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THE EFFECT OF FAMILY SIZE ON EXPENDITURE
DISTRIBUTION IN EGYPT
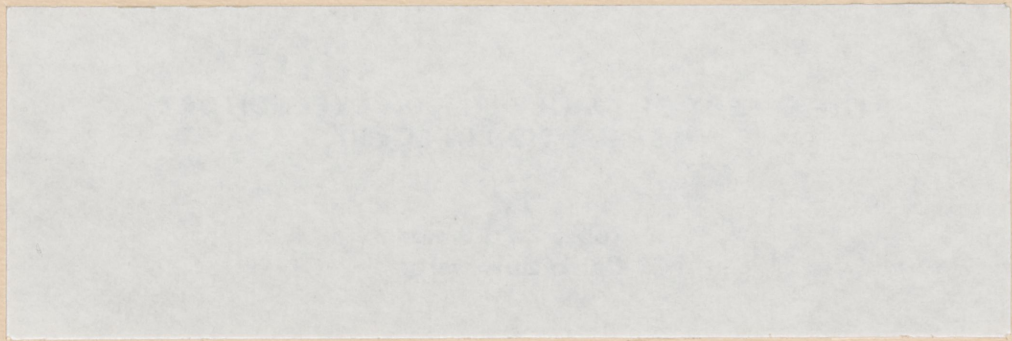
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ADS/EGYPT

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1- Introduction:

Egypt does not differ greatly from most underdeveloped countries in having relatively low spending levels and large families in the countryside. The main purpose of the present study is to focus on the following issues: a) expenditure distribution in Egypt, b) measurement of degree of expenditure inequality, and c) the changes in expenditure over several years.

The most consistent data source that can be used to estimate the expenditure distribution for each family size is a series of three consumer budget surveys undertaken by CAPMAS and predecessor agencies in 1958-59, 1964-65, and 1974-75. The expenditure distribution from the first two surveys has been described in an article by Osman A. El-Kholie. These, plus some results from the first round of the 1974-75 survey have also been described by Lance Taylor.

Both El-Kholie and Taylor studied the expenditure distribution in two major sectors, rural and urban. This paper takes into consideration the family size.

2- Data and Methodology:

El-Kholie (1973), discribes the method of drawing the sample of households in family budget surveys. This research depends on

the three surveys and the consumer price index published by the IMF. Also used were consumer price indicies for both rural and urban families which are published in various issues by CAPMAS.

The family budget surveys divide the population into three groups according to the family size. Small families contain from one to three persons. The middle size family contains from 4 to 6 persons, and the large size is more than 6 persons. These data are available for both rural and urban families.

The consumer price index (CPI) covered the period 1952-1981. But this index is an average number for the whole country. There are a set of rural and urban consumer price indices which cover food, clothes, housing, medical care, etc., and which are published by CAPMAS since 1966/67 only.

In this case we have six sets of data for each year as follows: Small size urban (SU), middle size urban (MU) large size urban (LU), small size rural (SR), middle size rural (MR) and, large size rural (LR). In addition to these six sets of data on family size, we can add all urban (AU) and all rural (AR).

The available data for each size contains: number of families, number of persons and, total expenditure for each income (expenditure) bracket. The number of persons in the family increases when the expenditure bracket increases in both AU and AR. For this reason the previous studies by El-Kholie and Taylor are more general. This reveals that we should utilize more precision in the present study. In each expenditure bracket within family size—rural and urban—there are three items of information: number of families (NF), number of persons (NP)

2

and, total expenditure (EX).

3. Analysis and Results:

As we mentioned before the population is divided into three divisions according to family size. The first one is small families (1-3 persons), the second is the middle size (4-6 persons), and the last is the large size (more than six persons).

From the three family budget surveys we have six sets of data (3 surveys x 2 regions). The analysis of this data includes: expenditure mean, standard deviation and gini coefficient. Table 1 explains the results of the small size family.

As a first look, expenditure mean in Egyptian pounds increases from one survey to another in current terms for both person and family. The annual expenditure per person increased from LE 33.048 to LE 54.936 and LE 86.388 during the period of study in rural areas. Also the annual expenditure per family increased from LE 79.2319 to LE 125.575 and LE 187.836 in the same period in rural areas. For urban areas the annual expenditure per person varied through the period of study from LE 73.511 to LE 119.245 and LE 165.86. At the same time the annual expenditure per urban family increased from LE 168.377 to LE 224.061 and LE 379.479. As a result the annual expenditure per person or per family in urban areas is double the annual expenditure for rural areas at the same time. The expenditure variance in urban areas is greater than the rural area and this result is consistent with Gini index.

Table (2) shows the mean and standard deviation and Gini

3

index for middle size family. The annual expenditure for urban families is about double the annual expenditure for rural families. It is important to note that annual expenditures for both urban and rural persons and families in the middle size families are less than those of the small size families. The annual expenditure for small size family is about 20% more than in the middle size family.

Table (3) shows the mean, s.d., and Gini index for large size families (more than 6 persons). The annual mean expenditure per person in this group is less than the middle and small family size. The annual mean expenditure for both person and family increased over time in terms of current prices. The shares of urban persons and families tend to be twice the shares of rural persons and families. The standard deviations and the Gini coefficients indicate more inequality among persons and families in the urban than in the rural sector.

For comparison it is more effective to calculate the aggregate over all family size in each year and to fix the annual mean of expenditure in fixed prices. Table (4) explains the annual mean expenditure, s.d. and Gini index in aggregate level for the three surveys.

From Table (4) the annual expenditure in the rural sector increased in current values through the period of study. But the increasing rate in the period 1958-59 to 1964-65 is equal to the increasing rate through ten years 1964-65 to 1974-75. The same result holds for the urban sector. The Gini index for rural sector is still small--more egalitarian--though it increases from

4

time to time. For the urban sector, the Gini index is the same in 1958-59 and 1964-65 and decreased in 1974-1975.

To complete the analysis we must take into consideration the CPI (consumer price index) and its changes from 1958-59 to 1974-75. There are two sets of data: CPI for the whole country published by IFM is and available for 1952-80 and CPI for both rural and urban areas published by CAPMAS is available from 1966-67 only.

Many trials were done to catch the relation between CPI for the country and both rural and urban areas. Using 1966 as a base year (=100), we find the price index numbers as follows in Table (5). The consumer price index for the rural areas rose from 74 in 1958-59, to 76.29 in 1964-65, and to 136.48 in 1974-75. The consumer price index for urban areas rose from 77.30 in 1958-59, to 79.68 in 1964-65, and to 142.45 in 1974-75.

Table (6) represents the annual mean expenditure deflated (in fixed prices 1966=100) to make the possibility of comparison between the three family budget data.

From Table (6) we find that the real annual mean expenditure decreases from one survey to another for both rural and urban sectors. In the three periods the mean overall data is very close to the middle size family class. In fact the mean of persons in each year is very near to the middle class (middle size = 4-6 persons). If we postulate that the expenditure distribution is a good indicator for income distribution, we can say that the real annual mean income per person and/or per family decreased from year 1958-59 to 1974-75. Also we can state as a

5

fact that the urban sector was in a relatively favorable situation compared with the rural sector during that period.

Table 1. Expenditure mean, Standard Deviation (LE)

and Gini index for small families

Year		Mean (LE)	S.D. (LE)	Gini
1958-59	RP	33.048	0.163	0.221
	RF	79.219	3.289	0.271
	UP	73.511	2.801	0.375
	UF	168.377	43.053	0.420
1964-65	RP	54.936	0.307	0.221
	RF	125.575	4.968	0.287
	UP	119.245	2.440	0.389
	UF	224.061	30.173	0.478
1974-75	RP	86.388	1.129	0.256
	RF	187.836	19.224	0.351
	UP	165.860	5.199	0.351
	UF	379.479	67.716	0.398

R = Rural

U = Urban

P = Persons

F = Family

Table 2.   Expenditure mean, Standard Deviation (LE) and Gini index for middle size families (4 – 6 persons)

Year		Mean (LE)	S.D. (LE)	Gini
1958-59	RP	26.728	0.037	0.236
	RF	131.720	5.126	0.263
	UP	49.791	0.229	0.353
	UF	250.820	30.484	0.366
1964-65	RP	40.021	0.051	0.244
	RF	199.095	7.295	0.263
	UP	72.760	0.195	0.378
	UF	362.881	25.037	0.387
1974-75	RP	64.910	0.264	0.256
	RF	327.119	32.925	0.274
	UP	111.683	0.393	0.341
	UF	557.501	44.448	0.340

R = Rural

U = Urban

P = Persons

F = Family

Table 3. Expenditure mean, Standard Deviation (LE) and Gini index for large families (more than 6 persons)

Year		Mean (LE)	S.D. (LE)	Gini
1958–59	RP	27.207	0.005	0.151
	RF	147.701	4.787	0.365
	UP	48.83	0.058	0.292
	UF	271.257	19.102	0.403
1964–65	RP	40.425	0.009	0.175
	RF	224.170	7.285	0.349
	UP	67.808	0.039	0.303
	UF	364.168	11.159	0.403
1974–75	RP	58.320	0.079	0.253
	RF	502.613	66.549	0.296
	UP	82.986	0.132	0.286
	UF	679.320	78.482	0.309

R = Rural

U = Urban

P = Persons

F = Family

Table 4. Annual mean Expenditure, Standard Deviation (LE)
and Gini index in the three family budget
surveys (1958-59, 1964-65 and 1974-75)

Year		Mean (LE)	S.D. (LE)	Gini
1958-59	RP	27.207	0.005	0.151
	RF	147.701	4.787	0.365
	UP	48.83	0.058	0.292
	UF	271.257	19.102	0.403
1964-65	RP	40.425	0.009	0.175
	RF	224.170	7.285	0.349
	UP	67.808	0.039	0.303
	UF	367.168	11.159	0.403
1974-75	RP	62.968	0.030	0.188
	RF	358.454	18.307	0.345
	UP	102.400	0.096	0.280
	UF	556.354	22.739	0.361

R = Rural

U = Urban

P = Persons

F = Family

Table 5.   Indices of Consumer Prices, 1958-59/

1974-75

Year Sector	1958-59	1964-65	1966 (base year)	1974-75
Rural	74.01	76.29	100	136.48
Urban	77.30	79.68	100	142.45

Table 6. Deflated Annual Mean Expenditure (LE)

(1966 = 100)

Class		1958/59	1964/65	1974/75
Small	RP	44.653	72.045	63.297
	RF	107.038	164.602	137.629
	UP	95.098	149.654	116.434
	UF	217.823	306.301	266.395
Middle	RP	36.114	52.458	47.56
	RF	177.976	260.971	239.683
	UP	64.413	91.315	78.402
	UF	324.476	455.423	391.366
Large	RP	35.263	46.146	42.732
	RF	326.671	443.834	368.269
	UP	51.310	69.927	58.256
	UF	427.965	594.269	476.946
All	RP	36.761	52.425	46.968
	RF	199.569	293.839	262.642
	UP	63.169	85.100	71.885
	UF	350.915	457.038	390.561

R = Rural

U = Urban

P = Persons

F = Family