

THE EFFECTS OF FERTILITY ON ECONOMICALLY ACTIVE POPULATION : EGYPT (1960—1975)

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INTRODUCTION

This paper is designed to throw some light on the major aspects of the population dilemma confronting the A. R. E. today. As we know, the problem is the result of many factors ; one of which is the demographic gap, which we want to emphasize here.

It is also clear that in the developing countries with predominantly agricultural economics the proportion of population under 15 years of age is expected to be high due to the high fertility rate, which adds more dependents on the economically active sector of the population.

The economically active population is defined according to the international definition as «All persons of either sex who furnish the supply of labour available for production of economic goods and services».

This definition comprises all persons engaged in or actively seeking productive work in some branch of the economy during a specified period of time.

The projection involves a period of fifteen years from 1960 to 1975, our analysis is primarily based on the data of 1960 census and on some assumptions.

The gross reproduction rate is supposed to be 3.2 in 1960, and the age specific fertility rates were estimated from the 1960 census.

The 1960 census age distribution was corrected by standard methods, and the crude birth rate when calculated was found to be 43.9 per thousand for the year 1960.

ASSUMPTIONS

It has been assumed that a basic projection with constant fertility should be carried out to show the effect of the high fertility level.

Hypothesis 1 :

In this hypothesis fertility will remain constant during the period 1960—1975 with a gross reproduction rate of 3.2. Mortality will decrease gradually with the following expectations of life figures (e) 1965 : males 46.4 years, females 50.5 years, 1970 : males 48.6 years, females 52.7 years, 1975 : males 50.7 years, females 54.9 years.

Hypothesis 2 :

This hypothesis assumes rapid decrease in fertility within years 1965—1975 by about 40%, which means a decrease in the gross reproduction rate from 3.2 to about 1.95 in 1975, and a drop in the completed family size from 6.6 children per woman to about 4 children per woman in 1975. This hypothesis assumes a fairly rapid dissemination of ideas on family planning, and active participation of all females in the national family planning programme, which already started in 1966, and shows the effect of rapid decrease of fertility on the population size.

Two other assumptions were made to calculate the size of the economically active male population during 1965—1975. The first one assumes that the activity rates of the year 1960 will remain up to 1975. These rates are related to an agricultural economy. The second one assumes a semi industrial pattern by 1975.

Economically active female population was not calculated, as its size cannot be estimated accurately due to the wide variation in definitions concerning female activity rates, together with the increased opportunities for female activities, due the advancing progress in education and training.

THE PROJECTIONS

1. If fertility and mortality will follow the pattern given in hypothesis 1, the crude birth rate would increase from 43.9 per thousand in 1960 to 45.0 per thousand in 1975, and the total population of the country would have a net increase of about thirteen millions, it is believed that serious economic consequences may follow this pattern of

population growth, with an increasing burden of population under fifteen years of age, to be fed and educated by the relatively small working populations.

As to the proportion of population under age 15, it will gradually decrease if fertility will follow the trend as foreseen in hypothesis 2, even the absolute number of those under fifteen will be about the same or even less than it was in 1965. In this case the proportion of those under 15 is expected to be about 36 percent, and will be not too far from similar proportions of developed countries with high or medium fertility. This shows the great effect of decreased fertility on the population size and the importance of a successful family planning programme in this case, and it is believed that such a programme will be more effective if it is going on parallel with the increase of the educational level of women.

2. The estimated labour force, assuming constant activity rates of 1960 will show high figures in teen ages because the children are considered as family helpers in farms and are included in the active populations, old farmers as land owners also appear among the economically actives in higher ages. In assuming that the country will be semi industrial in 1975, the figures for the economically active will definitely become lower at younger ages, specially with the increased opportunities for education and training. Also there will be a chance for the old to retire early, and this is clearly seen in the estimations. This industrialization, should go hand in hand with other services such as education ; economic housing, hospitalisation, traffic etc ..., which will actually increase the burden on the Government to plan for all these services.

CONCLUSIONS

It should be emphasized that all data and projections given in this paper are determined by demographic factors rather than by the future levels of employment.

The projections may help planners and economists to take into account the demographic effect in the future planning of population

and manpower programs in the country. An intensive programme for family planning together with a programme for industrialization and making benefit of every resource in the country is recommended, and must start as early as possible. Still we must take into consideration that even a sharply decreasing fertility will give a relatively high birth rate and number of births for some years, because the relative number of females in reproductive ages will be still high in the years following the programme, this high number of females is the result of previous high fertility and will wear itself out finally when the new female generations coming from lower fertility periods will enter the reproductive ages. Another alternative is exportation of excess trained man power to other parts of the World ; which is of limited scope but deserves planning.

Hypothesis 1 : Population by Age Groups,
1960—1975 (inThousands)

Age Groups	Males				Females			
	1960	1965	1970	1975	1960	1965	1970	1975
0 — 4	2376	2459	2854	3410	2297	2377	2755	3287
5 — 9	1847	2122	2223	2609	1794	2056	2152	2518
10—14	1534	1820	2094	2119	1499	1772	2036	2135
15—19	1122	1516	1801	2076	1105	1486	1759	2024
20—24	1030	1102	1497	1783	1022	1095	1475	1748
25—29	941	1012	1085	1478	939	1009	1083	1462
30—34	774	923	995	1059	775	924	995	1071
35—39	708	757	905	977	713	761	909	982
40—44	675	687	736	883	687	699	747	895
45—49	538	647	661	711	556	669	683	732
50—45	477	508	614	629	505	538	650	665
55—59	320	440	471	572	351	482	515	625
60—64	265	283	392	422	306	325	449	483
65—69	147	218	235	328	182	268	288	402
70—74	111	120	166	181	149	160	222	241
75—79	60	72	75	111	85	107	115	163
80+	34	48	63	63	60	83	111	111
Total	12959	14734	16867	19421	13025	14811	16944	19544

**Hypothesis 2 : Population by Age Groups
1965—1975 (in Thousands)**

Age Groups	Males			Females		
	1965	1970	1975	1965	1970	1975
0—4	2459	2290	2175	2377	2187	2068
5—9	2122	2223	2093	2056	2162	1999
10—14	1820	2094	2119	1772	2036	2135
15—19	1516	1801	2075	1486	1759	2024
20—24	1102	1497	1783	1095	1475	1748
25—29	1012	1085	1478	1009	1083	1462
30—34	923	995	1089	924	995	1071
35—39	757	905	977	761	909	982
40—44	687	736	883	699	747	895
45—49	647	661	711	669	683	732
50—54	508	614	629	538	650	665
55—59	440	471	572	482	515	625
60—64	283	392	422	325	449	483
65—69	218	235	328	268	288	402
70—74	120	166	181	160	222	241
75—79	72	75	111	107	115	163
80+	48	63	63	83	111	111
Total	14734	18305	17670	14811	16376	17806

**Projected Population by Three Main Age Groups
1960—1975 (in Thousands)**

Hypothesis I :

Age groups	1960 Pop.	Projected Population		
		1965	1970	1975
0—14	11347	12606	14114	16078
15—64	13809	15863	18422	21287
65+	828	1076	1275	1600
Total	25984	29545	33811	38965

Hypothesis II :

Age groups	1960 Pop.	Projected Population		
		1965	1970	1975
0—14	11347	12606	12982	12589
15—64	13809	15863	18422	21287
65+	828	1076	1275	1600
Total	25984	29545	32679	35476

Projected Population by Three Main Age Groups
1960—1975 (Percentage)

Hypothesis I :

Age groups	1960 Pop.	Projected Population		
		1965	1970	1975
0—14	43.5	42.6	41.7	41.2
15—64	53.1	53.7	54.5	54.7
65+	3.4	3.7	3.8	4.1
Total	100.0	100.0	100.0	100.0

Hypothesis II :

Age groups	1960 Pop.	Projected Population		
		1965	1970	1975
0—14	43.5	42.6	41.7	41.2
15—64	53.1	53.7	56.4	59.6
65+	3.4	3.7	3.9	4.5
Total	100.0	100.0	100.0	100.0

Average Age-Specific Activity Rates for Males in Countries Classified
According to Degree of Industrialisation Compared with Egypt 1960

Age Groups	Agricultural Countries	Semi-Industrialised Countries	Industrialised Countries	Egypt 1960
10—14	23.9	13.2	4.1	20.1
15—19	78.4	70.3	72.4	68.0
20—24	91.2	91.8	91.5	85.2
25—34	96.3	96.2	96.7	95.8
35—44	97.5	97.1	97.6	97.2
45—54	96.3	95.9	95.9	96.2
55—64	91.6	88.9	85.6	89.1
65+	70.1	61.0	37.7	62.5

Source : Demographic Aspects of Manpower (U.N.)

Estimated Participation Rates for Egypt
(1960 — 1975)

Age Groups	1960	Estimated Participation Rates		
		1965	1970	1975
15—19	68.0	68.8	69.6	70.3
20—24	85.2	87.4	89.6	91.8
25—34	95.8	95.9	96.1	96.2
35—44	97.2	97.1	97.1	97.1
45—54	96.2	96.1	96.0	95.9
55—64	89.1	89.0	88.9	88.9
65+	62.5	62.0	61.5	61.0

Estimated Labour Force Assuming that the Country
Rates of 1960— For Males— In Thousands

Age Groups	1960	Estimated Labour Force		
		1965	1970	1975
15—19	753	1031	1225	1412
20—24	875	939	1273	1519
25—34	1643	1854	1993	2440
35—44	1344	1413	1595	1808
45—54	976	1111	1226	1289
55—64	521	644	769	885
65+	220	286	339	427
Total	6332	7278	8420	9780

Estimated Labour Force Assuming Constant Activity
Will be Semi-Industrial in 1975 — for Males — In Thousands

Age Groups	1960	Estimated Labour Force		
		1965	1970	1975
15—19	1753	1043	1253	1459
20—24	875	963	1311	1637
25—34	1643	1856	1999	2450
35—44	1344	1402	1593	1806
45—54	976	1110	1224	1285
55—64	521	643	767	883
65+	220	284	331	417
Total	6832	7301	8478	9937

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