. 415* shows this conveniently. A comparison of the price relatives for wethers and ewes (p. 50) with the price relative for dressed mutton (p. 74) shows that, while the movements of the prices of sheep and mutton were not so much alike as the movements of the prices of meat and cattle, yet there was sufficient resemblance to justify us in considering meat and live stock to be in the same price behaviour group in

the United States. It is very probable that the same holds for Australia. If no price quotations are available for live stock, it is suitable to add some percentage weight to meat as representative of live stock.

It is easier to make an estimate of the total value of meat sold plus the total value of live stock sold for the United States than for Australia, because, in the *Abstract of the 1919 Census*, there is given an estimate of the value of all domestic animals sold or slaughtered on farms in the United States in 1919, namely, 3,511 million dollars (p. 807). Of the 92,000,000 animals represented by the 3,511 million dollars, 20% were estimated to be slaughtered on farms and ranges (p. 55, vol. X. of the 1919 Census). The value of animals sold was probably not far from 80% of the 3,511 million dollars, or 2,800 million dollars, which is 3% of 90,900 million dollars. The value of fresh meat produced in the slaughtering and meat packing industry in the United States in 1919 is given on p. 56, vol. V., of the Census as 1,639 million dollars, which is 1.8% of 90,900 million dollars. The total value of meat sold in the United States in that year might have been as high as 2% of the 90,900 million dollars. The total value of fresh meat sold plus the value of live stock sold in the United States in 1919 was about 5% of the rough estimate of the total value output plus imports for all industries.

Let us consider now the estimate of the value at 1924 prices in Melbourne of the average annual production of meat in Australia in 1922-3 to 1924-5 as a percentage of the rough estimate of the value of output plus imports for Australia in the year 1924-5, namely, 3.8%. If the value of live stock sold in Australia were one and a half times the value of fresh meat sold, corresponding roughly to the situation in the United States, the total value of meat produced and live stock sold in Australia in 1924-5 would have been round about £m. 80, or about 9.5% of £m. 840. The percentage weight allowed in the wholesale prices index number, even if no live stock is included in the index, should not be as high as 9.5% for the following reasons. £m. 840 is less than the total value of wholesale trade, and the price of meat fluctuates much more than the general price level. Probably it should never have a greater percentage weight than about 6% or 7%.

Group VII.—Building Materials.

An approximation to the output plus imports of these goods in 1924-5 may be obtained by adding the value of output of the "factories" producing stone, clay, bricks and glass (Group III., Table 182, *Production Bulletin*), the output of the "factories" producing paints and varnishes, the value of paints and varnishes imported, and the value imported of stones and minerals minus the value imported of ores and concentrates (Class II., Imports, in *Overseas Trade Bulletin No. 22*), and the value of forestry production. The forestry production is obtained from the value of production in forestry and fisheries

(*Production Bulletin No. 18*, p. 163) minus the value of fisheries production collected from the various items on p. 93. The total value of production plus imports of these building materials mentioned comes to £m. 26.2. This total should be diminished by about £m. 2 because of the inclusion in Group III. in Table 182 of the *Production Bulletin* of the output of modelling, ornamental glass and bottles. £m. 24.2 is 2.9% of £m. 840, and this should be near the percentage weight of building materials, unless they are considered to represent other excluded goods. The actual weight of this group in the Melbourne index for 1915 is 4.3%.

Group VIII.—Chemicals.

The value of output of drugs and chemicals in *Production Bulletin No. 18*, Table 182, minus the output of paints and varnishes, was for 1924-5 £m. 7.9, the value of imports of drugs, chemicals and fertilisers (Class 19, Imports, in *Overseas Trade Bulletin*) £m. 4.1, and the total of these two items £m. 12, which is 1.4% of £m. 840.

APPENDIX K.

Interpolations, price quotations and calculations for the indexes of wholesale prices for Melbourne compiled by the writer and based on 77 price quotations.

The mass units and all the price quotations except the interpolated prices mentioned below were taken from the *Annual Labour Reports of the Commonwealth Bureau of Census and Statistics*. The Sydney price quotations referred to are those published in the *New South Wales Statistical Register*, 1919-1920 to 1926.

I.—Interpolations.

Tinned Plates.—The Sydney price quotations for tinned plates for 1906 to 1911 were directly interpolated, because the same brand of tinned plates is taken for the Melbourne and Sydney indexes and because the price quotations for Melbourne and Sydney in 1912 were nearly the same, being 17s. 1d. for Melbourne and 16s. 9d. for Sydney.

Tobacco.—The prices of the four grades of tobacco quoted for Sydney remained unchanged from 1922 to 1924, and fell, on the average, 1% from 1924 to 1925. Melbourne prices were interpolated on the assumption that prices in that city had the same percentage change as in Sydney from 1922 to 1925. As no price quotations for Sydney for 1926 have been published at the time of writing, and as the price of tobacco is usually very stable, it was assumed that the price of tobacco in Melbourne had remained unchanged from 1925 to 1926.

Cocoa, Candles.—Prices for the years 1918 to 1920 for cocoa and candles were interpolated on the assumption that the percentage change from the preceding year was the same in Melbourne as the percentage change in the same period of the similar commodity in Sydney.

Condensed Milk.—The price of condensed milk was interpolated for the years 1906 to 1911 on the assumption that the percentage change from each of the years for which no Melbourne quotations are available to 1912 was the same as in the Sydney price quotation for that commodity.

	Interpolated Melbourne price quotations per dozen tins, 1906 to 1911, and the actual Melbourne price quotation for 1912.	Sydney price quotations per 42 lb. case.
	S.	S.
1906	5.258	24.5
1907	5.687	26.5
1908	5.776	26.917
1909	5.437	25.333
1910	4.864	22.667
1911	5.294	24.667
1912	5.687	26.5

Fine Salt, Mustard, Starch, Blue.—Prices were interpolated for these commodities in 1918, the prices interpolated being the arithmetic means of their 1917 and 1919 quotations.

Rice.—Prices for rice were interpolated for 1918 and 1919, the prices interpolated being the arithmetic means of the 1917 and 1920 quotations.

Flooring Timber, 6 × 1½; Flooring Timber, 6 × ¾; Shelving Timber.—Arithmetic means of their 1918 and 1920 price quotations were interpolated for these commodities in 1919.

In all these instances of the interpolation of arithmetic means, it is justifiable because the period 1917 to 1920 was a period of steadily rising prices for the groceries and building materials groups.

Leather.—The three leather items in the Melbourne index from 1906 to 1911 are not the same as the items included after 1911, and differ from them in relative importance.

It was decided to interpolate price quotations for the years 1906 to 1911 for the three leather items used after 1911.

First of all, the percentage change of the total cost of the mass units of the three leather items, kip, calf and basils, from each of the years of the period 1906-11 to 1912 was calculated from the price quotations in *Labour Reports Nos. 1 and 2, 1912*, being taken as 100.

Change in the Cost of the Mass Units of Leather in the Melbourne Index from 1906 to 1912.

	1906	1907	1908	1909	1910	1911	1912
	£	£	£	£	£	£	£
Kip	79	80	79	76	84	85	85
Calf	76	80	80	79	81	83	83
Basils	29	31	30	28	26	25	25
Total	184	191	189	183	191	193	193
Index	95.3	99.	97.9	94.8	99	100.	100.

Interpolations were then made for medium crop, waxed kip and waxed split for the years 1906 to 1911 on the assumption that their prices had the same percentage change from each of the years 1906-11 to 1912 as the total cost of the mass units of kip, calf and basils.

Interpolations for the Years 1906-1911 and the Actual Price Quotations for 1912 of Medium Crop, Waxed Kip and Waxed Split.

	1906	1907	1908	1909	1910	1911	1912
	s.	s.	s.	s.	s.	s.	s.
Medium crop	1.062	1.103	1.091	1.056	1.103	1.114	1.114
Waxed kip	1.459	1.516	1.499	1.451	1.516	1.531	1.531
Waxed split .. .. .	.764	.794	.785	.760	.794	.802	.802

II.—Table, Showing Price Quotations and Calculations.

The price quotations from the *Labour Reports* were converted into decimals of a shilling correct to the third place, and then multiplied by the appropriate mass unit and the result entered correct to the nearest pound sterling. This amount of accuracy in converting the prices into decimals was quite unnecessary for all but one or two commodities, and even for these

it is not really necessary, because the biggest difference that could have occurred in the indexes by taking the decimals to the second place would be only one tenth of one per cent. As they stand now, however, the decimals can be converted back into pence, farthings, and eighths and sixteenths of a penny as they are given in the *Labour Reports*.

Note on the Mass Units and the Substitution of Commodities.

—The mass units of some commodities were altered during the period in accordance with a change in the physical unit of the commodity for which the price was quoted. The mass units of *bran* and *pollard* were 1400 up to the year 1911, and 14 from the year 1912 onwards.

The mass unit of *lamb* was 200 up to 1914 and 5,600 thereafter.

Tapioca was substituted for *sago* in the year 1923, when the prices of these commodities in Melbourne, according to *Labour Reports Nos. 14 and 15*, were the same. The mass unit for *sago* was 800 up to 1911, .35 from 1912 to 1916, and 7 thereafter for *sago*, and also for *tapioca* when it was substituted for *sago* in 1923. One of the grades of leather for which a price quotation was given in 1912 was medium crop. Later on, factory crop was substituted for this and still later light crop.

Table showing prices, mass units, and the cost of the mass units, 1906 to 1926. For the missing mass units and information about the substitution of commodities, see the note above.

	Mass Unit.	1906.		1907.		1908.		1909.	
		Price.	Cost of M. U.	Price.	Cost of M. U.	Price.	Cost of M. U.	Price.	Cost of M. U.
Group I.									
Iron—Pig	8.5	89.583	38	91.25	38	79.417	38	79.417	38
Rod and Bar	3.5	192.667	34	201.417	34	204.25	34	196.75	34
Angle and Tee	3.5	197.333	36	211.417	37	215.	38	205.	38
Plate	3.	197.333	30	211.417	32	213.458	32	195.167	30
Hoop	5.5	196.833	5	210.542	5	216.017	5	212.067	5
Galvanized Corrugated	6.	343.25	68	368.308	68	370.	68	366.333	68
Wire, Fencing	6.	170.167	51	175.625	53	155.292	47	162.167	49
Zinc—Sheet	1.	696.917	35	761.417	38	667.667	33	613.833	31
Lead—Sheet	78	417.333	16	465.708	17	366.167	14	341.167	13
Lead—Piping	5	449.25	11	490.708	12	430.375	11	421.167	11
Copper—Sheet	2,000.	1.01	101	1.125	113	.999	99	.966	99
Coal (on Wharf)	600.	17.25	518	21.5	646	22.5	675	22.5	675
Thin Plates	60.	15.308	48	16.792	50	15.583	47	14.812	44
Total			994		1161		1156		1134
Group II.									
Jute Goods—Burlbags ..	110	5.062	29	5.25	29	4.385	24	3.706	20
Corn sacks	250	6.927	67	7.	68	5.521	60	4.602	60
Woolpacks	300	2.375	24	2.790	27	2.25	23	2.063	31
Leather—									
Medium Crop or Substitute	600	1.062	32	1.103	33	1.091	33	1.056	32
Waxed Kip	600	1.459	44	1.516	45	1.499	45	1.451	44
Waxed Split	600	.764	23	.794	24	.785	24	.760	23
Cotton—Raw	24,000.	.552	662	.593	712	.542	650	.552	662
Wool	12,200	.937	572	.927	565	.802	489	.843	514
Total			1472		1523		1357		1376
Group III.									
Wheat	500	3.229	61	3.75	94	4.167	104	4.583	115
Flour	46	142.75	343	169.833	405	179.25	430	208.917	497
Bras .. .. .		.822	58	.875	61	1.167	63	.875	61
Pollard .. .. .		.854	60	.906	63	1.239	67	1.031	73
Oats	1,200	2.667	161	2.667	160	2.917	175	2.208	132
Oatmeal	1.5	300.	23	323.5	24	383.5	29	291.917	23
Barley—Malting or English	150	4.562	34	4.542	34	4.937	37	3.917	29
Feed or Cane	100	2.896	14	2.75	14	3.697	18	2.479	13
Maise	1,000	3.25	163	3.167	158	4.25	213	3.937	197
Peas	55	3.637	10	3.396	9	3.937	11	4.531	12
Total			947		1022		1187		1149
Group IV.									
Ham	600	.802	32	.896	36	.958	39	1.01	40
Bacon	3,200	.572	92	.648	103	.729	117	.708	113
Cheese	1,500	.593	44	.648	48	.833	62	.729	55
Butter	9,500	.958	465	.978	465	1.156	549	1.062	504
Lard	200	4.58	5	4.79	5	.677	7	.542	5
Eggs	1,800	.812	73	.895	80	1.021	92	1.031	93
Honey	600	.25	6	.229	7	.26	8	.25	8
Condensed Milk	160	5.256	42	5.667	45	5.776	46	5.437	43
Total			751		789		910		861
Group V.									
Currants	1,400	.364	25	.437	31	.498	33	.498	33
Raisins	1,400	.51	36	.604	42	.562	39	.521	36
Herrings	50	4.208	11	4.771	12	4.562	11	4.521	11
Salmon	50	6.417	16	6.093	15	7.062	18	6.875	17
Sardines	100	4.875	24	5.01	25	5.	25	5.104	26
Tea	3,000	.014	92	.077	102	.067	100	.067	103
Coffee	200	1.125	11	1.125	11	1.125	11	1.125	11
Cocoa	100	1.	5	1.031	5	1.125	6	1.125	6
Soap	22	401.563	442	395.333	435	413.5	456	426.5	469
Macaroni	200	.417	8	.437	8	.437	8	.437	8
Seeds or Tapioca .. .. .		.229	9	.25	10	.156	6	.156	6
Rice	2	452.	45	498.	50	507.333	51	496.	50
Salt—Flake	7	67.5	24	70.167	25	75.5	26	81.25	28
Mustard	6	18.5	5	18.354	6	19.	6	19.	6
Starch	100	.417	2	.417	2	.417	2	.417	2
Blue	50	.604	2	.635	2	.697	2	.697	2
Matches	90	1.843	8	2.375	11	2.729	12	2.489	11
Candles	1,600	.521	42	.604	48	.604	48	.604	48
Kerosene	1,700	.739	63	.771	66	.822	70	.822	70
Tobacco	1,300	4.656	303	4.604	299	4.604	299	4.604	299
Total			1169		1201		1294		1258
Group VI.									
Beef	390	21.646	422	26.292	518	28.312	552	23.021	449
Mutton	33,000	.197	825	.229	378	.218	360	.167	276
Lamb		9.232	98	9.146	91	9.187	92	8.312	83
Veal	2,000	.177	18	.177	18	.197	20	.167	17
Pork	3,700	.354	65	.417	77	.468	87	.5	93
Total			923		1077		1111		918
Group VII.									
Timber—Flooring, 6 x 12 ..	30	9.521	14	10.333	15	10.312	15	10.26	15
6 x 12	30	7.729	12	8.333	12	7.917	12	8.104	12
6 x 12	30	6.5	10	7.447	11	7.167	11	7.114	11
6 x 12	30	5.063	8	5.271	8	5.146	8	5.25	8
Weatherboards	200	5.843	58	6.239	62	5.812	58	5.542	55
Oregon	20	127.063	127	134.667	136	118.833	114	107.312	107
Shelving	10	255.	128	280.708	140	305.	153	306.542	153
Cement	30	11.437	17	12.052	18	12.917	19	11.958	18
Whitelead .. .. .	.75	553.5	21	629.25	24	585.417	22	560.417	21
Total			395		425		412		400
Group VIII.									
Crown of Tartar	600	.729	15	.622	16	.75	15	.667	13
Carbonyl of Soda .. .. .	.5	180.	5	196.75	5	182.083	5	162.5	4
Saltpetre .. .. .	.05	490.75	1	597.833	1	582.667	1	592.833	1
Sulphur .. .. .	.25	161.5	2	175.667	2	160.	2	166.167	2
Total			23		24		23		20
Aggregate			6674		7222		7366		7096

Table showing prices, mass units, and the cost of the mass units, 1906 to 1926. For the missing mass units and information about the substitution of commodities, see the note above.

1910.		1911.		1912.		1913.		1914.	
Price.	Cost of M. U.	Price.	Cost of M. U.	Price.	Cost of M. U.	Price.	Cost of M. U.	Price.	Cost of M. U.
¢	¢	¢	¢	¢	¢	¢	¢	¢	¢
81.	26	81.167	26	89.167	27	90.	31	99.5	32
194.375	34	191.167	33	215.543	36	226.25	40	234.	41
197.667	35	196.	34	202.917	36	210.	37	214.	37
192.125	29	192.5	29	201.333	30	205.5	31	220.	33
209.625	5	203.833	5	212.333	5	215.833	5	225.5	6
354.708	89	347.417	87	359.417	90	373.75	93	383.5	96
171.333	51	169.25	51	156.917	47	154.167	46	156.5	47
601.542	90	673.833	94	733.063	97	745.	97	785.	99
322.125	12	315.917	12	405.	15	478.75	18	498.	19
405.167	10	367.25	9	448.333	11	566.25	14	610.	15
.802	60	.771	77	.854	85	.968	97	1.062	106
22.5	675	22.5	675	22.5	675	22.5	675	23.75	713
16.062	48	17.333	52	17.063	51	16.875	51	17.063	51
1124		1124		1147		1175		1235	
3.427	19	4.042	22	5.979	33	6.604	36	5.667	31
4.76	60	5.292	66	5.906	74	7.25	91	6.542	82
2.156	22	2.365	24	2.75	28	2.917	29	3.533	36
1.108	23	1.114	33	1.114	33	1.302	39	1.333	40
1.516	45	1.531	46	1.531	46	1.646	49	1.75	53
.794	24	.802	24	.802	24	.917	28	1.042	31
.729	875	.646	775	.51	612	.562	674	.521	625
.906	553	.885	540	.792	483	.812	495	.802	499
1631		1530		1333		1441		1387	
8.854	96	8.521	88	4.083	102	3.635	91	4.354	109
160.75	434	160.417	355	178.333	428	174.625	419	198.063	475
.906	63	.958	67	117.5	82	101.333	71	119.333	84
2.906	63	2.875	67	125.533	88	108.5	73	123.5	86
2.394	144	2.375	143	2.208	192	2.208	152	2.542	153
302.333	22	311.333	22	414.583	31	335.5	25	346.	26
4.083	31	4.75	36	5.937	45	3.958	30	4.	30
2.333	12	2.5	13	4.637	23	3.927	15	2.912	14
2.646	133	2.78	138	4.083	204	3.958	198	3.917	196
4.864	13	3.937	11	4.062	11	4.375	12	5.208	14
1011		971		1206		1065		1187	
1.021	41	.947	36	1.042	42	.917	37	1.031	41
.656	105	.562	90	.802	128	.771	123	.812	130
.593	44	.635	48	.917	69	.967	52	.771	58
.947	450	.958	455	1.125	534	.958	455	1.042	495
.51	5	.468	5	.593	6	.593	6	.614	6
.958	86	1.	90	1.125	101	.958	86	.989	89
.271	8	.25	8	.281	8	.25	8	.271	8
4.864	39	5.294	42	5.687	45	5.708	46	5.917	47
778		776		933		813		874	
.479	34	.489	34	.479	34	.447	31	.396	28
.562	30	.552	30	.562	30	.427	30	.458	32
4.562	11	4.479	11	4.5	11	4.667	12	5.417	14
7.406	19	8.885	22	9.437	24	8.292	21	8.063	20
5.	25	5.125	26	5.167	26	5.375	27	5.5	28
.687	103	.75	113	.718	108	.713	107	.697	106
1.125	11	1.125	11	1.206	12	1.25	13	1.25	13
1.125	6	1.125	6	1.125	6	1.125	6	1.146	6
448.	498	437.5	481	474.	521	448.167	493	432.667	476
.456	5	.479	5	.271	3	.26	3	.26	3
.146	6	.177	7	380.	7	314.333	6	277.	5
486.167	46	486.167	47	527.5	53	542.5	54	555.	56
81.25	28	81.25	28	81.25	28	85.625	30	90.	32
19.	6	19.	6	19.	6	19.	6	20.	6
.417	2	.417	2	.417	2	.417	2	.437	2
.697	2	.729	2	.697	2	.697	2	.697	2
2.239	10	2.083	9	2.043	9	2.042	9	2.292	10
.604	48	.604	48	.604	48	.604	48	.604	48
.823	70	.822	70	.843	72	.927	79	.896	76
4.604	299	4.604	299	4.854	316	4.854	316	5.042	328
1266		1266		1327		1295		1290	
19.792	366	18.833	367	25.206	492	22.292	435	28.	544
.167	276	.177	292	.271	447	.234	386	.281	464
8.031	80	8.996	89	9.979	100	11.208	112	12.	120
.167	17	.167	17	.197	20	.218	22	.234	23
.437	81	.364	67	.385	71	.479	89	.516	95
840		832		1130		1044		1249	
10.637	16	11.	17	11.25	17	12.354	19	12.5	19
9.604	14	8.822	13	8.667	13	9.771	15	10.292	15
8.125	12	8.042	12	7.75	12	8.604	15	9.333	14
6.021	9	5.802	9	5.625	8	6.271	9	6.292	9
7.	70	6.563	66	6.333	63	7.292	73	7.167	72
111.25	111	118.25	118	136.75	136	152.417	152	129.	129
330.	165	325.417	163	335.	168	335.	168	333.	167
12.667	19	13.417	20	14.542	23	13.917	21	14.875	22
567.667	21	602.333	23	723.5	27	735.833	28	792.	30
437		441		466		498		477	
.771	15	.886	16	.812	16	.843	17	1.458	29
164.75	4	167.5	4	165.417	4	165.	4	165.	5
660.	2	660.	2	660.	2	660.	2	660.	2
160.75	2	172.063	2	185.75	2	196.967	2	200.	2
23		26		24		25		39	
7110		6668		7566		7356		7737	

Table showing prices, mass units, and the cost of the mass units, 1906 to 1926. For the missing mass units and information about the substitution of commodities, see the note above.

	Mass Unit.	1915.		1916.		1917.		1918.	
		Price.	Cost of M. U.	Price.	Cost of M. U.	Price.	Cost of M. U.	Price.	Cost of M. U.
Group I.									
Iron—Pig	5.5	99.833	32	124.167	40	218.333	71	245.	80
Rod and Bar	3.5	287.5	50	442.292	77	483.75	85	559.167	96
Angle and Tee	3.5	278.	48	467.917	82	582.917	102	668.75	121
Plate	3.	291.667	44	531.667	80	1063.333	159	1599.167	236
Hoop .. .. .	.5	306.	8	552.5	14	746.25	19	1127.5	28
Galvanized Corrugated	6.	525.167	131	712.5	178	1243.333	311	1470.833	368
Wire, Fencing	6.	263.833	79	443.333	133	675.417	308	928.25	378
Zinc—Sheet	1.	1413.5	71	2566.667	128	2775.	139	2964.917	146
Lead—Sheet .. .. .	.75	565.417	21	770.	29	740.	28	751.667	28
Lead—Piping .. .. .	.5	678.25	17	873.75	23	830.	21	821.667	21
Copper—Sheet	2,000.	1.239	124	1.966	196	2.5	250	2.875	288
Coal (on Wharf)	600.	25.	750	27.	810	28.	870	29.	870
Tinned Plates	60.	21.792	65	38.	114	44.25	133	50.417	151
Total			1440		1903		2391		2717
Group II.									
Jute Goods—Branbags	110	6.458	36	7.956	44	8.271	45	11.917	66
Coronas	250	7.708	98	9.562	129	9.333	117	9.875	123
Woolpacks	200	3.167	32	3.917	39	4.146	41	6.292	68
Leather—									
Medium Crop or Substitute	600	1.354	41	1.614	49	1.654	56	1.833	55
Waxed Kip	600	1.958	59	2.042	61	2.396	72	2.5	75
Waxed Split	600	1.187	36	1.312	39	1.333	40	1.333	40
Cotton—Raw	24,000	.468	563	.672	808	1.302	1592	1.864	2237
Wool	12,200	.833	508	1.167	713	1.317	803	1.406	858
Total			1370		1859		2736		3517
Group III.									
Wheat	500	7.5	188	4.833	121	4.75	119	4.75	119
Flour	48	330.5	798	226.75	544	215.	516	215.	516
Bras		158.333	111	92.917	65	89.	62	94.583	66
Pollard		188.333	132	112.417	79	119.25	83	115.417	81
Oats	1,200	4.5	270	2.25	135	2.458	147	3.833	230
Oatmeal	1.5	542.917	41	360.	27	360.	27	467.	35
Barley—Malting or English	150	5.583	42	4.354	33	4.396	33	5.75	43
Feed or Cape	100	4.5	23	3.125	16	3.125	16	4.	20
Maize	1,000	5.25	263	4.792	240	3.708	185	5.167	258
Peas	55	6.917	19	6.104	17	6.25	17	6.583	18
Total			1882		1277		1205		1386
Group IV.									
Ham	600	1.125	45	1.292	52	1.125	45	1.167	47
Bacon	3,200	1.042	167	1.083	173	1.021	163	1.042	167
Cheese	1,500	1.021	77	1.042	78	.958	72	1.	75
Butter	6,500	1.458	603	1.375	653	1.333	633	1.343	638
Lard	200	.896	9	.9	9	.833	8	.729	7
Eggs	1,800	1.354	122	1.229	111	1.042	84	1.042	84
Honey	600	.417	13	.437	13	.417	13	.417	13
Condensed Milk	160	6.583	53	7.521	60	7.667	61	8.042	64
Total			1179		1149		1039		1106
Group V.									
Currants	1,400	.51	36	.635	44	.562	39	.583	41
Raisins	1,400	.51	36	.583	41	.562	39	.583	41
Herrings	50	6.875	17	9.	23	9.333	23	11.333	28
Salmon	50	9.958	22	9.958	25	13.167	33	16.417	41
Sardines	100	6.375	32	8.458	42	11.292	56	11.625	58
Tea	3,000	.843	126	.797	131	.797	129	.908	136
Coffee	200	1.25	13	1.25	13	1.167	12	1.167	12
Cocoa	100	1.208	6	1.229	6	1.292	6	1.360	7
Sugar	22	463.083	509	584.375	643	587.5	646	587.5	646
Macaroni	200	.38	4	.364	4	.364	4	.364	4
Sago or Tapioca		352.083	6	476.667	8	30.25	11	30.7	11
Rice	2	558.	58	619.167	62	640.	64	790.	79
Salt—Fine	7	93.75	33	92.062	32	95.333	33	93.604	35
Mustard	6	21.583	6	24.417	7	25.542	8	28.605	10
Starch	100	.489	2	.497	2	.625	2	.709	4
Blue	50	.697	2	.697	2	.697	2	1.057	3
Matches	90	4.252	19	3.833	17	4.083	18	4.542	20
Candles	1,600	.604	48	.667	53	.687	55	.801	64
Kerosene	1,700	.822	78	1.333	113	1.667	142	2.	170
Tobacco	1,300	5.771	375	5.771	375	5.771	375	6.292	409
Total			1428		1644		1690		1819
Group VI.									
Beef	300	50.292	981	47.833	933	46.75	912	49.042	956
Mutton	33,000	.453	747	.5	825	.463	764	.447	738
Lamb .. .. .		.605	141	.672	160	.562	155	.5	140
Veal	2,000	.375	38	.468	47	.542	54	.5	50
Pork	3,700	.656	121	.718	133	.625	116	.552	102
Total			2028		2098		2001		1986
Group VII.									
Timber—Flooring, 6 x 11	30	15.271	23	17.583	26	22.5	34	25.083	38
6 x 12	30	12.375	19	16.004	23	18.417	28	22.	33
6 x 16	30	10.958	16	14.437	22	18.233	27	21.667	33
6 x 18	30	7.417	11	9.75	15	14.667	22	17.917	27
Weatherboards	200	7.833	78	9.417	94	13.167	132	18.917	189
Oregon	20	164.167	164	206.206	206	266.833	267	375.667	376
Shelving	10	360.	180	393.75	197	468.75	234	779.167	390
Cement	30	21.167	32	19.	29	20.417	31	24.	36
Whitewash .. .. .	.75	873.75	33	1232.5	46	1466.667	56	1700.	64
Total			556		657		830		1186
Group VIII.									
Cream of Tartar	400	2.042	41	1.979	40	2.625	53	4.	60
Carbonate of Soda .. .. .	.5	207.917	5	261.875	7	443.75	11	307.417	8
Saltpetre .. .. .	.05	660.	2	945.	2	1428.333	4	1388.667	3
Sulphur .. .. .	.25	275.	3	425.	5	652.083	6	487.333	6
Total			61		54		74		97
Aggregate			9633		10661		12016		13818

Table showing prices, mass units, and the cost of the mass units, 1906 to 1926. For the missing mass units and information about the substitution of commodities, see the note above.

1919.		1920.		1921.		1922.		1923.	
Price.	Cost of M. U.	Price.	Cost of M. U.	Price.	Cost of M. U.	Price.	Cost of M. U.	Price.	Cost of M. U.
s.	£	s.	£	s.	£	s.	£	s.	£
247.5	80	256.667	83	220.	72	198.	64	185.	54
322.083	91	572.5	100	596.667	104	464.	61	367.5	64
594.167	104	563.333	99	582.917	102	479.5	64	391.667	69
1042.5	156	990.417	149	759.167	114	423.	63	336.667	51
915.833	23	975.	24	931.667	23	493.	12	382.5	10
1108.5	277	1161.25	290	831.583	208	559.	140	562.5	141
472.5	142	483.333	145	430.	129	393.5	118	356.	107
3623.333	141	1895.833	95	1754.167	88	1391.5	70	1087.5	54
785.417	29	1047.917	89	884.75	33	787.5	29	676.667	33
656.667	21	1322.5	38	959.167	24	896.	22	942.5	24
2.875	238	2.292	229	2.458	246	2.083	208	1.583	158
31.083	932	35.875	1076	39.667	1190	40.	1200	40.	1200
48.125	144	73.	219	36.583	110	30.25	91	29.5	89
2378		2581		2443		2182		2054	
12.833	71	13.167	72	6.583	36	7.333	40	7.917	44
12.5	156	14.583	182	6.417	105	9.292	118	9.625	120
5.292	58	6.417	64	3.917	39	4.292	43	4.708	47
2.125	64	2.75	62	1.417	43	1.271	38	1.354	41
2.833	65	3.25	98	2.083	62	1.896	57	2.083	62
1.458	44	1.75	53	1.333	40	1.271	38	1.354	41
1.583	1900	1.812	2174	1.792	950	1.	1200	1.312	1574
1.370	836	1.398	852	.947	578	1.271	775	1.682	1026
3209		3578		1853		2307		2955	
5.104	128	7.562	189	8.917	223	5.604	140	5.042	126
221.792	532	335.125	804	401.	962	254.5	611	231.333	555
129.792	91	170.583	119	168.	118	154.75	103	154.917	109
138.542	97	170.5	119	168.167	118	158.5	111	160.667	112
5.125	308	4.675	293	2.604	156	3.458	207	3.708	222
689.167	48	670.833	50	425.833	32	471.	35	480.	36
5.812	44	7.271	55	4.417	33	4.125	31	4.062	30
4.542	23	6.298	31	3.417	17	3.	15	3.125	16
6.917	846	7.958	398	4.75	238	5.167	258	5.604	280
7.917	22	10.208	28	8.25	23	8.208	23	7.062	19
1639		2086		1920		1539		1504	
1.292	62	1.958	78	1.833	73	1.667	67	1.75	70
1.187	187	1.625	260	1.542	247	1.25	200	1.25	200
1.125	84	1.292	97	1.333	100	1.083	61	1.312	93
1.583	752	2.125	1009	1.833	871	1.458	693	1.75	831
1.958	10	1.437	14	.917	9	.604	6	.792	8
1.187	107	1.667	150	1.5	135	1.333	120	1.375	124
.5	15	.667	20	.5	15	.375	11	.375	11
9.208	74	11.375	91	12.333	99	11.062	83	11.062	88
1281		1719		1549		1266		1430	
.614	43	.718	50	.771	54	.771	54	.583	41
.614	43	.75	53	.781	55	.822	58	.792	55
9.812	25	10.312	26	10.583	26	8.708	22	7.583	19
18.333	46	22.333	56	22.083	55	18.083	45	15.667	39
11.021	55	13.625	68	12.833	64	8.833	44	7.521	38
.932	140	1.104	166	.833	125	1.031	155	1.292	194
1.25	13	2.021	20	2.125	21	2.125	21	2.125	21
1.428	7	1.855	9	1.417	7	1.25	6	1.25	6
687.5	646	681.875	970	680.	1078	956.667	1052	828.833	912
.396	4	.542	5	.51	5	.5	5	.489	5
36.833	13	37.458	13	26.583	9	25.75	9	32.417	11
940.	94	1090.	109	842.917	84	512.5	51	446.667	45
101.875	36	111.667	39	120.917	42	120.	42	117.5	41
36.667	11	43.292	13	44.667	13	45.375	14	45.375	14
.792	4	1.333	7	1.292	6	1.979	5	.958	5
1.417	4	1.104	8	1.083	3	2.968	2	.958	2
5.229	24	6.875	31	6.125	28	6.	27	6.062	27
2.571	70	1.030	82	.812	65	.792	68	.771	62
2.167	184	2.542	216	2.583	220	1.833	156	1.625	133
7.333	477	7.542	490	8.	520	8.	520	8.	520
1939		2426		2480		2351		2195	
50.5	985	65.917	1285	38.167	744	27.417	535	41.917	617
.406	670	.614	1013	.417	688	.375	619	.583	962
.468	131	.729	204	.562	157	.542	152	.718	201
.375	38	.489	49	.396	40	.25	25	.312	31
.677	125	.968	179	.958	177	.771	143	.771	143
1949		2730		1806		1474		2154	
29.542	44	34.	51	30.083	45	25.667	39	22.875	34
27.167	41	30.333	45	25.25	38	19.833	30	17.75	27
24.5	37	27.333	41	22.333	33	17.292	26	15.75	24
19.	29	19.25	29	16.	24	14.167	21	11.333	17
20.167	202	21.083	211	16.833	168	14.708	147	12.75	128
356.25	354	467.917	466	327.25	327	241.	241	242.	262
865.417	433	951.667	476	893.75	447	589.	295	642.5	321
23.833	36	27.5	41	42.	63	23.167	36	20.458	31
1422.5	53	1750.	65	1662.	62	1319.	49	1182.5	44
1231		1428		1207		883		886	
3.292	66	3.167	63	1.917	38	1.5	30	1.289	25
410.833	10	418.75	10	379.167	9	365.	9	320.833	8
1433.333	4	1175.	5	976.667	2	900.	2	852.5	2
328.25	4	398.333	5	369.333	5	276.	5	254.333	5
84		81		54		44		38	
13710		16629		13312		12046		13215	

Table showing prices, mass units, and the cost of the mass units, 1906 to 1926. For the missing mass units and information about the substitution of commodities, see the note above.

	1924.		1925.		1926.		
	Mass Unit.	Price.	Cost of M. U.	Price.	Cost of M. U.	Price.	Cost of M. U.
Group I.							
Iron—Pig	0.8	150.167	52	157.5	51	140.	5
Rod and Bar	3.5	381.667	67	406.	71	415.833	73
Angle and Tee	3.5	356.667	62	358.75	63	352.083	62
Plate	3.	323.333	48	316.25	47	303.75	46
Hoop	5.	380.	10	380.	10	380.	10
Galvanized Corrugated Wire, Fencing	5.	575.833	144	573.917	143	573.083	143
Zinc—Sheet	1.	354.5	108	300.	90	291.667	68
Lead—Sheet	1.	1160.417	58	1281.25	64	1281.083	64
Lead—Piping .. .. .	.75	890.833	33	1026.25	38	979.167	37
Copper—Sheet	5.	1001.667	25	1160.	29	1160.	29
Coal (on Wharf)	2,000.	1.568	158	1.537	154	1.442	144
Tinned Plates	600.	40.	1200	40.667	1220	44.25	1328
Total	60.	34.75	104	33.75	101	35.833	107
Total			2065		2081		2177
Group II.							
Jute Goods—Branbags	110	7.021	80	9.120	50	9.432	52
Cornsacks	250	12.5	156	13.187	165	12.37	156
Woolpacks	200	5.010	50	5.734	57	5.338	53
Leather—Medium Crop or Substitute	600	1.417	43	1.495	45	1.442	43
Waxed Kip	600	1.833	55	2.	60	2.	60
Waxed Split	600	1.167	35	1.141	34	1.167	35
Cotton—Raw	24,000	1.333	1600	1.021	1225	1.734	881
Wool	12,200	2.208	1347	1.734	1058	1.437	877
Total			3325		2694		2156
Group III.							
Wheat	500	5.375	134	6.073	152	6.208	155
Flour	48	265.833	638	296.167	711	293.917	706
Bran		116.5	62	150.75	106	148.167	104
Pollard		188.583	97	170.	119	185.583	130
Oats	1,200	3.312	109	3.093	186	3.578	215
Oatmeal	1.5	510.	38	477.5	36	537.5	40
Berley—Malting or English Feed or Cape	150	4.667	35	5.812	44	4.401	33
Feed or Cape	100	4.125	21	4.630	23	3.970	20
Maise	1,000	4.604	230	4.739	237	6.062	303
Peas	55	6.385	18	5.562	15	7.970	22
Total			1492		1629		1727
Group IV.							
Ham	800	1.75	70	1.729	69	1.739	70
Bacon	3,200	1.333	213	1.271	203	1.208	193
Cheese	1,500	1.104	83	1.083	81	1.292	97
Butter	9,500	1.417	673	1.432	680	1.531	727
Lard	200	.896	9	.697	7	.776	8
Eggs	1,800	1.458	131	1.37	123	1.479	133
Honey	600	.5	15	.364	11	.422	13
Condensed Milk	160	11.375	91	11.437	91	11.437	91
Total			1285		1265		1332
Group V.							
Currants	1,400	.583	41	.578	40	.578	40
Raisins	1,400	.552	39	.557	39	.521	36
Herrings	50	7.5	19	7.562	19	7.75	19
Salmon	50	15.5	39	16.5	41	20.375	51
Sardines	100	8.667	43	8.312	42	7.75	39
Tea	3,000	1.479	222	1.542	231	1.588	238
Coffee	200	2.125	21	2.125	21	2.125	21
Cocoa	100	1.25	6	1.25	6	1.25	6
Sugar	22	782.5	861	781.	859	777.583	855
Macaroni	200	.479	5	.458	5	.458	5
Sago or Tapioca		30.625	11	22.917	8	20.417	7
Rice	2	442.917	44	445.	45	445.	45
Salt—Fine	7	124.167	42	128.667	45	130.	46
Mustard	6	45.375	14	45.375	14	45.375	14
Starch	100	.917	5	.917	5	.917	5
Blue	50	.958	2	.968	2	.968	2
Matches	90	5.958	27	5.995	27	5.63	25
Candles	1,600	.771	62	.781	62	.781	62
Kerosene	1,700	1.667	142	1.625	138	1.625	138
Tobacco	1,300	8.	520	7.792	506	7.792	506
Total			2156		2155		2160
Group VI.							
Beef	390	32.	624	34.302	669	36.437	711
Mutton	33,000	.5	825	.489	807	.349	576
Lamb .. .. .		.718	201	.697	195	.542	152
Veal	2,000	.312	31	.322	32	.338	34
Fork	3,700	.896	166	.833	154	.724	134
Total			1847		1857		1607
Group VII.							
Timber—Flooring, 6 x 1 1/2	30	22.083	33	20.583	31	19.506	30
6 x 1	30	16.083	24	15.667	24	15.641	23
6 x 3/4	30	14.083	21	13.542	20	13.38	20
6 x 3	30	10.583	16	10.833	16	9.854	15
Weatherboards	200	11.5	115	11.302	113	10.70	106
Oregon	20	232.5	233	221.667	222	219.167	219
Shelving	10	556.25	278	468.	244	464.167	238
Cement	30	20.562	31	20.167	30	20.625	31
Whitelead .. .. .	.75	1215.833	40	1272.917	48	1331.25	50
Total			797		743		727
Group VIII.							
Cream of Tartar	400	1.197	24	1.224	24	1.156	23
Carbonate of Soda .. .. .	.5	232.5	7	275.	7	275.	7
Saltpetre05	723.75	2	715.	2.	715.	2
Sulphur25	235.	3	235.	3	235.	3
Total			36		36		35
Aggregate			13013		12465		11921

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