

SECTION VIII.—VARIATIONS IN NOMINAL AND EFFECTIVE WAGES.

1. **General.**—From the beginning of the year 1913, records have been kept of all changes in rates of wage and hours of labour, the number of workers affected, and the methods by which such changes are brought about. The results of these records have been published in the quarterly Labour Bulletins and in Labour Reports No. 5 and No. 6. In order to supplement the results thus obtained, investigations have been made regarding rates of wages in past years with a view to shewing their general trend in each State and in various industrial groups. The methods adopted for the collection of the data and computation of the results were explained in Report No. 2 (see pages 23-4), and will not be repeated here. The particulars given in this Section shew variations in nominal wages from year to year in each State and in various industrial groups. Index-numbers are also given shewing variations in effective wages in each State.

The total number of occupations for which particulars are available back to 1891 is 652. In 1913, however, the scope of the investigation was extended, and particulars for that year are available for no fewer than 3948 occupations. The wages on which the index-numbers are based are, in the majority of cases, minimum rates fixed by industrial tribunals, but in some cases, particularly in the earlier years when no minimum rates had been fixed for many trades, either union or predominant rates have been taken.

2. **Weighted Average Nominal Weekly Rate of Wage in each and all States, 30th April, 1914 to 31st December, 1916.**—In the following table the weighted average nominal weekly rate of wage for adult workers (male and female separately), is shewn for each State and the Commonwealth, as at the 30th April, 1914, and approximately quarterly intervals to the 31st December, 1916 :—

Weighted Average Nominal Weekly Rate of Wage Payable to Adult Workers for a Full Week's Work in each State and Commonwealth, 30th April, 1914, to 31st December, 1916.

Dates.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'with.
MALES.							
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
30th April, 1914*	55 9	54 3	52 8	54 4	62 2	62 6	55 1
30th June, 1914	55 11	54 4	52 10	54 4	62 9	62 7	55 3
30th September, 1914 ..	56 2	54 7	53 4	54 5	62 10	62 8	55 6
31st December, 1914* ..	56 2	54 7	53 5	54 5	62 10	62 8	55 7
31st March, 1915*	56 3	54 8	53 4	54 3	63 1	62 9	55 7
30th June, 1915*	56 8	54 8	53 4	54 3	63 1	62 9	55 9
30th September, 1915* ..	56 10	54 11	53 8	54 3	63 1	62 9	56 0
31st December, 1915* ..	57 7	55 3	54 4	54 8	63 4	63 3	56 6
31st March, 1916*	58 2	56 7	55 1	55 8	63 4	63 9	57 3
30th June, 1916*	58 11	57 0	56 5	56 1	63 4	64 4	57 11
30th September, 1916* ..	59 6	57 9	57 11	56 6	63 8	64 9	58 8
31st December, 1916* ..	61 11	58 10	60 4	59 0	65 2	67 0	60 8

* See footnote on next page.

Weighted Average Nominal Weekly Rate of Wage payable to Adult Workers for a Full Week's Work in each State and Commonwealth, 30th April, 1914, to 31st December, 1916—cont.

Date.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wh'th.
FEMALES.							
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
30th April, 1914*	26 9	27 4	26 11	24 1	37 4	25 10	27 2
30th June, 1914	26 9	27 4	27 0	24 1	37 4	25 10	27 2
30th September, 1914	26 10	27 9	26 11	24 1	37 4	25 10	27 4
31st December, 1914*	26 10	27 9	27 1	24 1	37 4	25 10	27 5
31st March, 1915*	26 10	26 11	27 2	24 0	37 5	26 3	27 1
30th June, 1915*	27 2	26 11	27 2	24 0	37 5	26 3	27 2
30th September, 1915*	27 3	26 11	26 11	24 0	37 5	26 3	27 3
31st December, 1915*	27 5	26 11	26 11	24 6	37 5	26 3	27 4
31st March, 1916*	27 7	27 11	26 11	24 6	37 5	26 3	27 9
30th June, 1916*	27 7	27 11	26 11	24 6	37 5	26 3	27 9
30th September, 1916*	27 11	28 2	27 2	24 10	37 5	27 9	28 1
31st December, 1916*	28 7	28 5	27 3	24 10	38 10	28 3	28 5

* Details have been published as follows.—To 30th April, 1914 (Labour Report No. 5, pp. 44-6); to 31st December 1914 (Labour Bulletin No. 8, pp. 256-8); to 31st March, 1915, (Labour Bulletin No. 9, pp. 63-71); to 30th June, 1915 (Labour Bulletin No. 10, pp. 170-6), to 30th September, 1915 (Labour Bulletin No. 11, pp. 264-5), to 31st December, 1915, (Labour Bulletin No. 12, pp. 413-15), to 31st March, 1916 (Labour Bulletin No. 13, pp. 32-3), to 30th June, 1916, (Labour Bulletin No. 14, pp. 190-1), and to 30th September, 1916 (Labour Bulletin No. 15, pp. 300-1) †

(i.) *Adult Male Workers.*—It will be seen that the weighted average nominal weekly rate of wage for adult male workers for the whole Commonwealth advanced during the period reviewed by 5s. 7d. Increases above the weighted average increase are shown for Queensland and New South Wales, being 7s. 8d., and 6s. 2d. respectively. In each of the other States the increase was below the average, being in Victoria 4s. 7d.; Tasmania, 4s. 6d.; South Australia, 4s. 8d.; and in Western Australia, 3s. 0d. At the 30th April, 1914, the highest average rate of wage was 62s. 2d. in Western Australia, followed in the order named by New South Wales, South Australia, Victoria, Queensland and Tasmania. At the 31st December, 1916, the positions of the States remained unaltered, with the exception that Queensland had displaced South Australia and Victoria.

(ii.) *Adult Female Workers.*—During the period covered by the table the weighted average nominal weekly rate of wage for adult female workers, for the whole Commonwealth, shews considerably less movement, being 1s. 3d. per week only. The greatest increase in any one State occurred in Tasmania, where the weighted average nominal weekly wage advanced from 25s. 10d. to 28s. 3d. This was due to substantial increases being awarded to workers in the jam and fruit preserving, bootmaking, clothing and other manufacturing industries. New South Wales, Victoria and South Australia are the only other States in which any appreciable increase is shewn, the amount of which is in New South Wales, 1s. 10d.; Western Australia, 1s. 6d.; Victoria, 1s. 1d.; South Australia, 9d.; and Queensland, 4d. The decrease of 5d. in Victoria, between the 30th April, 1914, and the end of 1915, was brought about by the reduction, on appeal, of the minimum rates of wage to female clerks and stenographers.

3. Variations in Nominal Wage Index-Numbers in Industrial Groups, 1901 to 1916.—The following table shews variations in nominal wage index-numbers, the occupations having been classified in four-

teen industrial groups. As already pointed out, these index-numbers are comparable throughout, and shew, not only the variations in wages in each industrial group, but also the relative wages as between the several groups:—

Variations in Nominal Wage Index-numbers in different Industries in the Commonwealth, 1901 to 1916. (Weighted Average Wage for all Groups in 1911 = 1,000).

Particulars.	No. of occupations included.		1901.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.
	1901 to 1912.	1913-16.											
I. Wood, Furniture, etc.	27	270	1,019	1,049	1,051	1,055	1,097	1,125	1,144	1,142	1,161	1,174	1,246
II. Engineering, Metal Works, etc.	101	636	945	971	930	995	1,006	1,064	1,104	1,113	1,127	1,174	1,211
III. Food, Drink, etc.	34	576	871	902	905	914	928	901	1,038	1,074	1,085	1,127	1,194
IV. Clothing, Hats, Boots, etc.	13	124	708	856	867	935	976	981	990	1,019	1,034	1,037	1,104
V. Books, Printing, etc.	25	205	996	1,010	1,021	1,070	1,102	1,149	1,188	1,234	1,246	1,259	1,328
VI. Other Manufacturing	102	875	907	905	915	923	947	1,018	1,037	1,078	1,003	1,125	1,203
VII. Building	67	190	1,050	1,105	1,114	1,130	1,163	1,213	1,245	1,270	1,276	1,285	1,359
VIII. Mining, Quarries, etc.	71	161	1,067	1,117	1,116	1,120	1,168	1,194	1,216	1,270	1,272	1,299	1,420
IX. Rail & Train Services	68	224	1,021	1,027	1,031	1,064	1,074	1,113	1,164	1,165	1,165	1,187	1,236
X. Other Land Transport	9	70	795	813	836	836	889	910	993	993	1,026	1,041	1,128
XI. Shipping, etc.	74	198	751	787	787	856	857	871	942	953	972	1,028	1,153
XII. Agricultural, Pastoral, etc.	8	72	627	730	736	787	798	839	944	965	965	969	1,073
XIII. Domestic, Hotels, etc.	17	114	598	608	626	727	743	887	894	918	935	948	995
XIV. Miscellaneous	36	233	759	812	820	843	889	929	1,015	1,045	1,054	1,065	1,137
All Groups.*	652	3,948	848	893	900	923	955	1,000	1,051	1,076	1,085	1,102	1,184

* Weighted average; see graph on page 432 hereof. † The slight decrease in this group was due to a reduction in the award rates in the Furniture Trade in New South Wales, resulting from an appeal made by employers.

4. Variations in Nominal Wage Index-Numbers in States, 1901 to 1916.—The following table shews, by means of index-numbers, the variations in wages for all industries in each State, the weighted average wage for the Commonwealth in 1911 being taken as base (= 1000). These results are based generally upon rates of wage prevailing in the capital towns of each State, but in certain industries, such as mining, agriculture, etc., rates are necessarily taken for places outside the metropolitan areas:—

Variations in Nominal Wage Index-numbers in different States, 1901 to 1916. (Weighted Average Wage for Commonwealth in 1911 = 1,000.)

Particulars.	No. of occupations included.		1901.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.
	1901 to 1912.	1913-16.											
New South Wales	158	874	858	910	913	942	968	1,003	1,058	1,088	1,096	1,124	1,208
Victoria	150	909	798	857	871	887	924	985	1,038	1,058	1,065	1,078	1,148
Queensland	87	627	901	914	925	946	960	997	1,010	1,027	1,042	1,060	1,177
South Australia	134	567	819	858	868	905	951	1,013	1,048	1,061	1,062	1,067	1,151
Western Australia	60	489	1,052	1,053	1,061	1,068	1,116	1,152	1,191	1,214	1,226	1,236	1,272
Tasmania	54	482	719	725	725	732	772	799	934	1,025	1,028	1,039	1,112
Commonwealth*	652	3,948	848	893	900	923	955	1,000	1,051	1,076	1,085	1,102	1,184

* Weighted average; see graph on page 432.

The significance of the above figures since 1906 can be better appreciated by reference to the graph on page 432, which shews, of course, not only variations in wages in each State from year to year, but also the difference in wage-level as between the several States. From this graph it is clearly seen that, excluding Western Australia, the difference between nominal wages in the several States has decreased very considerably since 1906. This difference is shewn at any point by the vertical distance between the graphs. Wages in Queensland have increased since 1914 at a higher rate than in any other State, and the general level in that State is now higher than in Victoria, South Australia, or Tasmania. The graphs for Victoria and South Australia lie very close together throughout the period. In Tasmania the first determination under the Wages Boards Acts, 1910 and 1911, came into force in 1911. Since then wages in that State have increased rapidly, and their general level is now not far below those of the other States, except Western Australia.

5. **Average Nominal Weekly Wage in the Several States, 1891 to 1916.**—The following table shews the average weekly rate of wage payable to adult male workers in each State from 1891 to 1916. The wages given in this table are relatively identical with the index-numbers shewn in the table on page 429.

Average Nominal Rates of Wage Payable to Adult Male Workers in each State from 1891 to 1916.

Particulars.	1891.	1896.	1901.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	
New South Wales	44 1 42	1 43 11 46	7 46 9 48	3 49 7 51	5 54 3 55	9 56 2 57	7 61 1 11	40 5 88	9 40 9 43	11 44 7 45	5 47 4 50	6 53 2 54	3 54 7 55	3 58 7 0
Victoria	46 6 44	8 46 2 46	10 47 4 48	5 49 2 51	1 51 1 51	9 52 8 53	5 54 4 60	4 41	7 41 8 42	0 43 11 44	6 46 4 48	9 51 11 53	9 54 4 54	6 54 8 50
Queensland	52 4 53	7 53 11 53	11 54 4 54	9 57 2 59	0 61 0 62	2 62 10 63	4 65 2 38	6 35	6 36 10 37	1 37 1 37	5 39 6 41	0 47 10 52	6 52 8 53	3 57 0
South Australia	52 4 53	7 53 11 53	11 54 4 54	9 57 2 59	0 61 0 62	2 62 10 63	4 65 2 38	6 35	6 36 10 37	1 37 1 37	5 39 6 41	0 47 10 52	6 52 8 53	3 57 0
Western Australia	52 4 53	7 53 11 53	11 54 4 54	9 57 2 59	0 61 0 62	2 62 10 63	4 65 2 38	6 35	6 36 10 37	1 37 1 37	5 39 6 41	0 47 10 52	6 52 8 53	3 57 0
Tasmania	43 5 41	10 43 5 45	9 46 1 47	3 48 11 51	3 53 10 55	1 55 7 56	6 60 8							
Commonwealth	43 5 41	10 43 5 45	9 46 1 47	3 48 11 51	3 53 10 55	1 55 7 56	6 60 8							

The average weekly rate in 1916 was highest in Western Australia, followed in the order named by New South Wales, Queensland, South Australia, Victoria, and Tasmania. In each of the years specified the weekly rates were highest in Western Australia, and lowest in Tasmania. In each of the States of New South Wales, Victoria, and Queensland, the rates shew an increase in each of the years specified except in 1896, when there was a decrease compared with 1891. In South Australia there was an increase in each of the years specified, while in Western Australia the average rates remained constant in 1901, 1906, and 1907, with increases in each other year. In Tasmania there was a decrease in 1896 and again in 1907, and substantial increases in 1912 and 1913.

6. **Average Nominal Weekly Wage Payable in Industrial Groups, 1891 to 1916.**—The following table shews for each of the years indicated the average weekly wages payable in each of the fourteen industrial groups. The wages are *relatively* identical with the index numbers shewn in the table on page 429.

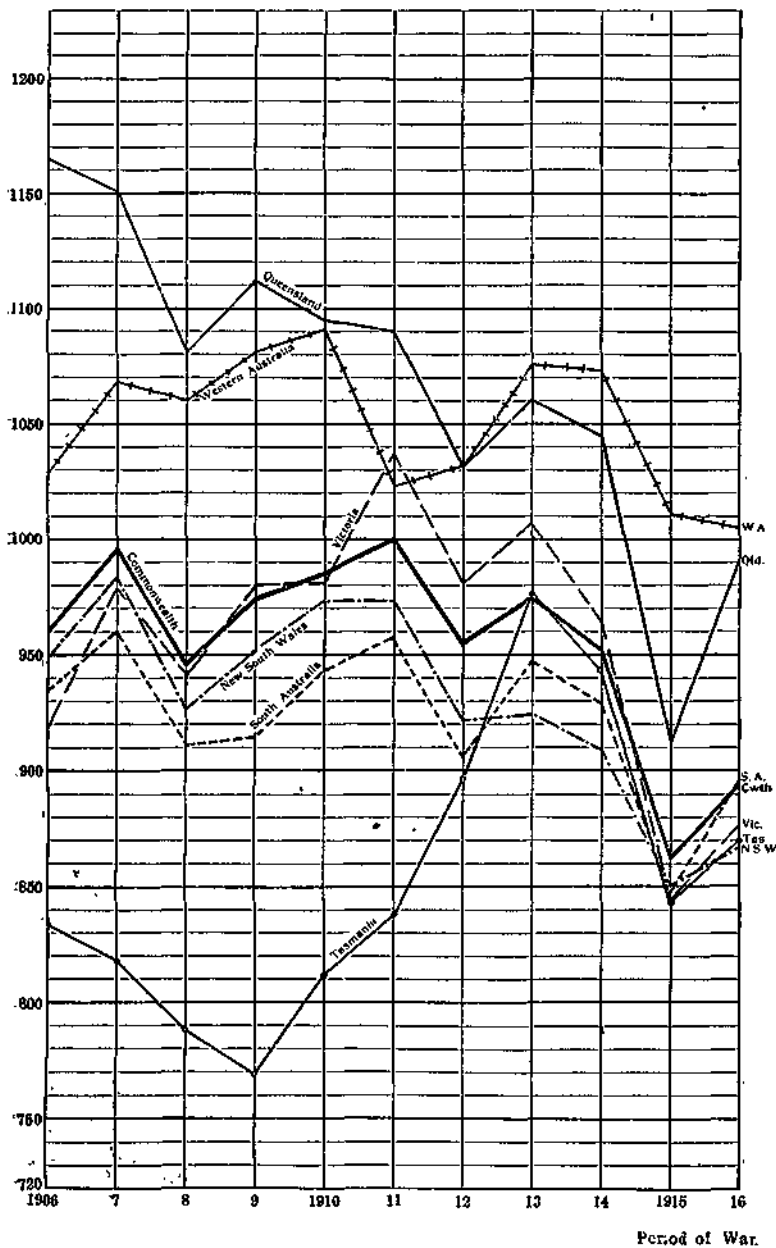
Average Nominal Rate of Wage Payable to Male Adult Workers in each Industrial Group from 1891 to 1916.

Particulars.	1891.		1896.		1901.		1907.		1908.		1909.		1910.		1911.		1912.		1913.		1914.		1915.		1916.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Group I.	52	5	48	2	52	3	53	9	53	10	54	1	56	2	57	3	58	7	58	0	59	6	60	2	63	10
" II.	47	8	47	7	48	5	49	9	50	8	51	0	51	7	54	6	56	7	57	0	57	9	60	2	62	1
" III.	38	2	37	11	44	7	46	3	46	5	46	10	47	6	50	9	53	2	56	0	55	8	57	9	61	2
" IV.	36	3	36	5	36	3	43	10	44	5	47	11	50	0	50	3	50	9	52	3	53	0	53	2	56	7
" V.	53	5	50	1	51	0	51	9	52	3	54	10	56	6	58	11	60	11	63	3	63	10	64	6	68	1
" VI.	46	4	44	8	46	5	46	4	46	10	47	3	48	0	51	11	53	1	55	1	56	0	57	8	61	1
" VII.	50	6	47	6	53	10	56	7	57	1	57	11	59	7	62	1	63	10	65	1	65	5	65	10	69	8
" VIII.	58	1	53	10	54	8	57	9	57	2	57	5	59	10	61	2	62	4	65	1	65	2	66	7	72	9
" IX.	59	10	51	0	52	4	52	7	52	10	54	6	55	0	57	9	59	7	59	8	59	8	60	10	63	4
" X.	39	6	36	0	40	9	41	8	42	10	42	10	45	7	46	7	50	10	51	1	52	8	53	4	57	10
" XI.	38	2	34	0	38	5	40	4	40	4	43	10	43	11	44	7	48	3	48	10	49	10	52	7	59	1
" XII.	34	10	33	0	32	1	37	5	37	8	40	4	40	11	43	4	49	4	49	5	49	5	49	8	55	0
" XIII.	32	10	30	6	30	8	31	2	32	1	37	3	38	1	45	6	45	10	47	0	47	11	48	7	51	0
" XIV.	39	7	38	7	38	10	41	7	42	0	43	2	45	6	47	7	52	0	53	7	54	0	54	7	58	3
ALL GROUPS	43	5	41	10	43	5	45	9	46	1	47	3	48	11	51	3	53	10	55	1	55	7	56	6	60	8

It may be seen that in 1916 the weekly rate of wage was highest in Group VIII., Mining (72s. 9d.), while the lowest average weekly rate was in Group XIII. (Domestic, Hotels, etc.), where the rate was 51s. 0d. The average weekly rate for all groups together increased in all the years since 1891 except 1896. The rate in 1901 was the same as in 1891 (43s. 5d.), but in 1916 had increased to 60s. 8d.

7. **Nominal Wages and Effective Wages.**—Wages are said to be *nominal* when they refer to the actual amounts of money received in return for labour, and are described as *effective* when their equivalence in purchasing power is expressed, that is their purchasing power according to some definite "composite unit" or "regimen," the cost of which is ascertained at a particular date or during a particular period adopted as a datum for reference. From what was said in Section IV., par. 3, of Labour Report No. 6, it is obvious that "effectiveness" of wages can be unequivocally ascertained only when changes in price vary normally, that is to say, when it is practicable and reasonable to regard the "composite unit" as continuously applicable. Estimations of the effectiveness of wages when the original regimen or composite unit ceases to be of reasonable application, as may be the case in times of severe drought, war, etc., becomes of more or less questionable validity. At such times some modification of the accustomed regimen may (or should) take place, and in the degree to which such modification may occur effective wages will become involved in uncertainty. It should, consequently, be borne in mind that index-numbers of effective wages, computed on the supposition of the continual maintenance of a constant regimen cannot be taken to really represent unequivocally the actual effectiveness of wages, they represent rather what *would* have been the effectiveness of wages, had the "composite unit" throughout been virtually the one in use with the wage-earning community. The limitations indicated in Section IV., par. 3, of Labour Report No. 6, already referred to, apply also here. *Fundamental changes in the usage of commodities vitiate this or any other method*, as is obvious from the analysis of the technique for properly ascertaining price-indexes outlined in Report No. 1, Appendix VIII., pp. 23 to 38. Just as there is no unequivocal means of comparing price-indexes, between say a rice-eating and a meat-eating community, or between a community living according to a very elementary standard of comfort, and one living according to a much more advanced standard, so there is in its degree no unequivocal method of computing effectiveness of wages, when the circumstances of the time involve material changes in the "regimen," or are characterised by a temporary passing through abnormal conditions, profoundly affecting the conditions of living.

EFFECTIVE WAGE INDEX-NUMBERS IN EACH STATE, AND COMMONWEALTH, 1906 to 1916.



8. **Variations in Effective Wages in each State, 1901 to 1916.**— In comparing wages two elements are of obvious importance, viz., (i.) hours worked per day or week, etc., and (ii.) the purchasing-power of money (in regard to the composite unit adopted). Thus 60s. per week of 60 hours is equivalent to 48s. per week of 48 hours on the time basis. Similarly, on the purchasing-power basis, if the purchasing-power *fall* one fifth, i.e., if the index-number of the purchasing-power *rises* from 1000 to 1250,* then 60s. per week (the index being 1250, is effectively equal only to 48s. (when the index was 1000). Or, again, if the purchasing power *rise* one third, as is implied by a *fall* in the index-number from 1000 to 750, then 60s. per week originally would, as regards the composite unit, be equal in purchasing power to 80s. Ignoring altogether for the present the number of hours worked and subject to the limitations referred to in the preceding paragraph, and further assuming that the real value of the average wages is to be measured by their purchasing power in regard to the "composite unit" adopted, then we can reduce the actual average wages paid to their effective value by applying the purchasing-power-of-money index-numbers to the nominal wages index-numbers. The following table shews the effective wage index-numbers in each State for each of the years indicated from 1901 to 1916.

In computing these effective wage index-numbers the nominal wage index-numbers given in paragraph 2 hereof have been divided by the purchasing-power-of-money index-numbers in Section IV., paragraph 5 hereinbefore. The resulting index-numbers shew for each State and for the Commonwealth for the years specified the variations in *effective wages*.

Variations in Effective Wages in each State and Commonwealth, 1901 to 1916.*

Particulars.	1901.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.
N.S.W.	961	983	926	952	973	973	922	924	900	850	867
Victoria	915	979	941	980	981	1,037	981	1,007	964	844	877
Queensland . . .	1,172	1,151	1,081	1,112	1,095	1,090	1,032	1,060	1,045	912	991
South Australia .	948	960	911	914	943	957	906	947	920	847	896
Western Australia	1,024	1,068	1,060	1,081	1,091	1,023	1,082	1,076	1,073	1,011	1,005
Tasmania	827	818	788	769	812	838	896	976	943	843	870
Commonwealth	964	996	946	974	985	1,000	955	975	952	862	894

* As to the effect in abnormal periods see Section IV., par. 3, of Labour Report No. 6.

The figures in the above table from the year 1906 onwards are shewn in the graph on page 433. A comparison between this graph with that on the opposite page shews that the difference between nominal and effective wages is very marked. In the first place, the whole nature of the graphs is entirely different. Instead of having a series of lines shewing a practically continuous and rapid upward trend, the effective wages show (except for Tasmania) a series of fluctuating points, in which no very marked tendency is immediately discernible. It will be seen that, generally speaking, the years 1907, 1909, 1910, 1911, 1913, and 1916 were marked by increases in effective wages, but that in each of the years 1908, 1912, 1914, and 1915, there were rapid decreases. In each of these years in which effective wages declined there was a rapid increase in cost of food and groceries (see graph on p. 362). In 1914 wages increased

* Or from any value to one-fifth greater.

0.9 per cent. but purchasing-power-of-money index-number went up 3.1 per cent., with the result that effective wages decreased 2.3 per cent. In 1915 the nominal wage index-number increased 1.6 per cent., while the purchasing-power-of-money index-number increased 12.1 per cent., resulting in a decrease of 9.5 per cent. in the effective wage. In 1916 the nominal wage index-number increased 7.4 per cent., and the purchasing power of money index-number only 3.6 per cent., which resulted in the effective wage index-number, shewing an increase of 3.7 per cent.

One important feature common to both graphs (nominal and effective wages) is the manner in which the graphs for the individual States have, on the whole, approached more closely together. With the adoption of differential rates of wages fixed according to the relative purchasing-power of money, it appears probable that this tendency will continue in the future.

9. Variations in Effective Wages and Standard of Comfort, 1901 to 1916.—In the preceding paragraph particulars are given as to variations in effective wages in each State, due allowance having been made for variations in the purchasing-power of money, though not for unemployment. Attention has also been drawn to the limitations to which they are subject in abnormal times.

If 48 hours per week be the time for which a given wage is paid, say 60s., then for the purpose of estimating the aggregate average earnings, account must be taken of the proportion of time spent in unemployment. For example, if the working days be 300 per year, and the time unemployed be 6 per cent., the actual proportion of working time is 94 per cent., i.e., 18 days are idle in every 300, or 6 per cent. of the period. Similarly if of the employable an average of only 94 per cent. are employed, the measure of unemployment is again 6 per cent., and the employment index-number is 940, i.e., 940 in 1000, or 94 per cent.

For years prior to 1913 the data available as to unemployment are so meagre that comparative results allowing for variations both in the purchasing-power of money and in unemployment cannot be accurately computed for the several States. In the subjoined table, however, the percentage of unemployment for the whole Commonwealth at the end of the years specified has been used in order to obtain results shewing the variations in unemployment upon effective wages. Column I. shews the nominal rate of wage index-numbers (see paragraph 2 hereof), and Column II the relative percentages unemployed (see Section II.). Applying these percentages to the numbers shewn in Column I., and deducting the results from each corresponding index-number, so as to allow for relative loss of time, the figures in Column III. are obtained. These figures are then recomputed with the year 1911 as base, and are shewn in Column IV. In Column V. the purchasing-power-of-money index-numbers are shewn, and in Columns VI. and VII. the effective wage index-numbers are given, firstly, for full work, and secondly, allowing for lost time. These are obtained by dividing the figures in Column I. and IV, respectively, by the corresponding figures in Column V. The resulting index-numbers shew for the Commonwealth for the years specified the variations in *effective* wages or in what may be called the "standard of comfort."*

* See footnote on next page.

A comparison between the figures in Columns I. and VI. shows the relation between the nominal rates of wages and the purchasing efficiency of these rates. The figures in Column VII. (see graph on page 437) show variations in *effective* wages after allowing not only for variations in purchasing-power of money, but also for the relative extent of unemployment.

Unemployment and Nominal and Effective Wage Index-numbers, 1901 to 1916.†

Year.	I. Nomina Wage Index- Numbers.	II. Percentage Unem- ployed.	Rate of Wage Index- Numbers, allowing for Lost Time.		V. Purchas- ing Power of Money Index- Numbers.	Effective Wage Index-Numbers.	
			III. Actual.	IV. Recom- puted. (1911 = 1,000).		VI. Full Work	VII. Allowing for Unemploy- ment.
1901	848	6.6	793	832	880	964	945
1906	866	6.7	808	848	902	960	940
1907	893	5.7	842	884	897	998	986
1908	900	6.0	846	888	951	946	934
1909	923	5.8	870	913	948	974	963
1910	955	5.6	901	945	970	985	974
1911	1,000	4.7	953	1,000	1,000	1,000	1,000
1912	1,051	5.5	993	1,042	1,101	955	946
1913	1,076	5.3	1,021	1,071	1,104	975	970
1914	1,085	11.0	966	1,014	1,140	952	889
1915	1,102	6.8	1,027	1,078	1,278	862	844
1916	1,184	6.7	1,105	1,159	1,324	894	875

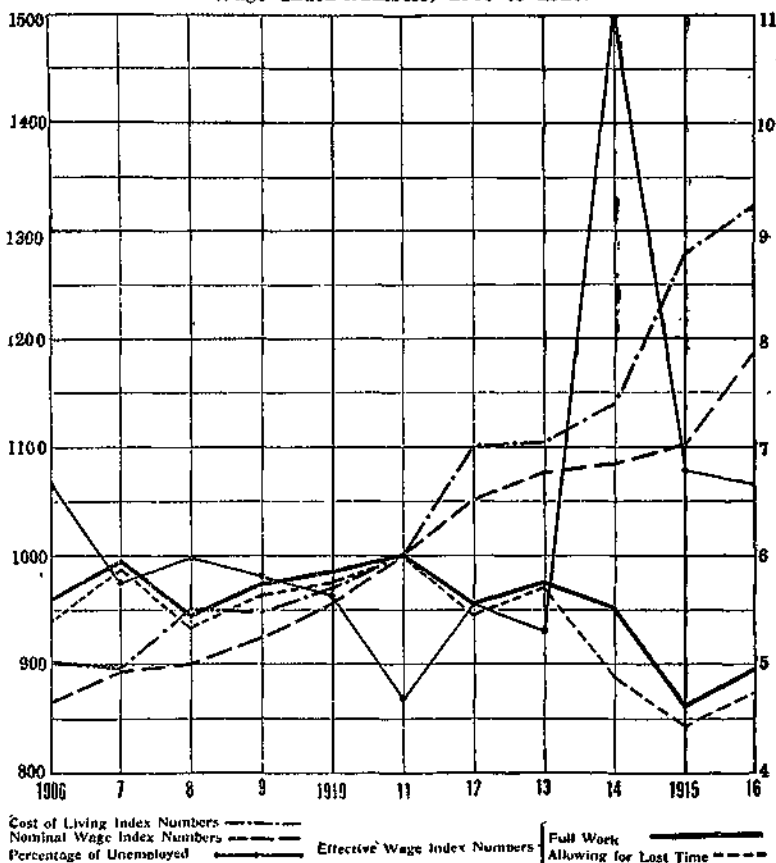
† As to the effect in abnormal periods, see Section IV., par. 3, of Labour Report No. 6

The above figures for the years 1906 to 1916, inclusive, are shown in the graph on page 437. It may be seen from the graph that the nominal wage index-number has steadily increased, and that the increase has been at a somewhat greater rate (except in the years 1908, 1912, 1914, and 1915) than the increase in the purchasing-power-of-money index-numbers. Owing to the decreases in these years the effective wage index-numbers (both "Full Work" and "Allowing for Unemployment") do not, on the whole, shew any general increase, but fluctuate between a range which reached its maximum in 1911, and its minimum in 1915. In 1907 there was a large decrease in unemployment, which is reflected in the "peak" in the effective wage index-number for that year. The rise in the purchasing-power-of-money index-number in 1908, which was a drought year, caused a considerable fall in effective wages. From that year, however, until the year 1911, the effective wage index-number steadily increased from 934 to 1000, but this increase was almost counterbalanced by the fall in 1912, which was due to the large increase in the purchasing-power-of-money index-number and the smaller increase in unemployment. In 1913 the purchasing-power-of-money index-number was practically the same as that for 1912, while nominal wages increased and unemployment decreased, with the result that the effective wage index-numbers, both for full work and allowing for unemployment, shew an increase. The effective wage index-numbers for 1914 both shew a decrease since the preceding year. This decrease is particularly marked in the case of the

* This expression must not be confused with "standard of living." A change in the standard of living necessarily involves a change in regimen (see Labour Report No. 1), that is, a change in the nature or in the relative quantity of commodities purchased, or both. A change in the "standard of comfort" merely implies a variation in effective wages, which variation may, or may not, result in, or be accompanied by, a change in the "standard of living."

index-numbers in which allowance is made for unemployment. In 1915 there was a decrease in unemployment when compared with the preceding year, but on the other hand the cost of food and groceries shew a very substantial increase, so that while nominal wages increased slightly, effective wages index-numbers, both for full work and allowing for unemployment, shew a large decrease, and are, in fact, lower than for any other year covered by the investigation. In 1916, the effective wage index-numbers both for full work and allowing for unemployment shew an increase, due to the fact that the increase in nominal wages index-number has been greater than the increase in the index-number shewing cost of food, groceries, and house rent.

Unemployment, Purchasing-Power of Money, and Nominal and Effective Wage Index-Numbers, 1906 to 1916.



EXPLANATORY NOTE.—Each space in the horizontal scale represents one year. The vertical spaces on the left represent the scale for the index-numbers for purchasing-power of money and wages, while the scale on the right from 4 to 11, represents the percentage of unemployment.

8. Relative Productive Activity and Effective Wages, 1871 to 1914.—The preceding tables refer to the matter of variations in effective wages having regard to fluctuations in cost of living and extent of unemployment. Another important matter in any investigation into increases in rates of wages is the question of increase in relative output or production per head of population.

Figures are published annually shewing the estimated *value* of production from industries in the Commonwealth, but these figures do not reveal whether there has been any increase in the *quantity* of productive activity, since the price-level from year to year is itself a factor in the determination of the values. Before, therefore, any estimate of the increase or decrease in the relative productive activity, that is, in the relative quantity of output or production per head of population, can be formed, the price element must be eliminated. This is done in the following table in which Column I. shews the estimated *value* of production (a) total and (b) per head of mean population. In Column II. the estimated value of production per head of population is shewn in the form of index-numbers with the year 1911 as base, that is to say, the production per head in 1911 is made equal to 1000, and the values for the other years computed accordingly. In Column III. Melbourne wholesale price index-numbers are given; it is assumed that these index-numbers reflect, with substantial accuracy, variations in wholesale prices in the Commonwealth as a whole. The figures in Column IV. are obtained by dividing the figures for each year in Column II. by the corresponding figures in Column III. They shew the estimated relative productive activity per head of population, taking the year 1911 as the basic or standard year, the fluctuations due to variations in prices having been eliminated.

Estimated Relative Productive Activity in Commonwealth, 1891 to 1914.

Year.	I. Estimated Value of Production.		II. Estimated value of Production. per head Index- Number (1911= 1,000.)	III. Wholesale Price- Index- Number (1911= 1,000).	IV. Estimated Relative Productive Activity Index- Number (1911= 1,000).
	(a) Total.	(b) Per Head of Popula- tion.			
	£000	£			
1871 ..	46,700	27.89	661	1,229	536
1881 ..	71,116	31.34	746	1,121	664
1891 ..	96,087	30.06	715	945	757
1901 ..	114,585	30.23	719	974	738
1906 ..	147,043	36.21	862	948	909
1907 ..	167,446	40.61	966	1,021	946
1908 ..	164,957	39.33	936	1,115	839
1909 ..	174,503	40.82	971	993	978
1910 ..	187,734	43.92	1,045	1,000	1,042
1911 ..	188,745	42.03	1,000	1,000	1,000
1912 ..	206,732	44.51	1,059	1,170	905
1913 ..	281,101	45.41	1,080	1,088	993
1914 ..	209,485	42.59	1,013	1,149	882

These figures shew that the estimated relative productivity per head of population increased by no less than 86 per cent. from 1871 to 1911, and by nearly 33 per cent. from 1891 to 1911. The increase was not uniform during the whole of the years specified, slight decreases occurring in 1901 and 1911, and a heavy fall in 1908, which was a year of severe drought. It may also be seen that the increase in productive activity per head has relatively been far greater than the increase in nominal wages and still greater than the increase in effective wages.