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A COST-OF-LIVING INDEX FOR RURAL LABOURERS, 1913-1961.

by

Fathia Zaghloul.
under supervision of
Bent Hansen.

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A cost-of-living index is an index by which a money wage index can be deflated in order to obtain a real wage index. In this case we ask for a price index which is suitable for deflating the money wages of landless agricultural labourers. This will be the price index of the commodities consumed by them. The price index to be used is defined as

$$P_t = \frac{\sum_i p_{it}\, q_i}{\sum_i p_i\, q_i} \times 100$$

where p_{it} is the price of the commodity i in the year t. p_i and q_i are the price and quantity, resp., of commodity i in the base year. The summation is carried out over all commodities consumed. This index can also be written in the form

$$(1) \qquad P_t = \frac{\sum_i \frac{p_{it}}{p_i}\, p_i q_i}{\sum_i p_i q_i} \times 100 = \sum_i \frac{p_{it}}{p_i} \times \frac{p_i q_i}{\sum_i p_i q_i} \times 100$$

$$= \sum_i \frac{p_{it}}{p_i} \times w_i \times 100$$

where w_i is the ratio of the expenditure on the commodity i to total expenditure in the base year, $\frac{p_{it}}{p_i}$ is the simple price index for the commodity i in the year t. Equation (1) was used in computing the cost-of-living index for rural labourers. In order to compute the index we had then to specify the principal commodities consumed by the agricultural labourers, the prices for the years 1913-61 and the ratio to total expenditure of the sum spent on each commodity in the base year, w_i.

From the family budget survey of 1958-59 made by the Central Committee for Statistics we obtain a percentage distribution of household expenditure for different brackets of total expenditure in rural districts.

The lowest expenditure bracket, less than £ 25 per year, was considered to comprise the landless rural labourers. The percentages of expenditure for this expenditure bracket were used as weights (w_1). It follows that our index is a fixed weight index with weights from the end of the period. To my best knowledge no other information is available about expenditure for the lower income brackets in rural districts. The percentages of expenditure are given for 20 groups of commodities. From each group of commodities we had then to try to find a "representative" commodity for which price information extends back to 1913. If the prices of all the other commodities of a certain group fluctuates in the same proportion as the "representative" commodity, considering only one commodity from each group leads then to the same result as considering the whole group of commodities. Similarly, if the price of the representative commodity happens to fluctuate in proportion to the weighted average price level of the whole group. To what extent the "representative" commodities used are really representative in this respect is unknown. Out of the 20 groups I succeeded only in finding "representative" commodities for 10 groups; however, the other 10 groups have a low percentage expenditure except for clothes; here price records were unfortunately only available for recent years. Each representative commodity has the maximum percentage expenditure within its own group except for two groups, pulses and dairy products where lentils and cheese would in this respect have been better representative commodities; for lentils, however, only wholesale prices could be found for early years and retail prices for recent years; and prices of cheese could not be found for earlier years. The percentage expenditures of the groups included add up to 80.4% . Weights were then calculated as percentages from this fraction of total expenditure. The commodity groups, their percentage of expenditure, the representative commodities, their percentage of expenditure on the group and the weights are shown in the following Table 1.

Prices were taken from the Annuaire Statistique as averages for the calendar year. There exist no price informations from the villages. It was believed that among the prices available[1)] wholesale prices in Cairo are the prices most closely related to the prices in the villages; the majority of the

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1) The available prices are wholesale and retail prices in Cairo and in Alexandria. There also exist retail prices of some commodities in the different Governorates of the UAR, but not for all included commodities and not for all considered years.

Table 1.

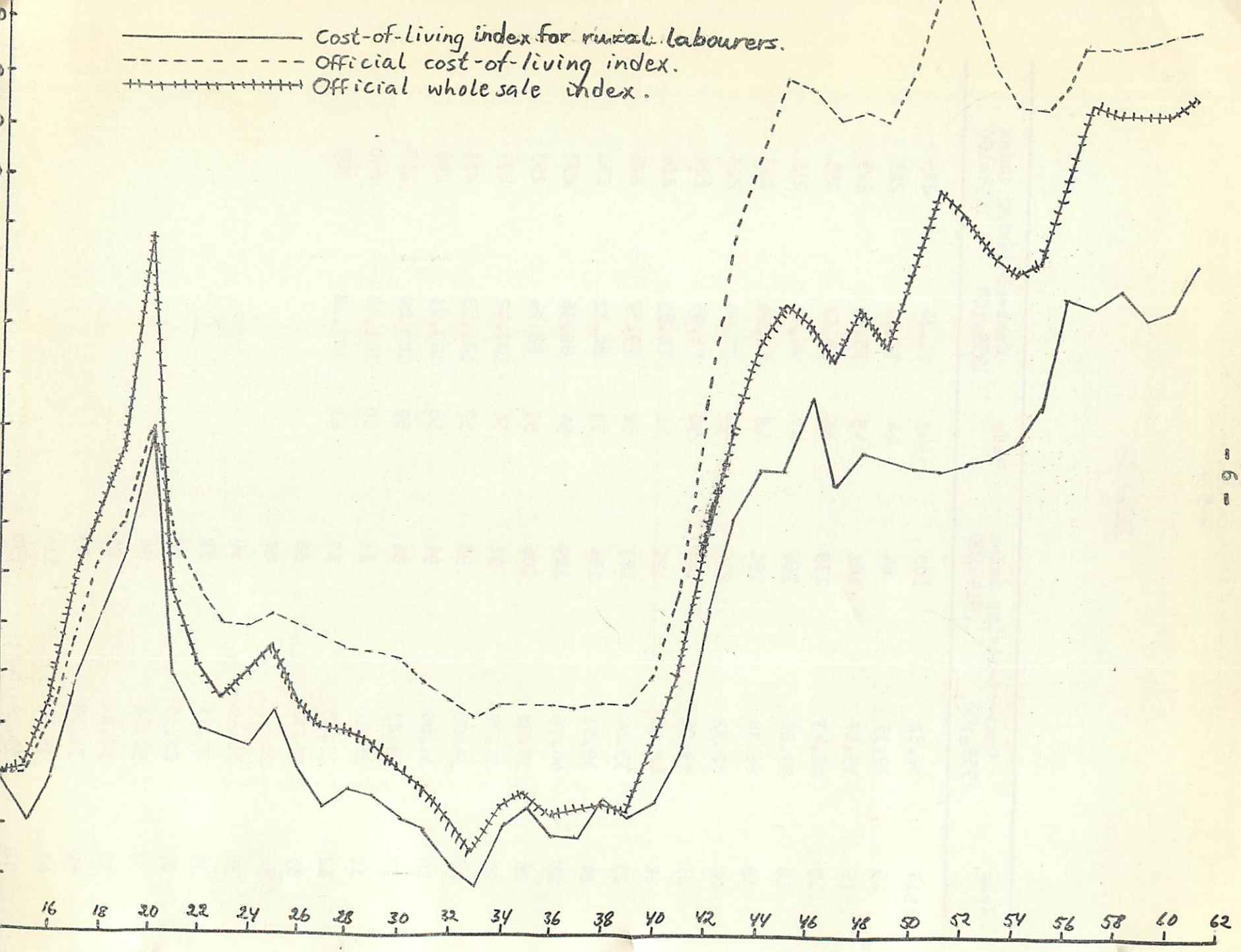
Commodity group	Expenditure percents of total	Representative commodity	Expenditure percents of group expenditure	Weights
Cereals-products	36.22	Maize	34	45.0
Pulses	3.01	Beans	15	3.7
Meat, fish & eggs	10.88	Beef	87	13.5
Oils & fats	2.31	Cotton seed oil	65	2.9
Dairy products	7.06	Butter, Samna	26	8.8
Vegetables	5.67	Onions	25	7.1
Fruits	1.27	Dates	46	1.6
Sugar & sugar products	4.75	Sugar	93	5.9
Other food-stuff	2.43			
Beverages	3.74	Tea	83	4.3
Stimulants	1.39			
Fuel & lightning	5.79	Kerosene	30	7.2
Petsonal & Decoration	0.12			
Products for house	1.97			
Clothes	3.12			
Furniture & kitchen utensils	0.12			
Health	0.35			
Transport	0.23			
Various services	1.85			
Other expenditure	7.99			
Total	100.00			100.0

commodities considered are agricultural products which are brought from villages to be sold in Cairo in the wholesale markets. For that reason most of the prices used are wholesale prices in Cairo. For the years 1946-49 prices of maize and beans were found only as average of wholesale prices in Cairo and Alexandria. Prices in Alexandria are - broadly speaking - slightly lower than prices in Cairo. For the years 1913-19 only retail prices for beef exist; they were converted to wholesale prices using the average ratio of wholesale to retail prices for beef calculated from the following 5 years (1920-24). Prices used for cotton seed oil for the years 1922-61 pertain to the quality "francaise", and prices for this quality do not exist for the years 1913-21; the available prices for cotton seed oil 1913-21 were chained to the prices of 1922-61 using an average of the simple ratio between the prices of the two qualities in the years 1922-25. For tea, import prices were used for the years 1914-21 and were chained to the wholesale prices for the years 1922-61 in the same way. Prices of Kerosene for the years 1952-61 were taken from the "Monthly Bulletin of Agricultural and Economic Statistics" as average wholesale prices in Cairo and Alexandria. The price of maize for 1945 and the prices of beans for 1945 & 1952 could not be found. An estimate of these prices was made by means of the official wholesale price indexes for maize and for beans. Prices of onions for 1952 & 1953 could not be found or estimated. Prices indexes for these two years were computed excluding onions and chained to the other indexes.

Using equation (1) and price data collected as explained above, the cost-of-living index for rural labourers was computed for the years 1913-61 with weights from year 1958/59 and then converted to an index with base year 1914 by dividing by the 1914 index number. The results obtained are shown in Table 2.

Table 2.

Year	Cost-of-living index 1959=100	1914=100	Year	Cost-of-living index 1959=100	1914=100
1914	34.82	100	1943	71.24	205
15	29.33	84	44	78.21	225
16	35.17	101	45	78.20	225
17	48.43	139	46	88.67	255
18	57.86	166	47	76.41	219
19	66.38	191	48	81.14	233
20	82.32	236	49	77.50	223
21	49.06	141	50	78.95	227
22	42.16	121	51	78.85	226
23	35.80	103	52	79.37	228
24	39.53	114	53	80.32	231
25	44.75	129	54	82.36	237
26	37.08	106	55	88.24	253
27	31.77	91	56	102.42	294
28	34.06	98	57	101.59	291
29	32.80	94	58	103.83	298
30	29.83	86	59	100.00	287
31	28.21	81	60	101.10	290
32	23.23	67	61	107.18	308
33	20.30	58			
34	28.69	82			
35	31.49	90			
36	27.53	79			
37	27.30	78			
38	32.84	94			
39	30.21	87			
40	32.38	93			
41	39.80	114			
42	59.14	170			


Cost-of-living index for rural labourers.
Official cost-of-living index.
Official wholesale index.
16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62

For the sake of comparison a diagram is included showing the development of our index of the cost-of-living for rural labourers, the official cost-of-living and the official wholesale price index. The three indexes develop in a rather similar way. All have a strong peak at 1920, and thereafter damped fluctuations around a falling trend during the period 1922-33. From 1933 prices start rising slowly until 1939 and during the war period there was a strong and continuous increase. After 1945 and until 1961 the fluctuations in the cost-of-living for rural labourers differ from the other two indexes which are more similar in their short term movements, but they all show an increasing trend. For the whole period 1913-61 the cost-of-living for rural labourers is lower than both the other two indexes. Its value falls to almost the half of the value of the official cost-of-living index during the periods 1930-37 and 1945-54. Both are equal at the peak of 1920. Before 1920 the official cost-of-living index is higher than the cost-of-living index for rural labourers by 5 to 20%. After 1920 it is higher by 30 to 115%. The main reason why our index is lower than the official one is that 45% of it depends on the maize price which is controlled by the Government who has aimed at offering maize at the cheapest possible price. Before 1921 the official wholesale index is the highest index, after that it lies between the two cost-of-living indexes quite near to their average.

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