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Abdel-Fattah Nassef

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CHAPTER 1

INTRODUCTION

1.1. Questions in the Study of Labor Force

One expert defines the subject matter of this field as "a study of the manner in which people earn their living, i.e., obtain the goods and purchasable services necessary to maintain the entire population."[1] This definition, brief as it is, implies various questions which a labor force investigator ought to face.

The first set of questions stems from the fact that the labor force of any society represents only a portion of the total population. If that is the case, how and why do some people enter the labor force while others stay out? What are the factors affecting the propensity to participate in economic activities? Do these factors influence, at the same time, the size of the population, and if so in what direction? Answers to such questions require, among other things, understanding of the demographic processes which determine the size of the total population. These demographic processes are, in turn, influenced by a variety of factors in the socio-economic environment.

These and other questions pertinent to the size of the labor force and its growth are of great importance, not only for labor force students, but also for students in other fields related to the welfare of society.

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[1] A.J. Jaffe, "Working Force," in P.M. Hauser and O.D. Duncan, eds., The Study of Population, An Inventory and Appraisal (Chicago: The University of Chicago Press, 1959), p. 604.

This is so because labor force occupies a central role in the productive process. Land and capital are, of course, essential for production, yet it is the human factor that gives them value. With a given population, other things being equal, the larger the size of the labor force of a country, the larger its capacity to produce and consequently, the higher the level of its welfare.[1]

The composition and structural aspects of the labor force are as important as its size if not more important. These pose another set of questions. How do the members of the labor force in a country get distributed with respect to structural elements such as status (as employer, employee, etc.), industry and occupation? What are the factors responsible for or associated with such distributions and their changes over time? Do these factors influence also the size and growth of the labor force? How do their influences on structure affect the capacity of the working force and the welfare of the society?

A third set of questions is pertinent to the extent of utilization of the working force. What are the levels of unemployment and underemployment in the society as a whole and its component areas? What are the factors related to the levels and patterns of unemployment and underemployment and their changes over time? What are the relationships between size and structure of the labor force, on the one hand, and its degree of utilization on the other?

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[1] Durand cautions, however, that, "the well-being of the people from a non-economic point of view may suffer if the growth of the labor force unduly interferes with the functions of homemakers or education of students." J.D. Durand, The Labor Force in the United States, 1890-1960 (New York: Social Science Research Council, 1948), p. 1.

Answers for all the questions cited above, as well as many related questions, are needed in order to formulate a sound policy for labor force development. This, referred to in the literature as "manpower planning," adds the fourth set of questions. The major question here is: What can be done to increase the productive capacity of the labor force, and how? Under such a general question, many other detailed questions may be asked. For instance, what are the objectives in terms of labor force size and its growth? If increasing the size is desired, in what way may this be achieved? What are the desirable changes in labor force structure? Are these changes related to the desired size, and in what way? To what extent should the policy be aimed at reducing unemployment and underemployment? What are the measures to be implemented on a short-run basis as against those of a long-run nature; and in what way are the two types of measures interrelated? Is the general objective of policy to match the supply of labor force to its potential demand, or to match demand to potential supply? What are the possible effects of the measures of labor force policy on other variables to overall socio-economic development? In this connection, questions about labor productivity, its trends and various factors associated with it are pertinent. The formulation of a sound labor force policy is by no means an undertaking exclusive to labor force specialists. It is rather the cooperative work of a team of experts in related fields, in which, of course, the labor force expert has an important role.

In short, labor force is a central variable influencing and influenced by innumerable interrelated variables in the large matrix of socio-economic life. Labor force studies unlock the door to the understanding of various

aspects of the life of a society. In addition, labor force development is a major target in overall social and economic development. In this spirit, Harbison and Myers state, "The building of modern nations depends upon the development of people and the organization of human activity."[1]

1.2. Measurement

Aside from the socio-economic factors, the results of labor force studies will partially depend on the concepts and procedures used for measurement. Among these, the concept of labor force itself takes the first priority in this chapter; others will be mentioned later.

Broadly defined, the labor force is the segment of the population which contributes the supply of labor, including those actually at work as well as those available and looking for work in the production of economic goods and services. It comprises the civilian labor force and the armed forces. In addition to those who work for wages and salaries, the labor force includes employers working for profits, persons who work on their own account, and unpaid helpers in a family income-producing activity. It does not include housewives, students, and retired persons not engaged in or seeking income-producing work.

Two different approaches are used in census enumerations of the labor force. The traditional approach, based on the "gainful worker" concept, which was formerly used throughout the world, has been replaced in recent

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[1] F.H. Harbison and C.A. Myers, Education, Manpower and Economic Growth: Strategies of Human Resource Development (New York: McGraw-Hill, 1964), p. v.

censuses of many countries, by an approach based on the "labor force" concept.[1] In Egypt, the latter approach was adopted for the first time in the census of 1960. The differences between the two approaches is, by now, a familiar story to students in this field. The following quotation gives the highlights:

> "Briefly stated, the 'gainful worker' approach is based on the idea that each person has a more or less stable functional role, either as a breadwinner or as a housewife, student, etc. and that this role is to some extent independent of his or her activity at any given brief interval of time; whereas the 'labor force' approach is based on the individual's activities during a stated brief time interval."[2]

Other terms have been used in the literature to denote either the labor force or gainful worker concepts such as economically active population, working force, working population, etc. These terms, whenever found in this study, are used interchangeably.

Although it has been said that the differences between the gainful worker and labor force concepts are "in large part procedural rather than substantive",[3] shifting from one to the other may affect the result of the enumeration appreciably. Variations in the concepts and methods of measurement may affect not only the size of the working force as reported in the

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[1] For detailed discussion, see G. Bancroft, The American Labor Force, Its Growth and Changing Composition (New York: John Wiley, 1958), Appendix C; A.J. Jaffe and C.D. Stewart, Manpower Resources and Utilization, Principles of Working Force Analysis (New York: John Wiley, 1951), Chapter 2 and 4, and Appendix D; L.J. Ducoff and M.J. Hagood, Labor Force Definition and Measurement (Social Science Research Council Bulletin 56; New York: 1947); U.N., Department of Economic and Social Affairs, Principles and Recommendations for the 1970 Population Censuses (ST/STAT/Ser.M/44, 1967), pp. 61-63, 92, 112 and 122-123; ____, Application of International Standards to Census Data on the Economically Active Population (ST/SOA/Ser.A/9, 1951).

[2] United Nations, Statistical Office, Handbook of Population Census Methods (Statistical Papers, Series F, No. 5, Rev. 1, 1958), Vol. II, p. 14.

[3] Jaffe and Stewart, Manpower Resources and Utilization...., p. 18.

census but also its dimensional and structural aspects because the subgroups involved in such variations are not distributed randomly among the dimensional or structural elements.

Many specialists in the field have questioned the adequacy of these concepts, and others to be discussed in later chapters, to serve their purposes in primitive societies and in societies in early stages of industrialization.[1] The following statement by Jaffe is but one example:

> "In summary, the conceptual framework which we now have is one developed to fit the socio-economic structure of the twentieth-century United States and culturally similar nations. Insofar as the practical needs of these nations are concerned and insofar as we wish to measure the emergence of more or less similar types of working forces in other societies (originally quite different from our own), this conceptual framework appears to be useful. However if we wish to have a more generalized framework which will encompass most of humanity, considerably more thought and research will have to be given to the subject."[2]

1.3. Objectives, Scope and Limitations of This Study

The objective of this study is to throw some light on the factors and processes of growth of the Egyptian labor force and its changing structure in the framework of population growth, economic development and social change during the 1907-1960 period.

Egypt is one of few developing countries having census data on the labor force over a period of many decades. The interest in these data and their analysis is not limited to Egypt itself. They are of wider interest as a case-study of relationships between labor force changes and socio-economic and demographic variables in a setting of predominantly agricultural

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[1] G. Myrdal, Asian Drama, An Inquiry into the Poverty of Nations (New York: Twentieth Century Fund, 1968), Vol. II, Chapters 21-23; U. N., Proceedings of World Population Conference, 1954 (E.CONF.13/416), Vol. IV, Meeting 9, papers by Davies; Ortiz; and Moore; United Nations, Department of Economic and Social Affairs, Proceedings of World Population Conference, 1965, E.CONF.41.5; New York, 1967), Vol. IV, Meeting B.11; papers by Mitra, Lacroix, Harewood, etc.

[2] Jaffe, "The Working Force," p. 612.

economy and low income. The use of the data has been hindered hitherto by lack of comparability for the successive censuses. An effort has been made in the present study to overcome this handicap so far as possible. The adjusted series of census data is presented in Appendix D as a basis for further studies.

On the dimensional side, the focus is on labor force growth, its sources, components and dynamics, as well as rates of participation in economic activities and other measures of the labor force in relation to demographic characteristics such as age, sex, marital status, etc. Due to the close relationships between these dimensional aspects, and also structural aspects of the labor force, on the one hand, and population growth and its composition, on the other, a summary statement on population growth, levels and changes of its components and related subjects is given.

The triangle of status (as employer, employee, etc.), industry and occupation is the focus of attention on the structural side of the labor force. Their temporal and geographic changes, as well as their interrelationships with each other and with other variables are discussed.

In addition to the population censuses, there are other sources of data on the labor force in Egypt, including industrial and commercial censuses, censuses of establishments, censuses of industrial production, surveys of wages and working hours, statistics on governmental employees, statistics on farm labor, statistics of employment offices and labor force sample surveys. These vary in frequency, coverage, types of information collected, classifications and concepts used for measurement. Though these sources of data are certainly helpful in answering some questions, their limitations are serious in view of the objectives of this study.

Not one of them gives data on the total labor force of the country and its structure.[1]

This study, therefore, depends primarily on labor force data provided by population censuses. These are more comprehensive, and to some extent more consistent than the data from other sources. Besides, census data on labor force can be traced back at least to 1907, which is not true of any other source.

The census data, however, are not completely comparable over time. Changes in concepts and systems of classifications have taken place. A first major goal of this study was, therefore, to secure an acceptable degree of comparability in the data over the period of time under consideration, by adjusting the data of earlier censuses to be comparable, as far as possible, with those of the 1960 census.

This adjustment was done for the total labor force as well as for its classifications available in each census. Although no information about the changes in concepts and classifications is published in the census reports, it was possible to detect some of the changes, thanks to the tradition of retabulating, at each census, the results of the preceding census in a comparable classification. Details of the adjustments and procedures are given in Appendix A.

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[1] The labor force sample survey (1957-1961) excludes only the armed forces, but the short period it covers is of limited use. However, for more details about these sources of data, see United Nations, Department of Economic and Social Affairs, The Development of Manufacturing Industry in Egypt, Israel and Turkey (E.3111, ST/ECA/54, 1958), Statistical Tables; D.C. Mead, Growth and Structural Change in the Egyptian Economy (Homewood, Illinois: Richard D. Irwin, 1967), Appendix B.II; A.M. Farrag, A Review of U.A.R. Activities in Related Fields to Manpower Planning (Cairo: Institute of National Planning, Memo. No. 150, 1962).

Even after the adjustments, there are still elements of noncomparability in the data, such as the shift from the gainfully occupied to the labor force concept between the last two censuses, the different treatment of the armed forces in 1960, and changes in the degree of coverage of marginal groups. The effects of such elements will be touched upon in subsequent chapters.

Traditionally, detailed tabulations of the Egyptian censuses have not included the nomads (less than one-half of one percent of the total population) living in the Frontier Districts. Only a small proportion of them, mainly shepherds living in a relatively stable way, have been covered by the census; and only estimates of the rest by sex have been provided. The single exception to this rule occurred in 1907, when all nomads were included in the labor force (in agriculture). Thus, aside from 1907, the analysis in this study does not include the nomads except in the total population figures.

In February 1958, Egypt and Syria joined in a union which was designated as the United Arab Republic (U.A.R.). In spite of the dissolution of the union in September 1961, the name has been maintained for Egypt's boundaries before that union. Therefore, U.A.R. and Egypt, in this study, are used interchangeably and both refer to the Egyptian boundaries before February 1958.

Unless otherwise stated, the sources of tables and figures in the text are given in Appendix D.

Units of measurement and symbols:

1 feddan	=	1.038 acres = 4,302 square meters
1 Egyptian pound	=	100 piasters (PT) = $2.84 until May 1962, and $2.30 thereafter
...	=	below the rounding level
—	=	zero
n.a.	=	not available

CHAPTER 2

DEMOGRAPHIC DEVELOPMENTS IN MODERN EGYPT

The total population of a country and its composition, in terms of age, sex, etc., are two major determinants of the size of its labor force. Obviously, the population total sets the limit of labor force size, but population composition is an important factor in determining how far the actual size is below this maximum. The size and composition of the population, in turn, are affected by the levels and trends of demographic processes, which are influenced by a host of social and economic factors as well as by the population composition itself. The purpose of this chapter is not to investigate such interrelations, but rather to present a brief summary of the basic demographic developments in the country, to which references will be made in subsequent chapters.

2.1. Population Growth

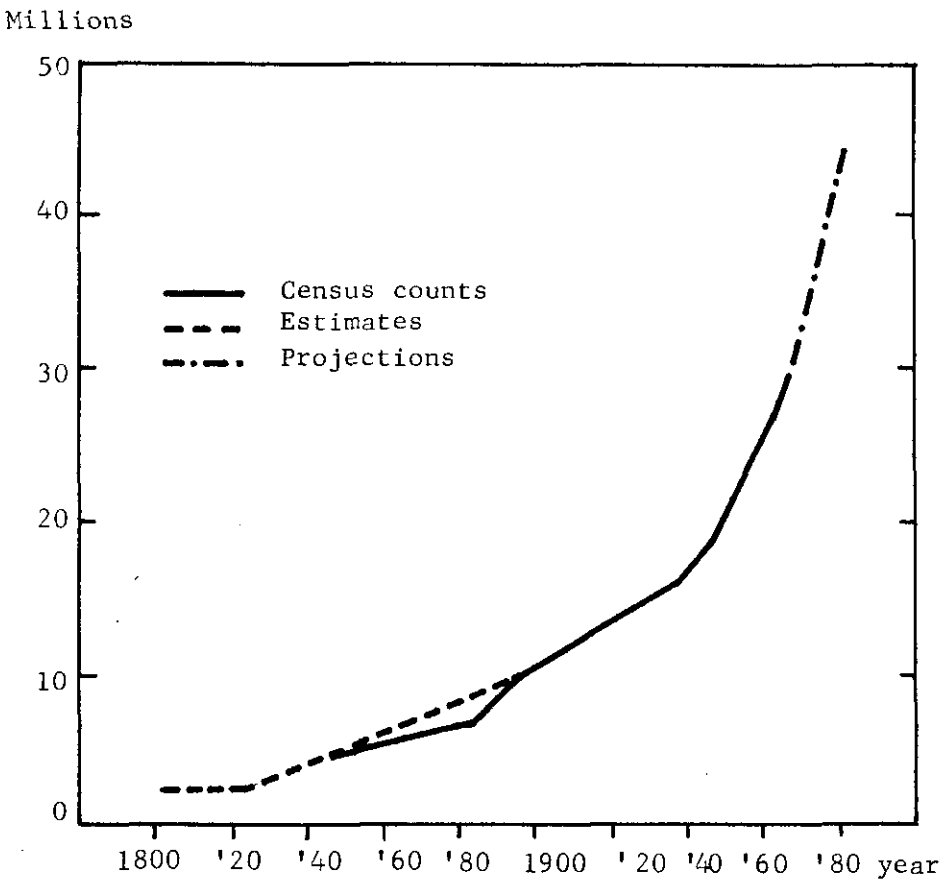
There are various indications that population enumerations were carried out frequently throughout the long history of Egypt. Cleland suggests that "Egyptians have been counted perhaps more times than any other people."[1] Unfortunately, records of such enumerations are fragmentary and the estimates of the population based upon them show considerable variations which raise questions about their reliability and usefulness. On this matter Kiser says, "Modern scholars doubt the population of ancient or

[1] W. Cleland, The Population Problem in Egypt (Lancaster: Science Press, 1936), p. 3.

medieval Egypt ever exceeded seven or eight million."[1] The principal demographic developments in modern Egypt will be the focus of our attention here.

Figure 2.1 shows the trend of population growth in modern times, as estimated three times during the first half of the nineteenth century, enumerated nine times between 1882 and 1966, and projected up to 1980.

FIGURE 2.1. THE POPULATION OF MODERN EGYPT, (1800-1980)



[1] C. Kiser, "The Demographic Position of Egypt," Milbank Memorial Fund, Demographic Studies of Selected Areas of Rapid Growth (New York: 1944), p. 98. See estimates of the population in ancient and medieval Egypt in Appendix D, Table D.1.

Some of the population totals have been questioned with regard to their reliability. The totals for 1800 and 1821 have been thought of as underestimates. In Cleland's view,

> "The low figures of 1800 and 1821 may seem open to doubt in view of the larger numbers in both earlier and later times. One explanation that can be offered is that some centuries of misrule, exploitation, and civil strife under the Mameluke chieftains had greatly decimated the population and wasted the country's wealth. Following the annihilation of the Mamelukes by Mohammed Aly ... and his improvement of the government, the population again increased to its former figure."[1]

However, Kiser suggests that, "It is quite possible that the early estimates of the population were too low and that the growth from 1821 to 1846 was not so great as that indicated by the population estimates for those years."[2]

The 1882 census is regarded as an undercount because of the disturbed conditions in the country including an open rebellion by the Egyptian army for over a year just before the census was taken. The Director General of the 1907 Census says of the 1882 enumeration, "The time could hardly have been worse chosen for far-reaching operations like the census; indeed, it would have been surprising if, in the midst of all this unrest, anything approaching really reliable figures had been obtained."[3]

El-Badry suggests an overenumeration in the 1947 census. According to his view, "The 1947 census gave total population figures which considerably exceeded expectations ... This sharp increase in 1947 growth

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[1] Cleland, The Population Problem..., p. 6.

[2] Kiser, "The Demographic Position...," p. 99.

[3] Egypt, Population Census of Egypt, 1907, p. 23.

rates can only be attributed to overreporting since there is no evidence that it has been accompanied by changes in mortality, fertility or migration."[1] He offers as a "possible explanation" that overreporting was "stimulated by a rationing census which was taken two years earlier."[2] Since El-Badry's adjusted figure for 1947 implies the exceptionally high annual rate of growth of 2.9 percent between 1947 and 1960, which is not supported by other evidence, this study will use the 1947 figure given by the census. The alternative of serious underreporting in the 1960 census is unlikely. The high rate for the 1937-47 period might have been due at least partly to better mortality conditions, concealed by a possible improvement in death registration.

In spite of the doubts about some of the figures, the recorded data reveal at least three important facts which may be summarized as follows:

(i) There has been a continuous and substantial increase of Egypt's population in modern times. The figure for 1966 is more than three times that of 1897. Moreover, the population has doubled within less than 40 years prior to 1966.

(ii) Although the rate of growth apparently followed a decelerating trend between 1882 and 1927, it has accelerated since then.

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[1] M.A. El-Badry, "Some Demographic Measurements for Egypt Based on the Stability of Census Age Distributions," Milbank Memorial Fund Quarterly, Vol. XXXIII, No. 3, July 1955, pp. 7-8. The estimate of overreporting is about one million or 5.6 percent.

[2] _____, "Trends in Components of Population Growth in the Arab Countries of the Middle East," Demography, Vol. II, 1965, p. 142.

(iii) The 2.53 percent annual rate of growth in Egypt between 1960 and 1966, though by no means the highest in the world, is among the highest rates within the group of countries of the same or larger population size.[1]

2.2. Components of Population Growth

2.2.1. Mortality:

The reported crude death rate for U.A.R. (Egypt) in 1960 was 16.9 per 1,000 population, which is considerably higher than the rates of developed countries, and among the highest rates of less developed countries.[2] Yet, this is considerably lower than the death rates which formerly prevailed in the country. The rate fluctuated within the range of about 25 to 30 in most years between 1906 and 1945 and then declined to 16.9 in 1960 as shown in Figure 2.2.[3] The highest recorded level of 39.6 in 1918 is easily attributable to the influenza epidemic. The relatively high rates during the 1930's coincided with the great depression, and those of the early 1940's reflect the effects of the Second World War. On the trend before 1940, Kiser says, "The recorded data for total Egypt show no improvement in mortality conditions since 1906 but improvements in registration doubtless weigh heavily in this series of data."[4] Students of Egyptian demography are inclined to the view that the recorded death rates

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[1] United Nations, Demographic Yearbook, 1966, pp. 96-119.

[2] Ibid., Table 17.

[3] See also Appendix D, Table D.2.

[4] Kiser, "The Demographic Position...," p. 109. For periods before 1906, Kiser indicates that, "It is practically certain that a substantial drop has occurred at least since the early part of the last century when the population was at a standstill."

are understated as a result of underregistration of deaths, especially in rural areas. Evidence of underregistration is seen in the fact that the rates recorded for areas without Health Bureaus (mainly rural) are lower than those for areas with such bureaus (mainly urban), though health conditions are believed to be better in the latter areas.[1]

Infant deaths contribute heavily to the high death rate. For 1960, the recorded infant mortality rate was 109, which is relatively high compared with both developed and less developed countries.[2] However, it has declined considerably since the second World War.[3] This decline may be considered as a major factor in the decline of the crude death rate during the same period. While it is possible that the registration of infant deaths has been improving and therefore that the decline of the infant mortality rate has been greater than the statistics show, demographers believe that the most serious weakness of death registration is still the underreporting to infant deaths especially in rural areas, and consequently that the true level of infant mortality is above the level indicated by the data.

The statistics for males and females in different age groups show, with a few minor exceptions, a definite decline of mortality rates between

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[1] S. Abdel-Atty, "Life-Table Functions for Egypt Based on Model Life-Tables and Quasi Stable Theory," Milbank Memorial Fund Quarterly, Vol. XXXIX, No. 2, April 1961, pp. 9 and 19-20; Cleland, The Population Problem..., pp. 25 and 50-52; El-Badry, "Some Demographic Measurements ...," pp. 31 and 36; El-Badry, "Trends in Components...," pp. 144-146; and Kiser, "The Demographic Position...", pp. 109-111. Estimates of underregistration of deaths in these studies range between 13 and 31 percent depending on the assumptions used.

[2] United Nations, Demographic Yearbook, 1965, Table 41.

[3] See Appendix D, Table D.2.

1937 and 1960, and especially since 1947, for both sexes at all levels of age.[1]

Seven life tables have been constructed for the country as a whole. The four National Life Tables, for the periods 1917-27, 1936-38, 1946-48 and 1959-61, reveal substantial gains in the expectation of life at birth. The first table shows expectation of life at birth equal to 31.0 years for males and 36.0 for females, while the corresponding figures in the fourth table are 51.6 and 53.8, respectively. The other three tables were constructed, by three different methods, for the periods 1927-37, 1907-47 and 1937-47, and show lower expectations of life than those of the National Life Tables.[2] In the following chapters, use will be made of the results of the National Life Tables on account of the comparable methods used in their construction and the time periods they cover.

Although data on causes of death are poor in Egypt, as in other less developed countries, yet the analysis of such data for Egypt, rough as they are, reflects an important fact: the predominance of causes of death which affect mainly infants and children.[3] Such causes of death have been substantially controlled in most developed countries and are potentially controllable, at a reasonable cost, in less developed countries as well. With this fact in mind, along with others indicated before, one may expect that decreasing mortality will continue to play a major role in accelerating

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[1] See Appendix D, Table D.3.

[2] For a brief summary of the methods used, see El-Badry, "Trends in Components...," pp. 156-157. Detailed presentations are given in the Bibliography No. 1, 2, 20, 25, 46, 52, 75.

[3] A. E. Sarhan, "Mortality Trends in the United Arab Republic", U.N., Department of Economic and Social Affairs, Proceedings of World Population Conference, 1965, Vol. II, pp. 359-360.

the natural increase of the population for some years in the future, unless a significant decline in fertility occurs.

2.2.2. Fertility:

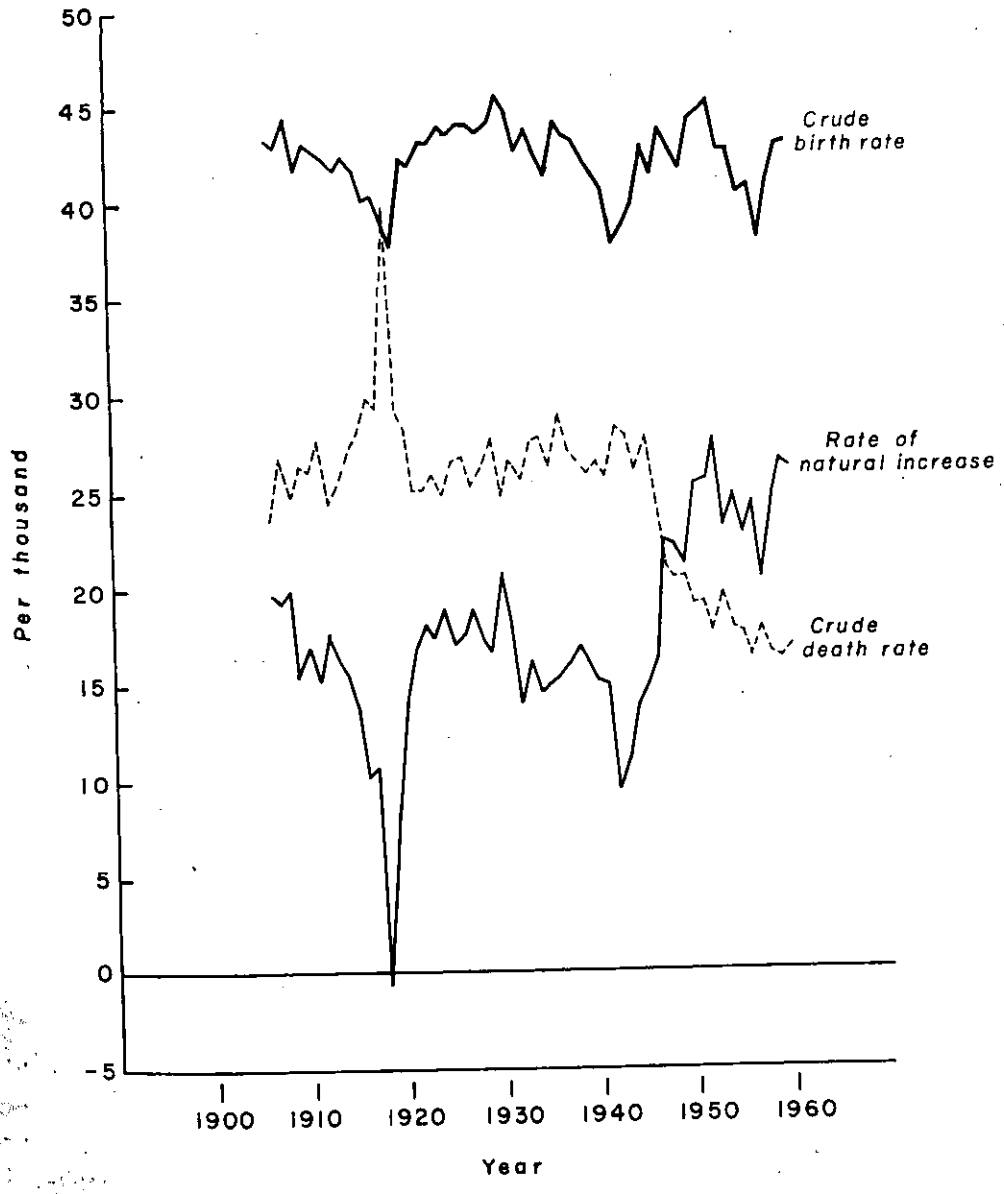
The reported crude birth rate of 42.9 for the U.A.R. in 1960 is substantially higher than the rates for developed countries, lower than the estimated average for Africa, and near the levels estimated for South and Middle America and Asia for the same year.[1] No clear trend is revealed by the reported data. The rate has been fluctuating roughly between 42 and 44 births per 1,000 of the population since 1906 with a few exceptions of temporary decline. One period of temporary decline was that of the first World War and the 1918-19 influenza epidemic, indicating a possible effect of increased mortality and disease on fertility. A second temporary decline occurred during the early 1940's, reflecting the effect of World War II, and a third during 1956-58, which might have been the result of the Suez War. However, like deaths, it is thought that births suffer from underregistration though to a lesser degree, and that the actual level of the birth rate is higher than the recorded level.[2]

Two other measures, based entirely on the censuses, show different pictures of fertility trends. The child/woman ratio (number of children below age 5 per 1,000 females 15-49) declined considerably between 1907 and 1917, and at a slower rate between 1927 and 1937. It remained practically unchanged in the 1917-27 and 1937-47 periods, and increased substantially between 1947 and 1960. The marital fertility ratio (number

[1] United Nations, Department of Economic and Social Affairs, Population Bulletin No. 7 (ST/SDA/Ser.N/7, 1965).

[2] See the works cited in footnote 1, page 16 above. Estimates of underregistration of births range between 4 and 11 percent.

FIGURE 2.2 CRUDE BIRTH AND DEATH RATES, AND RATES OF NATURAL INCREASE, U A R, 1906 - 1960



of children below age 5 per 1,000 married females 15-49) followed practically the same trend with some differences in the rate of change due, of course, to changes in the proportions of married females as well as changes in marital fertility.[1]

While all three measures reflect a high level of fertility, the last two agree better in their trends with the general trend of population growth. These two measures do not take account of the improvement in child mortality, which seems to weigh heavily in the increase of the values of the two measures between 1947 and 1960.

In Egypt, unlike the developed countries generally, fertility appears to be higher in urban than in rural areas. This has been found with the use of both registration and census materials.[2] Fertility differentials by education, on the other hand, seem to follow a typical pattern, i.e., the higher the educational status of the wife (or husband), the lower the level of fertility. This relationship was found to be a straightforward one in urban governorates. With the exceptions of Damietta and Giza, which have a considerable degree of urban influence, it has been found that in all other non-urban governorates, illiterate wives show lower fertility than those who read and write, and sometimes lower than those with elementary education.[3]

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[1] For census years before 1947, see Kiser, "The Demographic Position...," p. 108. For later years the discussion is based on data from the corresponding censuses.

[2] M.A. El-Badry and H. Rizk, "Regional Fertility Differences Between Socio-economic Groups in U.A.R.," United Nations, Department of Economic and Social Affairs, Proceedings of World Population Conference, 1965..., Vol. II, pp. 137-138; El-Badry, "Trends in Components...," pp. 146-151.

[3] El-Badry and Rizk, "Regional Fertility Differences...," pp. 137-138.

Regarding occupational differentials in fertility, the situation is quite different between urban and other governorates. In urban governorates, as well as in Giza and Damietta, the professional, technical and administrative group shows the lowest fertility, and clerical workers the second lowest. In non-urban governorates excluding Giza and Damietta, on the other hand, these groups have the highest fertility. Farmers show the lowest fertility in non-urban governorates.[1]

The low fertility recorded for rural illiterate wives and farmer's wives may be considered as the main factor behind the apparently lower level of fertility in the rural than in the urban population. It has been suggested that, "if...not entirely due to deficient reporting, it is perhaps wholly or partly due to the effect of worse health and environmental conditions...which raise the incidence of miscarriage."[2] If the second explanation is the true one, this may place in question, at least in part, the estimates of underregistration of births referred to earlier.

2.2.3. External Migration:

It has been said that "Egyptians have the reputation of preferring their own soil. Few ever leave to study and travel; and they always return."[3] This can easily be substantiated by estimates of the number of Egyptians outside the country. In 1927, this number was about 22,000.[4] It went up to 25,000 in 1937 and 100,000 in 1960, and then declined to 70,000 in 1966.[5] The rise of the number reflects primarily the increase

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[1] Ibid., pp. 138-139.

[2] Ibid., pp. 138-139.

[3] Cleland, The Population Problem..., p. 36.

[4] Ibid., p. 36.

[5] El-Badry, "Trends in Components...," p. 158; U.A.R., Population Census, 1966, Vol. II, Table 1. Rough as they may be, these figures show the insignificant effect of emigration on population growth.

in temporary employment of Egyptian teachers and professionals in the neighbouring Arab countries, along with the increasing number of native students abroad. For example, of the 22,000 in 1927, slightly over 18,000 were in the Sudan.

On the other hand, immigration to the country has also been negligible in modern times. The recorded numbers of foreigners since 1917 and their percentage in the total population are as follows:

Year	Number of foreigners[1]	Percent of population
1917	205,949	1.62
1927	225,600	1.59
1937	186,515	1.17
1947	145,912	0.77
1960	143,312	0.55
1966	90,594	0.30

The decline of the percentage of foreigners since 1917 and of the absolute number since 1927 can be attributed to the almost complete cessation of immigration since World War I and emigration of aliens in more recent periods.

It may be concluded that the Egyptian population is practically a "closed" one, depending for its growth almost entirely on its natural increase.

2.3. Age and Sex Structure

Age and sex are central variables in demographic as well as socio-economic analyses of the population. The age and sex structure of a population is a product of past developments of the components of population growth, and the factors affecting them; and it is, in turn, an important factor in shaping their current levels and future trends. The study

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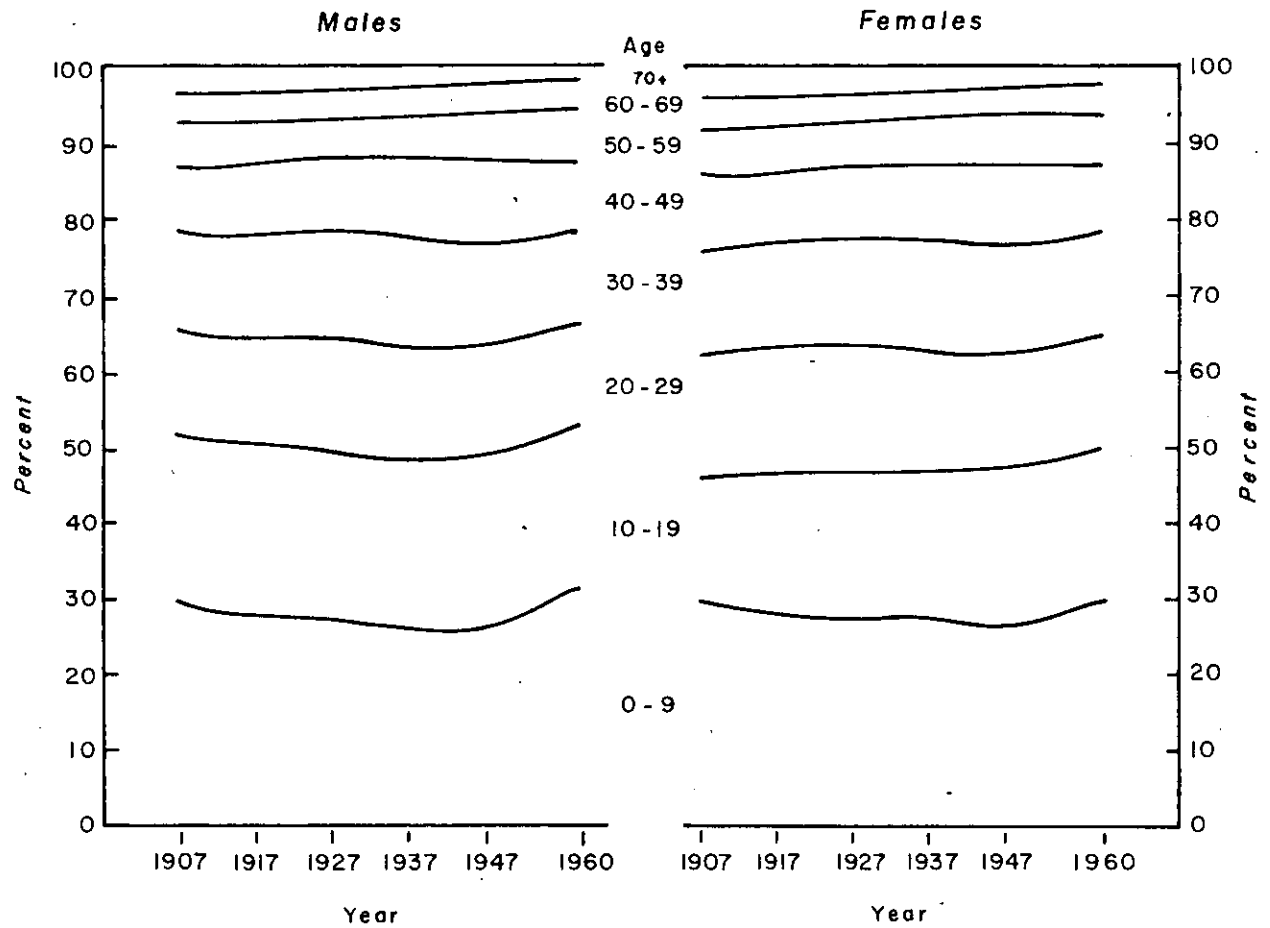
[1] U.A.R., Statistical Yearbook, 1962, p. 70 and 73; _____, Population Census, 1966, Vol. II, p. 4.

of this structure provides insights into socio-economic and demographic phenomena whose incidence differs by age and sex. It is an important aspect of the study of determinants of labor force size and growth, since the propensity to participate in income-producing work differs greatly among sex-age groups.

The age and sex structure of the Egyptian population since 1907 shows some interesting features (Figure 2.3). The first and foremost is the youthfulness of the population. The proportion of the population under the age of 15 varied between 38.0 and 40.5 percent up to 1947 and rose to 42.8 percent in 1960. The proportion of persons 65 years of age and above ranged between 5.9 and 7.7 percent of the total population. This feature is a direct result of the levels and trends of the vital rates discussed above, especially the high and relatively constant level of fertility. The increased proportion of children under 15 in 1960 is mainly due to the recent decline in mortality, particularly among infants.

The relative stability of the age distribution up to 1947 reflects the relative stability of the vital rates recorded before the 1940's. If it is true that improvements in mortality conditions were concealed by better registration, then, to be consistent with the stability of the age distribution, such improvements must have been, in general, proportionate at all ages. Their effect would then be seen only in the rate of growth of the population. This may be considered as an alternative explanation of the sudden high rate of growth during the 1937-47 period, provided that such improvements were of some importance during that period.

FIGURE 2.3 AGE STRUCTURE OF THE POPULATION BY SEX, UAR, 1907-1960



Distortions in the data on age distribution may be caused by both misreporting of ages and variation of the extent of enumeration in different age groups. Misstatements of age have frequently been found to be a major factor. The error most relevant to our subsequent analysis of labor force data is a deficiency in the number of males recorded in the age group 20-29 years, possibly due to fear of conscription. Though underenumeration is a possible source of this deficiency, the relatively large adjacent age groups and their high sex ratio suggest that many males in the age group 20-29 report ages over 30 or under 20.

The sex ratio has varied in a rather narrow range since 1907; the lowest was 98.1 and the highest was 101.2 males per 100 females. Variations of the sex ratio by age are affected by sex differentials in age misreporting.[1]

2.4. Urbanization and Internal Migration

The growth of the population has not been even in the country's geographical areas.[2] On the contrary, a large amount of population redistribution has occurred during this century, and consequently the

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[1] For detailed discussion of other kinds of misstatement of age and their improvement over time, as well as discussion on sex ratio by age, see El-Badry, "Some Demographic Measurements...," pp. 7-19.

[2] Egypt is geographically divided into Lower Egypt, Upper Egypt, Eastern Desert, Western Desert and Sinai Peninsula. Lower Egypt includes the following governorates: Cairo, Alexandria, Port Said, Ismailia, Suez, Behera, Menoufia, Gharbia, Kafr El-Sheikh, Kalyubia, Sharkia, Dakahlia, Damietta; while Upper Egypt includes Aswan, Kena, Asyut, Suhag, Minya, Beni Suef, Fayoum and Giza governorates. Although the other three desert areas cover 96 percent of Egypt's land, their share of the total population is about one percent concentrated mainly in four frontier districts (Red Sea, Sinai, Matruh and New Valley) now called governorates.

ranking of the governorates or provinces in terms of their percent shares of the total population has changed markedly. For example, Cairo's share increased from 5.8 percent in 1907 to 14.0 percent in 1966, and its rank changed from tenth to first during the same period.

2.4.1. Urbanization:

According to the administrative definition used in Egypt, the urban population increased from about 1.3 million in 1882 to 12.2 million in 1966.[1] The percentage of urban to total population more than doubled between these two census years - about 19 percent in 1882 and 40 percent in 1966 (Figure 2.4). Urban growth has been faster in more recent periods, especially since 1937. The apparent slackening of urban growth in 1960 and 1966 may be attributed, at least partly, to the new procedure of counting members of armed forces according to the residence of their families, particularly since if we know, from previous censuses, that most of them used to be stationed in or near the major urban centers.

Since Lower Egypt includes Cairo, Alexandria and the three cities of the Canal Zone, its urban population is much larger than that of Upper Egypt. The percent urban in Lower Egypt has been more than twice its counterpart in Upper Egypt throughout the period for which data are available. If these five major cities are excluded, the differences in the indices of urbanization between Lower and Upper Egypt almost vanish, insignificantly favoring Upper Egypt.

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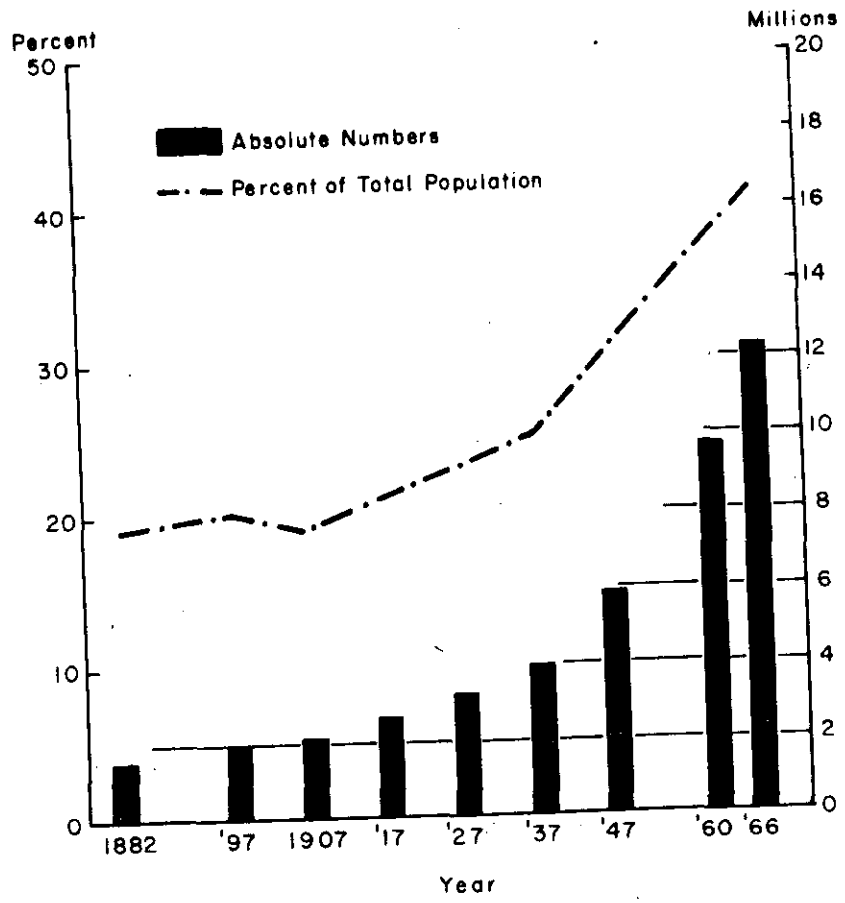
[1] According to this administrative definition, urban areas include urban governorates (Cairo, Alexandria, Port Said, Ismailia and Suez; the capitals of the other governorates, and the capitals of districts within these non-urban governorates, i.e., governorates which include both urban and rural populations. Due to changes in boundaries, however, Damietta, which was considered as an urban governorate until 1947, was treated as a non-urban governorate since 1960. For the same reasons, Ismailia was included in non-urban governorates in 1966.

FIGURE 2.4 GROWTH OF URBAN POPULATION, UAR, 1882-1966



Source: Nassef, "Urbanization in U.A.R....," p. 12; U.A.R. The Population Census, 1966, Vol. II, table 3. The 1960 definition of urban population was adopted for 1966.

Primacy has been a feature of the structure of urban population.[1] Cairo, the largest city, had about 30 percent of the urban population in 1897 and 35 percent in 1966. Cairo's population was about twice as large as that of Alexandria, the second largest city, during the same period. However, Alexandria has shared Cairo's dominance over other urban communities not only in the economic and political life of the country but also in terms of population size. The population of Alexandria was at least five times as large as that of the third largest city during the period 1897-1966. Both cities together contained about 45 to 50 percent of the total urban population during this period. Thus, the urban structure is and has been characterized by two primate cities.

If a few smaller cities, such as those of the Canal zone and the ones which may be considered as parts of Cairo metropolitan area, are added to Cairo and Alexandria, it is found that these cities contained a little less than two thirds of the urban population in 1960. Thus, urban structure is not only characterized by primacy but also by a high degree of concentration of urban population in a few major centers.

Generally speaking, the larger cities are growing more rapidly than the smaller ones, so that the urban concentration is intensified in the course of time. Thirty percent of the country's total population growth between 1937 and 1960 occurred in Cairo and Alexandria. Cities along the Suez Canal and those within Cairo metropolitan area have been growing

[1] For detailed discussions on aspects of urbanization, see J. Abu-Lughod, "Urbanization in Egypt: Present State and Future Prospects," Economic Development and Cultural Change, Vol. XIII, No. 3, April 1965, pp. 313-343; A. Nassef, "Urbanization in U.A.R. (Egypt)," University of Pennsylvania, Unpublished paper, 1966; A. Said, The Growth and Development of Urbanization in Egypt, Social Research Center, The American University at Cairo, 1960.

very rapidly as well, but many of the provincial capitals, which are the foci of regional urban growth, have not been growing so fast. These differentials of growth have resulted in a lack of cities of intermediate size between the two primates and the middle-sized cities.

Egypt has been said to have a higher proportion of her population in urban centers than would be justified on the basis of her economic development, i.e., to be overurbanized. For a measure of overurbanization, Davis and Golden relate their index of urbanization, defined as the proportion of population living in cities of 100,000 or more, to the index of industrialization or economic development, defined as the percentage of the labor force in non-agricultural activities. For a large number of countries, they have found a correlation coefficient of 0.86 between the two indices. They state, "If the relationship between the two variables is represented in the form of a regression curve, certain countries are found to be off the line to a significant extent. One of these is Egypt, which has far more urbanization than its degree of economic development would lead us to expect."[1] This remark about Egypt refers to the period from 1907 to 1947, as Davis and Golden say, "This condition is not of recent origin, i.e., not found in the 1947 census alone, but has characterized the country for at least forty years."[2]

The overurbanization thesis, however, has been challenged by Sovani, among others. Sovani worked out two correlation coefficients between the two indices mentioned above; one for a group of developed countries (0.395) and the other for a group of underdeveloped countries (0.85), and concluded:

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[1] K. Davis and H. Golden, "Urbanization and the Development of Pre-industrial Areas," in D.M. Heer, Readings on Population (New Jersey: Prentice Hall, 1968), pp. 48-49.

[2] Ibid., p. 49.

> "These results indicate that the association between the two variables is much more close in underdeveloped countries than in highly industrialized countries, or by implication, that the pace of urbanization in underdeveloped countries is much more closely dependent on the pace of industrialization than in highly industrialized areas. This flies in the face of the entire overurbanization thesis, at least in the way it has been formulated."[1]

With regard to Egypt, Sovani says, "If the case of Egypt in 1947 is judged from regression equation worked out by me for the 24 countries, outside Europe, excluding the U.S. and Canada, it is found to conform very much to the general pattern."[2]

The index of urbanization used by Davis and Golden has definitely influenced the position of Egypt and of other countries with similar urban structure, on their regression line. They chose their index on the assumption that, "There is a certain regularity about the pyramid of cities by size," and "Any major size-class tends to bear a systematic relation to the proportion in other size-classes."[3] Such assumptions have been far from valid in the case of the Egyptian urban structure, which has been characterized by persistent primacy and concentration during the period covered by their study.[4]

Advocates of the overurbanization thesis assume that the main reason for it is population pressure on land in rural areas of the underdeveloped countries which pushes people out to the cities, rather than increasing demand for labor in urban centers. Consequently, many of the migrants

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[1] N. Sovani, "The Analysis of Overurbanization," Economic Development and Cultural Change, Vol. XII, No. 2, January 1964, p. 115.

[2] Ibid., p. 116.

[3] Davis and Golden, "Urbanization and the Development....," p. 41.

[4] As to the other index used by Davis and Golden, this writer does not know enough about how much was done to achieve an acceptable degree of comparability of labor force data.

are unemployed or find employment in jobs of very low productivity. Davis and Golden declare that, "The densely settled and impoverished countryside in Egypt is pushing people into cities because they have no alternative" and "much of the migration to cities seems therefore to be a refugee migration from the countryside."[1]

The contribution of rural-urban migration to urban growth in Egypt is dealt with in the next few pages by analyzing lifetime migration data from the 1960 census. The analysis of labor force data in subsequent chapters will throw some light on the push-vs.-pull controversy of urban growth.

2.4.2. Internal Migration:

The only available data directly bearing upon internal migration in the U.A.R. are those of place of birth classified by place of residence introduced in recent censuses. In spite of their limitations for measuring internal migration, these data are helpful in explaining some features of the process of population redistribution.

In 1960 about 3 million persons in the country were reported to have been born outside their governorate of enumeration.[2] Among this group of lifetime migrants, the sex ratio was 113 males per 100 females. The sex ratio was much higher among out-migrants from Upper Egypt (139) and the Frontier Districts (123); and much lower among those from the major

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[1] Ibid., p. 50.

[2] In this and subsequent chapters, each of the following groups of governorates was dealt with as one unit: Port Said and Ismailia; Gharbia and Kafr El-Sheikh; and the Frontier Districts.

urban centers (94). The sex ratio was 108 among out-migrants from Lower Egypt.[1]

If the country is divided into two broad groups, namely urban and non-urban groups of governorates, the 1960 data show a gain of 1,442,987 persons in urban governorates through net lifetime migration. This represents more than one quarter (26 percent) of the population of urban governorates in 1960, which indicates the major role of internal migration in urban growth in the country. If the data were tabulated in more detail, it might be expected to find also net gains in urban areas within non-urban governorates. It is apparent that the first major migration stream is that from rural to urban areas.

If the country is divided into three regions, namely, Lower Egypt (including urban governorates), Upper Egypt, and Frontier Districts, it can be shown that as of 1960, Lower Egypt had a net gain of 585,722 persons by lifetime migration from both Upper Egypt (558,247) and the Frontier Districts (27,475). This seems to be why it has been suggested that there is a second major migration stream from Upper to Lower Egypt.[2] However, this second stream is a reflection of the first. This can be seen by studying migration data after separating urban governorates from Lower Egypt. When that is done, the net gain in urban governorates is

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[1] For more details on sex-age patterns of internal migration, see K.C. Zachariah, "Sex-Age Pattern of Population Mobility in the U.A.R.: With Some International Comparisons," a paper presented at the Conference of the International Union for Scientific Study of Population, London, 1969. He finds, among other things, that male selectivity is positvely associated with distance; and that age selectivity of young adults, males and females, among migrants is significant.

[2] C. Issawi, Egypt in Revolution: An Economic Analysis (London: Oxford University Press, 1963), p. 83.

distributed as follows: 857,265, or 59.4 percent, from the non-urban governorates of Lower Egypt; 558,247, or 38.7 percent, from Upper Egypt; 27,475 or 1.9 percent, from the Frontier Districts.

The data by individual governorate reveal a number of interesting points. For example, Cairo showed, in 1960, a net gain by lifetime migration of 952,663 persons, which is more than one-half of the total net gain in all governorates having net gains. In all other urban governorates, there was a net gain of 490,324, of which 297,741 was in Alexandria and the rest in the governorates of the Canal Zone. Among the non-urban governorates, only Giza, south of Cairo, showed a net gain of 186,911 persons; and the rest of the governorates recorded net losses which varied markedly.[1] The four governorates with greatest losses were Menoufia (345,668) and Dakahlia (171,064) in Lower Egypt and Suhag (237,770) and Kena (190,449) in Upper Egypt. The net gains represented 20 percent or more of the population in each of the individual urban governorates; and 14 percent in Giza. The net losses, on the other hand, represented about 26 percent in Menoufia, 9 percent in Dakahlia, 15 percent in Suhag, 14 percent in Kena, 11 to 13 percent in Asyut, Aswan, and the Frontier Districts, and smaller percentages in other non-urban governorates.[2]

2.5. People and Land

The political boundaries of the U.A.R. embrace an area of about one million square kilometers. With a total population of about 30 million

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[1] The gain in Giza is mainly attributable to its capital city, which is practically a part of the Cairo metropolitan area. Within the Frontier Districts or governorates, Red Sea showed a small net gain of about 11,000.

[2] The base for the percentages is the total population in 1960, excluding relatively small numbers of persons whose birthplace was not given. For detailed discussions on in- and out-migration by governorates, see El-Badry, "Trends in Components...", pp. 158-163,

in 1966, this gives an average population density of 30 persons per square kilometer, but such a crude measure of population density is very misleading in a country like U.A.R. whose inhabited area is just about 4 percent of its total territory. On the basis of the inhabited area, population density increased from 362 persons per square kilometer in 1907 up to about 850 at the present time, maintaining the country, as it was described in the 1930's, as "one of the most compact nations of equivalent or greater size anywhere on earth."[1]

Furthermore, comparing the population figures with those of the cultivated area, which is about 3 percent of the total area, gives about 2.1 persons, on the average, per feddan in 1907 and 4.4 persons in 1960. Since a good part of the cultivated area produces more than one crop a year, a better measure may be the average number of inhabitants per unit of crop area, which was 1.5 persons per feddan in 1907 and increased to 2.5 persons in 1960. The obvious reason for the increase of all measures is that the population has grown much faster than the inhabited, cultivated or crop areas. For example, between 1907 and 1960, the cultivated area increased by 9.5 percent and the crop area by 35.7 percent, while the population increased by 131.1 percent.[2]

In 1917, Craig, the Director General of the census, said,

> "If the rate of increase elicited at the last census is maintained, it is not difficult to show that, in 50 years time, the population will be about 29 million. The cultivated land will then be 7.7 millions of feddans cropped twice a year and so equivalent to 15.4 million feddans of land... Now 4.4 million feddans at present barely support 13.1 million of people, will 8.7 million feddans support the 29 million of 1970? Yes if the yield of crops is improved; no if it is not."[3]

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[1] Cleland, The Population Problem..., pp. 30-31.

[2] These measures were calculated from population and land data given in Mead, Growth and Structural Change..., pp. 4, 64, and 294-295.

[3] Quoted from Issawi, Egypt in Revolution..., p. 33.

The question about the future would have seemed more difficult, had Craig anticipated the rise since 1917 in the rate of population growth, and the drop in rates of increase of both cultivated and crop areas.

It was two decades later when Cleland, in the first detailed and classical study on Egypt's population, described population density in these humorous words:

> "So numerous are the Egyptians and so restricted are their habitable boundaries, that it is practically impossible for one who wants to be alone to get out of sight of human beings except by going under cover or into the desert. The valley land has no hills behind which the stranger who would visit the provinces can escape from curious eyes. An automobile stopping along any wayside is almost immediately the focal point for numerous lines of vision. In Egypt there are crowds at every turn."[1]

Cleland estimated "the ultimate population that Egypt can accommodate under the present conditions" in the neighborhood of 19 million,[2] a figure that was reached in 1947. He went on to say that, "Malthus' principle that population tends to increase in geometrical ratio, while the means of subsistence tend to increase only in arithmetical ratio, seems to find a certain measure of support in the experience of modern Egypt."[3] Therefore, rejecting the pro-natalist attitude held by some Egyptians at that time, he said, "Because the people of Egypt have been led to believe that they have increased 100 percent in the half century following 1882, or certainly 47.5 percent from 1897 to 1927, some present-day patriots, imbued with the post-war enthusiasm for national development, hope to see the process repeated. That this is not likely to happen appears from the obvious decline in the rate of increase."[4] It

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[1] Cleland, The Population Problem..., p. 31.

[2] Ibid., pp. 31-33.

[3] Ibid., p. 34.

[4] Ibid., p. 36.

may be recalled, however, that the decline in the rate of increase, which was apparent before 1927, has turned to acceleration since then.

Kiser's opinion was similar to that of Craig and Cleland. Projecting the total population to 1970, he observed that "The straight geometric increase derived by assuming a stable age distribution and continuation of existing levels of age-specific fertility and mortality yielded a population of about 24 million by 1970. This is a 50 percent increase over the 1937 population and can probably safely be regarded as an outside maximum that will not be attained."[1] Summing up his analysis, he concluded, "In short, Egypt is in a demographic jam. With limited room for expansion and no early prospect for substantial decline in fertility, she faces mounting population pressure."[2]

If extreme pessimism is barred, the fact remains that there has been an increasing disproportion between the country's population and its available land. So the question arises, how did Egypt manage to support such rapidly increasing population? It is hoped that this study will throw some light on this question.

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[1] Kiser, "The Demographic Position...," p. 121. The 24 million size was reached during the 1950's.

[2] Ibid., p. 122.

CHAPTER 3

DIMENSIONS OF THE LABOR FORCE

3.1. Labor Force Growth

3.1.1. Trends of Labor Force Growth:

The Egyptian labor force more than doubled within a 53-year period. It grew from about 3.5 million workers in 1907 to 7.8 million in 1960 (Figure 3.1).[1] This represents a gain of about 122 percent with an average exponential rate of growth of about 1.5 percent per year.

The rate of growth shows significant variations from one intercensal period to the other, as indicated by Table 3.1. The total labor force increased by 46.5 percent during the first intercensal period, 1907-1917, implying an annual rate of growth as high as 3.8 percent; whereas the increase during 1917-1927 was only 0.5 percent, indicating an annual rate of growth as low as 0.1 percent. In between these two extreme cases, the labor force experienced varying rates of growth, within a much smaller range of variation in the last three intercensal periods.

Before any inferences are drawn from these observations, about such questions as effects of the world wars and changing economic conditions on the growth of the labor force, further examination of the data is useful, especially with regard to marginal groups in the economically active population.

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[1] The analysis in this chapter and the rest of the study is based on adjusted data; see Appendix A for procedures of adjustment. 1960 data refer to persons six years of age and over, whereas age five was the lower limit for earlier years.

Table 3.1 provides rates of growth for the total labor force as well as for labor force 15 years of age and over by sex for intercensal periods between 1917 and 1960, so as to show the effect of variations in the proportions of children and women reported as economically active.[1]

Another factor is variation in numbers of the "ill-defined group" -- i.e., persons whose industry was not reported, included in the labor force totals. This group was much larger, both proportionately and in absolute numbers, in 1917 and 1947 than in other census years. The members of this group in 1947, when more detailed cross-classifications were given, not only had no reported industry but also no recorded employment status or occupation. In addition, they were highly concentrated in the young age groups. All these are indications that, perhaps, most members of the group in 1947 were not really economically active. Also in 1917, a significant proportion of this group was in the young age groups.[2] In what follows, the ill-defined group is excluded from the 1917 and 1947 data. In a few cases, the analysis has been carried out both including and excluding this group; while in some cases, it was included when its inclusion or exclusion would not affect the main conclusions.

Wide differences in the coverage of economically active females may be seen in the changes in size of the female labor force recorded at the successive censuses. There was an increase of nearly 400 percent between 1907 and 1917 followed by a decrease of 20 percent between 1917 and 1927.

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[1] The choice of age 15 is based on the U.N. recommendations regarding the tabulation of economically active population by age. See United Nations, Statistical Office, Principles and Recommendations for National Population Censuses (Statistical Papers, Series M, No. 27, 1958), pp. 13-14. For discussion on possible inconsistencies in the coverage of 15-19 age group, see Section 3.2.2.

[2] See Appendix A.

FIGURE 3.1 LABOR FORCE GROWTH BY SEX, UAR, 1907-1960

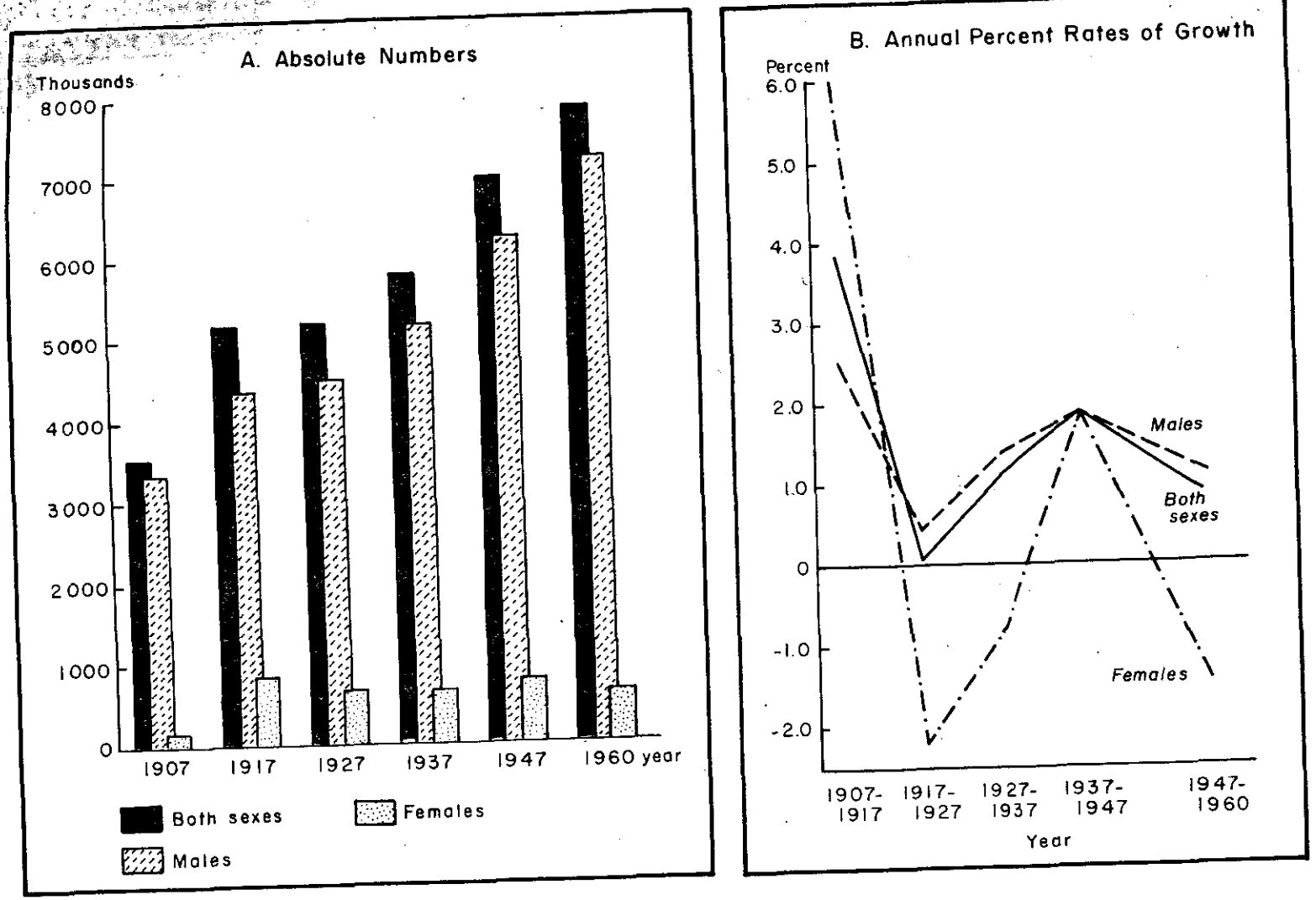

TABLE 3.1. LABOR FORCE GROWTH BY SEX, U.A.R., 1907-1960.

Period	Intercensal Change (%)				Annual Rate of Change (%)			
	Ages 5+		Ages 15+		Ages 5+		Ages 15+	
	Inc. ill-defined	Ex. ill-defined	Inc. ill-defined	Ex. ill-defined	Inc. ill-defined	Ex. ill-defined	Inc. ill-defined	Ex. ill-defined
				Males				
1907/17	28.6	18.4	n.a.	n.a.	2.5	1.7	n.a.	n.a.
1917/27	4.6	13.4	8.8	16.6	.5	1.3	.9	1.5
1927/37	14.6	14.9	13.1	13.4	1.4	1.4	1.2	1.3
1937/47	20.4	13.8	20.4	17.9	1.9	1.3	1.9	1.6
1947/60	15.5	21.5	21.0	22.9	1.1	1.5	1.5	1.6
				Females				
1907/17	396.7	343.8	n.a.	n.a.	6.1	4.9	n.a.	n.a.
1917/27	- 20.2	- 10.7	-22.5	-11.9	-2.3	-1.1	-2.6	-1.3
1927/37	- 8.1	- 8.4	- 3.7	- 3.6	- .8	- .9	- .4	- .4
1937/47	20.4	19.4	9.1	8.7	1.9	1.8	.9	.8
1947/60	- 17.1	- 16.9	-32.0	-21.4	-1.4	-1.4	-3.0	-3.0
				Both Sexes				
1907/17	46.5	34.2	n.a.	n.a.	3.8	2.9	n.a.	n.a.
1917/27	.5	9.6	3.7	12.2	.1	.9	.4	1.2
1927/37	11.7	11.8	11.0	11.3	1.1	1.1	1.1	1.1
1937/47	20.4	14.4	19.2	16.9	1.9	1.3	1.8	1.6
1947/60	12.0	17.2	15.8	17.4	.9	1.2	1.1	1.2

Note: See text for definition of ill-defined group.

When both females under 15 years of age and those in the ill-defined group are excluded, the figures show a trend which is less erratic but is still marked by wide variations and shifts between positive and negative values.[1]

The trend of the male labor force, generally speaking, is more consistent than that for females alone or both sexes together. Nevertheless, it exhibits some irregularities, viz., 2.5 percent annual rate of growth between 1907 and 1917 as against only 0.5 percent during the 1917-1927 intercensal period. The exclusion of the ill-defined group alone, or along with males below 15 years of age, results in smoother trends with narrower ranges of variation.

In short, the fluctuations in the rate of total labor force growth may be accounted for mainly by inconsistencies in reporting of economically active females, young persons, and the ill-defined group. When these groups are excluded, the trends are more acceptable, especially in the case of males. Exclusion of these groups does not mean that all their members were not in the labor force but that the degree to which they were covered in the enumeration of economically active persons varied in different censuses. It is preferable to omit them or deal with them separately rather than to make any gross adjustments of the data based on arbitrary assumptions about the extent of coverage.

Thus, it is likely that the actual range of variation in rates of labor force growth during intercensal periods was much narrower than the figures in Table 3.1 imply. The true trend of growth was probably fairly

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[1] Old age groups have not been dealt with separately in view of their small magnitudes as well as their relative consistency. The trend of unpaid family workers is another good indicator of variations in coverage, but separate data for this group are available only for 1947 and 1960. This group is closely related to some of the marginal groups under discussion. See Section 4.4.

steady, reflecting stable demographic conditions and relatively small changes in the activity rates during most periods.

3.1.2. Sources of Labor Force Growth:

Changes in the size of a country's labor force are brought about by changes in size of the population interacting with changes in the activity rate: i.e., the percentage of economically active persons in the total; and it is of interest to calculate how much of the labor force change is attributable to each of the two factors. In what follows, the growth of the Egyptian labor force during the 1907-1960 period is divided between these two sources by means of a multiple standardization technique explained in Appendix C. It should be noted that the results of such calculations do not represent exactly the magnitudes of the effects of the corresponding factors on labor force growth. Because of possible interrelations between population growth and activity rates, operating directly or through other intermediate variables, the magnitudes of such effects are strictly indeterminate. Nevertheless, the measures obtained represent relative degrees of influence of the two factors.

The results of the computations show that, in general, the effects of population growth overshadowed the effects of changes in the rate of participation in economic activities. Out of an increase of about 122 percent of the total labor force during the 1907-1960 period, the estimate of the contribution of population growth ("population component") is 120 percentage points, while the contribution of changes in the activity rate ("activity component") is less than 2 percentage points.[1]

[1] See Appendix C, Table C.1 for the results for the 1907-1960 period as a whole.

Computations for each sex separately give different results. For males, the results are similar to those for the total labor force, due to the dominance of males in the labor force. The contribution of the growth of the male population to the growth of the male labor force, for the whole period, amounts to 118 percent of the initial number; while a decline of the male activity rate detracted 4 percentage points from the male labor force growth.

On the female side, though the population component is the largest (162 percentage points), the activity component also shows a large contribution (102 percentage points). The difference between the results for females and males is explained by the smaller number of the female labor force, which is affected greatly by relatively small reported increments (or decrements) of economically active females. Such increments or decrements may only reflect variations in coverage, as indicated earlier, and therefore the results of the computations relating to females should be viewed with extreme caution.

Estimates of population and activity components by intercensal period, given in Table 3.2, show wide variations. For males, population growth provides the major contribution to the growth of the labor force in all periods while the activity component varies from a positive effect of about 13 percentage points during 1907-1917 to a negative effect of about the same size between 1947 and 1960, without any clear trend. For females, with the exception of the 1937-1947 period, the activity component is larger than that of population growth and it varies from a positive value as high as 355 percentage points in the 1907-1917 period to a negative value of 40 points during the last intercensal period.

TABLE 3.2. INTERCENSAL COMPONENTS OF LABOR FORCE GROWTH BY SEX: U.A.R., 1907-1960.

(Percent of Initial Labor Force)

	1907/17	1917/27	1927/37	1937/47	1947/60
		A. Including Ill-defined			
			Males		
Population Component	15.7	9.8	14.5	17.1	28.3
Activity Component	12.9	- 5.2	.1	3.3	-12.9
Total Change	28.6	4.6	14.6	20.4	15.5
			Females		
Population Component	41.7	9.9	11.7	20.4	22.5
Activity Component	355.0	-30.1	-19.8	...	-39.5
Total Change	396.7	-20.2	- 8.1	20.4	-17.1
			Both Sexes		
Population Component	17.0	9.8	14.2	17.4	27.7
Activity Component	29.5	- 9.3	- 2.5	3.0	-15.7
Total Change	46.5	.5	11.7	20.4	12.0
		B. Excluding Ill-defined			
			Males		
Population Component	15.0	10.2	14.6	16.6	29.0
Activity Component	3.3	3.3	.3	- 2.8	- 7.5
Total Change	18.4	13.4	14.9	13.8	21.5
			Females		
Population Component	38.1	10.4	11.7	20.3	22.5
Activity Component	305.7	-21.1	-20.1	- 1.0	-39.4
Total Change	343.8	-10.7	- 8.4	19.4	-16.9
			Both Sexes		
Population Component	16.2	10.2	14.2	17.0	28.3
Activity Component	18.0	- .7	- 2.3	- 2.6	-11.1
Total Change	34.2	9.6	11.8	14.4	17.2

These wide fluctuations on the part of females have influenced the trend of both sexes in spite of the small numbers of women in the labor force.

The exclusion of the ill-defined group results in an interesting trend for the male activity component, which decreases from slightly more than 3 percentage points between 1907 and 1917 to less than one half of one percent during 1927-1937 and shifts to negative values during 1937-1947 and 1947-60 (-2.8 and -7.5 percentage points, respectively). As regards females, excluding the ill-defined group results in some changes, especially in the activity component; but, by and large, the picture remains the same.

The fact revealed by these calculations is that the growth of the Egyptian labor force has been primarily the result of population growth, while changes in activity rates have been of secondary importance, although not of negligible economic significance. This is not peculiar to Egypt; the same is generally true of countries having high rates of population growth.

3.2. Levels, Patterns and Trends of Participation in Economic Activity

3.2.1. Crude and Refined Activity Rates, Levels and Trends:

The crude activity rate is defined as the percentage of the total population which is economically active. It is also called "labor force participation rate," or "worker rate".

For Egypt in 1960, the crude activity rate was about 30.1 percent; that is, less than one third of the total population was engaged in income-producing activities. The difference between the two sexes in this respect is extremely large. As of 1960, 55.2 percent of the male population but only 4.8 percent of females were reported as economically active (Table 3.3). Comparing with other countries, and bearing in mind the problems of international comparisons, one finds that activity rates in Egypt are among the lowest especially with respect to females.[1]

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[1] United Nations, Demographic Yearbook, 1964 (New York, 1965), Table 8, pp. 190-238.

The crude activity rate has varied since 1907 within a wide range of about 10.6 percentage points. The maximal level (40.7) was in 1917 and the minimal (30.1) in 1960. It varied within one percentage point between 1927 and 1947, but was relatively low (31.3) in 1907. The trend of the male activity rate during the 1907-1960 period was, by and large, similar to that of both sexes together but with a somewhat wider range of variation between 1927 and 1947 (2.4 percentage points). The rate for females, on the other hand, showed a substantial increase from 3.1 in 1907 to 13.4 in 1917, followed by a continuous decline till 1960 with the exception of almost identical rates for 1937 and 1947.

When the ill-defined group is excluded, the crude activity rate is lowered especially for 1917 and 1947. The exclusion of the ill-defined group not only narrows the range of variation of the activity rates but also affects the trend in terms of periods of increase or decrease. For instance, with the ill-defined group included, the crude activity rate shows an increase during the 1907-1917 and 1937-1947 intercensal periods; otherwise the rate is on the declining side from its highest level in 1917 to its lowest level in 1960. Exclusion of the ill-defined group, however, results in a trend in which an increase in activity rate is observable only between 1907 and 1917.

The activity rate of males showed an increase during the 1907-1917, 1927-1937 and 1937-1947 intercensal periods and a decline in the other two periods. The exclusion of the ill-defined group gives a trend with a continuous increase during the first three periods followed by decreases during the last two. For females, the deduction of the ill-defined group supports the continuous decline of their activity rate since 1917, following the increase between 1907 and 1917.

TABLE 3.3. CRUDE AND REFINED ACTIVITY RATES BY SEX, U.A.R., 1907-1960.

Year	Males		Females		Both Sexes	
	Inc. ill-defined	Ex. ill-defined	Inc. ill-defined	Ex. ill-defined	Inc. ill-defined	Ex. ill-defined
			A. Crude Activity Rate			
1907	59.3	59.3	3.1	3.1	31.3	31.3
1917	67.9	62.4	13.4	12.0	40.7	37.3
1927	64.1	63.9	9.6	9.6	36.7	36.6
1937	65.1	65.1	7.9	7.8	36.5	36.5
1947	66.5	62.8	7.9	7.8	36.9	35.0
1960	55.2	54.8	4.8	4.8	30.1	30.0
			B. Refined Activity Rate			
1907	70.0	70.0	3.7	3.6	37.2	37.1
1917	78.5	72.2	15.7	14.0	47.2	43.2
1927	74.6	74.4	11.2	11.2	42.8	42.7
1937	74.6	74.6	9.1	9.1	42.1	42.0
1947	76.9	72.7	9.1	9.0	42.7	40.5
1960	65.8	65.4	5.7	5.7	35.8	35.6

Levels and trends of the refined activity rate, defined as the percentage of the working age population in the labor force, including and excluding the ill-defined group are also given in Table 3.3. While the levels of refined rates are, by definition, higher than those of crude rates, their trends are similar.

In summary, when the effects of variation in the special categories mentioned above are taken into account, it is fair to conclude that since 1937 the male activity rate has been declining and that its changes in earlier periods were slight. The trend of the female activity rate is difficult to determine, although its real level may have been higher than the level implied in the recorded data (Section 3.5).

3.2.2. Levels and Trends by Age and Sex:

Participation in economic activity is unevenly distributed among different sex-age groups. In fact, the proportion of active persons of

a given age, i.e., the age-specific activity rate, varies from zero in some age groups to nearly 100 percent in others.

Figure 3.2 presents, in a simple way, the relative contribution to the labor force by each sex-age group for 1960. It shows the marked predominance of males in the labor force, especially those in adult ages, 15 years and over. It also provides an idea about the close relationship between the age structure of the male labor force and that of the male population in working ages, which results from the fact that almost all adult males are usually in the labor force.

Age patterns of activity for Egyptian males and females are charted in Figure 3.3 for census years between 1917 and 1960.[1] These patterns show, in general, a certain degree of similarity. For males, the rates are lowest at young ages, increase rapidly during adulthood, reach a maximum, and then decline first slowly and faster at older ages. The rates for females increase at ages in the teens, decline in the twenties, increase in the thirties and forties, and finally decline again at old ages.

The age-specific activity rates for Egyptian males are significantly higher than the averages of industrialized and semi-industrialized countries both around 1950 and 1960. The female rates, on the other hand, are among the lowest.[2]

The trends of activity rates by age given in Table 3.4 and portrayed, for selected age groups, in Figure 3.4 provide some more facts which

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[1] See Appendix D, Table D.7.

[2] See J.L. Sadie, "Demographic Aspects of Labor Supply and Employment," United Nations, World Population Conference, 1965 (Background Paper: A.5/19/E/484), p. 17; United Nations, Demographic Aspects of Manpower..., p. 12 and Appendix Table A.2.

FIGURE 3.2 POPULATION AND LABOR FORCE BY AGE AND SEX, UAR, 1960

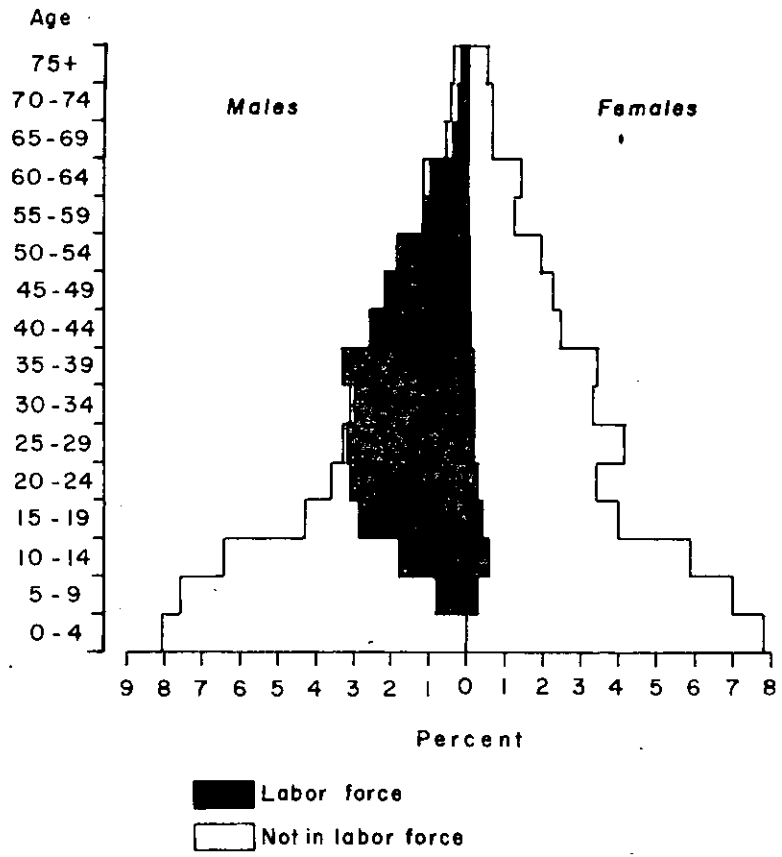

FIGURE 3.3 ACTIVITY RATES BY AGE AND SEX, UAR, 1917 - 1960

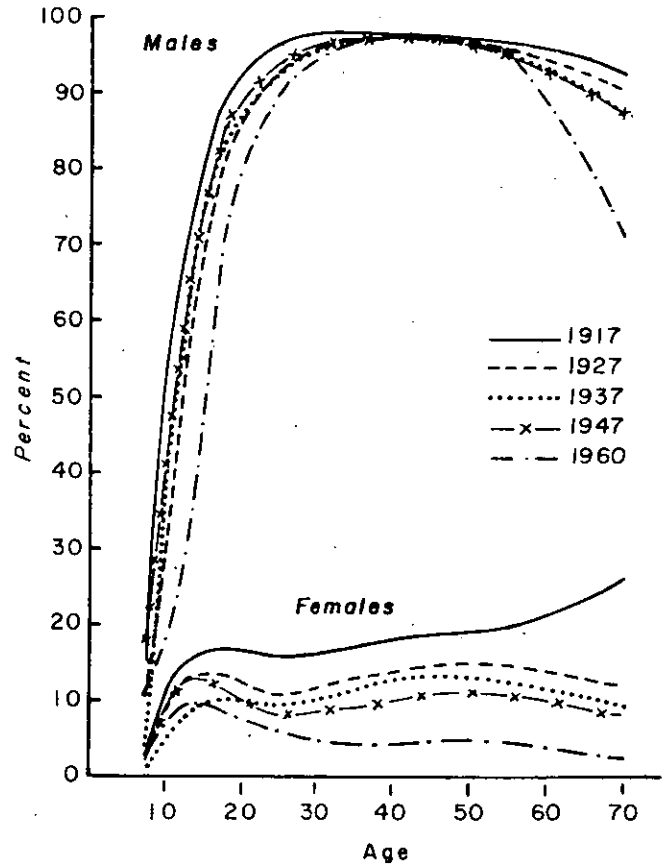

TABLE 3.4. INTERCENSAL CHANGES IN AGE-SEX SPECIFIC ACTIVITY RATES, (PERCENTAGE POINTS), U.A.R., 1917-1960.

Age/Year	1917/27	1927/37	1937/47	1947/60
		Males		
5-9	- 4.4	- 6.6	13.5	- 7.4
10-14	-15.4	10.3	- 8.2	-26.8
15-19	- 8.7	2.4	3.4	-17.3
20-29	- 2.0	- .9	.9	- 3.1
30-39	- .9	.4	...	.4
40-49	- .6	.4	.1	...
50-59	- 1.2	.3	- .2	- .4
60+	- 1.9	- 3.4	...	-15.6
Total 5+	- 3.9	.1	2.3	-11.2
15+	- 2.6	.4	.4	- 4.6
Crude activity rate	- 3.8	1.0	1.4	-11.3
		Females		
5-9	.1	- 1.9	.9	1.6
10-14	- 2.8	- 4.6	4.8	- 3.0
15-19	- 3.6	- 3.1	2.0	- 3.4
20-29	- 5.6	- .7	- 1.4	- 2.3
30-39	- 4.7	- 1.0	- 2.3	- 4.7
40-49	- 4.0	- 1.6	- 2.6	- 5.7
50-59	- 5.0	- 2.3	- 1.9	- 6.5
60+	-13.5	- 3.1	- .6	- 6.3
Total 5+	- 4.5	- 2.1	...	- 3.4
15+	- 6.0	- 1.6	- 1.2	- 4.5
Crude activity rate	- 3.9	- 1.7	...	- 3.0
		Both Sexes		
5-9	- 2.1	- 4.3	7.3	- 2.8
10-14	- 9.6	3.2	- 3.2	-15.2
15-19	- 7.6	.1	1.8	-10.6
20-29	- 4.2	- .2	- .4	- 2.5
30-39	- 2.8	- .1	- 1.9	- 2.0
40-49	- 2.2	.1	- 1.8	- 2.5
50-59	- 4.0	.1	- 2.3	- 2.4
60+	- 9.0	- 3.5	- .5	- 9.7
Total 5+	- 4.4	- .8	.6	- 6.9
15+	- 4.7	- .1	- .9	- 4.3
Crude activity rate	- 4.0	- .2	.4	- 6.7

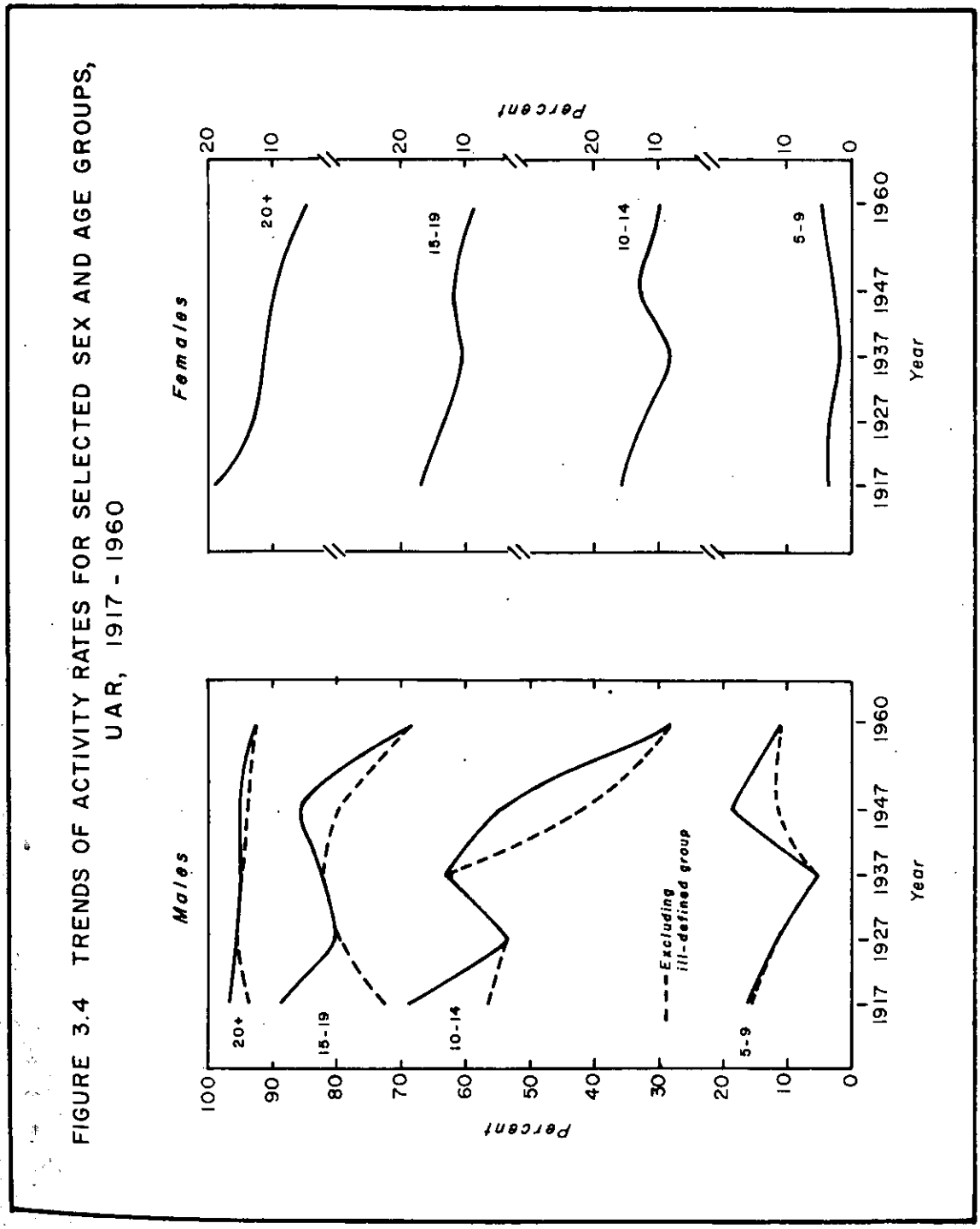

FIGURE 3.4 TRENDS OF ACTIVITY RATES FOR SELECTED SEX AND AGE GROUPS, U A R, 1917 - 1960

supplement the analysis in Section 3.1. Most important is the marked fluctuation of activity rates among young people.

The ranges of variation of the male activity rates are 11.0 and 40.2 percentage points for age groups 5-9 and 10-14 respectively. These ranges are wide in view of the relatively low levels of activity rates at those young age groups. Males 15-19 years old showed also a relatively wide range of variation (20.2 points). Though the ranges of variation of female rates in these young age groups are much smaller than those of males, they are quite significant in proportion to their extremely low level.

The trends of activity rates for young age groups are rather obscure; intercensal changes fluctuate between positive and negative values (Table 3.4). This fact may be seen from another angle by quantifying the contribution of young age groups to the crude activity rate (Table 3.5).[1] In the case of males, the total contribution of the three young

TABLE 3.5. CONTRIBUTIONS OF YOUNG AGE GROUPS TO THE CRUDE ACTIVITY RATE BY SEX, U.A.R., 1917-1960.

Age/Year	1917	1927	1937	1947	1960
			Males		
5-9	2.3	1.5	.7	2.4	1.7
10-14	8.6	6.5	8.2	6.7	3.6
15-19	8.5	7.7	7.4	9.0	5.8
Total (% points)	19.3	15.8	16.3	18.1	11.1
Total (% of crude activity rate)	28.4	24.6	25.1	27.3	20.2
			Females		
5-9	.5	.5	.3	.3	.6
10-14	1.6	1.3	.9	1.4	1.2
15-19	1.4	1.1	.8	1.2	.7
Total (% points)	3.5	2.9	1.9	2.9	2.5
Total (% of crude activity rate)	25.8	30.1	24.7	37.1	50.8

[1]The contribution of each age group to the crude activity rate is the product of the age-specific activity rate and the proportion of population in the given age group to the population of all ages.

age groups is relatively high for both 1917 and 1947. The ill-defined group accounts for a significant share of their total contribution; 3.5 percentage points in 1917 and 3.6 in 1947. Since the total contributions of the ill-defined group in all age groups to the crude activity rate are 5.5 and 3.6 percentage points for the two census years respectively, it is apparent that members of this group were highly concentrated in young ages, and more so in 1947 than in 1917.[1] The figures for males in 1937 are rather perplexing in that the contribution of the age group 5-9 is smaller and that of the group 10-14 is larger in 1937 than in any of the other census years.

For females, the total contribution of young age groups, as a percentage of the crude activity rate, shows a rising trend with the exception of 1937. The absolute value of the contribution, however, shows no clear trend. The effects of the ill-defined group are similar to those of males.

The trend of activity rates for persons 20 years of age and over is quite different. For both sexes, the rate declined continuously from 56.7 in 1917 to 47.7 in 1960. When the ill-defined group is subtracted, the same trend is maintained with a slightly smaller decline: from 55.1 in 1917 to 47.6 in 1960.

The rate for males 20 and over shows a similar trend with the exception of a relatively small increase between 1937 and 1947; but when the ill-defined group is excluded, an increase appears between 1917 and 1927, followed by a consistent decline up to 1960. The trend for

[1] The effects of the ill-defined group on the shares of young age groups in crude activity rate are relatively insignificant for other census years.

females 20 years of age and over, on the other hand, shows a steady decline between 1917 and 1960 with or without the ill-defined group.

The 1907 census data are not included in the analysis because the classification of economically active population by age has never been published for that year. If it is assumed that the contribution of males 20 years of age and over to the 1907 crude activity rate was equal to the average of their contributions for other census years, this assumption results in a contribution of 11.5 percentage points of young male age groups. This is an extremely small contribution compared with other census years. A serious underrepresentation of the young male age groups in the 1907 labor force enumeration is suggested, which possibly explains in part the low overall crude activity rate in 1907. The alternative, which is less likely, is that the contribution of males 20 years of age and over might have been less than assumed above.

In conclusion, the age-specific activity rates of Egyptian males (which have maintained a similar general pattern throughout the whole period) are higher than those prevailing in present-day developed countries. A declining trend of the rates for males in the youngest and oldest groups is clearly marked in the later periods; the changes, if any, in earlier periods may have been insignificant. There is no clear evidence of a definite trend in the female activity rates by age groups. Although the recorded data indicate a continuous decline of the female rates in ages 20 years and over, additional information is needed for interpretation of this decline.

3.2.3. Participation in Economic Activity by Regions and Governorates:

Crude and refined activity rates are given in Table 3.6 for the major

regions of the country by sex for census years between 1907 and 1960. The crude activity rate for both sexes together in 1960 was lowest in the urban governorates of Lower Egypt (28.3) and the Frontier Districts (28.4), near the national average in the non-urban governorates of Lower Egypt (30.4), and highest in Upper Egypt (31.0). These differences did not hold during the whole period 1907-1960. The rate for the urban governorates was below the national average at each census since 1937 and 1917, but above average in 1907 and 1927. The non-urban governorates of Lower Egypt showed rates above the national average from 1917 to 1947 but below average in 1907. Upper Egypt showed a relatively high rate only in 1960, being below the national average at each of the earlier censuses. The rate for the Frontier Districts followed a decreasing trend from a very high level in 1907 down to a level well below the national average in 1960. The exceptionally high activity rates for the Frontier Districts in 1907 was the result of including all the estimated number of nomads as economically active regardless of their age. Though the number of nomads is insignificant for the country as a whole, it is proportionately important in the Frontier Districts, where the population size is very small.

The extremely low and relatively stable female activity rate in Upper Egypt is a major factor depressing the region's crude activity rate. Conversely for the non-urban governorates of Lower Egypt, high overall rates in some years are accounted for in part by relatively high female rates. A substantial part of the fluctuations over time in the number and proportion of economically active females occurred in this group of governorates. The urban governorates in Lower Egypt

TABLE 3.6. CRUDE AND REFINED ACTIVITY RATES BY REGION AND SEX, U.A.R., 1907-1960.

Region/Year	1907	1917	1927	1937	1947	1960
		A. Crude Activity Rate				
			Males			
Lower Egypt	59.6	68.2	n.a.	63.9	65.6	53.2
Urban Gov.'s	64.8	65.2	n.a.	57.5	63.2	49.1
Non-urban Gov.'s	58.5	68.9	n.a.	66.0	66.7	55.3
Upper Egypt	58.4	67.5	n.a.	66.7	67.8	58.8
Frontier Districts	80.9	70.4	n.a.	65.8	66.3	52.8
U.A.R.	59.3	67.9	64.1	65.1	66.5	55.2
			Females			
Lower Egypt	3.3	16.3	n.a.	11.1	10.4	5.8
Urban Gov.'s	5.6	10.7	n.a.	6.8	6.7	6.6
Non-urban Gov.'s	2.7	17.5	n.a.	12.4	11.9	5.4
Upper Egypt	1.6	9.3	n.a.	3.1	3.9	3.2
Frontier Districts	55.1	12.6	n.a.	4.9	2.4	2.3
U.A.R.	3.1	13.4	9.6	7.9	7.9	4.8
			Both Sexes			
Lower Egypt	31.5	42.2	38.9	37.3	37.7	29.7
Urban Gov.'s	37.0	38.9	37.5	32.8	35.5	28.3
Non-urban Gov.'s	30.4	42.9	39.3	38.7	38.7	30.4
Upper Egypt	30.1	38.6	33.4	35.3	35.5	31.0
Frontier Districts	68.2	42.4	39.8	38.1	36.2	28.4
U.A.R.	31.3	40.7	36.7	36.5	36.9	30.1
		B. Refined Activity Rate				
			Males			
Lower Egypt	70.4	78.9	n.a.	73.6	76.5	66.0
Urban Gov.'s	73.9	74.4	n.a.	66.0	73.5	60.6
Non-urban Gov.'s	69.6	79.9	n.a.	76.1	77.9	68.8
Upper Egypt	69.0	77.9	n.a.	76.1	77.6	72.6
Frontier Districts	86.4	78.9	n.a.	74.3	76.4	64.2
U.A.R.	70.0	78.5	74.6	74.6	76.9	65.8
			Females			
Lower Egypt	3.7	18.9	n.a.	12.9	12.1	7.1
Urban Gov.'s	6.6	12.4	n.a.	7.9	7.8	8.1
Non-urban Gov.'s	3.2	20.3	n.a.	14.3	13.8	6.7
Upper Egypt	2.0	10.9	n.a.	3.5	4.5	3.9
Frontier Districts	59.2	14.3	n.a.	5.7	2.8	2.9
U.A.R.	3.7	15.7	11.2	9.1	9.1	5.7
			Both Sexes			
Lower Egypt	37.4	48.9	45.6	43.0	44.0	36.7
Urban Gov.'s	42.7	44.6	43.4	37.8	41.4	34.9
Non-urban Gov.'s	36.3	49.9	46.2	44.7	45.0	37.6
Upper Egypt	35.8	44.8	38.8	40.6	40.7	38.1
Frontier Districts	73.0	47.9	46.7	43.6	42.3	34.7
U.A.R.	37.2	47.2	42.8	42.1	42.7	35.8

showed the most stable female activity rate above the national average in 1907 and 1960, and below average in other years.[1]

The differences in female activity rates, however, do not explain all the variations in crude activity rates among regions. The male activity rate in Upper Egypt, for instance, was the highest between 1937 and 1960. The urban governorates had the lowest male activity rate in all available census years but 1907, when the rate was substantially higher in the urban governorates than in all other parts of Lower and Upper Egypt. This latter fact suggests that the possible serious underrepresentation of the male young age groups in 1907, referred to above, was essentially in non-urban governorates.

Activity rates vary less among governorates within the same region than between regions, with the exception of a few governorates influenced by urban culture such as Damietta and Giza. This is particularly true for males.

On the whole, it can be said that the trends of national activity rates do not reflect changes localized in particular regions, but are general throughout the country. The intercensal changes of activity rates for either sex by region have always been in the same direction as the change in the country as a whole. The amount of change, however, varied to some extent among regions.

A summary of crude activity rates by governorates and sex is provided by Table 3.7. The governorates' activity rates for males and both sexes have always been within three or four class intervals.

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1. When the ill-defined group is excluded in 1917 and 1947, the female activity rates are 8.3 and 6.5 respectively for this group of governorates.

TABLE 3.7. FREQUENCY DISTRIBUTION OF GOVERNORATE CRUDE ACTIVITY RATES BY SEX, U.A.R., 1907-1960.

Crude Activity Rate	1907	1917	1927	1937	1947	1960
			Males			
45.0-49.9	-	-	n.a.	-	-	4
50.0-54.9	1	1	n.a.	1	-	6
55.0-59.9	(10)	3	n.a.	5	5	(7)
60.0-64.9	5	(10)	n.a.	1	(9)	2
65.0-69.9	2	4	n.a.	(12)	5	-
70.0-74.9	-	1	n.a.	-	-	-
TOTAL	18	19	n.a.	19	19	19
			Females			
Under 5.0	(16)	-	n.a.	9	7	(13)
5.0- 9.9	2	(13)	n.a.	(6)	(8)	6
10.0-14.9	-	3	n.a.	3	4	-
15.0-19.9	-	2	n.a.	1	-	-
20.0-24.9	-	1	n.a.	-	-	-
TOTAL	18	19	n.a.	19	19	19
			Both Sexes			
25.0-29.9	6	-	1	1	1	8
30.0-34.9	(8)	7	5	7	10	(11)
35.0-39.9	4	(9)	(12)	(10)	(8)	-
40.0-44.9	-	2	1	1	-	-
45.0-49.9	-	1	-	-	-	-
TOTAL	18	19	19	19	19	19

Note: The ill-defined group was excluded in 1917 and 1947. Classes in which the national rate falls are in parenthesis. In 1907, Damietta was a part of another governorate.

Regardless of the level, male activity rates by governorate showed a trend of convergence toward the national rate between 1907 and 1947. The number of governorates with male rates within 10 percentage points of the national rate increased from 16 in 1907 to 19 in 1947. The divergence from this trend in 1960 was due in large part to the substantial decline in activity rates of urban governorates during the last intercensal period.

For females, there was no clear trend in the rates by governorate of either convergence to or divergence from the national rate during the 1907-1960 period. Besides, there was a wide variation of female rates among individual governorates relative to the overall low female activity rate.[1]

The regional differences in activity rates may be brought into clearer focus by comparing regional rates by sex-age groups. The data for 1960 show that the low male activity rate for urban governorates as of that year was due mainly to lower rates among the youngest and oldest age groups compared with the rates for other regions. For example, the activity rates for males below 15 years were about 7.1 in urban governorates, 24.1 in non-urban governorates of Lower Egypt, and 27.4 in Upper Egypt. For males between 15 and 19 years old, the activity rate in urban governorates (50.9) was about 20 percentage points below that of non-urban governorates of Lower Egypt, and 25 points below that of Upper Egypt. At middle ages, the differences are less significant; they widen again at old ages where, for instance, the activity rate for males 60 years old and above in the urban governorates was 20 percentage points below the level of the other two major regions. On the other hand, the regional differences of female rates by age are to some extent more important at the middle ages than the young and the old.[2]

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[1] More details may be found in Appendix D, Table D.12. For comparison with the results of a historical study on the United States data, see Ann R. Miller, "Labor Force Trends and Differentials," in S. Kuznets et al., Population Redistribution and Economic Growth, United States, 1870-1950: Analysis of Economic Change, Vol. II (Philadelphia: The American Philosophical Society, 1960), pp. 16-19.

[2] For more details by governorate, see Appendix D, Table D.13.

3.3. Regional Distribution of Labor Force

Of course, the crude activity rate for the country as a whole is simply the weighted average of regional rates. In view of this relationship, Table 3.8 gives the shares of each region in the country's crude activity rate by sex for the six census years.

The share of each region and its trend are not only the result of the level of activity in that region and its changes over time; but also reflect the percent share of the region in the total population and its changes. The changing regional shares in the total population of the country are, in turn, the result of the net balance of migration (and in some cases, changes of regional boundaries) and any regional differences in rates of natural increase.

The process of redistribution of the labor force is reflected in Part B of Table 3.8, where the regional shares are expressed as percentages of the national crude activity rate - i.e., in effect, the regional percentage shares of the total labor force. An outstanding feature is the continuously increasing share of urban governorates between 1917 and 1960 (with the exception of a slight decline between 1927 and 1937) despite their lower activity rates. In other words, the higher rates of population growth in the major urban centers, during this period, more than compensated for their lower activity rates. The apparent contrary trend in the period 1907-1917 probably results from the distortion of the 1907 census data mentioned above. The increasing share of urban governorates is balanced by decreasing shares of non-urban governorates in both Lower and Upper Egypt. Internal migration played a major role in this process of regional redistribution of economically active population.

TABLE 3.8. SHARES IN CRUDE ACTIVITY RATE BY REGION AND SEX, U.A.R., 1907-1960.

	1907	1917	1927	1937	1947	1960
			A. Percentage Points			
Lower Egypt	18.3	23.1	23.0	22.0	22.9	18.9
Males	17.4	18.8	n.a.	18.7	18.8	17.1
Females	.9	4.4	n.a.	3.3	3.2	1.8
Urban Gov.'s	3.6	3.8	4.8	4.5	5.8	6.1
Males	3.4	3.4	n.a.	4.1	5.3	5.4
Females	.3	.4	n.a.	.5	.6	.7
Non-Urban Gov.'s	14.7	19.3	18.2	17.5	16.3	12.8
Males	14.0	15.4	n.a.	14.6	13.7	11.7
Females	.6	4.0	n.a.	2.9	2.6	1.3
Upper Egypt	12.3	14.0	13.5	14.2	12.6	11.0
Males	12.0	12.4	n.a.	13.6	11.9	10.5
Females	.3	1.6	n.a.	.6	.7	.6
Frontier Districts	.7	.1	.3	.3	.3	.2
Males	.4	.1	n.a.	.3	.3	.2
Females	.3	...	n.a.	...	...	...
			B. Percent of Crude Activity Rate			
Lower Egypt	58.4	62.1	62.6	60.3	63.3	62.6
Males	55.5	50.3	n.a.	51.2	54.2	56.6
Females	2.9	11.8	n.a.	9.1	9.1	6.1
Urban Gov.'s	11.6	10.2	13.0	12.5	16.7	20.2
Males	10.7	9.1	n.a.	11.2	15.1	17.9
Females	.8	1.2	n.a.	1.3	1.6	2.3
Non-Urban Gov.'s	46.8	51.8	49.6	47.8	46.6	42.4
Males	44.8	41.2	n.a.	40.0	39.1	38.7
Females	2.1	10.6	n.a.	7.8	7.5	3.8
Upper Egypt	39.3	37.6	36.7	39.0	36.0	36.6
Males	38.3	33.3	n.a.	37.3	33.9	34.7
Females	1.1	4.3	n.a.	1.7	2.1	1.9
Frontier Districts	2.3	.8	.7	.7	.8	.8
Males	1.4	.3	n.a.	.7	.8	.7
Females	.9	.1	n.a.	...	...	...

3.4. Factors Affecting Labor Force Dimensions

It has rightly been said that:

> "The purpose of analyzing census data on the labor force is not merely to measure its size, composition and growth but also to gain knowledge of the factors which enter into the determination of these dimensions. Such knowledge is useful in dealing with many questions of policy and formulation of action programmes in economic and social fields. In particular, it provides a basis for labor force projections, which occupy an important place in the statistical apparatus of planning for economic development."[1]

In such a spirit, this section presents a discussion of factors affecting the dimensions of the labor force in Egypt. The factors included below are classified, to some extent arbitrarily, into three categories: demographic, economic and others. The relationships between these factors and labor force dimensions are discussed theoretically and, so far as possible, empirically.

3.4.1. Demographic Factors:

In the long run, it is an obvious fact that the most important factors affecting the size of the labor force are those associated with the size and structure of the population. In Section 3.1.2, it has been shown that population growth dominated all other factors as a determinant of labor force growth in Egypt between 1907 and 1960. However, there are other demographic factors whose influence on labor force dimensions cannot be ignored.

Age and Sex Structure: Since rates of participation in income-producing activities differ between sex and age groups, the sex-age structure of the population is an important determinant of the level of crude activity rate. Other things being equal, the higher the proportion of males and/or the higher the proportion of persons in the working-age

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[1] Durand and Miller, Methods of Analyzing Census Data on Economic Activities..., p. 40.

brackets, the higher the crude activity rate. Table 3.9 provides estimates of the effects of changes in the age structure of the total population (age component) on the crude activity rate as against the effects of changes in age specific activity rates due to all other factors (activity component) for each intercensal period since 1917 by sex.[1]

TABLE 3.9. COMPONENTS OF INTERCENSAL CHANGES IN CRUDE ACTIVITY RATE BY SEX, U.A.R., 1917-1960.

Period/ component	Age component	Activity component	Total change	Age component	Activity component	Total change
	Percentage Points			Percent of Initial Rate		
			Males			
1917/27	+ .2	-4.0	- 3.8	+ .4	- 5.9	- 5.5
1927/37	+ .5	+ .4	+ .9	+ .8	+ .6	+ 1.4
1937/47	+ .2	+1.2	+ 1.5	+ .3	+ 1.9	+ 2.2
1947/60	-4.1	-7.3	-11.4	-6.1	-11.0	-17.1
			Females			
1917/27	...	-3.9	- 3.9	- .1	-28.7	-28.8
1927/37	+ .1	-1.8	- 1.7	+ .6	-17.5	-16.9
1937/47	+ .2	- .2	...	+1.9	- 1.9	...
1947/60	- .2	-2.8	- 3.0	-2.9	-35.6	-38.5

The results show that the effects of changes in the age structure were, with one insignificant exception for females, to increase the crude activity rate between 1917 and 1947 and to decrease it between 1947 and 1960. The positive effects during the first three intercensal periods were small, however, reflecting the relative stability of the age structure of the population during these periods as mentioned earlier. The negative effects during the last period were much more significant. With the substantial decline in mortality, and in particular in infant mortality, coupled with a relatively stable level of fertility, the net result was to

[1] For details of methodology, see Appendix C.

change the age structure in a direction tending to reduce the crude activity rate.[1]

The effects of factors other than age structure as reflected by the changes in age-specific activity rates were, in most of the intercensal periods, dominant in the case of females. For males, their effects were significantly positive during the 1937/1947 intercensal period and negative during both the 1917/1927 and 1947/1960 periods.

Marital Status and Family Responsibilities: The probability of a woman's participation in the labor force is closely associated with her marital status. Other things being equal, a single, divorced or widowed women is freer and, perhaps more likely to have to seek employment in income-producing activities than a married woman.[2] Aside from her role as a wife, the entry of a married woman into the labor force may also be inhibited by the responsibilities of motherhood. The extent of these responsibilities depends on the number and ages of children under her care.

Egyptian data show differences in female activity rates by marital status in the direction stated above. Of married women in 1960, less than one-half of one percent (0.3) were in the labor force, while the corresponding percentages of single, divorced and widowed females were 14.8, 14.5 and 6.6 percent respectively. (These rates are for females 16 years of age and over. Unfortunately, data for more refined age groups are not available.) In 1947, the only other census that includes the classification of the labor force by marital status, the direction

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[1] See Section 2.2 and 2.3 for more details.

[2] See data for a number of countries in United Nations, Demographic Aspects of Manpower..., Chapter VI and Appendix Tables A-11, A-12, and A-13.

of the differences of activity rates by marital status was similar although the levels were different.

The declining trend of the female activity rate cannot be explained by changes in the composition of the female population by marital status, since there was a decrease in the proportion of married females. The proportion of married women in the female population aged 15-49 declined continuously from 794 per 1,000 in 1907 to 704 per 1,000 in 1947, followed by an increase in 1960 (729).[1] This trend is observable, with some exceptions, in most age groups. It is particularly pronounced in young age groups (below age 20) since the passage of a law in 1923 prohibiting the marriage of girls below 16 years old.[2]

Cross-sectionally, the variation in female activity rates by governorate at a particular census year is associated to some extent with the differences in composition of the female population by marital status. When the female activity rate is correlated with the overall proportion of married females, the product-moment correlation coefficients are -.51, -.47 and -.32 for 1937, 1947 and 1960 respectively.[3]

In short, Egyptian data indicate that marital status has some influence on the female activity rate, both on account of the different rates for marital status groups and the cross-sectional variations by geographical areas. Regarding the influence of motherhood responsibilities, there are no available data directly bearing on the question.

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[1] The 1960 proportion excludes foreigners from both the numerator and the denominator.

[2] For census years before 1937, see Cleland, The Population Problem..., Chapter 4. For later years, the discussion above is based on data from the corresponding population censuses.

[3] For males, the correlation coefficients mentioned in this section are statistically significant at least at the 5 percent level. For females, most of the coefficients are not statistically significant, but some of their patterns are nevertheless meaningful.

However, the decline in infant mortality in recent decades (Section 2.2.1) might have had some depressive effect on female activity rates. For the changes over time in the extent of female participation in the labor force, other factors, some of which are considered below, seem to have overshadowed the shifts in the composition of females by marital status and motherhood responsibilities.

Migration and Urbanization: It has been repeatedly stated that migration is closely related to economic opportunities.[1] In addition, it has been found that, in most cases, "there is an excess of adolescents and young adults among migrants, particularly migrants from rural areas to towns, compared with the non-migrating or the general population."[2] Thus, a related assumption would be that migrants are more likely to be in the labor force than nonmigrants.

Unfortunately, data for migrants and nonmigrants by labor force status are not available. Thus, the analyst of Egyptian data is left with indirect methods for studying the relationship between internal migration and labor force dimensions. It may be recalled that external migration has been too small to have a significant effect on labor force dimensions in the country (Section 2.2.3.).

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[1] Among others, see Everett S. Lee, "A Theory of Migration," Demography, Vol. III, No. 1, 1966, pp. 47-57; R.A. Easterlin, Population, Labor Force and Long Swings in Economic Growth, (New York: National Bureau of Economic Research, 1968), Part III; B. Thomas, The Economics of International Migration (London: Macmillan, 1958); and references therein.

[2] D. S. Thomas, Research Memorandum on Migration Differentials (New York: Social Science Research Council, Bulletin 43, 1938), p. 9.

One way of studying this relationship is through measuring the degree of association between the activity rate and the proportion of net lifetime migration to the population by governorate. The correlation coefficient is -.72 for males and +.30 for females as of the census year 1960.

The negative relationship for males is contrary to the presumption of a positive one between migration and participation in the labor force.[1] The explanation in the present case lies in the close association between internal migration and urbanization (Section 2.4.). Urbanization, in turn, tends to influence the extent of participation in the labor force through other factors associated with it such as organization and industrial structure of the economy, education, etc. The effects of such factors, to be discussed below, counteract each other. The net result of all factors associated with urbanization, in Egypt, is a dampening effect on the activity rate, at least of males. In 1960, the male activity rate was 49.0 in all urban areas and 59.0 in rural areas. In contrast, the corresponding rates for females were 5.8 and 4.3 respectively. The correlation coefficients, for the same year, between percent urban and crude activity rate by governorate were -.83 for males and +.26 for females.

Though data for all urban areas are not available before 1960, the data for urban governorates give a reasonable approximation to rural/urban differentials for earlier census years. As indicated in

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[1] With data directly bearing on age specific activity rates for interstate migrants and nonmigrants in the United States, a similar result has been found. See A.R. Miller, "Migration Differentials in Labor Force Participation: United States, 1960", Demography, Vol. III, No. 1, 1966, pp. 58-67.

Section 3.2.3., lower than national male activity rates have prevailed in urban governorates since 1917. For females, higher than national rates are found in urban governorates for 1907 and 1960 only. Thus, the positive association in 1960 referred to above between the female activity rate on the one hand and urbanization and migration, on the other hand, may not be genuine. It could be a consequence of other factors that resulted in a sharp decline in female activity rates in many non-urban governorates between 1947 and 1960.[1]

Even for males, the variations in their national activity rate cannot be explained by urbanization in view of the continuous growth of urban population throughout the 1907-1960 period.

3.4.2. Economic Factors:

Aside from the so-called "marginal" workers, the bulk of the economically active population is relatively stable in proportion to the size of the population. The extent of participation of the marginal groups, on the other hand, is affected by economic conditions such as the level of earnings, family income, volume and composition of employment opportunities, etc.; among other factors. The theoretical arguments and indications on the Egyptian case in this respect are summarized below.[2]

Theoretical Background: It should be noted at the outset that the way in which economic factors affect labor force dimensions is a debated issue in the literature on economic theory, and no general consensus exists in this regard.

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[1] For differences by age, see Appendix D, Table D.12.

[2] For more details on the theoretical arguments, see P. Douglas, The Theory of Wages (New York: Augustus M. Kelly, Reprints of Economic Classics, 1964), pp. 269-272; J. Durand, The Labor Force in the United States..., Chapter 4; J. Mincer, "Labor Force: Participation," International Encyclopedia of the Social Sciences, 8, pp. 474-481; United Nations, Department of Social Affairs, Determinants and Consequences of Population Trends (ST/SOA/Ser.A-17, New York, 1953), pp. 203-205, and the references cited therein.

Regarding the relationship between the changes in real wages and the propensity to be employed, some writers contend that it is positive; because an increase in real earnings attracts additional workers and induces employed persons to work for longer period. Moreover, proponents of this theory argue that an increase in real wages may, in the long run, increase the labor supply through a decline in the death rate and perhaps a rise in birth rate as well as through migration.

On the contrary, according to another theory, labor supply is negatively associated with real wages. This theory is supported by the argument that during periods of rising real wages, the family can maintain its desired level of living through the employment of a smaller number of its members. Therefore, children stay longer in school and wives and old persons leave the labor force.

The concept of "additional workers" is in accordance with this latter theory. According to this concept, persons who are normally dependents are forced, during depression, to look for employment in order to compensate for the loss of earnings on the part of the principal breadwinners in the family.

While there is an apparent contradiction between the two theories, each has its logical grounds and the major difficulty is to determine the net effects of rising real wages. Mincer, conceiving the problem as a choice in allocating time between production (work) and consumption (leisure) within the framework of standard demand analysis, presents the question in the following terms:

> "a rise in price of a good relative to prices of all other goods leads to a decrease in its consumption - that is a 'substitution effect' in favor of other goods; a rise in income normally (excepting 'inferior' goods) leads to an increase in consumption - the 'income effect'. Since the price of leisure is the foregone

> wage, a rise in the wage rate makes leisure more expensive, inducing the worker to work more; in effect, to 'purchase' less leisure. At the same time, however, an increase in the wage rate increases income, which leads to increased 'purchases' of leisure, that is, to decreased hours of work. Which of the effects triumphs cannot be determined a priori."[1]

The Egyptian Case: Limitations of data have hindered empirical research and, in many cases, has forced specialists to rely on indirect information for assessing the influences of economic factors on labor force dimensions. "Statistical analyses of the effect of income and employment levels on the size of economically active population have not been numerous and those which have been attempted have not established clear relationships."[2]

Egypt is no exception with regard to the lack of necessary data for a comprehensive analysis. The following are only rough indications on the effects of economic factors on activity rates in this country.

First: The cross-sectional relationship between the level of wages and the extent of participation in the labor force is negative when the dichotomy of urban vs. non-urban governorates is considered. In fact, wage rates are significantly higher, while activity rates are significantly lower, in urban governorates than in non-urban governorates of Lower and Upper Egypt.[3]

Second: The association between activity rates and the composition of demand for labor, reflected by the industrial structure of the labor

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[1] Mincer, "Labor Force: Participation", p. 475. See also Durand, The Labor Force in the United States..., pp. 87-88.

[2] United Nations, Determinants and Consequences..., p. 205.

[3] U.A.R., Statistical Yearbook, 1964, pp. 139-142. Wage rates in agriculture are not included. However, it has been estimated that wage rates in manufacturing have been twice or more the level of wages in agriculture between 1938 and 1959. See Mead, Growth and Structural Change..., p. 116.

force, seems to have a definite direction and significant strength, particularly for males. When the percentage of the male labor force in agriculture is correlated with the male activity rate by governorate, the correlation coefficients are +.88, +.83 and +.89 for 1937, 1947 and 1960 respectively. For females, the coefficients are also positive for 1937 (+.51) and 1947 (+.58), but negative and insignificant for 1960 (-.18). The status structure is also associated with the activity rate: the correlation coefficients between the percentage of unpaid family workers and the level of the activity rate are +.66 (1947) and +.71 (1960) for males, and +.66 and -.38 for females as of the same two census years.

Third: The indications given above represent the associations between the variables at a point in time and do not necessarily reflect the relationships between changes in these variables over time. Regarding the changes of per capita income in Egypt, Hansen and Marzouk say:

> "from the beginning of the century... until the middle of the fifties, no significant change in per capita income took place. The stagnation was partly due to the long-term fall in the country's terms of trade; but even if this is allowed for the increase in per capita income over forty-two years from 1913 to 1955, would only have been some 5 percent, i.e., an annual increase of about 0.1 percent. From the time of the Suez War, on the other hand, we find an annual increase in per capita income of about 4 percent. It would thus seem that 1956/57, by this yardstick, represents the demarcation line between stagnation and development."[1]

This trend is in no clear manner associated with the trend of activity rates described in Section 3.2. However, when the ill-defined group is excluded, the association seems to have a negative direction since 1937 for all age groups taken together, and since 1927 for 20 years of age and over. During the 1937-1960 period, there was an increase in

[1] B. Hansen and G. A. Marzouk, Development and Economic Policy in the U.A.R. (Egypt) (Amsterdam: North-Holland Publishing Company, 1965) pp. 4-5.

urbanization and a marked decline in the share of agriculture in the total labor force which perhaps, along with other factors, supported the hesitant increase of per capita income in bringing about the decline of the activity rate during this period.

The positive relationship between the activity rate and the share of agriculture in the labor force is plausible because agriculture offers opportunities for young and old persons to engage in simple kinds of work and because the poor economic conditions in rural areas inhibit long periods of schooling for children and retirement for the aged. The positive relationship between the activity rate and the percentage of unpaid family workers can be viewed as a consequence of the nature of family enterprise, in which family members can participate without the kinds of rigid regulation that exist in non-family enterprise. These two relationships are closely linked in Egypt, where agriculture is based to a great extent on family enterprise. In the future, therefore, decline in the relative importance of agriculture and of family enterprise in the economy may bring about further declines in activity rates, particularly of males. In the case of females, the negative correlation observed in some census years may be attributed to the inconsistencies in the data.

The 1937 Census showed a higher activity rate than that of 1927, most of the increase being for males in age groups 10-14 and 15-19. It may be tempting to explain these developments in the framework of the "additional worker" concept. However, the decline in all age-specific female activity rates and in the rates of extreme age groups for males (5-9 and 60+) throws some doubts on the validity of such explanation. It is difficult to rely on the possible influences of World Wars in explaining the increases in activity rates in 1917 and 1947 in view of

an arbitrary assumption in adjusting the data for 1917 and the characteristics of the ill-defined group in 1947 discussed below.

3.4.3. Traditionalism and Underreporting: In addition to the youthful age structure of the population, the overall crude activity rate in the Egyptian population is a result of the low level of the female activity rate. The latter is, in turn, affected by the classical social norms still prevailing in the country, which according to the proper role of females is considered to be in domestic work at home. To the knowledge of the writer, these norms have no roots in any of the major religious doctrines adhered to by the Egyptian people.

Neither the spread of modern appliances nor the development of commercial industries taking over domestic work from the home, which have freed many women in developed countries to seek paid employment, has materialized in a significant degree in Egypt. The lack of such developments has supported the continuation of women's traditional role. It is true that the liberalization of attitudes toward the role of females promoted by women's movements and by the rising educational level of the people along with somewhat better appliances in recent decades are common knowledge in Egypt. Yet their influence can hardly be seen in a declining trend of females' participation in the labor force.

It is likely that underreporting of females in the labor force is an important factor in the low level of their recorded participation rate. In fact, any observer may see wives and daughters, particularly in rural areas, helping their husbands or fathers in various kinds of agricultural work such as picking cotton, watching cattle in the field, etc. That this work is not adequately reported may be due to the traditional line of thinking about women's role and/or to discounting of the importance

of their part in the work of the farm. On the assumption of similar female activity rates in rural areas in Egypt and in other North-African Arab countries, the overall female activity rate has been estimated as 23 instead of 4.8 for the 1960 census year.[1]

Coverage of Certain Groups: The possible differences in the extent of the coverage of economically active persons among the young age groups in different census years and the effects of these differences along with those related to the ill-defined group on activity rates have been referred to frequently in earlier sections. One further comment is worth making here. In 1917, the census authorities included as economically active in agriculture all women and children eight years of age and over who were not attending school and who belonged to peasants' families owning 10 feddans or less, unless they definitely declared an inactive status. Arbitrarily in some degree, males in this group were included in the calculations of this study, while females were excluded. Including this group in 1917 gives the highest level of male activity rate (67.9) throughout the period, whereas excluding it gives a rate (61.0) which is higher than those of 1907 and 1960 but lower than those of other census years.[2]

Education and Legislation: Education has more than a one-sided effect on the extent of participation in the labor force. On the one hand, it has a negative effect on the activity rate of young persons of school age. Later in life, on the other hand, education may add to propensity to be in the labor force, particularly in the case of females. Education helps

[1] B. El-Tawil and R. Tabbarah, "Population and Labor Force Growth in Selected African Countries", United Nations, Proceedings of World Population Conference, 1965, Vol. IV, p. 274.

[2] Even after excluding this group, the 1917 female activity rate was the highest throughout the period as indicated in Section 3.2.

surmount traditional barriers against female employment. Husbands or parents are more inclined to permit their wives or daughters to work outside the home if they have sufficient education to be able to find jobs of a certain quality with respect to earnings, interest, prestige, etc. Data from the 1960 census support this hypothesis, showing that female activity rates rise with the educational level. For instance, the activity rate for illiterate females was 5.6 whereas it was above 75 for all females with educational level beyond high school. For those with high school education, the rate was slightly less than 25.[1]

Egypt cut down the illiteracy rate from 92.7 percent of the population 10 years of age and above in 1907 to 70.3 in 1960. The progress was greater for males than for females: the decline was from 87.0 to 56.5 for males and from 98.6 to 83.8 for females.[2] The apparent negative relationship between improving educational conditions and the declining female activity rate over time seems to be the result of other factors that overbalanced the expected positive effect of the rising educational level.

Since education is compulsory between ages 6 and 12, a law was enacted in 1959 prohibiting children below age 12 from entering the labor market. After the passage of that law, a continuous decline in the activity rate for the 6-12 age group was revealed by labor force sample survey data, especially in urban areas.[3]

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[1] U.A.R., Population Census, 1960, Vol. II, Table 36. The rates are for females 10 years of age and over. No data are available by age.

[2] Mead, Growth and Structural Change...., pp. 29-31.

[3] A. Nassef, "Analytical Study of the Results of Manpower Sample Survey in U.A.R.," Unpublished paper, pp. 50-53.

It should be emphasized that most of the factors mentioned above are interrelated in one way or another. The examination of relationships between each combination of these and other potential factors is beyond the scope of this study.

It will be recalled that an increase of 4 million workers in Egypt's labor force was recorded between 1907 and 1960. The question arises, whether difficulties in absorbing the rapidly increasing labor supply might have had anything to do with the declining trend of the crude activity rate. Such a hypothesis cannot be considered as sound in the case of males, in view of the socio-economic developments discussed above. Its possible validity in the case of adult females is a question which is difficult to examine in the poor light of the data now available.

It may also be suggested that the lower activity rates in urban as compared with rural areas, and the declining trend of the urban rates during the later intercensal periods are reflections of the alleged over-urbanization of the country: that these phenomena are due to insufficient employment opportunities in urban industries to match the rapid growth of urban population. But at least two arguments can be presented against this proposition. First, socio-economic developments associated with declining activity rates, such as rising level of education, change of industrial structure, development of social insurance and employment legislation, etc., are marked more strongly in the urban than in the rural areas of Egypt. Second, in an urban setting, lack of employment opportunity is likely to be reflected more in unemployment, and perhaps in underemployment in some branches of the economy, than in depressed activity rates.

The role of internal migration in the processes of accommodating population growth in Egypt's economy should not be neglected. Its role can be seen as a double one. On the one hand, a great many rural migrants have found jobs in urban centers. On the other hand, in the urban setting, the activity rates of young and old members of migrant families are lower than those of the rural communities. The considerable gap in wages between urban and rural areas, alluded to previously, also throws doubt on the idea of "refugee" migration to the cities which is inherent in the over-urbanization thesis. A positive economic role of internal migration is implied, although this should not belittle the problems involved in massive rural-urban movements.

CHAPTER 4

LENGTH OF WORKING LIFE OF MALES AND RELATED MEASURES OF LABOR FORCE DYNAMICS

In this chapter, attention is turned to the length of economically active life of males implied in their age-specific patterns of participation in economic activities, and to related measures of labor force dynamics. It is an extension of chapter 3, based on the same data.

4.1. Measures of Length of Working Life

There are several different ways of measuring the length of working life. The measure which will be considered first is the gross years of active life (GYAL), defined as the average number of active years per person in a hypothetical cohort who would survive between the ages of entry into and retirement from the labor force and who would be subjected to the current age-specific activity rates. Let w_x denote the specific activity rate for age group x, and v_x represents the number of years in the age interval. Then,

$$GYAL = \Sigma\, v_x . w_x$$

where the summation may be carried out between the lower and upper age limits of the labor force or between any other two age limits. The gross years of active life serve as a summary index of the current activity rate schedule by age which is independent of the age structure of the population.[1]

[1] In this respect, GYAL resembles the gross reproduction rate as a measure of fertility and population replacement.

Table 4.1 gives the gross years of active life in Egypt for males at census dates (1917-1960) between ages 5 and 75 in total as well as for ages below 20, 20-50, and 50-75.[1]

TABLE 4.1. GROSS YEARS OF ACTIVE LIFE, U.A.R. MALES, 1917-1960.

Age/Year	1917	1927	1937	1947	1960
		Inc. Ill-defined			
5-19	8.7	7.2	7.5	8.0	5.4
20-49	29.2	28.9	28.9	29.3	28.7
50-74	23.7	23.4	22.9	22.9	20.9
5-74	61.6	59.5	59.3	60.2	55.0
		Ex. Ill-defined			
5-19	7.2	7.2	7.5	6.7	5.4
20-49	27.9	28.8	28.9	28.6	28.5
50-74	22.5	23.4	22.9	22.6	20.7
5-74	57.6	59.4	59.3	57.9	54.6

The results show that, on the average, an Egyptian male who would survive from age 5 to 75 could be expected, according to the age patterns of economic activity recorded at the 1960 census, to be economically active during 55 years out of the potential maximum of 70 years in this life span. In other words, he would be working, or seeking work, during 78.6 percent of the span. The corresponding figures for earlier census years are higher.

A comparison of the results for 1947 with those of a United Nations study for 45 countries around 1950 places Egypt among countries with the highest gross years of males' active life. For instance, while the average number of

[1] The 75+ age group was excluded from the calculations in order to avoid making an arbitrary choice of the upper age limit and the uncertain accuracy of using the recorded activity rate to serve as a central value for this old age group. The age groups used in these calculations are those presented in Section 3.2.2. Activity rates for age groups 60-69 and 70-74 were extrapolated. See explanation of methods in Appendix B.

gross active years for males in agricultural countries in the United Nations study is 50.8 for the age span 15-70, it is 52.3 for Egyptian males using the 1947 activity schedule. Only three out of the forty-five countries included in the United Nations study show slightly higher gross years of active life than Egypt.[1] The study concludes that,

> "Barring the influence of mortality, the male populations of the less developed regions of the world, on the average, spend a greater number of years in economic activity than the populations of industrialized countries... Similar results are obtained by averaging the gross years of active life for countries grouped according to the level of industrialization."[2]

On the basis of such findings and in normal conditions one may be tempted to expect a pattern of declining number of gross years of active life for males in a country undergoing industrialization. The Egyptian data, by and large, bear out this expectation between 1917 and 1960 with the exception of 1947. When the ill-defined group is excluded from the calculation, the declining pattern continues between 1927 and 1960, while the 1917 figure replaces that of 1947 as an exception. In either case, the rate of decline is uneven for the different intercensal periods due, in part, to the variations in gross years of active life before age 20, which represent the fluctuations in activity rates during this part of the life span discussed earlier. On the other hand, the stability of working life of the main body of male breadwinners in the country is revealed by the table. On the average, an Egyptian male, according to the experiences at the dates given in the table and without premature death, would be expected to be in the labor force for about 29 out of 30 years between ages 20 and 50. Declining activity rates for males 50 years old and over contributed to the decline of overall gross

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[1] United Nations, Demographic Aspects of Manpower...., p. 18 and Appendix Table A.6. When the ill-defined group is excluded from the labor force, the Egyptian figure (51.0) is still slightly higher than the average for agricultural countries included in the study.

[2] Ibid.

years of active life. The average number of years of economically active life for males surviving between ages 50 and 75 declined consistently with the exception of almost identical figures for 1937 and 1947. The levels of gross years of active life after excluding the ill-defined group show a somewhat more consistent trend for all the age ranges except in 1917.

Another measure of the length of working life is the expectation of active life (ew_x), defined as the average number of years in economic activities per person in a hypothetical cohort at any exact age under the current activity and mortality schedules.[1] This measure, unlike the first one, takes account of the effects of the force of mortality and, therefore, gives the actual number of years a person is expected to work under the given conditions. Its value at age x is computed as follows:

$$ew_x = \frac{\sum_{x=i}^{\infty} {}_nLw_x}{l_x}$$

where ${}_nLw_x$ is the stationary labor force between ages x and x+n, which, in turn, is the product of the stationary population in the conventional life table and the activity rate for the age group x to x+n; while l_x is the survivorship function of the life table at exact age x.[2]

This measure has been calculated for Egyptian males for the years 1937, 1947 and 1960. Life table functions for these years were derived from the complete (i.e., single-year) National Life Tables. The results are displayed in Figure 4.1. It indicates that a newly born male in Egypt in 1937 could expect to live for 35.7 years out of which 26.1 years would be

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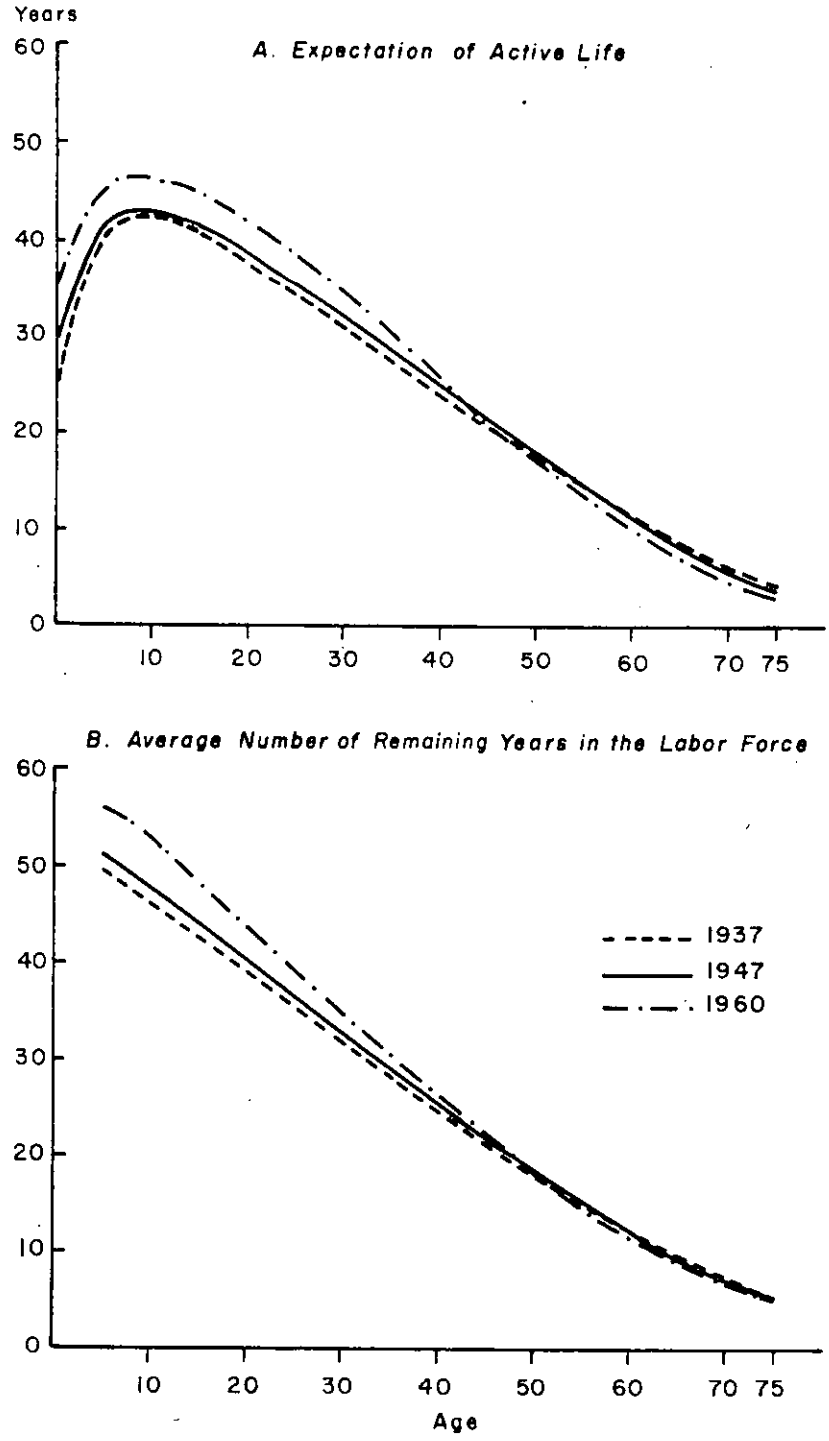
[1] Sometimes it is also called "net years of active life." This measure has been elaborated by Durand in The Labor Force in the United States...., pp. 44-46 and Appendix D.

[2] For details about definition and derivation of functions of the economically active life table and detailed results, see Appendix B.

FIGURE 4.1 MEASURES OF AVERAGE LENGTH OF WORKING LIFE, UAR, MALES, 1937-1960



spent in economically active status (i.e., 73.1 percent of his total life expectancy at birth), according to mortality and activity patterns of that year. Due to changes in these patterns discussed earlier, the two expectancy figures changed in 1960 to 51.6 and 36.1 years respectively, implying that, at birth, a male in Egypt would now be expected to be in the labor force for about 70.0 percent of the expected lifetime; or a reduction of 3.1 percentage points from 1937.[1]

The changes between 1947 and 1960 are more pronounced than those between 1937 and 1947. This is true for both life expectancy and expectancy of working life. The gain in life expectancy at birth amounted to 15.9 years between 1937 and 1960, out of which 5.6 years occurred between 1937 and 1947 and 10.3 years between 1947 and 1960. On the other hand, the gain in expectation of economically active life at birth amounted to 10.0 years during the 1937-1960 period, divided into 3.8 and 6.2 years during 1937-1947 and 1947-1960 respectively.

During both periods, the gains in total life and economically active life expectancies were not proportionately distributed by age. These gains were large in young and early adult age groups, moderate in late adulthood, and minimal, if any, in old ages. As a matter of fact, the curves of expectation of active life by age for the three census dates tended to converge around age 50 and then change positions beyond that age (Figure 4.1).

As a result of the uneven changes in activity and mortality schedules by age, the distribution of life expectancy between years of economic activity and inactivity has changed, by different amounts at different ages.

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[1] Similar changes over time for other countries are given in S.L. Wolfbein, Employment and Unemployment in the United States (Chicago: Science Research Associates, 1964), pp. 120 and 125.

TABLE 4.2. CHANGES IN LIFE EXPECTANCY AND IN EXPECTATIONS OF ACTIVE AND INACTIVE LIFE, U.A.R., MALES 1937-1960.

Age	1937/47 Changes in (years)			1947/60 Changes in (years)		
	e^o_x	$e^o w_x$	$e^o i_x$	e^o_x	$e^o w_x$	$e^o i_x$
0	5.6	3.8	1.9	10.3	6.2	4.1
5	2.0	.6	1.4	8.1	4.6	3.5
10	1.9	.2	1.8	7.3	3.7	3.7
15	1.8	1.1	.7	6.8	3.9	3.0
20	1.7	1.1	.6	6.3	3.9	2.4
25	1.4	.8	.6	5.6	3.4	2.2
30	1.1	.6	.5	4.9	2.7	2.2
35	1.0	.5	.5	4.2	1.9	2.3
40	.9	.4	.5	3.6	1.2	2.4
45	.8	.3	.5	3.0	.6	2.4
50	.6	.2	.5	2.4	- .1	2.4
55	.5	...	.4	1.9	- .6	2.5
60	.2	- .2	.4	1.6	-1.1	2.7
65	...	- .4	.4	1.4	-1.3	2.7
70	...	- .4	.4	1.2	-1.2	2.4
75	...	- .5	.5	1.0	-1.1	2.1

Note: e^o_x is expectation of life; $e^o w_x$ expectation of active life; and $e^o i_x$ expectation of inactive life.

Table 4.2 shows the net gains in the expectation of life and in its two components, economically active and inactive years, by age. The results indicate that young Egyptian males gained a substantial increase in life expectancy during the 1937-1960 period, which would allow them not only to work for some more years than before, but also to have more years for other activities and in particular for schooling. At the other end of the age curve, the old persons gained a proportionately large number of years for retirement, which was contributed by the increase in life expectation as well as a loss in expectation of active life. For the middle group, adults between ages 25-50, the increase in life expectancy resulted both in a larger number of expected active years and additional years of retirement. By 1960, these changes resulted in a lower curve of the percent of life expectancy to be allocated to economic activity than in 1937 or 1947.

Thus, on the whole, the increase in life expectancy has allowed the country to gain more man-years of expected active life as well as more years for schooling and retirement. Aside from the problem of increased old age dependency due to the increase in the number of years to be spent in retirement, this result contributes to the national welfare if the economy can provide productive jobs so that the increase of expected active man-years does not merely add to unemployment or underemployment. Otherwise, the increase in expectation of active life would be likely to create social, economic and perhaps political difficulties.

The difference between gross years of active life and the potential maximum (i.e., when activity rates are assumed to equal 100 between the lower and upper age limits under consideration) reflects the effects of social, economic and cultural factors. On the other hand, the difference between expectation of active life and gross years, in a given age range, reflects the effects of mortality. For example, while the number of gross years of active life in 1960 between ages 5 and 74 was 55.0, the expectation of working life was 45.0 years between the same age limits and the difference of 10.0 years measures the loss by mortality. The toll of mortality was higher in 1947 (17.1 years) and still higher in 1937 (19.3 years).

In the United Nations study mentioned above, where measures for various countries are given with reference to the age range 15-70, average losses by mortality for industrialized, semi-industrialized and agricultural countries are shown to be 4.8, 8.5 and 11.4 years respectively. The corresponding figure for Egypt in 1947 (12.7 years for the age range 15-70) is higher even than the average for agricultural countries.[1] However, the comparison

[1] United Nations, Demographic Aspects of Manpower..., p. 18.

with the latter group of countries is hazardous in view of the uncertain assumptions regarding mortality levels which had to be made in calculating the measures for many of these countries.

The third concept for measuring length of working life is the average number of remaining years in the labor force per economically active person (ew^*_x) at a given age. This refers to the expected work life of members of the labor force rather than the expectation for the whole population of a given age represented by the second measure.[1]

According to this definition and the mortality and activity schedules of 1960, an Egyptian male worker in the labor force at age 10 could expect, on the average, to participate 53.1 more years in economic activities and to spend the rest of his life expectancy in retirement (3.5 years). In 1937, the corresponding figures were 46.6 and 0.8 years. The figures indicate an increase in both expected economically active and inactive years for male members of the Egyptian labor force.

Figure 4.1 shows the patterns of remaining years in economically active life by age for the male working population in 1937, 1947 and 1960. In general, the age patterns and, with minor differences, the changes over time by age are similar to those of the expectation of active life. The results of comparing these patterns with tables for other countries (Appendix B) and the implications of the changes over time are also analogous to those discussed above regarding the second measure.[2]

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[1] For details, see Appendix B; Durand and Miller, Methods of Analyzing Census Data on Economic Activities..., Chapter I, Section D.; S.L. Wolfbein, "The Length of Working Life", Population Studies, Vol. III, No. 3, December 1949, pp. 291-294.

[2] It may be noted, however, that by definition: GYAL $\geq ew^*_x \geq ew_x$.

4.2. Dynamics of the Labor Force

4.2.1. Labor Force Accessions and Separations in Hypothetical Cohorts as of Census Dates:

In addition to estimates of average length of working life, tables of economically active life provide measures of the rates of labor force replenishment by accessions and its depletion by deaths and retirement at each age. Procedures and results for Egyptian males in the last three census years are given in Appendix B.[1]

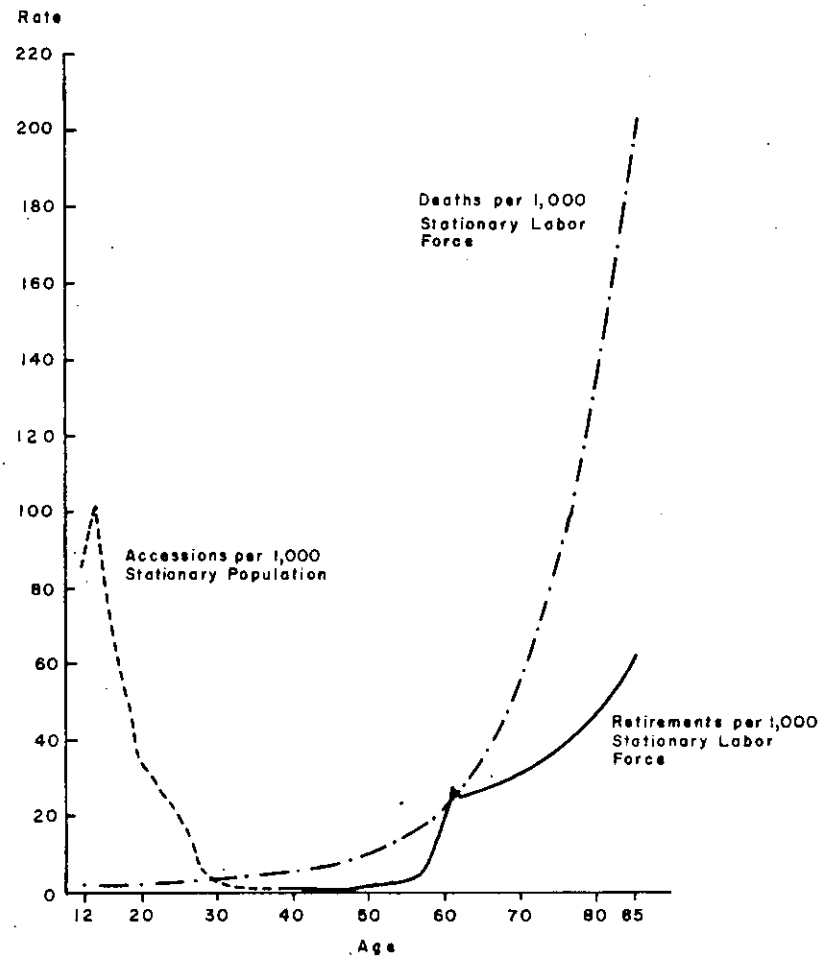
The measures of accessions to the labor force indicate that Egyptian males start their economically active lives in substantial numbers at ages in their early teens. Further increments to the economically active population continue at a declining rate until the late thirties. In 1960, the annual rate of labor force accessions for males rose to a maximum of 101 per 1,000 of the population between ages 13 and 14, then declined at later ages to a minimum of one per 1,000 at ages in the early thirties (Figure 4.2).

The rates of accessions are determined by the increases between successive ages in activity rates as recorded in the censuses. Thus, accessions do not include some of the casual entries of young males who join the labor force temporarily during periods of school vacation or after school hours and are not reported in the labor force. Inasmuch as some of the youths shift between economically active and inactive status, estimates of accessions, by this procedure, understate their gross values.

Separation from the male labor force, on the other hand, occurs over the whole economically active life span, at rates which are minimal at early ages, then rise progressively to the maximal levels at old ages. In 1960, for instance, the total separation rate (Q_x^s) was 2.0 per 1,000 of the labor force

[1] Table B.1 (Appendix B) gives male rates by single years of age for 1960, whereas Table B.2 gives the rates for 5-year age cohorts in 1937, 1947 and 1960.

FIGURE 4.2 ANNUAL RATES OF LABOR FORCE ACCESSIONS AND SEPARATIONS, UAR, MALES, 1960



between ages 12 and 13 and rose consistently up to 266.0 between ages 85 and 86 (Figure 4.2).

A comparison between the rates of separation due to death (Q_x^d) and those due to retirement (Q_x^r) for Egyptian males reveals that the former are much higher than the latter at all ages.[1] Separations below the age of the maximal activity rate (estimated at 37 years as of 1960) are assumed to be exclusively due to mortality. Thereafter, both retirement and mortality contribute to the depletion of the male labor force.[2] The age curve of the rate of separation through retirement is, in general, similar to the corresponding curve of the separation rate due to death though at a different level. For example, between ages 37 and 38 the rate of separation due to death in 1960 was 5.0 per 1,000 of the labor force, whereas the rate due to retirement was 1.0 per 1,000. The rates rose to 203.6 and 62.4 respectively between ages 85 and 86.

The changes in rates of labor force accessions and separations for males between 1937 and 1960, as reflected by Table B.2, Appendix B, may be summarized as follows:

(i) The above mentioned pattern of accession rates by age prevailed, by and large, during the three census years with one exception in 1937. In that year, the rate of accession was highest between the first two 5-year age groups (5-9 and 10-14). This is explainable by the extremely low activity rate for the first age

[1] Estimates of labor force deaths are based on the assumption that the mortality rate is the same for economically active and inactive persons. Error in this assumption would not falsify to any significant extent the results under discussion.

[2] Retirement, in this context, includes both voluntary and involuntary withdrawals from the labor force.

group, followed by an extremely high rate for the second in 1937.[1] In addition, the terminal age of labor force accession was 5 years older in 1937 and 1947 than in 1960. The 1960 rates of accession for males in their twenties were higher than the average rates for 1937 and 1947, possibly because of the increase of higher education, which resulted in more accessions to the labor force in these age brackets.

(ii) Rates of labor force separation due to death declined, at all ages, during the two intercensal periods between 1937 and 1960, while rates of separation due to retirement increased. In both cases, the changes were more pronounced between 1947 and 1960 than between 1937 and 1947. The increases in labor force separation rates due to retirement were larger than the decreases in rates due to mortality. The result was an increase in the rates of labor force depletion beyond the age of maximal activity rate, partly counterbalanced by a decrease in rates of depletion below that age. In short, although mortality continued to be the dominant factor in labor force depletion up to 1960, its role has been diminishing while the role of retirement has been gaining importance. This fact has been observed also in comparisons between countries at different socio-economic levels.[2]

The measures of labor force separations by retirement do not account for possible reentries into the labor force, since they represent only net differences between the activity rates of successive age groups. Therefore, these estimates do not exactly represent gross rates of separation from the labor force.

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[1] This latter high rate affected, in turn, the rate of accession between the second and third age groups, in the opposite direction. See Section 3.2.2.

[2] See Appendix B, Section B.1.

4.2.2. Accessions and Separations in Real Cohorts of the Labor Force during Intercensal Periods:

The measures considered above represent age-to-age changes in the labor force implied in the age-specific activity and mortality rates as of given census dates, within the frame of the tables of economically active life. In reality, the accessions to and separations from the labor force occurring in the course of time are functions of changing schedules of age-specific activity and mortality rates, and the time-trends of these rates must be taken into account in order to measure the components of actual changes in the labor force between census dates. For this purpose, it is necessary to compare cohorts of the population and labor force as enumerated in given age groups at one census and in higher age groups at the next census. The results of such an analysis of cohorts in the Egyptian censuses between 1917 and 1960 are presented in this section.[1]

An economically active cohort of age x at the beginning of the intercensal period is depleted by deaths and retirement and may be replenished by new accessions before it reaches age x+t at the end of the period. Thus, components of intercensal changes in labor force size due to deaths, accessions and retirement may be estimated as follows:

$$\text{Accessions (+) or retirements (-)} = LF_{x+t,2} - LF_{x,1} \cdot S_{x,x+t} \quad (1)$$

$$\text{Deaths} = LF_{x,1} - LF_{x,1} \cdot S_{x,x+t} \quad (2)$$

where $LF_{x,1}$ is the size of labor force cohort of age x at the beginning of the period; $LF_{x+t,2}$ the size of the same cohort t years later (t denotes the length of the intercensal period in years); and $S_{x,x+t}$ the census survival ratio of the cohort in the male population during the period. The estimate

[1] For following cohorts by age and sex between 1947 and 1960, labor force data of the latter census were adjusted on a linear basis.

of the number of deaths, based on equation (2), represents purely the effect of mortality if the population is closed; otherwise it includes also the effect of the net balance of immigration and emigration.

Estimates of all components, however, are affected by errors in age reporting. The distortions due to such errors are more serious in the estimates for individual age groups (particularly for those in which the misreporting is greatest); and are cancelled out, to a large extent, in the estimates for all ages taken together. The degree of distortion depends on whether or not the error in age reporting of given cohorts is in the same direction and of the same magnitude at the two censuses and for both the labor force and the population of each sex.[1]

In addition, the estimates of accessions and retirements are affected by errors in the reporting of persons as economically active or not. The degree of distortion caused by such errors also depends on differences between the two censuses in direction and frequency of errors. This factor appears to be of particular importance in the Egyptian data (and possibly in those of many other less developed countries) as illustrated in the discussion below with regard to females, young age groups, and the ill-defined group.

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[1] Suppose, for example, that the extent of age misreporting in age group x (x+t at the second census) is equal to K (in the same direction at the two censuses and for both the labor force and the population of each sex). Then, the estimates of components of change will be as follows:

$$\text{Accessions or retirements} = LF_{x+t,2}\,(1\pm K) - LF_{x,1}\,(1\pm K)\,.\,S_{x,x+t} \qquad (3)$$

$$\text{Deaths} = LF_{x,1}\,(1\pm K) - LF_{x,1}\,(1\pm K)\,.\,S_{x,x+t} \qquad (4)$$

The estimates obtained by equations (3) and (4) are obviously not equal to those obtained by equations (1) and (2); the difference being a function of K. If the direction or the relative magnitude of the errors in age reporting is different between the two censuses and/or between the labor force and the population, the extent of the distortions in the estimates will depend on the degree of such differences.

The results for Egypt during the intercensal intervals between 1917 and 1960 show a rather wide gap between the gross intercensal changes, measured by the sum of the absolute values of labor force accessions and separations, on the one hand, and the net changes in labor force on the other. In fact, the gross changes were always at least twice as much as the net changes during any of the intercensal periods under consideration. The difference was smaller during the later than the earlier periods, primarily as a result of differential effects of the changes in mortality and retirement, discussed below.

A summary of the contributions of accession, mortality, and retirement rates to intercensal changes in the labor force is given in Table 4.3. In general, the findings are similar to those described above for the hypothetical cohorts. When allowance is made for the different length of the latest intercensal period, it is clear that mortality has always been the major factor of labor force separation, and that its role declined throughout the period.[1] Retirement played a much smaller part in depleting the labor force although its effect increased slightly during the latest intercensal period. In this respect, exceptions during the 1917/27 and 1937/47 periods are associated with the higher proportions of the ill-defined group in 1917 and 1947 and the wide fluctuation in the recorded female rates. The latter fluctuations are also reflected in the estimates of female accession rates. The changes in intercensal accession rates for males, on the other hand, are correlated with the changes in activity rates among young age groups described in Section 3.2.

In spite of the effects of misstatements of age, the intercensal rates of accessions to and separations from the male labor force follow the same

[1] The estimates of labor force deaths are acceptable since the population was almost closed. However, the slight net emigration indicated by the data in Section 2.2.3. implies that these estimates are insignificantly exaggerated.

TABLE 4.3. INTERCENSAL RATES OF LABOR FORCE ACCESSION AND SEPARATION BY SEX, U.A.R., 1917-1960.

(Rates per 1,000 of the labor force at the beginning of each period)

	1917/27	1927/37	1937/47	1947/60
		Males		
Accession	272.2	344.5	384.8	348.0
Mortality	-217.0	-190.5	-173.1	-181.7
Retirement	- 9.5	- 7.7	- 7.7	- 11.5
Total	45.7	146.3	204.0	154.8
		Females		
Accession	215.0	217.3	421.2	434.3
Mortality	-190.6	-188.4	-122.5	-158.1
Retirement	-226.0	-109.8	- 94.7	-446.8
Total	-201.6	- 80.9	204.0	-170.6
		Both Sexes		
Accession	262.8	327.8	388.7	357.3
Mortality	-212.7	-190.2	-167.7	-179.2
Retirement	- 45.2	- 21.1	- 17.0	- 58.4
Total	4.9	116.5	204.0	119.7

general patterns described above for the hypothetical cohorts. For females, the age patterns of the rates were influenced greatly by their different age curve of activity rate and the marked variations of its level over time.

Measures of labor force replacement are another product of the analysis of components of labor force change. The labor force replacement rate is defined as the difference between the accession rate and the total separation rate. Thus, the intercensal labor force replacement rate is, in effect, the algebraic total of the three rates of accession, retirement and death, and is given in Table 4.3. In other words, it is simply the intercensal rate of labor force growth per 1,000 of the initial labor force. The trend of this

rate has been discussed in some detail in Section 3.1.1. and touched upon in other sections. A second measure is the labor force replacement ratio, defined as the number of entries per 100 of total withdrawals from the economically active population. On an intercensal basis, this index ranged between 120 and 213 for males, and between 53 and 193 for females. These variations, once again, are closely associated with the changes in recorded activity rates of young male age groups and the marked fluctuations of female activity rates.

In summary, although the growth of the Egyptian labor force has lagged to some extent behind the growth of population during the latest intercensal periods, as a result of the declining trend of male activity rates, the rate of growth of the labor force is still high. Its rapid growth is due to a high rate of accessions (resulting mainly from the growth of population), partly counterbalanced by a mortality rate which is still high although it has been declining. The retirement rate of Egyptian males is relatively low, although it has been increasing.

The high replacement ratio of the labor force, which results from these factors, is an indicator of the pressure on the labor market generated by new entrants greatly outnumbering withdrawals from the labor force (by death and retirement) each year. If mortality continues to decline without a significant decrease of fertility or a major reduction of activity rates, the result will be still faster growth of the labor force in the future, and greater pressure on the economy to absorb the increasing labor supply.

CHAPTER 5

INDUSTRIAL STRUCTURE OF THE LABOR FORCE

5.1. Aspects of Labor Force Structure

The structure of the labor force is represented by three major classifications of types of economic activity: industry (referring to the function of the establishment in which the person works - or worked previously if unemployed); occupation (i.e., the kind of work done by the individual - or previously performed by the unemployed); and status (employer, self-employed, employee, etc.).[1] The industrial structure of Egypt's labor force is considered in this chapter and the occupational and status structure in the next.

Some writers consider these three structural elements, along with seasonality in labor force activities, as the economic aspects of the labor force.[2] This is hardly surprising since each of them reflects, in one way or another, such characteristics of the economy as its organizational structure, the degree of division of labor, the level of skills of the economically active population, etc. Data on industry, occupation and status have been extensively used in sociological, demographic and economic studies. Studies of social stratification, of differentials in fertility and mortality, and of variations in productivity are examples of many kinds of works in which these data are used. In addition to the dimensions of the labor force, studies

[1] In the 1907, 1917 and 1960 censuses, the classifications covered only employed persons and the unemployed were given separately; while the 1927, 1937 and 1947 censuses included the unemployed persons also in these classifications.

[2] Jaffe and Stewart, Manpower Resources and Utilization...., p. 141.

of its structural aspects are also of great importance for policy decisions regarding socio-economic development.

The picture of structure of the labor force shown by census tabulations is affected by errors in reporting of industry, occupation, and status, and also by the extent of coverage of marginal groups, which are found in disproportionate numbers in certain categories of industry, occupation, and status. Comparisons between the data of two censuses may be affected also by differences in the classifications of industry, occupation, and status and in definitions of economically active and inactive persons.[1] In the Egyptian censuses between 1907 and 1960, different classifications and definitions were applied. Adjustments have been made as described in detail in Appendix A. Further potential elements of non-comparability are dealt with below.

5.2. Theoretical Considerations

In the literature on economic theory, changes in industrial structure are considered as depending on a number of factors such as the allocation of income, tastes and customs of consumers, population growth, technological level and the concomitant degree of division of labor in different industries, differentials in real wages by industry, etc.

Shifts in the allocation of income are frequently cited as a major factor in changing the industrial structure. Changes in the propensity to save, or to consume, for instance, affect the division of total output between producers' and consumers' goods. Changes in the pattern of consumers' outlays (i.e., the shares spent on different consumer goods and services) influence the relative quantities of these goods and services to be produced.

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[1] Durand and Miller, Methods of Analyzing Census Data on Economic Activities..., pp. 73-76.

Shifts in the allocation of income, in turn, depend, among other things, on changes in real income as well as custom and fashion. When per capita income rises, shifts in production are induced by shifts in demand resulting from differentials in income elasticity of demand for different goods. It has frequently been said that a rise in the standard of living of a community will result in a higher proportion of its production being devoted to luxuries and a smaller proportion to bare necessities.[1]

Technological change has also been emphasized as a determinant of industrial shifts. Stressing technological change as a major source of these shifts, Kuznets states that, "this is obvious when additions to useful knowledge result in the creation of a new product, of a new process, or of a new way of using raw materials and thus provide the basis for a new industry."[2]

The invention of a new product may change the pattern of consumer outlay by diverting some of the expenditure to this product; which, to repeat, induces a shift in production. In general, new products affect tastes and customs of consumers. The invention of the automobile has been cited as a factor which changed the whole way of life in Western societies.[3]

The influence of technological advances is by no means restricted to new products or new industries. It also bears on existing industries through new methods of production which result in changes in productivity. In fact, the differential effects of advances in technology (or any other factor) on the productivity of various industrial sectors are one important explanation for differences between the trends of industrial shares of the total output

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[1] Among others, see, E. H. Phelps Brown, The Economics of Labor (New Haven: Yale University Press, 1962), pp. 83-84; E. E. Hagen, The Economics of Development (Homewood, Illinois: Richard D. Irwin, 1968), pp. 42-45; S. Kuznets, Modern Economic Growth: Rate, Structure and Speed (New Haven: Yale University Press, 1966), pp. 98-101.

[2] Kuznets, Ibid., p. 155.

[3] Brown, The Economics of Labor, p. 85.

and those of the labor force. When labor productivity rises in a certain industry, its share in the total output is likely to increase while its share in the total labor force is likely to decline unless growing demand for its products outpaces the rise in productivity.

The effects of population growth on industrial shifts have been pointed out by Dovring.[1] The rate of change in the proportionate share of the non-agricultural sector in the labor force is determined by the difference between the rate of growth of the population (or the total labor force) and that of the non-agricultural labor force.[2] The speed of the reallocation of economically active population between the agricultural and non-agricultural sectors depends also on the initial proportionate share in agriculture. That is, given the rate of population growth, the higher the percent share of agriculture in the labor force, the greater the rate of increase in the non-agricultural sector that is required to bring about a given amount of decrease in the agricultural share. In this model, agriculture is assumed to exhibit a "surplus" of manpower which is considered as "residual", while the non-agricultural sector is viewed as the "dynamic element" whose expansion depends on the process of capital formation and, of course, on the development of complementary institutional arrangements.

Other writers have extended Dovring's framework by bringing into focus the role of increasing labor productivity in economic transformation.[3] It

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[1] F. Dovring, "The Share of Agriculture in a Growing Population," Monthly Bulletin of Agricultural Economics and Statistics, Food and Agriculture Organization of the United Nations, Vol. VIII, No. 8/9, August-September 1959, pp. 1-11.

[2] Dovring has correctly pointed out that, "if the growth of labor force is different from that of total population ..., then it may be necessary to keep apart the rates of growth referring to manpower and total population." Ibid., p. 1.

[3] A.J. Jaffe and J.N. Froomkin, "Economic Development and Jobs - A Comparison of Japan and Panama, 1950 to 1960," Symposium No. 1 on Population Problems in the Pacific, 11th Pacific Science Congress, Tokyo, August, 1966.

has been shown that the conditions necessary for holding the size of the agricultural labor force constant and for decreasing it may be expressed in terms of the rate of growth of the total labor force, the initial share of agriculture in the labor force, and rates of growth of productivity and total product in the non-agricultural sector.[1]

It has also been said that in countries with rapid population growth the surplus of agricultural labor is "squeezed out" of farming by lack of adequate employment opportunities.[2] Due to the shortage of capital, this surplus is forced to crowd into certain industries in the service sector of the economy where minimal amounts of capital are needed, and to offer its services at very low prices. As a result, the relative prices of goods and services are affected; and shifts in these relative prices bear on production shifts through their effects on consumer outlay.[3]

The traditional theory of wages and labor allocation places much emphasis on differentials in real wages as the major source of industrial shifts of the labor force. However, as Parnes has said, this theory "... is cast in a framework that assumes full employment. To the extent that employment opportunities are limited, the theory may only imperfectly describe or explain actual labor market processes."[4]

In an open economy, the effects of the obviously interrelated factors mentioned above on the industrial structure are modified to a varying degree

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[1] Changes in labor productivity are, of course, related to capital formation and technological and institutional developments. In addition, the inclusion of productivity in the two-sector model illustrates the differences between the trends of industrial shares in the total output and in the total labor force. See Jaffe and Froomkin, Ibid., pp. 16-17.

[2] Among others, see, Dovring, "The Share of Agriculture...," p. 9.

[3] Brown, The Economics of Labor, pp. 84-85.

[4] H.S. Parnes, Research on Labor Mobility: An Appraisal of Research Findings in the United States (Social Science Research Council Bulletin 65; New York: 1954), p. 143.

by the extent of a country's participation in the international division of labor and consequently by the trend of the international terms of trade of the export and import goods.[1]

5.3. Classification of Industries

The results of a study of industrial structure and its changes over time depend much on the industrial classification used. Different industries are distinguished from one another by various criteria. Kuznets states:

> "Industries are differentiated from each other by the raw materials that they use, by the productive process in which they engage (and hence by the technological constraint on size of plant), by the skill-mix of the labor force, by the capital intensity, etc. imposed by the specific production process employed, and by the finished product, and hence by the market that is being served."[2]

Ideally, the industrial classification of economic activities should take all these criteria into account. However, a classification incorporating all these criteria for each industry would be practically unmanageable. Therefore, classifications based on grouping of similar industries have been used in most countries, within the framework of the International Standard Industrial Classification (ISIC), sometimes with minor modifications.[3]

The simplest grouping is the division of the economy into agricultural and non-agricultural sectors. Three-sector classifications in various forms are also widely used.[4] In the present analysis, use will be made of the

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[1] J.W. Mellor, The Economics of Agricultural Development (Ithaca, New York: Cornell University Press, 1966), pp. 19-22.

[2] Kuznets, Modern Economic Growth..., p. 153.

[3] United Nations, The International Standard Industrial Classification of All Economic Activities (Statistical Papers, Series M, No. 4, Rev. 1, 1958).

[4] C. Clark, The Conditions of Economic Progress (London: Macmillan, 1957), third edition, pp. 490-492; S. Kuznets, "Quantitative Aspects of the Economic Growth of Nations: II, Industrial Distribution of National Product and Labor Force," Economic Development and Cultural Change, Vol. V, No. 4, July 1957 (Supplement), p. 5; _____, Modern Economic Growth..., pp. 86-87.

agricultural and nonagricultural dichotomy, a three-sector grouping, and more detailed classifications. In the three-sector grouping used here, the categories are: (a) agricultural sector, including forestry and hunting as well as agriculture; and fishing; (b) secondary sector, comprising mining and quarrying,[1] manufacturing, construction, electricity, etc.; (c) tertiary sector, consisting of commerce and services. The "not adequately described" division is included in the total labor force figures but not in any of the three sectors.

5.4. Peculiarities of the Statistics

The rates of growth of the Egyptian labor force during the 1907-1960 period were uneven among different industries. The results are reflected in the changes of the industrial structure shown in Tables 5.1 and 5.2 by sex. Before discussing these changes in the context of socio-economic developments, it is advisable to consider some statistical peculiarities which remain in the adjusted data.

Among these are variations in the extent of the coverage of the female labor force. The fluctuations in the three broad industrial sectors of the female labor force, shown in Table 5.3, suggest that the extent of coverage was unequal among these sectors. There is more consistency of trend in the number of females reported in the tertiary than in the secondary and agricultural sectors, possibly because of the concentration of the increasing number of educated women in the tertiary sector as well as of domestic servants. Education of the former and the fact that the latter are reported by their employers, who would not be affected by traditional sensitivity in reporting their economic activity, may tend to minimize underreporting of females in

[1] In some other three-sector classifications, mining and quarrying have been included with agriculture in the sector of "primary" industries. In Egypt, only a small proportion of the labor force is found in mining and quarrying.

TABLE 5.1. PERCENTAGE OF LABOR FORCE IN EACH INDUSTRY, BY SEX, U.A.R., 1907-1960.

Industry/ Year	1907	1917	1927	1937	1947	1960
			Males			
Agriculture	69.5	56.0	66.3	69.5	58.4	57.4
Mining	.1	.1	.2	.2	.2	.3
Manufacturing	6.0	6.1	7.7	6.3	8.4	9.6
Construction	2.8	1.5	2.8	2.3	1.8	2.2
Electricity	.3	.3	.5	.4	.3	.5
Commerce	4.2	5.0	8.0	7.5	8.5	8.4
Transport	3.0	3.5	2.9	2.7	3.2	3.6
Services	11.1	10.5	11.4	11.1	13.7	15.6
Not adequately described	3.1	17.1	.2	...	5.5	2.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
			Females			
Agriculture	60.6	60.3	72.2	66.6	59.0	43.3
Mining	-	...	...	...	...	...
Manufacturing	5.3	3.3	3.1	4.0	5.1	4.0
Construction	...	.1	.1	.2	.1	.1
Electricity	...	...	.2	.3	.4	.1
Commerce	4.2	4.3	5.5	8.0	8.1	6.2
Transport	.1	.1	.2	.2	.3	.4
Services	26.3	15.4	18.5	20.5	25.8	39.2
Not adequately described	3.4	16.5	.1	.5	1.3	6.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
			Both Sexes			
Agriculture	69.0	56.7	67.1	69.2	58.4	56.3
Mining	.1	.1	.2	.2	.2	.3
Manufacturing	6.0	5.6	7.1	6.1	8.0	9.1
Construction	2.7	1.3	2.4	2.1	1.6	2.0
Electricity	.3	.2	.5	.4	.3	.5
Commerce	4.2	4.9	7.6	7.6	8.4	8.2
Transport	2.9	2.9	2.5	2.4	2.9	3.3
Services	11.8	11.3	12.4	12.1	15.0	17.5
Not adequately described	3.1	17.0	.2	.1	5.1	2.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 5.2. PERCENTAGE OF LABOR FORCE IN EACH INDUSTRY, AGES 15 AND OVER, BY SEX, U.A.R., 1917-1960.

Industry/ Year	1917		1927	1937	1947		1960
	Inc. ill-defined	Ex. ill-defined			Inc. ill-defined	Ex. ill-defined	
				Males			
Agriculture	53.7	57.7	64.1	66.4	58.5	59.8	54.6
Mining	.1	.1	.2	.2	.2	.2	.3
Manufacturing	6.5	7.0	7.8	6.7	8.8	9.0	10.1
Construction	1.7	1.9	3.0	2.6	2.0	2.1	2.4
Electricity	.3	.3	.6	.4	.4	.4	.6
Commerce	5.7	6.1	8.7	8.5	9.4	9.6	9.0
Transport	3.9	4.3	3.2	3.0	3.7	3.7	3.9
Service	11.4	12.3	12.1	12.1	14.9	15.2	16.8
Not adequately described	16.7	10.5	.3	...	2.1	-	2.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
				Females			
Agriculture	57.2	65.1	72.4	68.4	61.4	61.7	32.9
Mining	...	...	...	...	...	...	...
Manufacturing	3.6	4.1	3.4	4.4	5.8	5.9	5.5
Construction	.1	.1	.1	.2	.2	.2	.1
Electricity	...	...	.2	.3	.5	.5	.1
Commerce	4.9	5.6	6.5	9.1	9.9	10.0	9.1
Transport	.1	.1	.3	.2	.3	.3	.6
Services	16.6	18.9	17.0	17.4	21.5	21.6	43.3
Not adequately described	17.5	6.1	.2	...	.5	-	8.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
				Both Sexes			
Agriculture	54.3	58.9	65.1	66.6	58.8	60.0	53.4
Mining	.1	.1	.2	.2	.2	.2	.3
Manufacturing	6.0	6.5	7.2	6.5	8.5	8.7	9.8
Construction	1.5	1.6	2.7	2.4	1.9	1.9	2.3
Electricity	.3	.3	.5	.4	.4	.4	.5
Commerce	5.6	6.0	8.5	8.5	9.4	9.6	9.0
Transport	3.3	3.6	2.8	2.7	3.3	3.4	3.7
Services	12.3	13.3	12.7	12.7	15.5	15.8	18.3
Not adequately described	16.8	9.8	.3	...	1.9	-	2.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 5.3. FEMALE LABOR FORCE BY MAJOR SECTOR, U.A.R., 1907-1960.

Year/ Sector	Agriculture		Secondary		Tertiary	
	Number	1937=100	Number	1937=100	Number	1937=100
1907	104,160	25	9,320	33	52,408	29
1917	514,706	123	29,938	105	168,091	94
1927	492,183	118	24,353	86	163,886	92
1937	416,866	100	28,476	100	178,128	100
1947	444,594	107	44,258	155	255,389	143
1960	270,638	65	28,584	100	283,713	159

the tertiary sector. Variations of coverage are more clearly apparent in the figures for females in agricultural and secondary sectors. However, the decline in relative importance of family enterprise in the secondary sector may have contributed to the decrease in number of females reported in that sector between 1947 and 1960.

Likewise, the reporting of workers in young age groups, discussed in Chapter 3, appears to have been uneven among industries. The effects of differences between censuses in industrial distribution of workers reported in age groups under 15 years can be seen by comparing the distributions in Tables 5.1 and 5.2. Seasonality may be an important factor here. The 1960 census was taken in September, at a seasonal peak in agricultural work (cotton picking), but all other censuses since 1907 were taken in or around March, a slack season in agriculture. Therefore, when the 1960 data are compared with those of earlier censuses, it should be remembered that the 1960 agricultural labor force is likely to have been swollen by seasonal participation, especially of children, in cotton picking. However, differences between the industrial distribution of younger and older age groups do exist, and one should not belittle the role of young people in economic activities, especially at the earlier census dates.

The effect of variations in the ill-defined group can be seen in Table 5.2 by comparing the distributions of labor force including and excluding this group, for the years 1917 and 1947. If most members of the ill-defined group were actually not in the labor force, the effect of their inclusion is to understate the proportionate shares of all specified industry groups in the labor force, the degree of understatement being the same in all industry groups at any one census but varying between censuses. On the other hand, if most members of this group were actually economically active in industries which were not reported, the failure to report their industries has the effect of understating both the numbers and proportionate shares of specified industries, to a degree which may vary between industries as well as between censuses.[1]

Unless otherwise stated, the "not adequately described" division includes both the ill-defined group and unemployed persons. For 1907 and 1917, another category, "general designation without definite occupation", is included in this division. This category includes a subgroup of "workmen, day laborers, agents, etc. without other designation" which represents about one percent of the total labor force of 1907 and six percent of 1917. Further investigation shows that about 48 percent of this subgroup in 1907 and 97 percent in 1917 were in non-urban governorates, which suggests that many of the subgroup were in agriculture. This, together with the possible misrepresentation of young age groups in the non-urban governorates in 1907, suggested in Section 3.2.2., implies that the size of labor force in agriculture and perhaps its proportionate share were larger in 1907 and 1917 than indicated by the census data. Similarly, the actual size of the labor force in the non-agricultural

[1] See Appendix A. In the rest of this chapter, the ill-defined group is excluded from 1917 and 1947 data.

sectors in 1907 and 1917 seems to have been larger than the reported figures because of the inclusion of such groups as "merchants, manufacturers, etc.," "accountants, cashiers, etc." and "mechanics, etc." in the "not adequately described" division.[1]

The classification of unemployed persons either according to their previous industries or in a separate division affects the size of the labor force in almost every industry and also bears on the relative industrial shares, depending on industrial differentials in unemployment. However, the effects of this factor could not have been significant since the recorded unemployment rates during 1907-1960 were very low.

Finally, before 1960, members of the armed forces were classified in the service division. In 1960, they were included in the industries to which they were attached before their military service. On this account, the size and relative shares of all industrial divisions other than service have been inflated in 1960 compared with earlier censuses.

5.5. Growth of Labor Force in Agricultural and Non-agricultural Sectors

Turning now to the developments in the industrial structure of the labor force and the socio-economic changes associated with them, one should keep in mind the statistical faults noted above.

The leading role played by agriculture (including forestry, fishing and hunting) is clearly revealed by Table 5.1. Its relative share in the economically active population ranged between 55 and 70 percent during the 1907-1960 period. The trend of the proportionate share of the agricultural labor force, however, was not uniform throughout the period. Since 1937 a steady decline is obvious, whereas in earlier periods the trend is unclear.

[1] For details, see Appendix A.

Attempting to explain the trend of the agricultural labor force, among other things, by changes in the available resources in the agricultural sector itself, Seklani suggests:

> "The reduction of 500,000 persons in the agricultural sector between 1917 and 1927 would be explained by economic development. From the beginning of the 20th century until 1917, ... the extension of perennial irrigation and of the cultivated area kept the peasants on farms. The first world war stopped this expansion and the distribution of economically active population was modified accordingly. After 1930, the trend was reversed: the exodus toward the secondary and tertiary (sectors) was stopped by irrigation and the extension of cotton cultivation. After the second world war, the revival of the secondary and tertiary (sectors), through the continuous encouragement of local industries between 1939 and 1945, was interrupted by the return to imports."[1]

The trend of agricultural labor force in the data used by Seklani is different from that of Table 5.1 due, in particular, to the inclusion in his series of over a million females "inferred" by the 1917 census authorities as being economically active in agriculture, a group excluded from the labor force in the present study in view of the trend of the female economically active population both in agriculture and other sectors of the economy.[2] It is likely that the reduction of half a million in the agricultural labor force between 1917 and 1927, according to the data Seklani used, is simply the result of inflation of the 1917 figure by that "inferred" group.[3] The figures used by Seklani imply an increase of 66 percent of the agricultural labor force between 1907 and 1917, but available data do not show any spectacular agricultural developments to support such a great increase (Table 5.4). On the

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[1] M. M. Seklani, "Population Active et Structures Économiques de L'Égypte," Population, Vol. XVII, No. 3, July-September 1962, pp. 469-470.

[2] If this group were included, economically active females in 1917 would be 11.4 times the number of 1907 and 2.9 times the 1927 number.

[3] See Appendix A.

TABLE 5.4. SELECTED INDICES OF AGRICULTURAL DEVELOPMENT, U.A.R., 1907-1960.

1937=100

Year	Cultivated area	Area cropped	Length of irrigation canals and drains	Area of cotton cultivation
1907	102	92	n.a.	81
1917	100	92	85	85
1927	105	104	88	76
1937	100	100	100	100
1947	109	110	116	63
1960	112	124	130	89

Source: Mead, Growth and Structural Change..., pp. 324 and 331; U.A.R., Statistical Yearbook, 1964, p. 91.

contrary, the cultivated area decreased slightly while the area cropped was practically unchanged between 1907 and 1917. Moreover, there is no evidence in Seklani's series of any unusual shifts in the non-agricultural labor force to reflect the supposed effects of economic development between 1917 and 1927; merely a reduction in the agricultural labor force as a result of the difference in the coverage of females in the two census years.

Between 1927 and 1937, the cultivated area decreased again, possibly as a result of "the depression in the thirties, which pushed large marginal areas out of cultivation."[1] However, the effects of the same depression years on the growth of non-agricultural sectors cannot be ignored. Meanwhile, the rapid expansion of irrigation and drainage continued, and "a great increase in the use of artificial fertilizers" took place at the end of the 1920's and during the 1930's.[2] The increase in cotton cultivation during the 1930's, referred to by Seklani, cannot be considered as a major factor in the growth of agricultural labor force during the 1927/1937 intercensal period. The

[1] Hansen and Marzouk, Development and Economic Policy..., p. 46.

[2] Ibid.

1937 census was not taken during a peak seasonal period of cotton cultivation. In addition, this period witnessed a serious cut in cotton prices which, to a great extent, counteracted the influence of the increase in cotton cultivation as an incentive for farmers to stay on the land.[1] It appears, therefore, that the increase in the share of agriculture in the labor force between 1927 and 1937 was not induced by agricultural development. On the contrary, the depression hurt Egyptian agriculture very badly; the sharp fall in prices of agricultural products left the rural population in misery. Thus, the workers in agriculture did not stay on the farms because of prosperity; they had to live out the misery of the depression years there because of the absence of sufficient alternative employment opportunities in the non-agricultural sector, as indicated by the decline in the absolute number of the labor force in the secondary sector, to be discussed below.

In short, it seems fair to conclude that the shares of agricultural and non-agricultural sectors in the labor force did not undergo any great change between 1907 and 1937; and that the apparent changes shown in Table 5.1 for this period are, to a great extent, statistical artifacts. A possible exception to this conclusion is the temporary decline in the agricultural share from 1907 to 1917 as a consequence of the first World War. This period is marked by a somewhat higher rate of growth of the nonagricultural labor force than appears in the data for 1917 to 1937, and by some decrease in the cultivated area. This decline in the share of agriculture is maintained even when the males "inferred" to have been working in agriculture in 1917 are included and other statistical peculiarities are taken into account.

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[1] The cotton price in the 1930's decreased to half of its level during 1920's. See, Mead, Growth and Structural Change..., p. 323.

The 1937-1960 period, on the other hand, witnessed a considerable structural change. The share of agriculture decreased by some 15 percentage points. Meanwhile, the non-agricultural labor force increased significantly, both in absolute number and in its proportionate share.

Associated with these changes, a number of socio-economic developments took place. In agriculture, the small increase in the labor force was accompanied by a faster increase in the area of cultivated land and area cropped. Improvements in irrigation and drainage continued; the use of chemical fertilizers increased, with the exception of shortages during the war period; and agricultural machinery rose significantly.[1]

Between 1937 and 1960, the country experienced the highest rates of urban growth throughout the period for which census data are available, and it is interesting to note, the highest rates of total population growth as well. The positive association between the rate of structural change and population growth in this instance does not necessarily conflict with Dovring's rule stated above, since it is possible that effects of other factors overshadowed the effect of population growth, or that population growth was a stimulus for structural change, or that the structural change was not economically sound and was merely a transfer of underemployed agricultural workers to the least productive industries in the secondary and tertiary sectors.

First among the factors responsible for the structural changes were events during the depression years which gave new impulse to industrialization. Although the need for industrialization was felt immediately after the first

[1] For further details, see Hansen and Marzouk, Development and Economic Policy..., chapter 3; Mead, Growth and Structural Change..., chapter 4.

World War, not much was done in this respect during the 1920's partly because of the high cotton prices which seemed to promise prosperity. The 1930's saw a considerable deterioration in the terms of foreign trade, as the prices of agricultural exports (especially cotton) fell more than those of imported manufactured goods; and at the same time there was a corresponding shift in relative prices of domestic manufactured goods and agricultural products. Thus, there was an incentive for investors to put more capital into manufacturing industries rather than into agriculture.

The regaining of fiscal autonomy in 1930 and the tariff reform, including higher duties on imported goods, mark the beginning of serious efforts by the government to protect local industries. The government support took also the form of loans to industrial enterprises. Moreover, the cutting off of imports during the second World War stimulated significantly the growth of local industries. After the war, the return to imports, to which Seklani refers, was greatly hindered by higher duties imposed during the immediate postwar period on types of commodities produced by domestic industries, which gave these industries a chance to survive and to grow further.

Among the classical factors of industrial shifts (Section 5.2) is the increased relative demand for non-agricultural products and services. Adequate data for evaluating the role of this factor in Egypt's case are lacking. However, citing various examples, Hansen and Marzouk conclude that "In Egypt when a domestic industry has been built up, a demand for the commodity in question has existed in advance, a demand which up till then had been satisfied by imports from abroad, and which was big enough to offer a market for modern establishments."[1] It has also been suggested that the considerable

[1] Hansen and Marzouk, Development and Economic Policy..., pp. 149-150.

expenditure of Allied troops stationed in Egypt during the second World War increased the demand for industrial products and so contributed to the stimulation of industrial growth.[1]

The growth of urban and total population was a primary factor of increase in the labor force in the service industries. The increase in the intensity of certain services such as educational and medical services (as discussed below) was another factor. Some remarks on the assumption of a transfer of underemployed agricultural workers to the service industries are given in Section 5.9.

Finally, the possibility that the accelerated growth of population might have been a stimulus for structural changes may not be ruled out. In fact, it has been suggested that during the 1930's, concern over population growth was among the factors which renewed the urge for industrialization.[2] In recent years, the government of the U.A.R. has expressed such a concern, stating that the industrial sector receives a great deal of care and attention for counteracting population growth among other purposes.[3]

5.6. Changes in Industrial Structure of the Non-agricultural Labor Force

According to Clark, the declining share of agriculture and other primary industries in the economically active population of a developing country is accompanied initially by growth in the share of the secondary sector, and at a later stage, by an increase in the tertiary relative to the secondary sector.

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[1] Issawi, Egypt in Revolution..., pp. 44-45.

[2] Ibid.

[3] United Nations, Economic and Social Council, Inquiry Among Governments on Problems Resulting from the Reciprocal Action of Economic Development and Population Changes, Report of the Secretary-General (E/3895/Rev. 1).

This theory is based on the assumption of higher income elasticity of demand for the products of the tertiary sector, together with slower growth of productivity in the tertiary than the secondary sector.[1]

In cross-sectional comparison of the shares of non-agricultural sectors for countries at different levels of economic development, measured by per capita income, Kuznets has shown a different pattern. He found a fairly close association between the level of per capita income and the share of the tertiary sector; and an even closer association between income level and the share of the secondary sector. Thus, the ratio of the labor force in the secondary sector to that in the tertiary sector appears to be positively associated with the level of economic development.[2]

In time series analysis, on the other hand, Kuznets found that the increase in the share of the secondary sector was "neither as consistent, nor as sizable, as expected from the cross-section analysis"; and that, in most countries, the decline in the share of agriculture was compensated by considerable increase in the tertiary sector. This trend, he suggests, may be explainable in terms of changes in the differentials in product per worker in the two sectors and income elasticities of demand for their products during different stages of economic development.[3]

Tables 5.1 and 5.2 show, by and large, parallel trends in the shares of the secondary and tertiary sectors in Egypt. In fact, between 1937 and 1960, the ratio of the secondary to the tertiary sector increased only by two percentage points and this increase occurred only during the 1947-1960

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[1] Clark, Conditions of Economic Progress, pp. 493-495.

[2] Kuznets, "Quantitative Aspects...," pp. 19-27.

[3] Ibid., pp. 31-32.

period. The increase would be 4 percentage points if only the labor force 15 years of age and over were considered. This trend appears to conform more to Kuznets' findings than to Clark's theory.

The sizable share of the "not adequately described" division in 1907 and 1917, especially in 1917, and possible differences in the reporting of young agricultural workers between 1927 and 1937 do not permit a definite conclusion as to what was the actual trend of the shares of the secondary and tertiary sectors in terms of increase or decrease. However, the data, rough as they are, show a decline of more than 10 percentage points in the ratio of the labor force in the secondary sector to that of the tertiary sector during the 1907-1937 period. In general, during this period of fluctuating trend of the non-agricultural sector as a whole, the fluctuations in the secondary sector were greater than those in the tertiary sector.

The processes of growth and structural change of the labor force are represented in another way by the measures given in Table 5.5. This shows the percent increase of labor force in each major sector during intercensal periods between 1927 and 1960, and coefficients of differential growth and absorption. The coefficient of differential growth is defined as the difference between a sector's rate of change and that of the total labor force, while the coefficient of absorption is the ratio of the sectoral to the total rate.[1] The two coefficients show a significantly higher rate of growth of the labor force in the secondary than in the tertiary sector between 1947 and 1960 and a slightly lower rate for the secondary sector during the preceding intercensal period. However, because of its smaller size, the secondary sector played a much smaller role than the tertiary in absorbing the

[1] For further details on the use of these coefficients see Dovring, "The Share of Agriculture...," pp. 2 and 8; Seklani, "Population Active et Structures Economiques...," pp. 474-475.

TABLE 5.5. MEASURES OF INTERCENSAL GROWTH OF LABOR FORCE BY INDUSTRIAL SECTOR AND SEX, U.A.R., 1927-1960.

Period and sector	Percent increase of labor force			Coefficient of differential growth (both sexes)	Coefficient of absorption (both sexes)
	Males	Females	Both sexes		
1927/37:					
Agriculture	20.1	-15.2	15.1	3.5	1.3
Secondary	- 2.9	17.0	- 2.1	-13.8	- .2
Tertiary	9.5	8.7	9.4	2.3	.8
Total	14.6	- 8.1	11.7		
1937/47:					
Agriculture	1.1	6.6	1.7	-12.7	.1
Secondary	41.3	55.2	42.0	27.6	2.9
Tertiary	44.0	43.1	43.9	29.5	3.1
Total	13.8	19.0	14.4		
1947/60:					
Agriculture	13.7	-39.0	8.0	-10.2	.4
Secondary	33.8	-35.1	30.5	12.3	1.7
Tertiary	25.1	11.8	23.0	4.9	1.3
Total	22.2	-15.7	18.2		

increase of the country's labor force during the 1937-1960 period. About 43 percent of the total increase during that period occurred in the tertiary sector, 27 percent in the secondary, and 19 percent in agriculture.[1] The rest of the increase was in "not adequately described".

The reallocation of the labor force between broad sectors of the economy may be accompanied by shifts between industries within each sector. In fact, economic growth is bound to be enhanced by shifts from less productive to more productive industries within each sector even in the absence of any changes in the broad sectoral shares in the total labor force.

[1] If the division of "transport and communication" were included in the tertiary sector, the corresponding percentages would be 49, 21, and 19 respectively.

Within the secondary sector, manufacturing has occupied a primary place; its share ranged between 56 and 61 percent of the labor force in that sector between 1917 and 1960 (See Tables 5.1 and 5.2). This share was almost constant (around 50 percent) from 1907 to 1937, and increased six percentage points during the 1937/1947 intercensal period.[1]

Both "mining and quarrying" and "electricity, gas, etc." have been insignificant in terms of employment opportunities. Their share in the labor force of the secondary sector was relatively stable and in the order of 4 to 5 percent between 1927 and 1960; the data for earlier years show smaller shares.

The rest of the secondary sector is distributed between "construction and building" and "transport and communication", the latter division always having a larger share. Although the share of transport and communication in the total labor force showed some increase between 1937 and 1960 (Table 5.1), its share in the secondary sector was almost constant. Construction, on the other hand, showed no stability in its share; a characteristic of construction, which is very sensitive to changes in the level of investment activity within very narrow time periods.

TABLE 5.6. COMPOSITION OF THE LABOR FORCE IN MANUFACTURING INDUSTRIES, U.A.R., 1937-1960.
(Percent)

Industry/Year	1937	1947	1960
Food and beverages	13.4	12.4	12.7
Textiles and wearing apparel	33.4	38.1	33.3
Wood and furniture	21.8	15.1	12.3
Chemical industries	1.0	1.3	2.8
Basic metal, and metal products	10.2	9.9	10.1
Manufacture of machinery	7.3	11.8	12.0
All others	8.9	11.4	16.7
Manufacturing, total	100.0	100.0	100.0

[1] When "transport, etc." is excluded from the sectoral total, the trend is maintained, but the share of manufacturing ranges between 70 and 79 percent.

Table 5.6 provides some further details on the composition of manufacturing for 1937, 1947 and 1960. In Egypt, as in many other developing countries, two lines of activity dominate manufacturing industries, namely, food (including beverages) and textiles (including wearing apparel). In fact, these two accounted for about 56 percent of the labor force in manufacturing in 1907. This proportion declined to 46 percent in 1960.[1] In a highly developed economy like that of the United States in 1960, the corresponding proportion was 23 percent. The proportionate share of these two lines of activities in the manufacturing labor force increased between 1937 and 1947, then declined to a level insignificantly lower than that of 1937. The increase in the share of textiles between 1937 and 1947 is possibly attributable to the conditions of the early 1940's, when the local industries may have been stimulated by the lack of imports.

The proportion of the labor force in manufactures of wood, cork and furniture decreased significantly between 1937 (21.8 percent) and 1960 (12.3 percent) while the shares of chemical industries and manufacture of machinery (including transport equipment) increased. These changes may be considered as signs of progress in economic development, but the rate of change does not appear to have been fast, at least in terms of labor force shares.[2] For comparison, the following were the percentages for the United States in 1960: wood and furniture 4.9; chemical industries and products 4.7; basic metal industries and metal products 13.8; and manufacture of machinery 31.4.

Within the "transport and communication" division, the 1937-1960 period witnessed an appreciable increase in the proportion of workers in the more

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[1] Unpublished estimates developed by the Population Studies Center, University of Pennsylvania.

[2] Ibid.

mechanized lines. For example, the proportion of workers in transport by airplanes, trains, automobiles, buses, and trucks rose from 33 percent in 1937 to 43 percent in 1947 and continued rising to about 49 percent in 1960. This increase was compensated by a significant decline in the share of traditional means of transport and sea navigation.[1] Finally, the proportion in communication declined from 8 to 7 percent, then increased to 10 percent in 1960.

The share of the tertiary sector in the total labor force increased continuously from about 16 percent in 1907 to 26 percent in 1960. The continual expansion of this sector as a major source of employment opportunities for the growing population calls for some further investigation of its composition and the changes in that composition over time.

Within the tertiary sector, the labor force in "commerce" ranged between 30 to 40 percent of the sectoral total. The relative share of "commerce" shows an increase between 1907 and 1927, stagnation during the 1927/37 intercensal period, and a decline since 1937.

Commerce in Egypt is dominated by retail trade - another feature of a little developed economy. In 1960, 88 percent of the economically active population in "commerce" were engaged in retail trade, 6 percent in wholesale trade, and 6 percent in banking and insurance.[2] The corresponding proportions for the United States in 1960 were 61, 18, and 21 percent respectively. Unfortunately a comparable classification is not available for Egypt in earlier years. However, in 1937 about 62 percent of all workers in

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[1] Sea navigation has not been included in the first group because of the wide variation in the extent of modernization within this line of transport activities.

[2] Ibid.

commerce were engaged in trade of food and food products, 20 percent in peddling, haberdashery and retail stores without specialty, 3 percent in banking and related activities, and the rest in trade of all other lines including textiles, composite goods, petroleum products, etc. The picture was practically the same in 1947, the only significant change being the increase of the proportion of workers in banking and related activities to 5 percent.

Changes in the composition of the services division during the 1937-1960 period are shown in Table 5.7. The two main developments are the

TABLE 5.7. COMPOSITION OF THE LABOR FORCE IN SERVICE INDUSTRIES, U.A.R., 1937-1960.

(Percent)

Industry/Year	1937	1947	1960
Government Services	24.0	31.0	33.8
Community Services	18.3	15.7	21.2
Business Services	3.7	2.4	2.4
Recreation Services	1.4	.9	1.2
Personal Services	52.6	50.0	41.4
Total	100.0	100.0	100.0

increasing share of government services and decreasing share of personal services. Though the proportion of personal services declined by 11 percentage points, it was still considerably higher in 1960 than the corresponding figure for the United States (about 30 percent).[1]

It should be emphasized that the increase in proportion of government services between 1947 and 1960 is understated because of the change in the way of classifying the armed forces. For the same reason, changes in the other subdivisions during the last intercensal period are underestimated to a lesser extent.

[1] Ibid.

It is also useful to study the trends in individual service groups such as education, medical services, domestic services, etc. For these groups the 1960 census gives data only for persons 15 years of age and over, excluding foreigners. Since these groups vary greatly in the extent of employment of workers below 15 years of age, a comparison over time is rather hazardous. However, because of the insignificant number of workers in both government and community services below age 15, the following observations are possible:

(i) The number of workers in public administration (i.e. ministries and departments) in 1960 was more than five times that of 1937. The proportion in this group of government services increased from 9.5 to 23.4 percent of the labor force in the service division during that period.

(ii) Education shows the largest increase relative to other service industries. The number of persons employed in educational services more than tripled during 1937-1960, implying a rise in their share from 6.9 to 13.2 percent of the service division. Almost all of the relative increase occurred between 1947 and 1960.

(iii) Though employment in medical and health services in 1960 was about 2.9 times that of 1937, the percentage share in the service division rose only from 2.8 to 4.1. Again, most of the rise took place between 1947 and 1960.

The increase in the relative share of the tertiary sector during the 1937-1960 period was to some extent due to the rapid growth in the three groups of services just mentioned.

It has been said that the "outstanding characteristic" of the tertiary sector is "the multiplication of opportunities for female employment."[1] This statement is born out in Tables 5.1 and 5.8. Table 5.1 shows the increasing share of the tertiary sector in the female labor force since 1917 (from 20 to 45 percent). Most of the increase occurred in services. Table 5.8 provides the proportions of females among the total labor force of each

TABLE 5.8. PERCENTAGES OF FEMALES IN THE LABOR FORCE OF EACH INDUSTRY, U.A.R., 1937-1960.

Industry/Year	1937	1947	1960
Agriculture	10.4	10.9	6.1
Mining	.4	.8	.6
Manufacturing	7.0	6.9	3.5
Food and beverages	4.2	3.2	2.6
Textile and wearing apparel	11.9	9.1	4.6
Wood and furniture	9.5	16.1	.5
Chemical industries	20.5	16.0	4.6
Basic metal and metal products	.6	1.1	.5
Manufacture of machinery	.4	.9	.5
All other manufactures	2.6	3.3	8.1
Construction	.8	.8	.4
Electricity, Gas, etc.	7.7	11.9	.8
Commerce	11.4	10.4	6.0
Transport and Communication	.7	.9	1.0
Transport	.4	.7	.1
Communication	3.9	.3	2.3
Services	18.3	18.5	17.9
Government	.3	1.1	1.3
Community	12.4	13.7	22.8
Business	1.0	1.4	3.1
Recreation	10.7	10.1	10.2
Personal	29.9	31.7	30.0
Not Adequately Described	82.1	2.8	18.9
Total	10.8	10.8	8.0

industry division and selected subdivisions. The proportions are relatively stable at a high level in services.[2] Among the tertiary industries,

[1] Organization for Economic Co-operation and Development (OECD), Manpower Resources in the Service Sector (Paris: 1967), p. 12.

[2] Though the proportion of females in commerce was below the level for the labor force as a whole in 1947 and 1960, commercial activities give employment to a significant proportion of the female labor force.

community and personal services show the highest proportions of females. Particularly important within these groups are the proportions in domestic service (over 50 percent female) and in medical services (over 30 percent). In addition, the proportion of females in educational services rose from about 14 percent in 1937 and 1947 to 24 percent in 1960.

Outside the tertiary sector, significant proportions of females are also found in agriculture and some manufacturing industries. Within manufacturing, textile industries provide a fairly sizable amount of employment for females. Other high proportions in the manufacturing division are either unstable over time or insignificant in terms of employment opportunities.

In brief, from 1907 until the late 1930's, the industrial distribution of the labor force shows fluctuations, but without notable trends among any of the component industries. Since then, there has been a sustained transformation, with two outstanding features: a shift from agricultural to nonagricultural activities and, within the nonagricultural sector, a shift from less productive to more productive industries and lines of activity. These features are indicative of progressive economic growth.

The increasing relative share of nonagricultural activities is particularly noteworthy in view of the rapid growth of population. Agriculture gave employment to less than a fifth of the total increase in the labor force between 1937 and 1960, while the nonagricultural sector absorbed the rest.[1]

5.7 Industrial Structure of the Labor Force by Regions and Governorates

The industrial structure of the economically active population was by no means similar in all regions and governorates during the period under

[1] See Section 5.3 for differences between the two broad nonagricultural sectors in this regard.

investigation. This section summarizes the geographical differentials in the industrial structure and their trend, and the degree of concentration of economic activities, in order to see how and to what extent the different regions and governorates have shared in the economic development of the country and to get some light on the needed course of action in this respect. Details of the industry structure by regions and governorates are shown in the tables of Appendix D, Tables D.17 giving the numbers of labor force by industry division for each area, Tables D.18 the percent share of each industry division in the labor force within each area, and Tables D.19 the percent share of each area in each industry division of the national labor force.

5.7.1. Agriculture:

The proportion of the labor force in agriculture differs considerably among different regions and governorates. While the share of agricultural workers in the labor force of the whole country was 56.3 percent in 1960, it was only 1.4 percent in Cairo and as high as 77.6 percent in Suhag. As one would expect, this proportion has always been substantially lower in urban than in non-urban governorates. For urban governorates, the weighted average of the agricultural share was below ten percent of the labor force, whereas the corresponding proportion for non-urban governorates was above 65 percent during the 1907-1960 period (Table 5.9).

Among the non-urban governorates, Upper Egypt showed higher percentages of agricultural workers than Lower Egypt although, in the case of females, the percentage of agricultural workers is generally lower in Upper Egypt (Table 5.9). It is difficult to see whether the differences in the percentage of females in agriculture are due to variation in the extent of reporting or in actual female participation in economic activities. With the

exception of 1907, due to the special treatment of nomads in that census, the Frontier Districts show intermediate levels of the percentage of labor force in agriculture between those of urban governorates, and those of the non-urban governorates of Lower and Upper Egypt.

The weighted average of the proportion of agricultural labor force for each region is generally fairly representative of the proportions for the component governorates, but there are some exceptions. In 1960, for example, changes in the boundaries of Ismailia were responsible for the share of agriculture in the Canal governorates (25.9 percent) being higher than in other urban governorates. In contrast, the lower share of agriculture in Damietta compared with other non-urban governorates of Lower Egypt is due to the fact that it was an urban center before 1960, when its boundaries were changed. The influence of Cairo on the two adjacent governorates (Kalyubia in Lower Egypt and Giza in Upper Egypt) is reflected in relatively low shares of agricultural workers. The construction work on the Aswan Dam and the High Dam is likely to have been a factor in the relatively low share of agriculture in Aswan in recent periods.

The trends of the percentage share of agriculture in the labor force for various regions and individual governorates followed, by and large, the direction of the national trend, with a few minor exceptions, some of which are explainable by the changes in boundaries mentioned above. However, the amounts of changes varied between regions and governorates (Table 5.9). Between 1937 and 1960, for instance, Giza showed a decline of about 28 percentage points, while Cairo's decline was only 2 percentage points. In making such comparisons, of course one should take account of the size of the agricultural share at the beginning of the period. Differences in the tempo of change may

TABLE 5.9. PERCENTAGE OF TOTAL LABOR FORCE IN AGRICULTURE BY GOVERNORATE, U.A.R., 1907-1960.

Governorate/Year	1907	1917	1927	1937	1947	1960
Cairo	6.7	4.8	4.9	3.6	2.0	1.4
Alexandria	12.2	3.4	3.9	4.1	3.2	4.6
Canal	13.7	3.1	7.2	9.3	7.8	25.9
Suez	15.8	8.0	9.9	12.8	10.1	9.9
Damietta	n.a.	6.6	6.7	5.9	5.9	54.7
Dakahlia	73.5	63.1	75.3	75.9	72.3	68.0
Sharkia	76.0	74.5	78.0	79.1	73.0	72.5
Kalyubia	72.4	68.3	73.3	73.1	65.1	57.7
Gharbia	74.4	65.9	75.8	77.2	72.2	66.7
Menoufia	77.0	75.3	79.0	79.4	75.6	70.8
Behera	77.6	71.8	80.6	82.6	78.2	75.1
Giza	70.8	66.2	69.7	73.0	62.3	46.3
Beni Suef	76.7	73.6	76.7	78.9	75.2	74.1
Fayoum	73.7	73.9	75.8	76.0	72.1	71.7
Minya	77.2	71.4	76.7	80.5	75.3	75.9
Asyut	76.9	65.5	75.0	80.6	75.6	75.3
Suhag	80.8	65.6	80.0	83.4	78.9	77.6
Kena	83.3	61.7	79.1	81.6	76.5	74.7
Aswan	78.4	69.0	74.9	77.1	71.4	59.0
Frontier Districts	94.3	52.1	59.2	55.9	57.5	46.0
U.A.R. Total	69.0	61.0	67.1	69.2	61.5	56.3

be measured by relating the proportion in agriculture at the end to that at the beginning of a period for each region or governorate. In this way the proportion in Cairo decreased by 61 percent (from 3.6 to 2.0) while Giza's proportion declined by 37 percent, between 1937 and 1960.

The question arises, whether the differences in the trend among different governorates were such as to make the governorates more or less similar in the proportions of their labor force in agriculture. The problem of measuring changes in the degree of similarity or dissimilarity "is one of definition and interpretation",[1] as shown by the following comparison of trends in different measures:

[1] Miller, "Labor Force Trends and Differentials", p. 46.

TABLE 5.10. PERCENTAGE OF LABOR FORCE OF EACH SEX IN AGRICULTURE BY GOVERNORATE, U.A.R., 1907-1960.

Governorate/Year	1907	1917	1937	1947	1960
		Males			
Cairo	7.1	4.8	4.0	2.2	1.6
Alexandria	13.1	3.8	4.5	3.3	4.8
Canal	14.3	3.2	9.3	8.1	26.7
Suez	16.2	7.5	13.0	10.3	10.2
Damietta	n.a.	7.1	6.4	6.4	55.8
Dakahlia	73.4	61.9	75.1	71.4	68.0
Sharkia	76.1	72.7	79.1	72.8	73.5
Kalyubia	72.6	67.2	73.1	65.1	58.1
Gharbia	74.4	64.2	75.9	70.8	66.9
Menoufia	77.3	72.7	79.7	76.1	71.9
Behera	77.8	70.5	82.1	77.8	74.6
Giza	71.3	66.8	74.0	63.4	48.2
Beni Suef	77.3	74.1	79.9	76.5	75.5
Fayoum	78.0	75.8	79.3	77.1	75.0
Minya	77.6	72.0	81.5	76.7	76.9
Asyut	77.4	65.6	81.5	77.2	76.1
Suhag	81.0	65.4	84.2	79.9	77.9
Kena	83.3	60.9	82.8	77.8	74.9
Aswan	78.7	69.8	78.0	72.8	58.5
Frontier Districts	91.6	58.9	57.6	57.7	46.3
U.A.R. Total	69.5	60.9	69.5	61.8	57.4
		Females			
Cairo	.8	4.9	.8	.6	.3
Alexandria	1.5	.8	.7	1.6	3.0
Canal	.1	1.7	9.2	3.0	14.3
Suez	-	18.9	9.6	4.3	3.3
Damietta	n.a.	3.4	.6	.9	42.9
Dakahlia	74.8	67.4	79.8	76.8	68.4
Sharkia	75.0	82.4	79.1	74.9	57.8
Kalyubia	66.0	75.7	73.6	65.0	51.9
Gharbia	75.0	71.8	82.1	21.5	64.9
Menoufia	65.6	83.5	77.8	72.8	50.0
Behera	73.0	77.2	85.4	80.6	79.1
Giza	36.8	59.4	59.2	51.1	23.4
Beni Suef	54.5	68.5	59.6	61.8	45.1
Fayoum	8.2	63.2	37.3	28.7	28.4
Minya	60.0	65.7	63.5	54.7	62.0
Asyut	58.0	64.5	49.0	40.8	55.5
Suhag	69.2	67.0	48.1	49.9	68.5
Kena	79.9	67.8	38.2	36.9	67.8
Aswan	65.1	63.4	53.9	40.2	71.6
Frontier Districts	98.3	11.2	27.5	52.4	37.3
U.A.R. Total	60.6	67.6	66.6	59.7	43.3

	1937	1947	1960
Range of variation	79.7	76.9	76.2
Average deviation	22.7	22.3	19.6
Relative deviation	32.8	36.3	34.9
Coefficient of localization	12.0	16.3	19.6

While the range of variation of the governorate proportions of agricultural workers narrowed somewhat between 1937 and 1960, and the average deviation from the national proportion also decreased, the relative deviation (i.e. average deviation divided by the national proportion) shows an unsteady trend of increase.[1] Probably the best measure is the coefficient of localization, obtained by subtracting the percent distribution of the agricultural labor force from that of the total labor force by governorate, and then summing the positive or negative differences. This shows a pronounced trend of increasing relative concentration of agricultural activities, i.e. increasing divergence of governorate proportions of agricultural workers.

Further insight into the question is given by Table 5.11, where the percentage of agricultural workers in the labor force of each governorate is expressed as a relative to the national average for each of the three census years. This shows an increase of the already high agricultural relatives in 11 non-urban governorates throughout the 1937-1960 period, comparative stability of the low relatives of urban governorates except those which had boundary

[1] When the relative deviation is based on the unweighted mean of governorate proportions, the measures obtained are 22.4, 22.3, and 17.9 for the three census years, respectively. The decrease of the relative deviation from 1947 to 1960 was due primarily to changes in boundaries of Damietta and Canal Governorates, which resulted in a considerable increase in the proportions of their labor force in agriculture. If the trend in these governorates is assumed to have been similar to the trend in other urban governorates, an increase in the relative deviation from 1947 to 1960 is found.

TABLE 5.11. PERCENTAGE OF LABOR FORCE IN AGRICULTURE RELATIVE TO THE U.A.R. AVERAGE, BY GOVERNORATE, 1937-1960.

Governorate	1937	1947	1960
Cairo	5	3	3
Alexandria	6	5	8
Canal	13	13	46
Suez	18	16	18
Damietta	9	10	97
Dakahlia	110	118	121
Sharkia	114	119	129
Kalyubia	107	106	103
Gharbia	112	117	119
Menoufia	115	123	126
Behera	119	127	133
Giza	105	101	82
Beni Suef	114	122	132
Fayoum	110	117	127
Minya	116	122	135
Asyut	116	123	134
Suhag	120	129	138
Kena	118	124	133
Aswan	111	116	105
Frontier Districts	81	94	82
U.A.R. Total	100	100	100

changes between 1937 and 1960, and a decreasing trend of the relatives of governorates whose proportions were near the national level and which are adjacent to Cairo.[1]

5.7.2. Non-agricultural Industries:

The distribution of economically active population in non-agricultural industries exhibits wide regional variations, of which the most important are the differences between urban and non-urban governorates. These variations, their changes over time, and the effect of differentials in such changes on the degree of concentration of workers in each major industry are summarized below, starting with the industries in the secondary sector.

[1] The "relative" as used here is also called "location quotient" or "self-sufficiency ratio".

Though the proportion of the labor force in mining and quarrying has been very small, the shift in location is quite significant. In 1907 about 72 percent of the total workers in this industry were in Cairo, Alexandria and Giza; by 1960 the proportion in these three governorates declined to 21 percent. In contrast, the share of the Frontier Districts increased from less than 0.1 to 46 percent. This change in location reflects the changing emphasis on different lines of activities within this industry: from mainly quarrying of stone in 1907 to increasing search for petroleum and other minerals in the Frontier Districts. The proportion of the labor force in mining for each governorate relative to the U.A.R. average is given in Table 5.12, which illustrates the high geographical concentration as well as the shifting location of mining activities.

The proportion of the labor force in manufacturing in urban governorates was more than three times that of the non-urban governorates between 1907 and 1960. This proportion increased from 14 to 21 percent in urban governorates; from 5 to 7 percent in non-urban governorates of Lower Egypt; and fluctuated around 5 percent in Upper Egypt. Among urban governorates, the proportions of manufacturing workers have been higher in Cairo and Alexandria than in Suez and Canal governorates. Only a few non-urban governorates have had proportions of their labor force in manufacturing equal to or more than the national average, such as Damietta and Kalyubia in Lower Egypt and Giza in Upper Egypt (Table 5.12). Damietta's proportion was roughly twice that of Cairo before its boundaries were extended (between 1947 and 1960) to include substantial rural areas. The proportions in other governorates do not indicate any clear difference between Lower and Upper Egypt.

TABLE 5.12. PERCENTAGES OF LABOR FORCE IN INDUSTRY DIVISIONS OF THE NON-AGRICULTURAL SECTOR RELATIVE TO U.A.R. AVERAGES, BY GOVERNORATE, 1937-1960.

Governorate/ census year	1937	1947	1960	1937	1947	1960
		Mining			Manufacturing	
Cairo	147	125	93	314	255	232
Alexandria	216	90	107	304	279	289
Canal	174	20	170	185	141	80
Suez	53	155	619	295	131	176
Damietta	32	65	56	655	468	154
Dakahlia	16	...	7	71	61	56
Sharkia	42	20	15	57	47	46
Kalyubia	158	195	156	103	135	139
Gharbia	...	...	4	83	89	95
Menoufia	-	...	4	58	59	52
Behera	16	15	19	47	59	69
Giza	274	215	96	100	104	118
Beni Suef	105	105	52	48	42	38
Fayoum	21	25	19	113	103	65
Minya	68	65	41	54	48	39
Asyut	11	20	7	58	51	40
Suhag	11	30	7	57	50	39
Kena	5	75	67	86	76	55
Aswan	400	680	359	58	61	73
Frontier Districts	5258	4720	5989	57	29	50
U.A.R. Total	100	100	100	100	100	100
		Construction			Electricity	
Cairo	356	275	228	234	160	300
Alexandria	299	226	174	276	203	321
Canal	611	201	199	247	109	264
Suez	540	188	365	200	120	213
Damietta	193	129	82	145	134	15
Dakahlia	81	73	62	37	40	15
Sharkia	52	59	42	34	31	11
Kalyubia	86	82	63	37	34	40
Gharbia	59	61	60	53	54	45
Menoufia	48	51	60	26	31	36
Behera	48	54	53	50	51	45
Giza	85	135	127	40	49	170
Beni Suef	65	85	65	58	63	51
Fayoum	84	67	64	124	126	38
Minya	47	59	45	50	57	45
Asyut	51	60	54	179	226	55
Suhag	40	50	55	192	234	34
Kena	62	87	110	145	180	34
Aswan	112	88	368	111	151	328
Frontier Districts	324	194	154	84	46	55
U.A.R. Total	100	100	100	100	100	100

TABLE 5.12. (Continued)

Governorate/ census year	1937	1947	1960	1937	1947	1960
		Commerce			Transport	
Cairo	251	202	194	305	235	214
Alexandria	324	245	200	458	351	242
Canal	317	215	154	567	586	374
Suez	223	303	217	550	433	355
Damietta	233	195	103	398	262	105
Dakahlia	85	84	84	65	69	69
Sharkia	79	74	69	40	47	48
Kalyubia	95	87	81	63	72	103
Gharbia	73	71	72	70	62	71
Menoufia	80	79	70	41	41	54
Behera	63	62	59	56	58	52
Giza	90	107	117	94	96	109
Beni Suef	82	84	79	62	54	50
Fayoum	81	80	87	36	35	39
Minya	76	81	73	61	62	54
Asyut	67	74	74	61	59	56
Suhag	63	70	77	48	50	48
Kena	59	67	66	60	57	59
Aswan	61	64	63	128	121	115
Frontier Districts	50	59	86	121	150	133
U.A.R. Total	100	100	100	100	100	100
		Services				
Cairo	350	235	242			
Alexandria	283	351	185			
Canal	227	586	160			
Suez	224	433	151			
Damietta	187	262	90			
Dakahlia	82	69	80			
Sharkia	76	47	76			
Kalyubia	81	72	85			
Gharbia	76	62	75			
Menoufia	74	41	79			
Behera	60	58	54			
Giza	78	96	131			
Beni Suef	72	54	64			
Fayoum	65	35	62			
Minya	64	62	58			
Asyut	63	59	59			
Suhag	47	50	46			
Kena	45	57	47			
Aswan	67	121	73			
Frontier Districts	126	150	80			
U.A.R. Total	100	100	100			

The proportionate share of the urban governorates in the country's manufacturing labor force increased considerably, from 27 percent in 1907 to 47 percent in 1960. The share of Cairo and Alexandria alone increased from 25 to 41 percent. The coefficients of localization shown in Table 5.13 reveal an increase in the relative degree of geographical concentration of manufacturing between 1947 and 1960.

TABLE 5.13. COEFFICIENTS OF LOCALIZATION BY INDUSTRY, U.A.R., 1937-1960.

Industry/Year	1937	1947	1960
Agriculture	12.0	16.3	19.6
Mining	61.6	56.8	56.0
Manufacturing	27.0	27.5	30.1
Construction	34.4	28.2	29.3
Electricity	34.8	33.0	46.9
Commerce	22.3	20.1	19.6
Transport	35.4	33.7	29.4
Services	27.6	28.4	25.0

The proportion of the labor force in construction was much smaller in non-urban than in urban governorates (roughly one-third as large) between 1907 and 1960. The differences between Lower and Upper Egypt were insignificant. Most of the fluctuations in the economically active population in construction over time occurred in urban governorates. However, the changes in governorate proportions resulted in a decline in the relative concentration of construction workers between 1937 and 1947.

The leading role held by Upper Egypt between 1927 and 1947 in the total employment in electricity, etc. was transferred by 1960 to the urban centers, whose share in this industry increased from 31 percent in 1907 to 60 percent in 1960. The decline in the share of Upper Egypt between 1947 and 1960 was the net result of a more rapid decline in Fayoum, Asyut, Suhag and Kena partly

offset by an increase in the shares of Aswan and Giza. The share of non-urban governorates in Lower Egypt declined during the same period. The outcome of these developments was an increasing dissimilarity among governorates in their proportions of workers in this industry.

Transport and communication is also characterized by a high degree of concentration. In urban governorates, the proportion of economically active population in transport was, on the average, more than 4 times the corresponding proportion in non-urban governorates between 1907 and 1960. Among the urban governorates, Suez and Canal had higher proportions than Cairo and Alexandria. Among the remainder, Damietta, in Lower Egypt, and Giza and Aswan in Upper Egypt have shown relatively high proportions, as illustrated in Table 5.12. Cairo has had the lion's share in the national total of transport and communications workers. Its share increased from 20 to 26 percent between 1907 and 1960. When Alexandria's share is added, the two governorates are found to have had slightly less than 40 percent of all transport and communications workers in 1960. But the changes of governorate proportions led to a reduction in the relative concentration of workers in this industry between 1937 and 1960.

As the figures in Table 5.13 indicate, the degree of relative concentration in commerce was the lowest among non-agricultural industries in 1937. Between 1937 and 1960, the degree of geographical concentration of this industry was reduced further by a decline in the proportion of workers in commerce in urban governorates, with comparative stability in other governorates in Lower and Upper Egypt.

In urban governorates, the proportion in services increased from 33 to to 43 percent between 1907 and 1947, and decreased in 1960 to 39 percent.

This proportion fluctuated between 9 and 10 percent in Lower Egypt and between 7 and 8 percent in Upper Egypt during the 1907-1937 period, then increased to 13 and 12 percent, respectively by 1960. The trend during the 1937-1960 period as a whole brought about a decline in the degree of relative geographical concentration of service workers as indicated by Table 5.13.

5.7.3. The Overall Industrial Pattern:

Next, viewing the whole pattern of industrial structure of the labor force of each governorate and its changes over time, one may ask to what extent the structure differs from that of the country as a whole and whether the trend has been toward greater or less similarity. The measure used here for exploring these questions is obtained by subtracting the percent distribution of economically active population among the eight industry groups and the "not adequately described" group in each governorate from the corresponding percentage distribution in the U.A.R. as a whole. The sum of the positive (or negative) differences for each governorate represents the proportion of the governorate's labor force that would have to change industry in order to make the industrial structure be the same as that of the country as a whole. This measure is sometimes called "index of specialization" or "index of diversification". Table 5.14 gives the values for each governorate during the 1937-1960 period.

As one might have anticipated from the preceding discussion, urban governorates show extremely high indices compared to those of the non-urban governorates in Lower and Upper Egypt, primarily as a result of the pronounced concentration of non-agricultural activities in the urban governorates. In fact, the indices for urban governorates are practically equal to the positive deviations

TABLE 5.14. DEVIATIONS OF GOVERNORATE INDUSTRIAL DISTRIBUTIONS FROM THOSE FOR THE U.A.R., 1937-1960.

Governorate/Year	1937	1947	1960
Cairo	65.6	59.5	54.9
Alexandria	65.1	58.4	51.6
Canal	59.9	53.9	32.2
Suez	56.5	51.5	46.3
Damietta	63.4	55.7	5.3
Dakahlia	6.7	10.8	11.8
Sharkia	9.9	11.5	16.3
Kalyubia	4.2	6.7	5.3
Gharbia	8.0	10.6	10.5
Menoufia	10.2	14.1	14.5
Behera	13.4	16.7	18.8
Giza	4.2	2.6	10.0
Beni Suef	9.7	13.7	17.9
Fayoum	7.7	10.9	15.5
Minya	11.3	13.7	19.6
Asyut	11.7	14.5	19.0
Suhag	14.5	17.8	21.3
Kena	12.5	15.3	18.6
Aswan	9.5	11.9	10.5
Frontier Districts	18.0	13.8	19.7

of their proportions in non-agricultural industries from the national proportions. In contrast, the indices for non-urban governorates are, with few exceptions, equal to the positive deviations of their proportions in agriculture. Again the main exceptions are Damietta and Kalyubia in Lower Egypt; Giza and Aswan in Upper Egypt; and the Frontier Districts.

Between 1937 and 1960, the urban governorates showed a significant reduction in their indices; i.e., the difference between their industrial structure and that of the country as a whole diminished; but the trend was opposite in non-urban governorates. It may be recalled that the extreme declines of the indices in Damietta and Canal governorates are, in a large part, due to the boundary changes mentioned earlier.

The answer to the question about the general trend in degree of similarity or dissimilarity of governorate industrial structures depends again on the measure used. The trends shown by weighted and unweighted averages of the indices given in Table 5.14, and an index of relative concentration defined as the simple average of governorate sums of positive or negative deviations from the arithmetic mean of industry distributions, are as follows:

	1937	1947	1960
Averages of indices of Table 5.14:			
Unweighted	8.9	10.1	11.2
Weighted	23.1	23.2	21.0
Index of relative concentration	27.2	25.7	21.3

The directions of change indicated by the three measures are not the same; and in any case, the changes indicated are not very large. Taking into account boundary changes between 1947 and 1960, it is fair to conclude that the regional industrial shifts have occurred, by and large, on a nearly proportionate basis so that the degree of dissimilarity in 1960 was not very different from that of 1937.

Concluding this discussion of the trends of industrial structure in different parts of the country, it is worth emphasizing that in the urban governorates, the proportionate share of secondary industries (especially manufacturing and electricity, etc.) in the labor force has been expanding continuously. Although the share of the tertiary sector also increased for a time, it decreased during the latest intercensal period. These observations, suggesting productive directions of change in the urban industrial structure during a period of large influx of migrants from rural areas; throw further doubt on the validity of the overurbanization thesis as applied to Egypt.

5.8. Age Distribution of the Male Labor Force by Industry

Beside the influence of changes in the age composition of the population on that of the total labor force, differences in the age structure of various industries depend upon their different patterns of growth -- i.e. differences in the rates of entry and withdrawal specific for age and changes in these rates over time. Since a rapidly growing industry tends to attract young workers (new entrants into the labor force and movers from other industries), it may on that account have a younger labor force than a slower growing or declining industry has.[1] However, the age structures of industries are influenced also by the ages of entry and retirement, which vary among industries. Among the factors related to such variations are the status structure in each industry (chapter 6), the proximity of establishments, the workers' knowledge of labor market conditions, retirement policies in various industries, etc.[2]

Table 5.15 provides median ages of the male labor force by industry for 1937, 1947 and 1960. Although the labor force in agriculture grew at a slower

TABLE 5.15. MEDIAN AGE OF THE MALE LABOR FORCE BY INDUSTRY, U.A.R., 1937-1960.

Industry/Year	1937	1947	1960
Agriculture	29.9	30.7	31.6
Mining	33.8	34.2	34.9
Manufacturing	32.2	29.6	31.5
Construction	36.7	38.4	36.3
Electricity	37.2	35.8	38.9
Commerce	37.6	37.4	37.9
Transport	36.5	36.2	37.4
Services	34.7	34.1	36.2
Not adequately described	37.6	13.0	22.7
Total	31.9	31.1	33.3

[1] A.J. Jaffe and J. Froomkin, Technology and Jobs: Automation in Perspective (New York: Frederick A. Praeger, 1968), Chapter 11.

[2] A.J. Jaffe, "From Entries to Retirement: The Changing Age Composition of the U.S. Male Labor Force", Demography, Vol. IV, No. 1, 1967, pp. 273-282.

rate than the total during this period, the median age in agriculture was lower than that of the total labor force. This observation is explained by the fact that in agriculture, on the average, the age of entry is lower and the age of retirement is higher than in the total labor force, particularly for males.

Some of the differences in age concentrations between the major sectors are shown in Table 5.16 for males between 1917 and 1960.[1] In addition to the

TABLE 5.16. PERCENTAGES OF MALE LABOR FORCE IN SELECTED AGE GROUPS BY INDUSTRIAL SECTOR, U.A.R., 1917-1960.

Age group and sector/year	1917	1927	1937	1947	1960
Less than 20:					
Agriculture	30.8	28.8	30.4	28.6	26.1
Secondary	17.0	18.8	14.9	19.3	13.3
Tertiary	16.2	14.4	11.3	14.5	8.3
20-39:					
Agriculture	37.7	41.2	39.5	39.3	39.6
Secondary	48.1	49.2	49.3	47.1	42.9
Tertiary	46.3	50.2	50.1	47.3	50.4
60 and above:					
Agriculture	10.3	9.1	8.1	8.1	8.5
Secondary	9.0	7.1	6.2	6.2	5.1
Tertiary	9.7	8.2	7.0	7.0	6.7

higher proportions of the young and the aged, the agricultural sector also shows a significantly lower proportion of males between ages 20 and 40, for all census years. This is a result, not only of the movement of workers from agriculture to non-agricultural industries, but also of the earlier age of entry and later age of retirement in agriculture. Although the effects of these factors cannot be measured separately with the data given in the table, the large migration from rural to urban areas as well as other indications make

[1] For more details of the variations of age structure of industries, see Appendix D, Tables D.20, D.21, and D.22.

it clear that the movement from agriculture to the non-agricultural sector is a major factor.

While the age structure of an industry's labor force is partly determined by factors related to its growth, this structure plays a part, in turn, in determining the growth rate of labor force in the industry. In particular, the rate of losses by mortality is determined primarily by the age structure. Estimates of this component of change in industry sectors of Egypt's labor force during intercensal intervals are given in Appendix C.

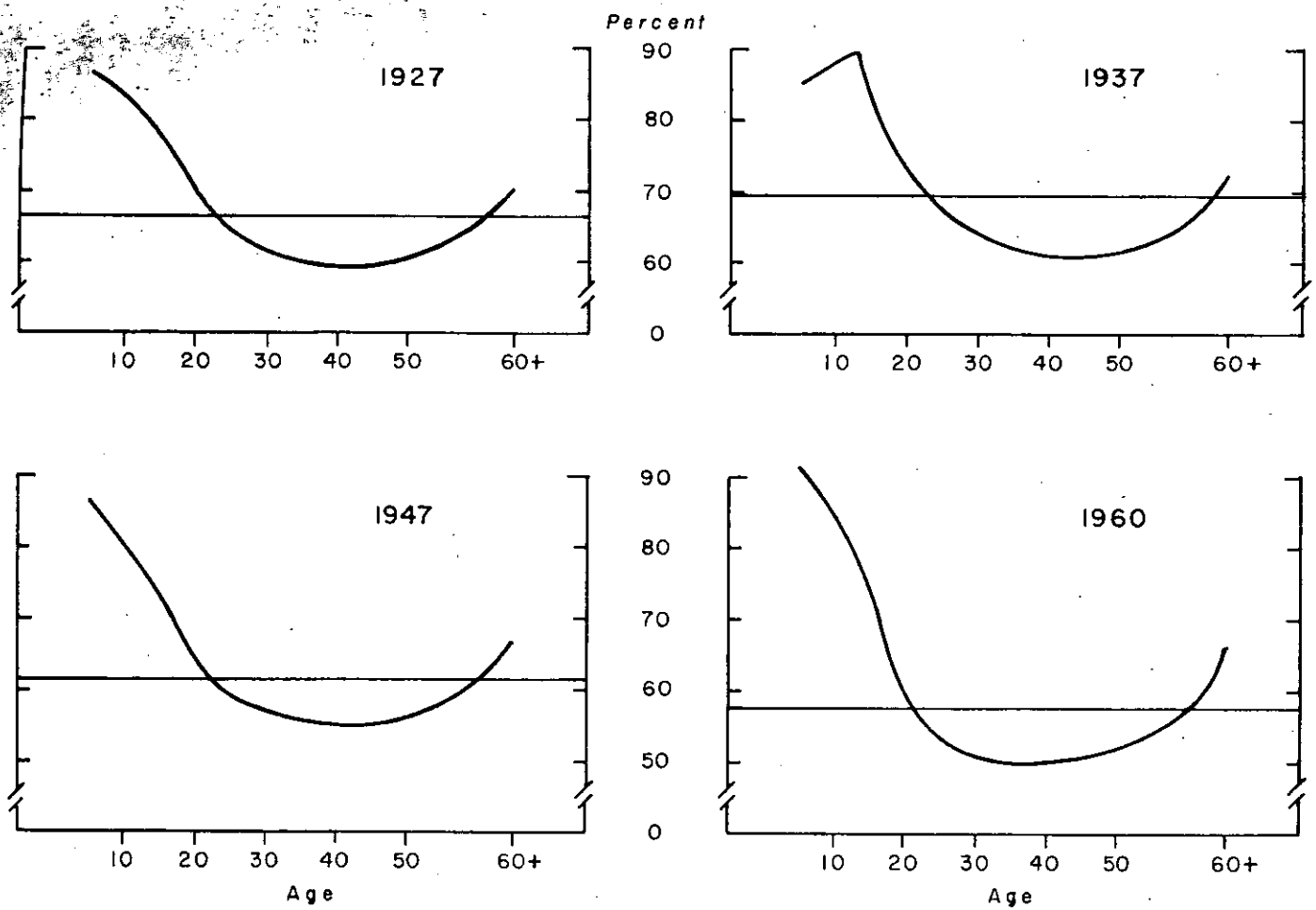
The cross-classification of the labor force by industry and age can also be studied from another angle, to compare patterns of industrial distribution in different age groups of the labor force. Figure 5.1 displays "age profiles" of the male labor force in agriculture for census years between 1927 and 1960.[1] These show the percentage of agricultural workers among the total male labor force in each age group. The corresponding proportion for males of all ages is represented by the horizontal line in each graph.

The similarity of the curves for all census years confirms the observations above.[2] The deviation of the age group 5-9 in 1937 from the U-shape curve is probably due to underreporting of this age group in agriculture. (It corresponds to the extremely low activity rate of this age group mentioned in chapter 3.) The significantly higher proportion of the age group 10-19 in agriculture in 1937 than in 1927 also corresponds to a difference in activity rates in the two census years and suggests that this age group in agriculture

[1] In constructing the curve for 1947, the ill-defined group was excluded.

[2] The 1917 census shows the same pattern. However, it has been excluded here because of the sizable share of the "not adequately described" division, which affects greatly the percentages at most ages even when the ill-defined group is ignored.

FIGURE 5.1 PERCENTAGE OF ECONOMICALLY ACTIVE MALES IN EACH AGE GROUP IN AGRICULTURE, UAR, 1927-1960



may have been reported more fully in 1937. The higher proportion of the youngest age group in 1960 than in all other census years is, to a large extent, due to the fact that the 1960 census was taken at a seasonal peak for agriculture.

Looking at these charts upside down, one sees the age profiles of the labor force in the non-agricultural sector, which indicate, of course, higher proportions of adults in intermediate ages and lower proportions of the youngest and oldest workers.

5.9. Relationships Between Changing Labor Force Structure and Productivity

A better view of the economic significance of changes in industrial structure of the labor force can be obtained by relating them to changes in industry shares of total product. Estimates of the industry shares in product for periods before 1947 in Egypt are shaky and their comparability is rather doubtful. However, the data for 1947 and 1960 are fairly adequate for our purpose.[1]

The industrial shift in labor force has been accompanied by a significant shift in the structure of national product (Table 5.17). During the postwar years and until 1960, the share of agriculture declined appreciably (some 9 percentage points of total product) in favor of the non-agricultural sectors.[2]

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[1] A critical statement of different estimates and their results may be found in Mead, Growth and Structural Change..., Statistical Appendix. The data for 1947 and 1960 are not strictly comparable due to exclusion from the 1947 figures and inclusion in those of 1960 of net factor income from abroad. However, this accounts for only 0.6 percent of gross national product in 1947.

[2] A less comparable estimate of the share of agriculture in 1937 is 49 percent of gross domestic product (at factor cost). This indicates a decline in that share from about one-half to somewhat more than one-quarter of the total product during the 1937-1960 period. Ibid., Appendix Table I-A-1.

TABLE 5.17. INDUSTRIAL STRUCTURE OF TOTAL PRODUCT, 1947 AND 1960.

(Egyptian pounds per year at 1954 market prices)

Industry/Year	1947 (Gross Domestic Product)	1960 (Gross National Product)
Agriculture	37.5	28.8
Manufacturing	12.7	17.6
Construction	3.1	2.9
Commerce	18.4	16.8
Transport	5.8	7.2
Services	22.5	26.8
Total	100.0	100.0

Source: Computed from Appendix Tables I-A-6 and I-A-8 in Mead, Growth and Structural Change... Manufacturing includes mining and quarrying, and electricity, gas, etc.

In his long-term study of thirteen of the present-day developed countries, Kuznets concludes that "the downward trend in the share of the agriculture sector was offset by the upward trend in the share of industry (secondary) sector - leaving no marked trend in the share of the residual services (tertiary) sector in total product."[1] Likewise in Egypt, in terms of Kuznets' sector grouping, more than two-thirds of the decline in the share of agriculture was accounted for by the increase in the share of the secondary sector during the 1947-1960 period. As a result, the ratio of the share of the secondary sector to that of the tertiary sector rose from 53 to 64 percent.

This observation does not in any way discount the increasing role of the tertiary sector. Table 5.17 shows that this sector took the lead in the country's economy by 1960. In fact, the share of the services division alone approached the agricultural share in total product. Its growth is attributable to the rapid increase in both government and community services; particularly in public administration, armed forces, education and medical services.

[1] Kuznets, Modern Economic Growth..., p. 97.

Most of the increase in the relative share of the secondary sector, on the other hand, occurred in manufacturing, mining, electricity, etc. The rise in the share of transport is, in large part, due to the increased revenues from the Suez Canal after its nationalization in 1956.

The differences between the changes in industrial structure of the labor force and those of total product are mainly explainable by differential changes in labor productivity among various industries. A rough measure of the productivity of labor is the average product per worker.[1] Table 5.18 provides estimates of gross value added per worker for 1947 and 1960 by industry.

TABLE 5.18. GROSS VALUE ADDED PER WORKER, BY INDUSTRY, 1947 AND 1960.

(Egyptian pounds per year at 1954 prices)

Industry/Year	1947	1960
Agriculture	73.2	88.5
Manufacturing	169.0	293.1
Construction	219.9	257.9
Commerce	129.3	186.7
Transport	225.8	357.7
Services	105.0	200.0

Source: Adapted from Mead, Growth and Structural Change..., Appendix Table I-A-10. Customs receipts have been excluded from commerce. The figures here are modified for the differences between labor force data used in this study and those used by Mead. Manufacturing includes mining and quarrying, and gas, electricity, etc.

While productivity of labor has increased considerably in the economy as a whole, the level in agriculture is still rather low and has risen relatively little. The 1947-1960 period witnessed a decline in the ratio of product per worker in agriculture to that of the non-agricultural sector.

[1] For details, see OECD, Productivity Measurement, three vols. (Paris, 1955-1966).

Nevertheless, the increase of over 20 percent in the value added per agricultural worker during these thirteen years is not negligible. It has been brought about by various factors such as the expansion of cultivated and cropped area, better irrigation, use of fertilizers, etc. Also, the slackened rate of growth of the agricultural labor force is an important factor. Physical output per worker in agriculture increased more (over 32 percent) than the gross value added during the same period.[1] The difference between the trends of the two measures is explainable by a change in terms of trade against agricultural products, and by changes in the amounts of inputs in agriculture produced by other sectors.

Within the non-agricultural sector, the secondary sector has maintained higher levels of labor productivity than the tertiary sector.[2] The increase in transport was greatly influenced by the Suez Canal, which accounted for 40 percent of the income and only 3 percent of the labor force in that industrial division in 1960.

The increase of productivity in the services division is quite exaggerated as a result of the special treatment of the armed forces in the 1960 census classification. Since the armed forces are included in the denominator for each of the divisions in Table 5.18, but their product is included in services, the measures of labor productivity are underestimated except in services.

Underemployment has frequently been cited as a primary reason for the low indices of average labor productivity in less developed economies, especially in agriculture and to a lesser degree in the tertiary sector. A number of

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[1] Hansen and Marzouk, Economic Development and Policy..., Tables 3.14 and 3.15, p. 75. The rate of increase was adjusted for differences in labor force figures.

[2] For detailed analysis of productivity in manufacturing, see Ibid., pp. 129-135.

studies of underemployment in agriculture in Egypt have led to conflicting conclusions.[1] On the one hand, Cleland says: "On a national scale one might envisage with fair assurance the reduction of the agricultural population by at least 50 percent without reducing the total products from the land and without much more mechanization than at present."[2] Hansen, on the other hand, contends that "most probably Egypt has never been overpopulated in the sense that marginal (or, rather, differential) product of labour in agriculture is zero."[3] These two statements throw some light on the extent of disagreement on this intricate issue. The wide differences in the results of various studies are, in a large measure, due to differences in the theoretical concepts and empirical data used. For example, Cleland's application of the pattern of labor use on a single farm to the country as a whole cannot be considered as an adequate proof for the existence of a 50 percent redundancy of agricultural workers.

On the other hand, the seasonal pattern of wages which indicates the tightening in the market for hired agricultural workers in peak periods, in Hansen's excellent study, may not be taken as a demonstration of the absence of year-round underemployment. In the first place, this finding does not cover a substantial proportion of workers in agricultural activities carried out on a family basis. Secondly, it has been suggested that because of traditional rigidities a considerable male labor surplus exists on small farms while large farms in the same region suffer from shortages of child and female

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[1] For an excellent critical review of the major studies, see Mead, Growth and Structural Change..., pp. 89-98.

[2] Cleland, The Population Problem..., p. 106. Other estimates range between 20 and 50 percent. See Bibliography No. 23, 37, 76.

[3] B. Hansen, "Marginal Productivity Wage Theory and Subsistence Wage Theory in Egyptian Agriculture", The Journal of Development Studies, Vol. II, No. 4, July 1966, p. 393. For similar conclusions, see Bibliography No. 27, 34, 45.

labor. In addition, the insufficient mobility of workers between agricultural areas is illustrated by the regional variations in seasonal patterns of labor shortages in agriculture. These rigidities, it is argued, may explain the possible coexistence of shortages of paid workers during periods of peak labor demand with year-round underemployment.[1]

Whatever the case may be, it should be noted that opponents of the permanent underemployment hypothesis do not deny the existence of large seasonal underemployment in agriculture.[2] It may be concluded that seasonal underemployment, perhaps together with some degree of permanent underemployment, is, in part, responsible for the low level of average labor productivity in agriculture.

The rapidity of the labor force increase in the tertiary sector during the 1937-1960 period has led some writers to argue that it was induced by the acceleration of population growth together with the limited capacity for absorption of labor in the small, though rapidly growing, secondary sector. The result, they suggest, is spreading underemployment in the tertiary sector.[3] Here again, as in the case of agriculture, solid empirical evidence is lacking; and most of the discussion on the subject depends heavily on employment data. Mead, for example, says that "excessive" expansion in government services between 1937 and 1960 resulted in underemployment of workers in these services. but he does not provide adequate substantiation for this hypothesis.[4] Similarly,

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[1] R. Mabro, "Industrial Growth, Agricultural Under-employment and the Lewis Model. The Egyptian Case, 1937-1965", The Journal of Development Studies, Vol. III, No. 4, July 1967, pp. 325-326.

[2] Among others, see Hansen and Marzouk, Development and Economic Policy..., p. 63.

[3] Mead, Growth and Structural Change..., chapter 6.

[4] Ibid., pp. 132-143.

an adequate evaluation of possible underemployment in other lines of the tertiary sector, particularly personal services and commerce, is not available, and it is beyond the scope of this study to go into that question. However, the shifts within the non-agricultural sector from less productive to more productive industries and the rising trend of productivity indices suggest that underemployment has been diminishing.

CHAPTER 6

OCCUPATIONAL AND STATUS STRUCTURE OF THE LABOR FORCE

6.1. Occupational Structure

The occupational structure of the labor force and its changes occupy an important place in various fields of social sciences. Sociologists have emphasized that an individual's occupation in a modern society is a primary factor in determining his social class. Hence, the data on occupational patterns and changes in these patterns have been used frequently in recent years for explaining some aspects of the dynamics of social stratification.

In the course of economic development, the occupational distribution of economically active population shifts as a consequence of changes in the demand for goods and services and in the supply of human skills required for various occupations. Information on occupational patterns and their trends is of special importance in the statistical framework of manpower planning as an integrated part of policy for socio-economic development.

Occupational data are also used in studying patterns of consumer behavior and differentials in fertility, mortality and migration. It has been well said that "the variegated role of the occupational structure in connecting different elements of social organization makes an understanding of it essential for the student of modern society."[1]

[1] Blau and Duncan, The American Occupational Structure, p. 7.

Unfortunately non-comparability of occupation classifications has hindered detailed studies of historical trends in most countries. However, adjustments have been made covering relatively long periods for several of the present-day developed countries with the hope of exploring typical patterns of occupational shifts over time.[1]

The purpose of this section is to present the general features of the occupational structure and its regional variations as revealed by the 1960 census data, as well as some indications of occupational trends during the period from 1937 to 1960. The data for 1937 and 1947 have been adjusted to correspond roughly to the international standard classification used in 1960. However, it should be noted that the data for 1937 and 1947 refer to persons 5 years of age and over, while those of 1960 are given for ages 15 and above.[2]

6.1.1. Patterns and Trends, 1937-1960:

In 1960, the proportion of workers in white-collar occupations (professional, technical, administrative, managerial, clerical and sales workers) amounted to slightly less than 17 percent of economically active population in Egypt compared to 42 percent in the United States. Likewise, the proportion of blue-collar workers (miners, quarrymen, workers in transport, craftsmen and production-process workers) in Egypt was roughly one-half that of the United States. The difference in the share of service workers was not as great (9 percent in Egypt and 12 percent in the United States). Evidently, these differences are accounted for mainly by the large difference between

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[1] Among others, see A. M. Farrag, "The Occupational Structure of the Labour Force: Patterns and Trends in Selected Countries," Population Studies, Vol. XVIII, No. 1, July 1964, pp. 17-34.

[2] See Appendix A.

the two countries in the proportion of farmers, fishermen and hunters (53 percent in Egypt and 6 percent in the United States).[1]

The differentials in occupational patterns between the two countries are analogous to the occupational shifts observed over time with the increasing complexity of technology and economic organization in countries undergoing economic development. Such shifts are also found in Egyptian data for the 1937-1960 period (Table 6.1). The increase in the proportion of white-collar workers was shared by all the four occupational groups comprised by this broad category. This observation remains valid when differences in the age range are taken into account.[2] The shares of the blue-collar occupations as well as service and sport workers also increased during the same period, though the increase in the share of the latter group was less impressive.

The sex differentials in occupational patterns for 1947 and 1960 can be seen in Table 6.2. Females appear to have larger proportionate shares than males in both professional and service occupations and smaller shares in other occupations. Because of the possible differences in reporting of economically active females mentioned earlier, the concentration of females in specific occupations may be viewed through the proportions of females among the total workers in each occupational group. These proportions are relatively high in the group of professionals as well as service and sport workers. Keeping

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[1] For comparison with other less developed countries having lower proportions of non-farming occupation than Egypt, see Durand and Miller, Methods of Analyzing Census Data on Economic Activities..., p. 70. The United States data cited above are taken from Farrag, "The Occupational Structure....", p. 27.

[2] When professional, administrative, clerical and sales workers 15 years of age and over are related to the total labor force 6 years of age and over in 1960, their shares are 3.7, 1.0, 3.3 and 7.2 percent respectively.

TABLE 6.1. PERCENTAGE OF LABOR FORCE IN EACH MAJOR OCCUPATIONAL GROUP, U.A.R., 1937-1960.

Occupation/Year	1937	1947	1960
White-collar:	11.7	12.4	16.6
Professional, technical, etc.	2.5	2.7	3.7
Administrative, managerial, etc.	.7	.9	1.1
Clerical workers	1.8	2.0	3.7
Sales workers	6.7	6.8	8.1
Blue-collar:	12.2	15.7	19.3
Miners and quarrymen	.1	.1	.2
Transport workers	2.3	2.4	3.1
Craftsmen & production-process workers	9.8	13.2	16.0
Farmers, fishermen, etc.	68.6	60.5	53.1
Service workers	7.2	9.0	8.9
Not classified	.3	2.5	2.2
Total	100.0	100.0	100.0

TABLE 6.2. PERCENT DISTRIBUTION BY OCCUPATIONS OF MALE AND FEMALE LABOR FORCE, AND PERCENTAGE OF FEMALES IN TOTAL LABOR FORCE OF EACH MAJOR OCCUPATIONAL GROUP, U.A.R., 1947-1960.

Occupation/ year and sex	1947			1960		
	Males	Females	Percentage of females	Males	Females	Percentage of females
White-collar:	12.7	10.5	9.4	16.1	24.8	8.7
Professional, etc.	2.7	3.3	13.5	3.2	12.7	22.5
Administrative, etc.	1.0	.2	1.9	1.1	1.0	4.9
Clerical workers	2.2	.5	2.6	3.7	3.2	5.0
Sales workers	6.8	6.5	10.7	8.1	7.9	5.6
Blue-collar:	16.8	6.9	4.9	19.8	10.2	3.0
Miners & quarrymen	.1	...	.5	.2	...	.1
Transport workers	2.7	.1	.5	3.2	.3	.5
Craftsmen, etc.	14.0	6.8	5.8	16.4	9.9	3.5
Farmers, fishermen, etc.	60.5	60.0	11.1	54.3	32.6	3.5
Service workers	7.6	19.6	24.5	7.9	24.2	14.9
Not classified	2.4	3.2	14.1	1.8	8.0	21.2
Total	100.0	100.0	11.2	100.0	100.0	5.7

in mind the difference in age coverage, one can see that the proportions of females increased only in professional, administrative and clerical occupations between 1947 and 1960, which supports the hypothesis that education is an important factor for female participation in the labor force.

6.1.2. Geographical Differences:

Occupational patterns, like the industrial structure, differ greatly among various regions and governorates. In 1960, the proportion of white-collar workers was 33 percent in urban governorates and 11 percent in non-urban governorates. Similarly, the proportion of workers in blue-collar occupations in the group of urban governorates was three times that in other governorates in Lower and Upper Egypt taken together. Although the variation in the proportion of service workers was less than that of blue-collar or white-collar occupations, it was still significant between urban and non-urban governorates (11 and 7 percent respectively). The narrower range of regional and governorate variation in the proportion of service workers reflects the fact that services are less transferable geographically than physical products are.

Occupational structures of individual governorates (Table 6.3) show the leading position of Cairo in the proportions of white-collar and service workers, and Suez and Alexandria in the proportion of blue-collar workers.[1] On the other hand, since a large majority of the labor force in the non-urban governorates is engaged in agricultural occupations, they have limited scope for variation in the proportion of all non-agricultural occupations with the exception of such governorates as Damietta, Kalyubia, Giza and Aswan.

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[1] The differences between Tables 6.3 and 6.1 in the shares of professional and service workers are due to the lack of the necessary regional data to transfer the groups of "Muslim clergy, mosque servants and other employees of religious places" and "musicians and related workers" from service to professional occupations. For this reason, the data for governorates in Table D.23 likewise differ from the national totals on which Table 6.1 is based.

TABLE 6.3. PERCENTAGE OF LABOR FORCE IN EACH MAJOR OCCUPATIONAL GROUP FOR GOVERNORATES, U.A.R., 1960.

Governorate/ Occupation*	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7/8)	(9)	(X)	Total
Cairo	7.8	3.7	10.3	13.9	2.1	.1	6.0	33.3	18.4	4.3	100.0
Alexandria	5.6	3.0	9.7	13.2	5.0	.1	5.0	36.5	16.6	5.4	100.0
Canal	3.5	1.8	6.4	12.1	24.5	...	7.2	24.5	14.6	5.6	100.0
Suez	4.4	1.6	7.3	13.5	10.4	.7	8.9	34.3	14.1	4.8	100.0
Damietta	2.7	.9	2.0	9.0	52.8	...	3.4	20.3	7.8	1.0	100.0
Dakahlia	2.5	.6	2.3	7.3	65.4	...	2.7	10.5	7.4	1.3	100.0
Sharkia	2.2	.5	2.1	6.2	69.7	...	1.8	8.8	7.4	1.3	100.0
Kalyubia	2.1	.5	2.6	7.0	54.9	.4	2.6	19.7	8.1	2.1	100.0
Gharbia	2.2	.6	2.2	6.2	63.5	...	2.3	13.6	7.8	1.5	100.0
Menoufia	2.9	.4	2.1	6.0	68.6	...	1.8	9.3	7.3	1.5	100.0
Behera	1.6	.4	1.7	5.5	70.2	.1	2.0	10.9	6.3	1.2	100.0
Giza	4.0	1.6	4.3	9.3	44.5	.2	4.1	17.8	11.7	2.6	100.0
Beni Suef	1.7	.4	1.4	7.3	69.8	...	1.4	10.1	6.5	1.2	100.0
Fayoum	2.1	.5	1.6	6.6	72.2	...	1.8	7.2	6.7	1.2	100.0
Minya	1.7	.4	1.5	6.3	73.0	.1	1.8	7.2	6.8	1.1	100.0
Asyut	2.1	.4	1.7	6.5	71.6	...	2.1	8.1	6.3	1.1	100.0
Suhag	1.4	.3	1.2	6.9	74.7	...	1.6	7.7	5.1	1.0	100.0
Kena	1.4	.3	1.3	5.8	72.3	.2	1.8	10.6	5.2	1.2	100.0
Aswan	2.8	.7	2.5	5.3	55.4	.9	4.0	18.2	7.5	2.6	100.0
Frontier Districts	2.8	.7	4.6	5.0	45.2	9.8	4.0	16.6	6.5	5.0	100.0
U.A.R. Total	3.2	1.1	3.7	8.1	53.1	.2	3.1	16.0	9.4	2.2	100.0

* (0) Professional, technical, etc.; (1) Administrative, managerial, etc.; (2) Clerical workers; (3) Sales workers; (4) Farmers, fishermen, etc.; (5) Miners and quarrymen; (6) Workers in transport; (7/8) Craftsmen and production-process workers; (9) Service and sport workers; (X) Workers not classifiable by occupation.

The regional concentration of certain occupational groups may be illustrated by a few observations. While the share of the four urban governorates in the total labor force was about 32 percent in 1960, their share in all white-collar occupations was 45 percent. Their shares were larger in professional, administrative and clerical than in sales workers (46, 62, 57 and 36 percent respectively). The shares of that group of governorates were 44 percent of workers in blue-collar occupations and 40 percent of service workers. With the exception of "miners and quarrymen," the shares of non-urban governorates of Lower Egypt in other non-agricultural occupations were larger than those of the governorates of Upper Egypt. However, when these shares are related to the regional shares in the total labor force, the variation becomes less significant; in fact, the relatives for Upper Egypt become slightly higher than those of Lower Egypt in administrative, sales, mining and farming occupations, and lower in all other occupational groups.

6.1.3. Relationship Between Occupational Patterns and Industrial Structure:

The similarities between regional occupational patterns and industrial structure should not be surprising in view of the close relationship between occupation and industry particularly in less developed economies. In fact, "in the simplest form of the division of labor, when each man makes only one product but himself performs all the processes that go into it, occupation and industry coincide... As soon, however, as men specialize in processes, a difference appears".[1] But the relationship continues to hold to some degree even in economies characterized by a high level of specialization and division of labor.

[1] Brown, The Economics of Labor, pp. 85-86.

From two different angles, Table 6.4 and 6.5 throw light on this relationship in Egypt as of 1960 from the cross-classification of major occupational and industrial groups. Table 6.4 shows the relative concentration of each occupation in various industries. The outstanding cases of high degree of concentration are exemplified by the high proportions of farmers, fishermen and hunters in agriculture, miners and quarrymen in the mining and quarrying industry, sales workers in commerce, and service and professional workers in service industries. On the other hand, craftsmen and production-process workers as well as clerical workers are the relatively least concentrated occupations.

The occupational patterns for different industries are given in Table 6.5. It shows higher than average proportions of white-collar occupations, excluding sales workers, in mining and quarrying; electricity, gas, etc.; and service industries. The proportions of craftsmen and production-process workers are highest in manufacturing, construction, and electricity, gas, etc. industries.

These tables also give an idea of the influence of the demand for labor in given industries on the demand for different occupational groups. For instance, despite the relatively high proportion of professional and technical occupations in mining and quarrying, a sizable expansion of that industry would not significantly affect the demand for professional and technical personnel in view of the fact that mining and quarrying employ less than one-half of one percent of all professional and technical workers. A similar expansion in manufacturing, which employs about seven times as many professional and technical workers, would have a much more important impact on the demand for such

TABLE 6.4. PERCENT DISTRIBUTION OF LABOR FORCE BY INDUSTRY FOR EACH MAJOR OCCUPATIONAL GROUP, U.A.R., 1960.

Occupation/ industry*	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
Professional, etc.	1.3	.4	3.9	1.3	.6	2.2	2.2	87.1	1.1	100.0
Administrative, etc.	.3	.3	11.0	8.8	.4	9.9	6.5	61.7	1.0	100.0
Clerical workers	2.9	.4	10.6	1.0	1.3	14.3	8.3	57.4	3.9	100.0
Sales workers	.2	...	.9	.1	...	96.7	.1	1.2	.8	100.0
Farmers & fishermen	99.3	...	...	...	...	.1	...	.5	.1	100.0
Miners & quarrymen	.1	93.3	1.8	1.0	.1	.3	.1	2.0	1.3	100.0
Transport workers	2.3	.3	2.9	.5	.7	2.4	70.0	19.0	1.8	100.0
Craftsmen, etc.	.9	.5	54.9	12.8	2.5	1.3	5.9	18.8	2.4	100.0
Service workers	2.6	.1	1.9	.2	.2	1.3	1.8	90.9	.9	100.0
Not classified	1.6	.1	1.7	.2	.2	.5	1.0	13.3	81.2	100.0
Total	53.7	.3	9.8	2.3	.5	8.9	3.7	18.1	2.6	100.0

TABLE 6.5. PERCENT DISTRIBUTION OF LABOR FORCE BY OCCUPATION FOR EACH INDUSTRY DIVISION, U.A.R., 1960.

Occupation/ industry*	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
Professional, etc.	.1	4.0	1.2	1.7	3.4	.8	1.9	15.0	1.3	3.1
Administrative, etc.	...	1.1	1.2	4.2	.9	1.2	1.9	3.7	.4	1.1
Clerical workers	.2	4.8	3.9	1.5	9.2	5.8	8.1	11.5	5.3	3.6
Sales workers	...	.3	.7	.4	...	87.3	.2	.5	2.3	8.0
Farmers & fishermen	98.8	.2	.2	.1	1.3	.4	.2	1.3	2.9	53.5
Miners & quarrymen	...	54.0	...	.1	...	...	...	...	.1	.2
Transport workers	.1	3.3	.9	.7	4.0	.8	57.2	3.2	2.1	3.0
Craftsmen, etc.	.3	27.4	89.6	90.0	76.4	2.3	25.4	16.5	14.6	16.0
Service workers	.5	4.2	1.8	1.0	3.8	1.3	4.5	46.6	3.3	9.3
Not classified	.1	.7	.4	.2	.9	.1	.6	1.6	67.8	2.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* (0) Agriculture, forestry, hunting and fishing; (1) Mining and quarrying; (2-3) Manufacturing; (4) Construction; (5) Electricity, gas, water and sanitary services; (6) Commerce; (7) Transport and communication; (8) Services; (9) Not adequately described. Foreigners are excluded.

workers although their proportion of the total manufacturing labor force is less than half of the overall average. However, the coefficients of the matrix (Table 6.5) change over time and should be viewed merely as rough indicators for future developments. Besides, changes in the labor supply in given occupational groups may affect also the growth of the labor force in given industries. In short, the occupational structure is influenced not only by industrial shifts but also, among other things, by occupational substitution and the increase of general education and vocational training in the population.[1]

6.2. Status Structure

Economically active persons in a given industry or occupation may be further differentiated according to status (employers, self-employed or own-account workers, employees, unpaid family workers, etc.).[2] Employers and self-employed persons are sometimes referred to as "independent" and the rest as "dependent" workers.

Before the spread of contractual employment, the independent workers were considered "free" men, whereas wage earners (i.e., employees) were looked upon as "slaves". With such attitudes, Brown states that "men who can spend the hours of their working days at their own discretion regard it as an indignity to put themselves under the order of another man."[3] Hence, when the need

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[1] The decomposition of the change in the share of an occupation in the labor force into "industry effect", i.e., the effect of changes in the industrial distribution, and "occupation-mix effect", i.e., the effect of changes in the occupational patterns within industries is illustrated in K.S. Gnanasekaran, Interrelations between Industrial and Occupational Changes in Manpower: United States, 1950-1960 (Philadelphia, University of Pennsylvania, Population Studies Center, 1966), Analytical and Technical Report No. 6.

[2] Other terms used for this classification are industrial status, class of worker, occupational status, etc. For definitions of status groups, see United Nations, Handbook of Population Census Methods, Vol. II, pp. 31-32.

[3] Brown, The Economics of Labor, p. 10.

arose for employees on a relatively permanent basis, they were often slaves.[1] Likewise, Marx's well known theory divides all persons into two social classes. The first comprises those who own capital and control production, whereas the second includes persons who derive their livelihood by selling their labor.

Such differentiation between employment statuses is no longer adequate in a modern society. For instance, a truck driver in a large company and a director of that company are both employees; but they cannot be grouped together in the same social status. The status of a self-employed peddler may not equal that of a truck driver. In fact, the abolition of slavery, the extension of market economy and division of labor, the improvements in techniques of production, the movement of labor unions and increasing governmental supervision of working conditions, etc. reinforced by rapid population growth in modern times have resulted in pronounced changes in the status structure of economically active population, and in attitudes toward different status groups.

The status composition of the labor force reflects the organizational framework of the economy, which is influenced by the factors cited above as well as others. Among others is the political system. In a socialist economy almost every member of the labor force is an employee. The procedure used for status classification is also important. The decision regarding the treatment of persons with dual status affects the results especially in less developed countries where this group of persons is relatively large.

6.2.1. Patterns and Trends, 1937-1960:

It is often true in the early stages of development, as is the case at present in many less developed countries, that most economic activities

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[1] Ibid., p. 12. On the role of slave labor in the United States during earlier periods, see S. Lebergott, Manpower in Economic Growth (New York: McGraw-Hill, 1964), pp. 19-22.

are carried on in small, family-owned and family-managed enterprises. As development proceeds, this system gives way to a more complex type of economic organization with large-scale, mass-production enterprises. These shifts are reflected by changes in the status structure of the labor force; the proportionate shares of self-employed persons, unpaid family workers, and, perhaps, employers decline, while the proportion of the employee group increases.

The important role of family enterprises in the Egyptian economy is illustrated by the fact that 40.8 percent of the labor force in 1960 were self-employed persons and unpaid family workers. The corresponding proportion in the United States, in 1960, was roughly one-fourth that of Egypt. In contrast, the share of the employee group was 49.5 percent in Egypt and 87.1 percent in the United States.

The available data for Egypt in the 1937-1960 period (Table 6.6) show a decline in the proportionate share of independent workers (i.e., employers and self-employed persons) and unpaid family workers, compensated by an increase in the proportion of the employee group.

The status composition of the labor force varies significantly between the two sexes as well as by age. Table 6.6 shows that females, as compared with males, have in general lower proportions in the groups of independent workers and higher proportions of unpaid family workers. However, the trend for each sex follows the same pattern with varying rates of change.

TABLE 6.6. PERCENT DISTRIBUTION OF LABOR FORCE BY STATUS AND SEX, U.A.R., 1937-1960.

Status	Males		Females		Both Sexes		
	1947	1960	1947	1960	1937	1947	1960
Employers	12.1	7.8	5.1	1.9	13.6	11.3	7.4
Own account workers	23.9	23.6	24.0	8.2	22.8	23.9	22.4
Employees	43.9	49.0	43.8	55.3)	62.4	43.9	49.5
Family workers	18.7	17.6	26.7	28.2)		19.6	18.4
Unemployed & ill-defined	1.4	2.1	.4	6.4	1.2	1.3	2.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

The distinctive patterns of status structure by age are illuminating. Employers and self-employed persons, i.e., the entreprenurial groups, prevail among old age groups. In 1960, seven out of ten of economically active persons 65 years of age and over were either employers or self-employed. In contrast, the proportion of both groups was less than one percent of the labor force below 15 years of age. In fact, the proportion of each of these two status groups rises from a minimum at young ages to a maximum in the oldest age group (Table 6.7 and Figure 6.1). The higher proportions of employers and self-employed among old age groups are partly attributable to the longer average number of years in working life among persons in those statuses, as well as the voluntary or involuntary shifts of individuals from the status of wage-earners or family helpers to the entrepreneurial status as they become older. Another factor is the increasing trend over time in the share of employees. The older age groups are survivors from a time when the share of independent workers in the labor force was higher than it is now.

Unpaid family workers, on the other hand, are dominant among children in the labor force. For instance, 80 percent of economically active persons aged 6-9 were family helpers. This proportion declines continuously to a minimal level in the oldest age group. Vocational inexperience, ignorance of the labor market, legal age-requirements for paid work, social norms, as well as the nature and availability of family chores are among the factors responsible for the large proportion of unpaid family workers in the youngest age groups.

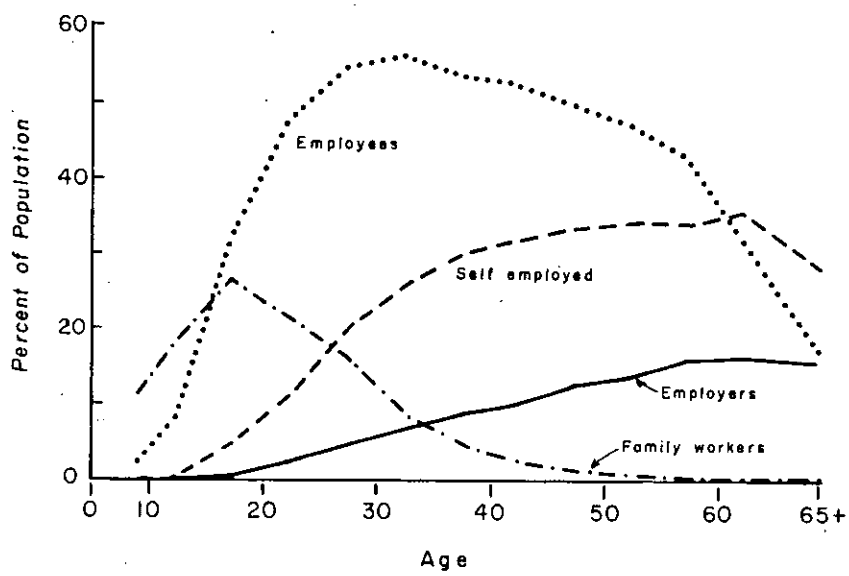
As would be anticipated from the discussion above, employees tend to be concentrated in the adult age groups, where above-average proportions are found in the age range 20-50.

TABLE 6.7. PERCENT DISTRIBUTION OF THE LABOR FORCE BY STATUS, FOR AGE AND SEX GROUPS, U.A.R., 1960.

Age	Employers	Own account workers	Employees	Family workers	Unemployed and ill-defined	Total
			Males			
6-9	...	.2	16.8	80.1	2.9	100.0
10-14	.2	.8	28.5	65.7	4.8	100.0
15-19	1.3	7.4	47.6	38.8	4.9	100.0
20-24	2.6	13.3	55.1	25.3	3.8	100.0
25-29	4.7	20.7	56.2	16.7	1.7	100.0
30-34	6.6	25.8	57.3	9.3	1.1	100.0
35-39	8.6	30.5	54.7	5.4	.8	100.0
40-44	10.3	32.6	53.7	2.6	.9	100.0
45-49	12.6	34.3	50.9	1.5	.8	100.0
50-54	14.0	35.5	48.8	.7	.9	100.0
55-59	16.6	36.0	46.0	.5	1.0	100.0
60-64	19.1	42.1	37.6	.4	.9	100.0
65+	25.3	45.8	27.9	.4	.6	100.0
Not stated	5.4	9.7	46.2	3.2	35.5	100.0
Total 6+	7.8	23.7	48.8	17.7	2.1	100.0
			Females			
6-9	...	.1	28.8	67.3	3.8	100.0
10-14	...	.2	52.3	43.7	3.8	100.0
15-19	.2	2.8	61.8	25.1	10.1	100.0
20-24	.5	3.9	73.4	13.1	9.2	100.0
25-29	1.1	7.5	69.8	14.8	6.8	100.0
30-34	2.3	12.7	61.7	15.4	7.8	100.0
35-39	4.0	17.6	56.0	14.1	8.3	100.0
40-44	5.6	21.2	55.7	10.3	7.3	100.0
45-49	6.4	24.0	52.2	10.7	6.8	100.0
50-54	7.5	28.1	52.4	6.7	5.4	100.0
55-59	8.4	30.8	47.8	7.9	5.1	100.0
60-64	9.6	37.0	46.2	4.4	2.9	100.0
65+	12.8	40.4	40.3	4.0	2.4	100.0
Not stated	4.8	9.5	9.5	2.4	73.8	100.0
Total 6+	1.9	8.3	54.9	28.5	6.4	100.0
			Both Sexes			
6-9	...	.1	19.9	76.8	3.2	100.0
10-14	.1	.7	34.3	60.4	4.5	100.0
15-19	1.2	6.9	49.1	37.4	5.5	100.0
20-24	2.5	12.6	56.4	24.4	4.2	100.0
25-29	4.5	19.9	57.0	16.6	2.0	100.0
30-34	6.4	25.2	57.5	9.6	1.4	100.0
35-39	8.4	30.0	54.7	5.8	1.2	100.0
40-44	10.1	32.0	53.8	3.0	1.2	100.0
45-49	12.3	33.8	50.9	1.9	1.1	100.0
50-54	13.7	35.2	49.0	1.0	1.2	100.0
55-59	16.3	35.9	46.0	.7	1.1	100.0
60-64	18.7	41.9	37.9	.5	.9	100.0
65+	24.9	45.7	28.3	.5	.7	100.0
Not stated	5.2	9.6	34.8	3.0	47.4	100.0
Total 6+	7.4	22.4	49.3	18.5	2.4	100.0

Foreigners are excluded.

FIGURE 6.1 STATUS GROUPS AS PERCENTAGES OF POPULATION BY AGE, UAR, MALES, 1960



In general, male and female patterns of status composition by age are similar. However, in 1960 the proportions of unpaid family workers among females were lower than those among males in ages below 25, and higher at older ages. The higher proportions for females at ages over 25 were largely due to the number of wives reported as family workers. Since the underreporting of economically active females suggested in earlier sections is likely to be greatest among adult females helping in family enterprises,[1] the sex differentials of status structure by age may be larger than indicated by Table 6.7.[2]

The above discussion implies that family enterprises have appreciably higher proportions of young and old workers than non-family enterprises have. The decline in the role of such enterprises which accompanies economic development is an important factor in the decline of activity rates in young and old age groups. When the number of persons in a given status and age group is related to the population of the given age, the quotient represents the contribution of that status group to the age-specific activity rate (Figure 6.1). Comparing the status contributions to activity rates by age between 1947 and 1960 reveals an increasing (rather than decreasing) role of unpaid family workers in age groups below 15. Most likely this result is merely due to the seasonal peak at which the 1960 census was taken.

Table 6.8 illustrates the wide variation in the status composition of the labor force for various governorates in 1960. For instance, while 74 percent of the economically active population in urban governorates were employees, the proportions were about 40 and 47 percent in non-urban governorates in Lower

[1] The available data show that females 15 years of age and over in the status groups of employers, self-employed and unpaid family workers decreased significantly in absolute numbers between 1947 and 1960.

[2] See Appendix D, Table D.28 for percent age distribution of the labor force for each status by sex in 1960.

TABLE 6.8. PERCENT DISTRIBUTION OF LABOR FORCE BY STATUS, FOR GOVERNORATES, U.A.R., 1960.

Governorate	Employers	Own account workers	Employees	Family workers	Unemployed and ill-defined	Total
Cairo	3.5	14.2	76.2	1.4	4.7	100.0
Alexandria	4.2	13.2	74.6	2.0	6.2	100.0
Canal	6.8	17.0	60.1	8.8	7.3	100.0
Suez	4.1	16.4	69.5	2.6	7.3	100.0
Damietta	7.7	20.2	53.7	16.7	1.7	100.0
Dakahlia	8.7	22.0	43.2	24.1	2.0	100.0
Sharkia	8.0	29.7	33.7	27.0	1.7	100.0
Kalyubia	5.1	28.4	43.9	20.4	2.2	100.0
Gharbia	7.1	25.3	40.0	26.2	1.5	100.0
Menoufia	11.5	29.0	33.2	24.8	1.5	100.0
Behera	8.1	20.4	40.4	30.0	1.1	100.0
Giza	2.8	27.6	51.4	15.7	2.5	100.0
Beni Suef	9.3	28.0	43.0	18.4	1.3	100.0
Fayoum	11.3	31.3	33.8	22.0	1.6	100.0
Minya	8.4	21.4	52.4	16.6	1.2	100.0
Asyut	10.2	19.3	50.9	18.2	1.3	100.0
Suhag	10.0	22.8	42.2	23.8	1.5	100.0
Kena	8.1	19.8	50.0	20.2	1.9	100.0
Aswan	7.5	25.1	50.1	15.5	1.7	100.0
Frontier Districts	2.8	27.7	51.5	14.1	3.9	100.0
U.A.R. Total	7.4	22.4	49.5	18.4	2.4	100.0

and Upper Egypt respectively. In contrast, the proportion of unpaid family workers was 2 percent in urban governorates, 26 percent in non-urban governorates of Lower Egypt, and 19 percent in Upper Egypt. The ratio of family workers to employers and self-employed workers shows both regional and governorate variations. For urban governorates, this ratio is low, reflecting the fact that self-employment in urban governorates is not generally in family enterprises. Similarly, within non-urban governorates, Damietta and Kalyubia in Lower Egypt, and Giza and Aswan in Upper Egypt show lower ratios than the average of their regions. The higher proportion of the "others" category in urban than in non-urban governorates reflects primarily higher unemployment rates in the former than in the latter.[1] In short, the differences in the status patterns

[1] See Appendix D, Table D.30 for regional differences by sex.

between urban and non-urban governorates are very similar to those between developed and underdeveloped countries. The discussion below will throw further light on regional differences as well as national patterns and trends discussed above.

6.2.2. Status and Industry or Occupation:

The distribution of economically active population by status cross-classified by industry or occupation reflects differences in the organizational structure within which different types of economic activities are carried out. The classical example of such differences is that between the agricultural and non-agricultural sectors of the economy. The data for Egypt bear out the typical differences between the two sectors. In 1960, for instance, the proportion of employees in the non-agricultural sector was roughly twice that in agriculture; the proportion of independent workers was significantly lower in the non-agricultural sector while the proportion of unpaid family workers in agriculture was nine times that in non-agricultural industries. The pattern of differences between the two sectors was the same in 1937 and 1947 with one exception: the proportion of independent workers in 1937 was lower in agriculture than in non-agricultural industries.[1] Therefore, the decline of the agricultural share in the labor force contributed to the overall trend of status structure between 1937 and 1960. In addition, a marked shift in the status distribution within the non-agricultural industries not only influenced the trend but also resulted in a widening gap in the organizational pattern between the two sectors.

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[1] The inconsistency of the trends of employers and self-employed persons in agriculture separately may be attributed to the sensitivity of these two groups to problems of reporting. See Durand and Miller, Methods of Analyzing Census Data on Economic Activities..., pp. 73-74. Land reform laws have, of course, some effect during the 1947-1960 period.

When the status distribution of agricultural workers in Egypt is compared with that in other less developed countries, it becomes clear that the proportion of the employee group is relatively high in Egyptian agriculture; and the proportion of independent workers is relatively low.[1] While procedures of reporting females in agriculture are an important factor, the difference exists also in the patterns for males, though in a lesser degree. It is quite likely that the high and rising man/land ratio in Egypt with the concomitant rise in the number of landless workers, who continue living on the farm and derive their livelihood by wage-earning in agricultural activities, is a primary factor behind the high proportion of employees in agriculture.

The same argument may be applied to the regional differences. Whereas Upper Egypt has a somewhat higher proportion of the labor force in agriculture, it has a lower proportion in the employee group than in non-urban governorates of Lower Egypt. Thus, the significantly higher man/land ratio in Upper Egypt may partially explain these patterns of differences between the two regions.[2]

With few minor exceptions, the shift in the status structure of the labor force occurred in all major non-agricultural industries between 1937 and 1960 (Table 6.9). Commerce exhibits the highest proportion of independent workers and particularly of self-employed persons, indicating the predominance, in this industry division, of small, individually operated commercial units in retail trade in food and food products as well as hawking and peddling. The decline in independent workers during the 1937-1960 period was impressive in all non-agricultural industries except commerce. In other words, the data imply that

[1] For data on other countries, see Durand and Miller, Chapter 3; Kuznets, Modern Economic Growth, p. 404.

[2] Any possible differences between the two regions in the status structure of the small non-agricultural sector may be considered as an additional factor.

TABLE 6.9. PERCENT DISTRIBUTION OF THE LABOR FORCE BY STATUS, FOR INDUSTRY DIVISIONS, U.A.R., 1937-1960.

Status	Employers	Own account workers	Employees	Family workers	Unemployed and ill-defined	Total
Agriculture:						
1937	17.3	17.8	64.2	a)	.6	100.0
1947	15.7	20.8	33.9	28.6	.9	100.0
1960	9.8	25.2	34.7	30.1	.1	100.0
Mining:						
1937	.8	5.2	92.3	a)	1.7	100.0
1947	.9	8.8	88.5	1.1	.6	100.0
1960	.4	1.3	97.3	.8	.2	100.0
Manufacturing:						
1937	7.0	31.7	58.1	a)	3.3	100.0
1947	4.6	26.6	60.8	6.4	1.6	100.0
1960	4.0	12.9	78.8	4.1	.2	100.0
Construction:						
1937	2.8	21.0	71.7	a)	4.6	100.0
1947	1.2	15.8	80.0	1.4	1.6	100.0
1960	4.9	13.0	80.0	2.1	.1	100.0
Electricity, etc.:						
1937	2.9	26.8	69.4	a)	1.0	100.0
1947	1.2	15.6	80.1	2.4	.8	100.0
1960	-	-	100.0	-	-	100.0
Commerce:						
1937	8.9	61.5	27.8	a)	1.7	100.0
1947	7.7	59.3	21.5	10.7	.7	100.0
1960	10.2	56.0	26.1	7.8	.1	100.0
Transport:						
1937	4.4	29.7	63.4	a)	2.4	100.0
1947	2.5	22.9	70.0	3.6	1.1	100.0
1960	1.9	10.8	84.9	2.3	.1	100.0
Services:						
1937	3.1	21.5	73.8	a)	1.7	100.0
1947	2.8	16.0	76.3	1.9	3.0	100.0
1960	2.4	10.1	85.5	1.9	.1	100.0
Not adequately described:						
1937	-	-	-	-	100.0	100.0
1947	-	-	-	-	-	-
1960	.3	1.8	15.1	1.0	81.9	100.0
Total:						
1937	13.6	22.8	62.4	a)	1.2	100.0
1947	11.3	23.9	43.7	19.8	1.3	100.0
1960	7.4	22.4	49.3	18.5	2.4	100.0

a) Included in employees. In 1960, foreigners are excluded.

commerce, like agriculture, has been relatively slow to modernize, and suggest the existence of persistent underemployment in commerce.

In all industry groups except agriculture and commerce, the employee group is in the majority (between 79 percent in manufacturing and 100 percent in electricity in 1960). This proportion has increased in all industries including agriculture and commerce between 1937 and 1960.[1]

Table 6.10 provides the percent distribution of the 1960 labor force by status for each major occupation group. The close relationship between industry and occupation is further illustrated by the similarity between Tables 6.9 and 6.10. It may be noted that most of the professional and clerical workers are employees; this is more true for females than for males. In contrast, the proportion of male craftsmen and production-process workers who are self-employed is lower than that of females. The relatively high proportion of the self-employed females in this occupational group reflects the importance of cottage industries in the economy.[2]

On the whole, the trends in status composition, like those in industry structure and occupational patterns, show marks of progressive economic development, subject to some reservations with respect to commerce and possibly agriculture. Whether the pace of this development is rapid enough to be satisfactory is another question.

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[1] For status patterns in each industry by sex, see Appendix D, Table D.19.

[2] See Appendix D, Tables D.33 and D.35 for the shares of each industry or occupation in the total number of workers of a given status by sex.

TABLE 6.10. PERCENT DISTRIBUTION OF THE LABOR FORCE BY STATUS, FOR MAJOR OCCUPATIONAL GROUPS, BY SEX, U.A.R., 1960.

Occupation*	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7/8)	(9)	(X)	Total
					Males						
Employers	2.1	27.9	.2	11.9	12.0	-	1.5	3.2	2.4	.2	8.6
Own account workers	4.3	.3	1.2	63.8	30.9	-	12.7	14.1	13.8	.8	26.1
Employees	93.2	71.5	98.0	17.6	36.9	99.3	82.6	78.6	81.4	26.4	51.4
Family workers	.1	.1	.2	6.1	20.0	.4	2.2	2.4	1.7	.9	12.1
Unemployed & ill-defined	.4	.1	.4	.5	.2	.2	1.0	1.6	.7	71.6*	1.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
					Females						
Employers	.1	8.3	...	4.0	6.8	-	.2	3.0	.1	.2	3.0
Own account workers	.6	.1	.2	76.5	9.7	-	1.5	33.0	1.6	.6	13.0
Employees	98.8	91.5	99.2	9.6	44.8	85.7	97.8	54.9	97.2	5.8	61.1
Family workers	.1	.1	.2	9.6	38.6	14.3	.3	8.3	.7	5.6	15.0
Unemployed & ill-defined	.4	...	.4	.2	.1	...	.2	.9	.3	87.8*	7.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
					Both Sexes						
Employers	1.6	27.0	.2	11.5	11.8	-	1.5	3.2	2.1	.2	8.3
Own account workers	3.4	.3	1.2	64.5	30.2	-	12.6	14.8	12.0	.8	25.4
Employees	94.4	72.5	98.0	17.2	37.2	99.3	82.7	77.7	83.7	21.8	51.9
Family workers	.1	.1	.2	6.3	20.6	.4	2.2	2.6	1.5	2.0	12.2
Unemployed & ill-defined	.4	.1	.4	.5	.2	.2	1.0	1.6	.6	75.3*	2.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* (0) Professional, technical, etc.; (1) Administrative, managerial, etc.; (2) Clerical workers; (3) Sales workers; (4) Farmers, fishermen, etc.; (5) Miners and quarrymen; (6) Workers in transport; (7/8) Craftsmen and production-process workers; (9) Service and sport workers; (X) Workers not classifiable by occupation. Includes all unemployed persons. Foreigners are excluded.

CHAPTER 7

SUMMARY, PROSPECTS, AND IMPLICATIONS

In the following few pages, a summary of highlights of this study is given along with some indications of future developments and implications of the findings.

The Egyptian labor force more than doubled within a 53-year period. It grew from about 3.5 million workers in 1907 to 7.8 million in 1960 with an average rate of growth of about 1.5 percent per year. The contribution of population growth to expansion of the labor force overshadowed the effects of changes in socio-economic factors upon the rate of participation in economic activities. In fact, the latter had a negative effect during the most recent decades.

The proportion of the total population in the labor force has been relatively low, implying a heavy load of dependency. A primary factor in this regard is the youthful age structure of the population resulting from the high level of fertility.

However, the age-specific activity rates for Egyptian males have been appreciably higher than the average rates of developed countries, particularly at young and old ages. The relatively high rates of participation in economic activities by boys and old men compensate, to some extent, for the relative deficiency of adult manpower inherent in the age structure of the population.

The significant extent of child labor particularly in rural communities of Egypt, as in other less developed countries, results from the inability of

poor families to afford sufficient schooling for their children. Besides, the agricultural structure of the rural economy offers relatively easy work for children at least on a part-time basis.

Similarly, men at old ages remain in the labor force as long as they are physically able, in order to share the burden of supporting their large and poor families. Since most of these aged men are independent workers in agriculture and trade, they can continue their participation in economic activities beyond the age at which wage earners retire.

Despite the high participation rates of youths and aged men, the expectation of working life is rather short. This is due to the high level of mortality, which means that a high proportion of each generation dies before reaching the working age and that many of those who start work are eliminated by premature death.

In addition to the youthful age structure of the population, the low level of the female activity rate makes for a low crude activity rate in the population as a whole. The low female activity rate is due, among other things, to the classical social norms still prevailing in the country. By and large, the principal role of women is considered to be in domestic work at home; a norm which to a varying degree prevailed also in some of the present-day developed countries less than a century ago.

The spread of modern appliances and the development of commercial industries taking over some of the domestic work from the home, which have freed many females in developed countries to seek employment outside the home, have not, so far, occurred on a large scale in Egypt. The lack of such developments has supported the continuation of the traditional role of females primarily in home duties.

However, there are indications that underreporting of females in the labor force has a substantial influence on the level of their participation rate, especially in agriculture, as shown by the censuses. Such underreporting may be due to, once again, the traditional line of thinking or it may result from the importance of womens' work being discounted for reporting.

Education seems to be the most powerful single factor tending to increase female participation in economic activities, not only by breaking down the traditional barriers, but also by opening up new and desirable employment opportunities. With increasing education, one may expect women's share in the labor force to grow in the coming decades.

An assessment of future developments and their policy implications requires an understanding of past trends and possible changes in the associated factors. The reduction of death rates, mainly since the second World War, has lengthened the average economically active life despite the decline in the proportion of young and aged males in the labor force. The gains in life expectancy of young males allow them not only to work for more years than before, but also to have more years for other activities and in particular for schooling. Old people have gained more years for retirement, as their total life expectation has increased while their expectation of active life has diminished. For the middle group of adults between ages 25 and 50, the increase in life expectancy has resulted both in a larger number of active years and additional years of retirement.

Thus, on the whole, the increase in life expectancy has allowed the country to gain more man-years of active life as well as more years for schooling and retirement. Although there is a problem of increased old-age dependency due to the increase in the number of years to be spent in retirement,

this result contributes positively to socio-economic welfare, provided that the economy can provide productive jobs so that the increase of expected active man-years does not merely add to unemployment or underemployment.

The relatively high mortality is still the dominant factor in labor force depletion. A further increase in the expectation of working life as a concomitant of further decline in mortality is very likely in the future. However, increases in the average of economically active years on account of reductions in mortality will not alter the extremely unfavorable dependency ratio, unless a corresponding decline in fertility or a significant increase in the female participation rate takes place.

Looking to the future, one could expect the labor force to increase to about 14.0 million by 1980 (an increase of some 80 percent over the 1960 number) if both the fertility and age-sex specific activity rates of 1960 should remain the same.[1] However, if the recent trends of decreasing male activity rates for age groups below 20 and above 60 are maintained, and if expected gains in educational attainment of females are taken into account, the projected size of the labor force for 1980 becomes 12.7 instead of 14 million.[2]

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[1] The discussion here is based on the "maximum and expected" estimates of the population. These estimates involve an assumption of continued mortality decline. See U.A.R., Central Statistical Committee, Population Trends in the United Arab Republic (Cairo: General Organization for Government Printing Offices, 1962).

[2] For males, it is assumed that the activity rate below age 12 is zero, and that the annual rate of decline of activity rates between 1947 and 1960 for age groups 12-14, 15-19 and 60 and above will continue. For females, education-specific activity rates for ages 12 and over in 1960 are applied to the projected number of females by educational status on the assumption of a 100 percent enrollment of females aged 6-12 in 1980. See M. D. Moustafa, Population Trends and Female Labor Force by Educational Status (Cairo: Ministry of Planning, Memo. No. 674, in Arabic).

The difference between the two figures represents the net result of two counteracting factors: a reduction in the projected labor force due to the assumed declines in activity rates at young and old ages, and additions to the projected female labor force due to expected improvements in female education. The major reduction (1.5 million) is that attributable to the projected changes in activity rates among young people below age 20, particularly males. The cumulative effect of such changes on the total number of worker-years during the two decades is, of course, much larger and represents a substantial sacrifice of future labor supply.

The decline in activity rates among young people in the recent past was largely due to the governmental policy of limiting their employment and encouraging their education, and the projected changes assume the continuation of such a policy. Important in this policy are compulsory education between ages 6 and 12 and prohibition of the employment of children below age 12. The assumption that these two interrelated targets will be achieved by 1980 implies a reduction of 0.9 million from the labor force which would result if the 1960 activity rate for the age group 6-11 years were maintained. The additional reduction of 0.6 million among boys in the age group 12-19 would result if the rate of decline in the activity rate of this age group between 1947 and 1960 should continue, primarily in response to the free education at all levels at the present time, as well as to urban growth.[1]

Obviously these projected reductions would further aggravate the already unfavorable dependency ratio. Yet education of young people is a national asset whose economic and non-economic returns, in the long run, overshadow their immediate effect on national output. More precisely,

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[1] The projected reduction might be somewhat exaggerated due to the fact that September, to which 1960 data refer, is a seasonal peak in agricultural activities.

> "Youths of school age are the only major class of potential workers whose restriction from employment, at least up to a certain point is indubitably advantageous even from a strictly economic point of view, provided only that they are given the kinds of education needed to make them better workers and citizens. With this provision, a prolongation of the educational period before they go to work is an investment in their future productivity as well as in political and cultural progress."[1]

At the other end of the age span, the decline in the projected labor force participation rates of males 60 years of age and over implies a reduction of 226,000 workers below the number projected for 1980 on the assumption of constant rates. Though such a reduction is small relative to that projected for young age groups, it is still economically significant. Besides, the increased proportion of non-economically active persons at old ages requires different types of policy actions. For the sake of persons who are not willing to continue in economically active status and prefer leisure in their old age, social security programs should be extended to cover their increasing number in coordination with the overall manpower policy and in view of the capacity of the economy. On the other hand, for old people who desire to remain in the labor force but are unable to continue in their previous types of work for various reasons such as technological change, old age, or accidents, special retraining programs should be available in order to achieve the fullest use of their potential labor supply.

The estimated effect of the projected educational improvements is to raise the female labor force in 1980 roughly half a million higher than that which would be expected on the basis of stability of the 1960 age specific activity rates, excluding those below age 12. This addition represents a significant contribution to the labor supply which, if it materializes, will

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[1] Durand, The Labor Force in the United States..., pp. 182-183.

compensate partially for the projected reductions in young and old age groups of males. In fact, it is possible that the increasingly liberal attitude toward female employment among the younger generations and further availability of modern appliances may increase the propensity of females at given educational levels to be in the labor force, resulting in more additions to the labor force. Since the category of illiterate females has represented the vast majority of the female population and will continue to do so for some years to come, changes in activity rates of this category will be a primary factor in the future trend of the female labor force. The pronounced fluctuations in recorded activity rates of illiterate females in the past offer no clue to future changes. Thus, consideration of a proposed policy of improving the dependency ratio by raising the female activity rate requires additional research to explore first to what extent the census data reflect the actual extent of women's participation in economic activity. Moreover, careful evaluation of potential economic and non-economic effects of increased female participation is needed before appropriate measures are decided upon.

Any policy measures for lightening the dependency load should be coupled with the necessary measures for stimulating changes in the economic structure in such a way as to absorb the increasing number of economically active population in productive work. The Egyptian economic structure has been dominated by the agricultural sector. From the turn of this century until 1937, roughly seven out of each ten workers were employed in agriculture, with the exception of an apparent premature decline in the share of agriculture in 1917 due to the conditions of the first World War.

The shift away from agriculture dates back to the late 1930's. The deterioration of the country's terms of trade during the great depression; the protectionist foreign trade policy after fiscal autonomy was regained, the lack of imports and accelerated urban growth during the second World War; and, perhaps, concern over the consequences of rapid population growth led to further governmental as well as pioneering private efforts which laid the foundation for economic transformation.

The decline in the percent share of agriculture in the labor force during the 1937-1960 period was accompanied by increasing shares of both the secondary and tertiary sectors, with a leading edge in the rate of increase for the former during the 1947-1960 intercensal period. In terms of national output, the increase in the share of the secondary sector was much faster than that of the tertiary sector. In fact, more than two thirds of the decline in the share of agriculture was accounted for by the increase in the share of the secondary sector between 1947 and 1960. These facts indicate that the rate of increase of average product per worker was higher in the secondary than in the tertiary sector. However, due to its smaller size, the secondary sector has played, so far, a smaller role than the tertiary sector in absorbing the additions to the labor force. Despite the difference in growth rates, the share of the secondary sector in the labor force in 1960 was still only about three-fifths of that of the tertiary sector.

The reallocation of manpower among broad sectors of the economy was accompanied by significant shifts between industry divisions within each sector, as well as shifts between lines of activities within each industry division. On the whole, manpower shifted from less productive to more productive industries and lines of activity. Along with these industrial changes,

the occupational structure showed a definite trend of increasing proportions of occupations with higher levels of skill and education. Moreover, the 1937-1960 period witnessed modernization in the organizational framework of the economy as reflected in the changing distribution of the labor force by status, in varying degrees between different industries. With all these developments, the average productivity of labor increased significantly.

Despite the aforementioned developments, the traditional sector of the economy still employs a sizable portion of the labor force; the proportion of skilled, well-educated workers is relatively small, while family-type enterprises and relatively inefficient organization predominate. Can Egypt significantly improve her situation in these respects and at the same time create productive jobs for her rapidly growing labor force? In view of the projected size of the labor force, the achievement of this goal does not appear as an easy task.

Given the projected labor force size mentioned above, if the agricultural labor force in 1960 were to remain constant, the non-agricultural labor force would have to grow by 1980 to about 8.6 million (i.e., 2.8 times its 1960 size). This implies an annual rate of growth of 5.1 percent, which is substantially higher than that of the 1937-1960 period, and also higher than the rates which prevailed in present-day developed countries during the period of their economic transformation.[1]

If, on the other hand, the percent share of agriculture in the labor force were to continue at the 1960 level, the non-agricultural labor force would increase at an annual rate of 2.8 percent, which is slightly higher

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[1] Dovring, "The Share of Agriculture...,", p. 8.

than that of the 1937-1960 period.[1] Under this assumption, the agricultural labor force would increase by some 3.2 million (i.e., 77 percent of its size in 1960), which would considerably increase the already high man/land ratio, even with allowance for the expected increases in the area cultivated as a result of the construction of the High Dam and other projects associated with it.

The fact that the annual rate of growth of non-agricultural labor force needed to stabilize the absolute number or the proportion of the labor force in agriculture is higher than the rates experienced by the developed countries of today at earlier ages of their development does not mean that it is impossible to achieve such rates of growth. As Dovring has said, "Modern technique and modern planned economy should be able to do better than the immature industrialization of the nineteenth century".[2] Still, the above discussion sheds some light on the implications of alternative goals in terms of the needed job opportunities in the non-agricultural sector, which, in turn, are required for a sound investment policy.

The regional picture of labor force dimensions and structure exhibits distinctive patterns. Among non-urban governorates, those in Lower Egypt show somewhat lower activity rates together with a corresponding higher proportion of the labor force in non-agricultural activities and a more favorable occupational structure than those in Upper Egypt do. These differences, however, are small; and they become even smaller when a few exceptional governorates (such as Damietta and Kalyubia in Lower Egypt; and Giza and Aswan in Upper Egypt) are excluded.

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[1] If age-sex specific activity rates of 1960 are applied to the projected population in 1980, the annual rate of growth of non-agricultural labor force are found to be 5.8 and 3.3 percent for the two assumptions respectively.

[2] Ibid., p. 9.

A pronounced disparity exists between urban and non-urban governorates. Beside appreciably lower activity rates, urban governorates have more than the lion's share in the non-agricultural sector, in highly skilled workers, and in enterprises organized along modern lines. Structural shifts in recent decades have occurred, by and large, on a nearly proportionate basis so that the extent of dissimilarity among governorates in 1960 was not very different from that of 1937.

A sound long-run policy in this regard should be to encourage an increasing regional similarity in types of economic activities. Such a policy not only satisfies the right of the inhabitants of the non-urban governorates to share the fruits of socio-economic development, but also alleviates the increasing problems of housing, transportation, etc. in the major urban centers, especially Cairo and Alexandria. Projects such as the comprehensive socio-economic planning of Aswan as a future major metropolitan area and increasing the number of regional universities are steps on the right road which should be followed by further steps in the same direction.

In short, avoiding undue waste of manpower, alleviating the high dependency ratio, speeding the process of economic transformation, and reducing the regional disparities require a carefully worked-out manpower policy, well coordinated with the overall socio-economic development program. Under the expected conditions of rapid population growth, the achievement of such goals during the coming decades poses a real challenge for those concerned with the welfare of the Egyptian people.

APPENDIX A

ADJUSTMENT OF LABOR FORCE DATA

Since the census concepts and classifications of economically active population varied during the 53-year period covered by this study, the first major task was to reconstruct the data of earlier censuses in forms comparable with those of the 1960 census. The 1960 census publications include a number of comparative tables "after introducing the necessary adjustments to secure comparability as far as possible, on the basis of concepts and definitions adopted in 1960 census."[1] Among these, Table IV gives the distribution of the population of both sexes in the country as a whole by industry at the first-digit level for 1937, 1947 and 1960. This table is of limited use. Besides, the method of adjusting 1937 and 1947 data is not explained in the census volume. However, this table was taken as the starting point for a detailed investigation, which was made possible by the detailed tabulation of population by industry at each census since 1907, and the tradition of retabulating at each census the corresponding data from the preceding census in a comparable classification.[2]

The procedure used for adjustment may be summed up in two steps: (i) detection and exclusion of categories included in the economically active population at earlier censuses which were excluded in 1960; and (ii) regrouping

[1] U.A.R., The Population Census, 1960, Vol. II, p. x.

[2] The investigation led to some revisions in the comparative table published in 1960 census for the 1937-1960 period.

of active persons into classifications comparable to those of 1960. As an aid to possible further investigations by others, these adjustments are described below in some detail with respect to the total labor force as well as its major classifications.

A.1 Total Labor Force:

Beside the categories of "not occupied","not able to work", and "not seeking work", the examination of the data led to excluding some other groups from the labor force in every census prior to 1960, as given in Table A.1. The numbers of persons excluded in various years depend primarily on whether "females engaged in home duties" were included in the labor force or not. The following are some observations about the other categories:

(i) Persons living on private means include "land owners", "home owners", "pensioners", etc. The high figure for females in 1917 is the result of an exceptionally large number of female land owners having been reported in that year (106,016).

(ii) The category of "non-classified persons" comprises students, beggars, vagabonds, tourists, etc. The inclusion in this category of "children without occupation on account of their age and attending no school" in 1917 explains the large numbers in that year. The decline in the number of students included in this category between 1937 and 1947 is contrary to educational developments in the country. However, the characteristics of the ill-defined group, described below, suggest that a significant number of students was included in that group in 1947.

(iii) The excluded group of persons engaged in "dairying" consisted only of persons in this line of activity who lived in farmers' houses; this activity is socially considered as a part of home duties. Before 1937, the numbers

TABLE A.1. CATEGORIES EXCLUDED FROM THE RECORDED LABOR FORCE, U.A.R., 1907-1947.

Category/Year	1907	1917	1927	1937	1947
Persons living on private means:					
Males	99,323	26,505	27,582	22,223	48,812
Females	13,300	109,822	40,485	20,547	38,772
Non-classified persons:					
Males	433,355	1,087,762	457,338	851,815	767,720
Females	252,297	1,006,109	117,203	459,536	436,943
Persons engaged in dairying in farmers' houses:					
Males	-	-	-	1,426	1,183
Females	-	-	-	257,366	95,426
Females working on family farm, "inferred":	-	1,108,106	-	-	-
Females engaged in home duties:	2,265,820	2,374,713	-	-	5,772,906
Total:					
Males	532,678	1,114,267	484,927	875,464	817,715
Females	2,531,417	4,598,750	157,693	737,449	6,344,047

in dairying were insignificant (270 in 1917 and 358 in 1927) and were reported in food manufacturing rather than agriculture.

(iv) In 1917, children and females over eight years old not attending any school who belonged to families of agriculturists owning ten feddans or less were "inferred" by the census authorities to have been economically active on family farms, unless they definitely declared an inactive status. In addition to the figure for females given in Table A.1, this category included 437,172 males. While the females were excluded, the males were not. This was, in some degree, an arbitrary decision, but exclusion of both males and females would have resulted in a decline in the absolute number of the agricultural labor force between 1907 and 1917; an outcome not supported by other information about economic developments. For females, although the inference made by the census authorities may have been correct, it should have been

equally correct for other censuses in which no such addition to the reported numbers of female agricultural workers was made. Thus, the exclusion of the "inferred" females makes temporal comparisons more meaningful. In view of the nature of this "inferred" category and the "ill-defined" group, discussed below, caution should be exercised in using the adjusted figures for 1917.

The total number of the labor force in 1960 varies in different tables of the census reports depending on the treatment of foreigners, the unemployed, and persons whose employment status and/or industry was "not stated". In this study, all these groups were included in 1960 labor force figures unless stated otherwise.

A.2 Labor Force by Industry:

The first-digit industrial classifications used in earlier censuses were easily converted to the 1960 classification, which, with few minor exceptions, corresponds to the international standard (ISIC). Before 1960 "gas, electricity, etc." and in some censuses "construction" were included as separate subdivisions within "manufacturing". In contrast, the "services" division was frequently given in two or more separate divisions.

After regrouping the industrial divisions, two further adjustments were carried out: (i) subtraction of the excluded categories given in Table A.1 from the labor force of the industrial divisions in which these categories were included, and (ii) transfer of some subgroups and individual industries from one division to another in order to achieve comparability of the contents of each division over time as far as possible. Details of the adjustment procedure are described below.

1907 and 1917 Data: These two censuses are treated together because of the close similarity between their detailed industrial classifications.

References to 1907 data here correspond to the data as retabulated in 1917. The adjusted figures for industrial divisions were derived as follows:

(0) Agriculture, etc.: Reported number minus females inferred to be working on family farms.

(1) Mining and quarrying: As reported.

(2-3) Manufacturing: Reported minus building industry; minus production and transmission of power; minus upholstering and bed furnishing; minus industry of refuse matters; minus newspaper enterprises (administrative staff); minus men's tailors, clothiers and costumers; sewers, dress makers, makers of ladies' shawls and other articles pertaining to women's dress; minus dry cleaners and dyers; bath keepers, barbers, hairdressers, wig makers and other human hair workers; minus cinematography.

(4) Construction: As reported within manufacturing under "building industry".

(5) Gas, electricity, etc.: As reported within manufacturing under "production and transmission of power"; plus water works (water companies); plus industry of refuse matters (i.e. garbage collection).

(6) Commerce: Reported minus hotels, coffee houses, restaurants, bars, etc.

(7) Transport, etc.: As reported.

(8) Services: As reported in "public force", public administration except water works, "liberal arts" and "domestic work" except members of families in domestic work; plus upholstering and bed furnishing; plus newspaper enterprises (administrative staff); plus men's tailors, clothiers and costumers; sewers, dress makers, makers of ladies' shawls and other articles pertaining to women's dress; plus dry cleaners and dyers; bath keepers, barbers, hairdressers, wig makers and other human hair workers; plus cinematography; plus hotels, coffee houses, restaurants, bars, etc.

(9) Not adequately described: As reported in "general designation without definite occupation"; plus unproductive and unknown occupation except non-classified persons.[1]

1927, 1937 and 1947 Data: Adjustments of 1927 figures described here refer to the data as retabulated at the 1937 census. For 1937, references correspond to either the data given in the census volume of that year, or the data as retabulated in 1947; the differences are only in arrangement and not in content.

(0) Agriculture, etc.: Reported minus dairying in farmers' houses; minus land owners; minus home duties in farmers' houses; minus domestic service in agriculture; plus irrigation (public and private).

(1) Mining and quarrying: As reported.

(2-3) Manufacturing: Reported minus production and distribution of power, light and heat, water distribution; minus photography, cinematography and sign painting; minus men's tailoring, shirt making, women's dress making; minus upholstering and bed furnishing; minus tinkering, sharpening of knives and farriery.[2]

(4) Construction: As reported.

(5) Gas, electricity, etc.: As reported in manufacturing under "production and distribution of power, light and heat"; water distribution "except public and private irrigation"; plus carrying sweepings and sewage from houses.

(6) Commerce: As reported minus home owning.

(7) Transport: As reported.

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[1] "Living on private means" was a separate division which was excluded.

[2] According to the Central Agency for Public Mobilization and Statistics, 868 out of 61,959 persons engaged in men's tailoring in 1947 were actually in clothing manufactures. This number was maintained in manufacturing. In 1937, persons engaged in sharpening of knives (180) were included in "other industries".

(8) Services: Non-industrial public services, social services (public and private) and services of persons except carrying sweeping and sewage from houses; plus domestic service in farmers' houses; plus photography, cinematography and sign-painting; plus men's tailoring, shirt making and women's dress making; plus upholstering and bed furnishing; plus tinkering, sharpening of knives and farriery; minus home duties not in farmers' houses.

(9) Not adequately described: Ill-defined and unproductive industries except students, living on private means, beggars and vagabonds, and tourists.[1]

Table A.2 provides a summary of the transferred categories. Evidently some of them do not appear in all censuses. This is so either because they were classified in the appropriate divisions or were intractable. Fortunately, the intractable groups were few and had small numbers of workers as may be judged from the data given in other censuses.

The "not adequately described" division poses some problem for analysis of the adjusted series. Its contents vary in different census years as indicated above, and its size ranges from about 3,000 in 1937 to 881,000 in 1917.

One major source of these fluctuations is the changing size of the ill-defined group mentioned repeatedly in this study.[2] This group comprises persons whose industry was not given. Its size was largest in 1917 and 1947. The available data show that members of this group also did not report an occupation in 1927, 1937 and 1947.[3] However, a significant proportion of them had a recorded employment status in 1927 and 1960. In 1947, most, if not all,

[1]Thus, in these three censuses, this division includes only the ill-defined group. Unemployed persons are distributed according to their industry of affiliation.

[2]The inclusion of the unemployed in this division in 1907, 1917 and 1960, whereas they were distributed according to industry of affiliation in other years, is another factor. The sizeable group of "general designation without definite occupation" included in 1907 and 1917, is also an important factor especially for 1917.

[3]In 1960, most of the members of this group reported an occupation.

TABLE A.2. CATEGORIES TRANSFERRED BETWEEN INDUSTRIAL DIVISIONS, U.A.R., 1907-1947.

Category/Year	1907	1917	1927	1937	1947
Domestic service in agriculture:					
Males	-	-	-	15,448	14,493
Females	-	-	-	22,943	27,235
Irrigation (public and private):					
Males	-	-	14,822	19,187	23,064
Females	-	-	43	44	33
Construction and building:					
Males	94,898	65,937	-	-	-
Females	27	649	-	-	-
Electricity, gas, etc.:					
Males	8,601	9,343	23,340	19,360	19,890
Females	26	7	1,100	1,606	2,776
Garbage collection:					
Males	120	1,154	946	896	873
Females	1	70	46	74	25
Water works:					
Males	-	926	-	-	-
Females	-	1	-	-	-
Men's tailoring, women's dress making, etc.:					
Males	18,482	29,495	43,862	49,513	60,684
Females	8,825	34,743	23,951	19,148	15,167
Dry cleaners, barbers, etc.:					
Males	28,784	47,747	-	-	-
Females	1,879	4,170	-	-	-
Upholstering and bed furnishing:					
Males	4,251	5,278	7,378	6,476	7,558
Females	2	29	46	264	64
Newspapers (staff):					
Males	-	448	-	-	-
Females	-	14	-	-	-
Photography, cinematography and sign painting:					
Males	-	150	969	1,259	1,853
Females	-	7	24	25	31
Tinkering:					
Males	-	-	-	7,438	12,396
Females	-	-	-	158	350
Sharpening of knives and farriery:					
Males	-	-	947	1,006	4,346
Females	-	-	2	9	34
Hotels, coffee houses, restaurants:					
Males	11,772	25,433	-	-	-
Females	301	1,777	-	-	-

of them did not report status.[1] The age structure of this group is given in Table A.3. The concentration in young age groups, and to a lesser degree at old ages, is evident particularly in 1947 and 1917.

These facts, together with the unexpected declining number of students between 1937 and 1947, suggest that most, possibly all, of the members of the ill-defined group might not have been in the labor force in 1947, and probably in 1917 also.

Beside the problems of the "not adequately described" division, it should be mentioned that the armed forces were classified in "services" in all censuses up to 1947. In 1960, however, members of the armed forces were classified according to industry of affiliation before their military service.[2] No attempt has been made in this study to estimate their total number in that year nor their industrial distribution.[3]

A.3 Labor Force by Occupation:

In addition to industry, a separate distribution of the labor force by occupation has been introduced in Egyptian censuses since 1927. In fact, the industrial distributions of 1907 and 1917 referred to above were called occupational distributions though their contents were more industrial than occupational in nature.

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1 Out of 1,122,837 persons in the "not adequately described" division including students, tourists, pensioners, beggars and the ill-defined group, only 8 reported status.

2 The writer was informed of this procedure through correspondence with the Central Agency for Public Mobilization and Statistics.

3 Excluding workers for the British army, the number of the armed forces amounted to 4,608, 16,434, 18,890, and 62,661 persons in 1917, 1927, 1937 and 1947. For 1960, an estimated number is 226,000. See Mead, Growth and Structural Change..., p. 134.

TABLE A.3. ILL-DEFINED GROUP BY AGE AND SEX, U.A.R., 1917-1960.

Age group/Year	1917	1927	1937	1947	1960
			Males		
Under 15	95,214	614	42	231,344	6,006
15-19	98,707	1,295	33	56,457	3,133
20-29	66,397	3,039	115	27,962	13,267
30-39	34,022	2,485	155	9,504	9,225
40-49	14,950	1,688	137	5,377	6,058
50-59	8,494	962	85	4,644	3,378
60+	29,733	764	49	8,174	2,152
Not stated	-	30	-	683	28
Total	347,517	10,877	616	344,145	43,247
			Females		
Under 15	4,047	93	2,610	6,952	2,618
15-19	2,880	181	88	607	686
20-29	5,963	215	27	271	1,652
30-39	5,750	144	20	365	799
40-49	7,041	146	22	408	367
50-59	8,838	94	20	397	324
60+	56,880	94	27	703	208
Not stated	-	6	3	86	23
Total	91,399	963	2,817	9,789	6,677

In what follows, a detailed account is given of adjustments in the occupational distributions for 1937, 1947 and 1960 to correspond, as far as possible, to the international standard classification (ISCO). Each major occupational group is given together with its contents. The occupational titles are those used in the corresponding census publications.

1937 Data:

(0) Professional, technical, etc.: Religions; legal; medical, engineering and drawing; teaching; literary and scientific; and entertaining except monkey boys, fortune tellers, jockeys, boxers, etc.

(1) Administrative, managerial, etc.: Governing body, public service, supervisory and clerical staffs except chief clerks, clerks, foremen, overseers, officers, soldiers, policemen, non-commissioned officers, ghaffirs, janissaries, kawas, orderlies, and employees (undefined).

(2) Clerical workers: Chief clerks and clerks.

(3) Sales workers: Commerce.

(4) Farmers, fishermen, etc.: Crafts pertaining to agriculture, keeping of livestock and poultry; forestry, hunting and fishing.

(5) Miners, quarrymen, etc.: Crafts pertaining to mining, quarrying and salines.

(6) Workers in transport: Transport.

(7/8) Craftsmen, production process workers and laborers: Crafts pertaining to food industries except cooks and dairymen; crafts pertaining to wood working, cane, palm ribs and straw working and furniture making; crafts pertaining to manufacture of paper, printing, photography and graphic manufactures except photographers, and sign writers; crafts pertaining to skin, fur making; crafts pertaining to textile industries; crafts pertaining to manufacture of clothing and toilet except hairdressers, bath attendants, washers, ironers, dry cleaners, and bootblacks; crafts pertaining to power, light and water distribution; crafts pertaining to preparation of materials of construction and ceramics, pottery making and building; crafts pertaining to metallurgy and vehicles; crafts pertaining to precision instruments, jewelry, and other precious articles; toys, etc.; foremen and overseers, workmen and laborers.

(9) Service, sport and recreation workers: Other occupations except workmen, laborers; cooks, photographers, sign writers, hairdressers, bath attendants, washers, ironers, dry cleaners, bootblacks, monkey boys, fortune tellers,

jockeys, boxers, etc., officers, soldiers, policemen, non-commissioned officers, ghaffirs, janissaries, kawas, and orderlies.

(X) Workers not classified by occupation: Employees (undefined), and others.

1947 Data:

(0) Professional, technical, etc.: Entertaining and picture-places except acrobat, monkey boy, fortune teller, guide, footprints tracer, boxer and jockey; medicine and pharmacalogy; education; science, art and journalism; religion, law; engineering and drawing; and nurse.

(1) Administrative, managerial, etc.: Governing body, police, public security, and clerical staff except chief-clerk, clerk, secretary, store keeper, cashier, money collector, officer, non-commissioned officer, soldier, policeman, and employee (undefined); superintendent, supervisor, proprietor or his agent, director and subdirector.

(2) Clerical workers: Chief-clerk, clerk, secretary, store keeper, cashier and money collector.

(3) Sales workers: Commerce, banking, commission agents, representatives.

(4) Farmers, fishermen, etc.: Agriculture, fishing and hunting.

(5) Miners and quarrymen, etc.: Mining and quarrying.

(6) Workers in transport: Transport and communication.

(7/8) Craftsmen, production process workers and laborers: Food industries, drinks and tobacco except cook and dairyman; oil, fats and chemical industries; wood working and furniture making; manufacture of paper and articles in paper, printing, book-binding and photography except photographers, cinematographer and sign writer; manufacture of leather and leather articles; textile industries, manufacture of clothing and wearing apparels, production and

distribution of power, light, heat and gas; water distribution; preparation of materials of construction and ceramics; metallurgy, preparation of metals and vehicles repairing; manufacture of scientific instruments, jewelry, etc.; construction and building; foreman, overseer, workmen and laborers.

(9) Service, sport and recreation workers: Personal services except nurse; acrobat, monkey boy, fortune teller, guide, footprints tracer, boxer, jockey; officer, non-commissioned officer, soldier, policeman, cook, photographer, cinematographer, sign writer; doorkeeper, private guard, janizary and kawas.

(X) Workers not classified by occupation: Employee (undefined), and worker's relatives assisting the head of the family in his work (not in agriculture).

Minor discrepancies in the size of the categories to be excluded from the labor force (Table A.1) as given in industry and occupation distributions were accounted for from the group vaguely titled "workmen and laborers".

1960 Data: Some 30,000 persons "not seeking work" were included in the distribution of labor force by occupation. This group was excluded only from detailed tables which exclude foreigners. The groups of "Muslim clergy, mosque servants and other employees of religious places" (31,119 persons), and "musicians and related workers" (5,575 persons) were transferred from "service, sport and recreation workers" to "professional and technical and related workers". Finally, it should be emphasized that occupational distributions in 1937 and 1947 refer to persons five years of age and over, while in 1960 the distribution refers to ages 15 and above.

A.4 Other Adjustments:

The other major adjustments are those of the distribution of the labor force by age and industry, and by employment status.

The adjustment of labor force distribution by age and industry was made for the country as a whole for the 1917-1960 period. The exclusion of the

categories in Table A.1 and the transfer of those in Table A.2 necessitated estimation of their age distributions. These distributions were given for some of the categories; for others, the age distributions were assumed to have been similar to those of the larger industrial groups (or divisions) of which they were parts. With more detailed data available in 1947, some refinements were made. For example, the age distributions of "dairying in farmers houses", "land owners", and "students, tourists, beggars, etc." were assumed to be similar to those of "unpaid family workers in agriculture", "home owners", and "ill-defined status within the not-adequately-described division" respectively.[1]

In 1960, aliens were classified by industry in two broad age groups: under 15 years of age, and 15 and above. Their age distribution was assumed to have been similar to that of Egyptian citizens within these broad age groups by industry.

The adjustment of the labor force distribution by employment status involved regrouping of detailed categories in 1947 to correspond to those of 1960, and estimation of the excluded and transferred categories by status. With few modifications, the latter was carried out on the same principles used in the age adjustments.[2]

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[1] Without need for detailed description, adjusting 1927 data required a comparison between the original data and those retabulated in 1937 and tracing all the differences between the two sets in terms of age distribution.

[2] The small number of "other unpaid workers", presumably apprentices, was grouped with employees in 1960.

APPENDIX B

METHODS OF THE DERIVATION OF WORKING LIFE TABLES

This Appendix deals with the application of life table techniques for estimating the length of working life and related measures both by single years of age and in abridged form.

B.1. Complete Table of Economically Active Life, Males 1960:[1]

A complete table of economically active life by single years of age is given in Table (B.1), referring to the male population of 1960.

B.1.1. Definition and Derivation of Functions:

Column (1) Years of age. The ages in columns (3), (4), (5), (12), (13), and (14) refer to exact ages at each birthday (x) while those in the rest of the columns refer to age intervals (x to x + 1).

Column (2) w_x: Activity rate, or percentage of the population in the labor force. The 1960 census gives the data in age groups as follows.[2]

Age group	Activity rate	Age group	Activity rate
10-14	28.4	45-49	97.7
15-19	68.4	50-54	96.3
20-24	86.6	55-59	94.5
25-29	96.0	60-64	85.2
30-34	97.7	65-69	74.3
35-39	98.1	70-74	63.5
40-44	97.9	75 and above	45.6

[1] This section is drawn to a large extent, and Table B.1 is reproduced, from Durand and Miller, Methods of Analyzing Census Data on Economic Activities..., Annex, pp. 129-143.

[2] The following categories are excluded from the calculations: aliens (143,312 persons), nomads (101,225 persons) and "not stated" cases (12,890 persons). The differences between activity rates after these exclusions and those of the total population, excluding only nomads, are quite insignificant.

Although data were collected in the census for children less than 12 years old, the age 12 has been chosen to start the table because employment of children below that age is legally prohibited. Activity rates calculated for the above mentioned age groups were taken as central values for these age groups, interpolated by single years of age and extrapolated beyond age 75. Minor changes were introduced in the central values for the sake of smoothness. Several mathematical formulae for interpolation and extrapolation were attempted, but they did not give satisfactory results. A free-hand curve-fitting was therefore adopted.

Column (3) l_x: The number of males who would survive to the exact age indicated from a cohort of 100,000 males born alive, subject throughout life to the mortality rates given by the 1960 life table.[1]

Column (4) lw_x: The number of survivors of 100,000 males born alive expected to be in the labor force at each exact year of age (or birthday) subject to the activity rates given in column (2). lw_x values may be computed directly by multiplying activity rates by the corresponding values of survivors, i.e.,

$$lw_x = l_x \cdot w_x$$

provided that w_x values are computed at exact age x. Since the w_x values used in the present example are central values, lw_x values were computed as follows:

$$lw_x = 1/2\ (Lw_{x-1} + Lw_x)$$

i.e., by direct interpolation from the Lw_x function, on the assumption of an even distribution of labor force accessions and separations in successive years.

[1] This function was taken directly from U.A.R., Central Statistical Committee, Population Trends in U.A.R., pp. 42-44.

Column (5) lw_x^*: The number of male survivors at each exact age who would hypothetically be in the labor force if the activity rate at each age under 37 years were the same as at age 37, the age of maximum activity rate. Therefore,

$$lw_x^* = 1/2\ (Lw_{x-1}^* + Lw_x^*)$$

where Lw_x^* values are based on the maximal activity rate. This function is required in calculating average number of remaining active years per active survivor at ages under 37 years (column 14), in order to eliminate effects of accessions to the active population.

Column (6) L_x: The male stationary population or the number who would be living in the successive age intervals in a population replenished annually by a constant number of 100,000 male births and subject to the prevailing mortality rates. L_x values were computed by linear interpolation between the corresponding values of l_x functions, on the assumption of an even distribution of deaths within each year of age, as follows:

$$L_x = 1/2\ (l_x + l_{x+1})$$

Column (7) Lw_x: The number of males in the stationary population expected to be in the labor force at each age in the life span, i.e., the stationary labor force, under the prevailing activity rates, i.e.:

$$Lw_x = L_x \cdot w_x$$

Column (8) Lw_x^*: The number of males in the stationary population who would hypothetically be active if the activity rate at each age under 37 were the same as at age 37, i.e.:

$$Lw_x^* = L_x \cdot w_{37}$$

Column (9) T_x: The total number of man-years of life remaining at the given year of age and in all following years, for males alive at the

exact year of age. It may be expressed as follows:

$$T_{x_i} = \sum_{x=i}^{\infty} (L_x)$$

Column (10) Tw_x: The total number of man-years in the labor force remaining in the given year and all later years for males in the labor force at the exact year of age, computed from the values of the Lw_x function as follows:

$$Tw_{x_i} = \sum_{x=i}^{\infty} (Lw_x)$$

Column (11) Tw_x^*: These are the hypothetical values of the total man-years in the labor force which correspond to the hypothetical lw_x^* and Lw_x^* values for ages under 37, which may be expressed as follows:

$$Tw_{x_i}^* = \sum_{x=i}^{\infty} (Lw_x^*)$$

Column (12) e_x: The average number of years of life remaining at the beginning of the given year of age. It is computed as follows:

$$e_x = T_x \div l_x$$

Column (13) ew_x: The expectation of active life, i.e., average number of economically active years for all males surviving at the given age. It is computed, like the e_x function, by dividing the cumulated man-years in the labor force in the given year and all succeeding years, by the number of survivors at the beginning of the year of age:

$$ew_x = Tw_x \div l_x$$

Column (14) ew_x^*: The average remaining number of years of active life for males in the labor force at the given age. This is calculated with reference to the values of Tw_x^* and the hypothetical numbers of active survivors at ages under 37 (lw_x^*) as follows:

$$ew_x^* = Tw_x^* \div lw_x^*$$

For ages 37 and above ew_x^* values are computed as follows:

$$ew_x^* = Tw_x \div lw_x$$

The differences between the corresponding values in columns (13) and (14) are due to the differences between l_x's and lw_x's as well as the effects of the assumption of the hypothetical activity rate at younger ages (under 37).

The expectation of inactive life can be computed easily by subtracting ew_x from the corresponding e_x. Similarly, by subtracting ew_x^* from the corresponding e_x, we get the average remaining number of inactive years of life for males in the labor force at any given age.

Column (15) Q_x: Mortality rate for males living in year of age. It is computed as follows:

$$Q_x = \frac{L_x - L_{x+1}}{L_x}$$

that is, in terms of the stationary population rather than the survivors at birthdays as in the computation of probability of dying in the conventional life table.[1]

Column (16) A_x: Accession rates to the labor force for males living in each year of age. If it is assumed that activity rates remain constant, the differences between the rates for successive ages at a given time serve as reasonable estimates of the net annual rates of labor force accession or separation between successive ages, after allowing for mortality. Accession rates were computed from the net increments in the stationary labor force per 1,000 persons in the stationary population after allowing for deaths among workers, as follows:[2]

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[1] United States, Bureau of Labor Statistics, Tables of Working Life - Length of Working Life for Men, Bulletin No. 1001, Washington, 1950, pp. 67-68.

[2] A_x may be expressed, equivalently, as: $A_x = (w_{x+1} - w_x)(1-Q_x^d)$ where Q_x^d is separation rate from the labor force due to death; see note on Column (18).

$$A_x = \frac{Lw_{x+1} - Lw_x + Lw_x \cdot (Q_x)}{L_x}$$

No accessions are shown beyond the age of the peak activity rate because the rates of accessions are derived from the net changes in activity rates.

Column (17) Q_x^s: Separation rates from the labor force due to all causes in a given year of age were computed as a ratio of the difference between stationary labor force in successive years to the labor force in the base year:

$$Q_x^s = \frac{Lw_x - Lw_{x+1}}{Lw_x}$$

For ages 12-37, it was assumed that the labor force separations were due solely to death, and therefore:

$$Q^s_{12\text{-}37} = Q_{12\text{-}37}$$

Column (18) Q_x^d: Separations from the labor force due to death for males in the labor force in the given year of age, assuming that the age specific death rate for males in the labor force was the same as that for all males of the same age. The Q_x^d function was computed as follows:

$$Q_x^d = \frac{Q_x \cdot (2 - Q_x^s)}{(2 - Q_x)}$$

Column (19) Q_x^r: Probabilities of separation from the labor force due to retirement (or all causes other than death). Given Q_x^s and Q_x^d, the values of the Q_x^r function were calculated as the difference between the two:

$$Q_x^r = Q_x^s - Q_x^d$$

B.1.2. Patterns of Working Life:

The functions of the table just described illustrate the patterns of working life in the U.A.R. in 1960. It is useful to compare some of the indices with those of other countries.

The average remaining number of economically active years, ew_x, for males at age 17, for example, is 45.4 years in the United States (1960)[1], 46.5 years in Great Britain (1955), 44.8 years in New Zealand (1951), 49.0 years in Japan (1955), 46.0 years in Malaya (1957), and 46.8 years in the United Arab Republic (1960).[2]

Since these countries differ, among other things, in their values of expectation of life, a single index may be used for this comparison, namely the percentage of the expectation of life spent in the labor force. The value of this index for males at age 17 is 86.8 in the United States, 87.7 in Great Britain, 83.7 in New Zealand, 92.1 in Japan, 93.1 in Malaya, and 92.9 in the U.A.R. in the years listed above. The same pattern of the differences in this index among these countries holds not only at age 17 but also throughout the age span. These results suggest the following proposition: the higher the socio-economic level, the lower will be the percentage of expectation of life spent in economically active status for males in the labor force at given ages, or, conversely, the higher the socio-economic level, the higher will be the percentage of expectation of life spent in retirement. Roughly speaking, this proposition holds for all

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[1] S. Garfinkle, "The Lengthening of Working Life and Its Implications", United Nations, Department of Economic and Social Affairs, Proceedings of World Population Conference, 1965..., Vol. IV, pp. 277-282.

[2] United Kingdom, Ministry of Labor, The Length of Working Life in Great Britain (London, 1959).

New Zealand, Census and Statistics Department, Tables of Working Life, 1951: Male Population (Including Maoris), (Wellington, 1955).

K. Azumi, "Length of Working Life of Japanese Men, 1930 and 1955", Monthly Labor Review, December 1958.

S. H. Saw, "Malaya: Tables of Male Working Life", Journal of the Royal Statistical Society, Series A, Vol. 128, No. 3, 1965.

countries mentioned above but one. New Zealand apparently deviates.

The differences in the index in the preceding paragraph are due primarily to differences in activity rates. Male activity rates by age have generally a universal pattern, where they rise sharply in the teens and early twenties, approach 100 percent in the middle adult ages, decline after age 50 at first gradually and then more rapidly at old ages. Differences exist mainly in the youngest and oldest ages, where developing countries generally have higher activity rates than developed countries. This is true for the countries under consideration. Only New Zealand has the highest activity rates at young ages and lowest at ages above 60.

Not only do differences in activity rates affect the pattern of the average remaining years of economically active life in different countries, but also they affect all other functions of labor force dynamics included in the table. For example, in developing countries such as Malaya and United Arab Republic, the main factor of separation from the labor force is death, throughout the life span, while in developed countries such as the United States and Great Britain, retirement becomes the major factor at old ages.

B.1.3. Differences Between Methods of Estimating Average Length of Working Life:

Each of the two procedures of estimating average years of active life has its own merits in answering certain questions of interest in this field. For instance, as Wolfbein has said, the expectation of active life (ew_x) "makes it possible to estimate the future working life potential of a newly-born infant - a measure of considerable intrinsic interest".[1] Moreover,

[1] Wolfbein, "The Length of Working Life", p. 293.

"it takes account of trends in the age of entry into the labor force, as well as separation, and therefore permits a more comprehensive measure of trends in total work-life span". On the other hand, average remaining years of active life per person in the labor force (ew_x^*) seems to be "most consistent with the life-table concept". Furthermore, in combination with other functions pertinent to the labor force, the ew_x^* measure would be the logical one to use; the same holds for ew_x in the case of functions related to the total population.

However, Wolfbein says that ew_x, "seems somewhat less meaningful at upper ages when a large number of the population has already left the labor force".[1] In fact, our calculations show that, at the old ages, ew_x gives a consistently declining curve of the percentage of the expectation of life to be spent in economically active life (a function which resembles activity rate schedule by age) which the other measure, ew_x^*, fails to show. On the other hand, "the validity of measures of average remaining years of active life (ew_x^*)... depends on certain conditions which do not have to be satisfied for valid measures of the expectation of active life (ew_x). These conditions are:

(i) That all persons who enter the labor force at any time in their lives do so prior to the age at which the activity rate reaches its maximum, and no survivors retire into inactive status prior to that age;

(ii) That the ages at which individuals retire are independent of the ages at which they enter the labor force;

(iii) That the rate of mortality at each age is the same for economically active and inactive persons".[2]

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[1] Ibid.

[2] Durand and Miller, Methods of Analyzing Census Data on Economic Activities..., p. 26.

The effects of deviations from these assumed conditions are, in general, less for males than for females. However, caution should be exercised in view of these potential effects within the context of the particular circumstances of the population under consideration.

It may be concluded that it seems desirable to use both measures in combination with other related variables, when the necessary data are available, in exploring the demographic and socio-economic conditions of the working force.

B.2. Abridged Tables of Economically Active Life: Males 1937-1960:

Expectation of active life and average remaining years in active status of those in the labor force have been calculated for Egyptian males for the census years 1937, 1947 and 1960.

The methodology as well as the implied assumptions are the same as those described in the preceding section. The main difference is that the abridged form presents the functions for 5-year age intervals, while the complete form presents them for single years of age. For the functions expressed in terms of exact age at birthday, the age in the abridged form is the lower limit of the age group.

The purpose here is to summarize the steps which were taken to prepare the necessary data and to present the main results:

Age specific activity rates ($_nw_x$) by 5-year age intervals up to age 74 and the 75+ group are available for 1960. However, for 1947, activity rates were extrapolated for age groups 65-69, 70-74, and 75+, excluding the ill-defined category. For 1937, both extrapolation beyond age 60 and interpolation for the age range 30-60, which is given in 10 year age intervals, were carried out. In all cases, both the interpolated and extrapolated values of activity

rates were checked with the more detailed age groupings of the male population and then adjusted to give approximately the same total figure of labor force size, keeping in mind the smoothness of activity curves. Since the National Life Tables are published by single year of age, it was needed to calculate the stationary population ($_5L_x$) by 5-year age groups from the survivorship function (l_x) of the complete tables. A simple method, in this respect, would be as follows:

$$_nL_x = \frac{n}{2}(l_x + l_{x+n})$$

assuming linearity over the n-year age interval. A better approximation, which was used, is to assume linearity over single years of age, then to compute the stationary population by single years also, and finally to add up the results over the required age intervals, i.e.,

$$_nL_x = \frac{l_x + l_{x+1}}{2} + \frac{l_{x+1} + l_{x+2}}{2} + \cdots + \frac{l_{x=n-1} + l_{x+n}}{2}$$

$$= \frac{l_x + l_{x+n}}{2} + (l_{x+1} + l_{x+2} + \cdots + l_{x+n-1})$$

This method gave e_x values practically identical to those published in the complete tables for 1937, 1947 and 1960 for the ages included. Having $_nw_x$ and $_nL_x$ ready, other functions were easily computable, as described in Section B.1, such as $_nLw_x$, $_nLw^*_x$, T_x, Tw_x, Tw^*_x, e_x, etc.

For computing measures of average length of economically active life, both ew_x and ew^*_x, estimates of activity rates at the beginning of the age interval were carried out simply by averaging activity rates for the given age group and the one for the preceding age interval, i.e.,

$$w_x = \frac{_nw_x + _nw_{x-5}}{2}$$

Then lw_x^*, ew_x and ew_x^* were computed. A summary of the results is given in Table B.2 and a summary of their analytical interpretation is given in Chapter 4.[1]

[1] A comparison of ew_x and ew_x^* values for 1960 computed by the abridged method and those given by the complete table are almost the same.

TABLE B.1. COMPLETE TABLE OF ECONOMICALLY ACTIVE LIFE, UNITED ARAB REPUBLIC, MALES, 1960.

Year of age	Activity rate	Number living of 100,000 born alive at beginning of year of age			Number living of 100,000 born alive in year of age		
		In the population	In the labor force		In the population	In the labor force	
x	w_x	l_x	lw_x	lw_x^*	L_x	Lw_x	Lw_x^*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
12	28.4	76,572	19,399	75,120	76,496	21,725	75,043
13	37.0	76,419	24,986	74,968	76,343	28,247	74,892
14	47.2	76,266	32,104	74,815	76,186	35,960	74,738
15	55.3	76,106	39,001	74,660	76,026	42,042	74,582
16	62.3	75,946	44,654	74,504	75,866	47,265	74,425
17	68.4	75,786	49,523	74,345	75,703	51,781	74,265
18	73.3	75,619	53,573	74,181	75,532	55,365	74,097
19	77.4	75,445	56,845	74,010	75,355	58,325	73,923
20	80.7	75,264	59,494	73,833	75,170	60,662	73,742
21	83.8	75,076	61,747	73,648	74,979	62,832	73,554
22	86.6	74,881	63,796	73,457	74,780	64,759	73,359
23	89.1	74,679	65,603	73,259	74,575	66,446	73,158
24	91.3	74,470	67,170	73,054	74,362	67,893	72,949
25	93.1	74,254	68,460	72,842	74,143	69,027	72,734
26	94.7	74,031	69,513	72,623	73,916	69,998	72,512
27	96.0	73,801	70,367	72,398	73,683	70,736	72,283
28	96.6	73,565	70,842	72,166	73,444	70,947	72,049
29	96.9	73,322	70,936	71,926	73,194	70,925	71,803
30	97.2	73,065	70,907	71,674	72,930	70,888	71,544
31	97.4	72,795	70,828	71,411	72,657	70,768	71,277
32	97.6	72,518	70,704	71,140	72,377	70,640	71,002
33	97.7	72,235	70,535	70,860	72,087	70,429	70,717
34	97.8	71,939	70,318	70,569	71,785	70,206	70,421
35	97.9	71,630	70,087	70,266	71,469	69,968	70,111
36	98.0	71,308	69,843	69,950	71,141	69,718	69,789
37	98.1	70,973	69,622	-	70,799	69,454	-
38	98.0	70,625	69,245	-	70,445	69,036	-
39	97.9	70,265	68,822	-	70,079	68,607	-

TABLE B.1 (Continued)

Year of age	Activity rate	Number living of 100,000 born alive at beginning of year of age			Number living of 100,000 born alive in year of age		
		In the population	In the labor force		In the population	In the labor force	
x	w_x	l_x	lw_x	lw_x^*	L_x	Lw_x	Lw_x^*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
40	97.8	69,893	68,386	-	69,698	68,165	-
41	97.7	69,502	67,934	-	69,297	67,703	-
42	97.6	69,092	67,463	-	68,875	67,222	-
43	97.5	68,657	66,971	-	68,431	66,720	-
44	97.4	68,204	66,463	-	67,972	66,205	-
45	97.3	67,740	65,940	-	67,496	65,674	-
46	97.2	67,252	65,396	-	66,991	65,117	-
47	97.1	66,734	64,826	-	66,461	64,534	-
48	97.0	66,187	64,232	-	65,906	63,929	-
49	96.9	65,624	63,612	-	65,319	63,294	-
50	96.7	65,014	62,924	-	64,689	62,554	-
51	96.5	64,364	62,164	-	64,013	61,773	-
52	96.3	63,662	61,361	-	63,290	60,948	-
53	96.0	62,917	60,483	-	62,518	60,017	-
54	95.6	62,118	59,497	-	61,690	58,976	-
55	95.2	61,261	58,426	-	60,793	57,875	-
56	94.8	60,324	57,298	-	59,833	56,721	-
57	94.3	59,341	56,094	-	58,819	55,466	-
58	93.3	58,297	54,675	-	57,752	53,883	-
59	91.8	57,207	52,939	-	56,638	51,994	-
60	89.9	56,069	50,933	-	55,475	49,872	-
61	87.5	54,880	48,667	-	54,241	47,461	-
62	85.3	53,601	46,302	-	52,923	45,143	-
63	83.1	52,245	43,983	-	51,532	42,823	-
64	80.9	50,819	41,650	-	50,032	40,476	-
65	78.7	49,244	39,279	-	48,387	38,081	-
66	76.5	47,530	36,874	-	46,622	35,666	-
67	74.3	45,714	34,458	-	44,750	33,249	-
68	72.1	43,785	32,045	-	42,774	30,840	-
69	69.9	41,762	29,647	-	40,706	28,453	-

TABLE B.1. (Continued)

Year of age	Activity rate	Number living of 100,000 born alive at beginning of year of age			Number living of 100,000 born alive in year of age		
		In the population	In the labor force		In the population	In the labor force	
x	w_x	l_x	lw_x	lw_x^*	L_x	Lw_x	Lw_x^*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
70	67.7	39,649	27,278	-	38,555	26,102	-
71	65.5	37,460	24,953	-	36,342	23,804	-
72	63.3	35,224	22,693	-	34,094	21,582	-
73	61.1	32,963	20,503	-	31,790	19,424	-
74	58.9	30,616	18,376	-	29,419	17,328	-
75	56.7	28,222	16,324	-	27,020	15,320	-
76	54.5	25,817	14,368	-	24,614	13,415	-
77	52.3	23,411	12,514	-	22,203	11,612	-
78	50.1	20,995	10,768	-	19,807	9,923	-
79	47.9	18,618	9,144	-	17,462	8,364	-
80	45.7	16,306	7,655	-	15,196	6,945	-
81	43.4	14,085	6,303	-	13,042	5,660	-
82	41.1	11,998	5,099	-	11,038	4,537	-
83	38.8	10,078	4,054	-	9,201	3,570	-
84	36.4	8,324	3,158	-	7,542	2,745	-
85	34.0	6,759	2,405	-	6,070	2,064	-

TABLE B.1. (Continued)

Year of age	Number of man-years remaining in year of age and later years			Complete expectation of life at beginning of year of age	Expectation of economically active life at beginning of year of age	Average remaining years of active life for survivors in labor force at beginning of year of age
	In the population	In the labor force				
x	T_x	Tw_x	Tw^*_x	e_x	ew_x	ew^*_x
(1)	(9)	(10)	(11)	(12)	(13)	(14)
12	4,200,564	3,542,527	3,853,944	54.9	46.3	51.3
13	4,124,068	3,520,802	3,778,901	54.0	46.1	50.4
14	4,047,725	3,492,555	3,704,009	53.1	45.8	49.5
15	3,971,539	3,456,595	3,629,271	52.2	45.4	48.6
16	3,895,513	3,414,553	3,554,689	51.3	45.0	47.7
17	3,819,647	3,367,288	3,480,264	50.4	44.4	46.8
18	3,743,944	3,315,507	3,405,999	49.5	43.8	45.9
19	3,668,412	3,260,142	3,331,902	48.6	43.2	45.0
20	3,593,057	3,201,817	3,257,979	47.7	42.5	44.1
21	3,517,887	3,141,155	3,184,237	46.9	41.8	43.2
22	3,442,908	3,078,323	3,110,683	46.0	41.1	42.3
23	3,368,128	3,013,564	3,037,324	45.1	40.4	41.5
24	3,293,553	2,947,118	2,964,166	44.2	39.6	40.6
25	3,219,191	2,879,225	2,891,217	43.4	38.8	39.7
26	3,145,048	2,810,198	2,818,483	42.5	38.0	38.8
27	3,071,132	2,740,200	2,745,971	41.6	37.1	37.9
28	2,997,449	2,669,464	2,673,688	40.7	36.3	37.0
29	2,924,005	2,598,517	2,601,639	39.9	35.4	36.2
30	2,850,811	2,527,592	2,529,836	39.0	34.5	35.3
31	2,777,881	2,456,704	2,458,292	38.2	33.7	34.4
32	2,705,224	2,385,936	2,387,015	37.3	32.9	33.6
33	2,632,847	2,315,296	2,316,013	36.4	32.1	32.7
34	2,560,760	2,244,867	2,245,296	35.6	31.2	31.8
35	2,488,975	2,174,661	2,174,875	34.7	30.4	31.0
36	2,417,506	2,104,693	2,104,764	33.9	29.5	30.1
37	2,346,365	2,034,975	-	33.1	28.7	29.2
38	2,275,566	1,965,521	-	32.2	27.8	28.4
39	2,205,121	1,896,485	-	31.4	27.0	27.6

TABLE B.1. (Continued)

Year of age	Number of man-years remaining in year of age and later years			Complete expectation of life at beginning of year of age	Expectation of economically active life at beginning of year of age	Average remaining years of active life for survivors in labor force at beginning of year of age
	In the population	In the labor force				
x	T_x	Tw_x	Tw^*_x	e_x	ew_x	ew^*_x
(1)	(9)	(10)	(11)	(12)	(13)	(14)
40	2,135,042	1,827,878	-	30.5	26.2	26.7
41	2,065,344	1,759,713	-	29.7	25.3	25.9
42	1,996,047	1,692,010	-	28.9	24.5	25.1
43	1,927,172	1,624,788	-	28.1	23.7	24.3
44	1,858,741	1,558,068	-	27.3	22.8	23.4
45	1,790,769	1,491,863	-	26.4	22.0	22.6
46	1,723,273	1,426,189	-	25.6	21.2	21.8
47	1,656,280	1,361,072	-	24.8	20.4	21.0
48	1,589,819	1,296,538	-	24.0	19.6	20.2
49	1,523,913	1,232,609	-	23.2	18.8	19.4
50	1,458,594	1,169,315	-	22.4	18.0	18.6
51	1,393,905	1,106,761	-	21.7	17.2	17.8
52	1,329,892	1,044,988	-	20.9	16.4	17.0
53	1,266,602	984,040	-	20.1	15.6	16.3
54	1,204,084	924,023	-	19.4	14.9	15.5
55	1,142,394	865,047	-	18.6	14.1	14.8
56	1,081,601	807,172	-	17.9	13.4	14.1
57	1,021,768	750,451	-	17.2	12.6	13.4
58	962,949	694,985	-	16.5	11.9	12.7
59	905,197	641,102	-	15.8	11.2	12.1
60	848,559	589,108	-	15.1	10.5	11.6
61	793,084	539,236	-	14.5	9.8	11.1
62	738,843	491,775	-	13.8	9.2	10.6
63	685,920	446,632	-	13.1	8.5	10.2
64	634,388	403,809	-	12.5	7.9	9.7
65	584,356	363,333	-	11.9	7.4	9.3
66	535,969	325,252	-	11.3	6.8	8.8
67	489,347	289,586	-	10.7	6.3	8.4
68	444,597	256,337	-	10.2	5.9	8.0
69	401,823	225,497	-	9.6	5.4	7.7

TABLE B.1. (Continued)

Year of age	Number of man-years remaining in year of age and later years			Complete expectation of life at beginning of year of age	Expectation of economically active life at beginning of year of age	Average remaining years of active life for survivors in labor force at beginning of year of age
	In the population	In the labor force				
x	T_x	Tw_x	Tw^*_x	e_x	ew_x	ew^*_x
(1)	(9)	(10)	(11)	(12)	(13)	(14)
70	361,117	197,044	-	9.1	5.0	7.3
71	322,562	170,942	-	8.6	4.6	7.0
72	280,622	147,138	-	8.1	4.2	6.5
73	252,126	125,556	-	7.6	3.8	6.1
74	220,336	106,132	-	7.2	3.5	5.8
75	190,917	88,804	-	6.8	3.1	5.4
76	163,897	73,484	-	6.3	2.8	5.1
77	139,283	60,069	-	5.9	2.6	4.8
78	117,080	48,457	-	5.6	2.3	4.5
79	97,273	38,534	-	5.2	2.1	4.2
80	79,811	30,170	-	4.9	1.9	3.9
81	64,615	23,225	-	4.6	1.6	3.7
82	51,573	17,565	-	4.3	1.5	3.4
83	40,535	13,028	-	4.0	1.3	3.2
84	31,334	9,458	-	3.8	1.1	3.0
85	23,792	6,713	-	3.5	1.0	2.8

TABLE B.1. (Continued)

Year of age	Mortality rate per 1000 living in year of age	Accession to the labor force per 1000 living in year of age	Separations from the labor force per 1000 in the labor force in year of age		
			Total	Due to death	Due to retirement
x	$1000\ Q_x$	$1000\ A_x$	$1000\ Q_x^s$	$1000\ Q_x^d$	$1000\ Q_x^r$
(1)	(15)	(16)	(17)	(18)	(19)
12	2.0	85.8	2.0	2.0	-
13	2.1	101.8	2.1	2.1	-
14	2.1	80.8	2.1	2.1	-
15	2.1	69.9	2.1	2.1	-
16	2.1	60.9	2.1	2.1	-
17	2.3	48.9	2.3	2.3	-
18	2.3	40.9	2.3	2.3	-
19	2.4	32.9	2.4	2.4	-
20	2.5	30.9	2.5	2.5	-
21	2.7	27.9	2.7	2.7	-
22	2.7	24.9	2.7	2.7	-
23	2.9	21.9	2.9	2.9	-
24	2.9	17.9	2.9	2.9	-
25	3.1	15.9	3.1	3.1	-
26	3.2	13.0	3.2	3.2	-
27	3.2	6.0	3.2	3.2	-
28	3.4	3.0	3.4	3.4	-
29	3.6	3.0	3.6	3.6	-
30	3.7	2.0	3.7	3.7	-
31	3.9	2.0	3.9	3.9	-
32	4.0	1.0	4.0	4.0	-
33	4.2	1.0	4.2	4.2	-
34	4.4	1.0	4.4	4.4	-
35	4.6	1.0	4.6	4.6	-
36	4.8	1.0	4.8	4.8	-
37	5.0	-	6.0	5.0	1.0
38	5.2	-	6.2	5.2	1.0
39	5.4	-	6.4	5.4	1.0

TABLE B.1. (Continued)

Year of age	Mortality rate per 1000 living in year of age	Accession to the labor force per 1000 living in year of age	Separations from the labor force per 1000 in the labor force in year of age		
			Total	Due to death	Due to retirement
x	$1000\ Q_x$	$1000\ A_x$	$1000\ Q_x^s$	$1000\ Q_x^d$	$1000\ Q_x^r$
(1)	(15)	(16)	(17)	(18)	(19)
40	5.7	-	6.8	5.7	1.0
41	6.1	-	7.1	6.1	1.0
42	6.4	-	7.5	6.4	1.1
43	6.7	-	7.7	6.7	1.0
44	7.0	-	8.0	7.0	1.0
45	7.5	-	8.5	7.5	1.0
46	7.9	-	9.0	7.9	1.1
47	8.4	-	9.4	8.4	1.0
48	8.9	-	9.9	8.9	1.0
49	9.6	-	11.7	9.6	2.1
50	10.4	-	12.5	10.4	2.1
51	11.3	-	13.4	11.3	2.1
52	12.2	-	15.3	12.2	3.1
53	13.2	-	17.3	13.2	4.1
54	14.5	-	18.7	14.5	4.2
55	15.8	-	19.9	15.8	4.1
56	17.0	-	22.1	17.0	5.1
57	18.1	-	28.5	18.0	10.5
58	19.3	-	35.1	19.1	16.0
59	20.5	-	40.8	20.3	20.5
60	22.2	-	48.3	21.9	27.4
61	24.3	-	48.8	23.9	24.9
62	26.3	-	51.4	26.0	25.4
63	29.1	-	54.8	28.7	26.1
64	32.9	-	59.2	32.6	26.6
65	36.5	-	63.4	36.0	27.4
66	40.2	-	67.8	39.6	28.2
67	44.2	-	72.5	43.6	28.9
68	48.4	-	77.4	47.7	29.7
69	52.8	-	82.6	52.0	30.6

TABLE B.1. (Continued)

Year of age	Mortality rate per 1000 living in year of age	Accession to the labor force per 1000 living in year of age	Separations from the labor force per 1000 in the labor force in year of age		
			Total	Due to death	Due to retirement
x	$1000\ Q_x$	$1000\ A_x$	$1000\ Q_x^s$	$1000\ Q_x^d$	$1000\ Q_x^r$
(1)	(15)	(16)	(17)	(18)	(19)
70	57.4	-	88.0	56.5	31.5
71	61.9	-	93.3	60.8	32.5
72	67.6	-	100.0	66.5	33.5
73	74.6	-	107.9	73.3	34.6
74	81.6	-	115.9	80.1	35.8
75	89.1	-	124.3	87.5	36.8
76	98.0	-	134.4	96.1	38.3
77	107.9	-	145.4	105.8	39.6
78	118.4	-	157.1	116.0	41.1
79	129.8	-	169.7	127.0	42.7
80	141.8	-	185.0	138.5	46.5
81	153.7	-	198.4	150.0	48.4
82	166.4	-	213.1	162.2	50.9
83	180.3	-	231.1	175.3	55.8
84	195.0	-	248.5	189.2	59.3
85	210.2	-	266.0	203.6	62.4

TABLE B.2. ABRIDGED TABLES OF ACTIVE LIFE, U.A.R., MALES, 1937-1960.

Age group	Activity rate n^{w}_{x}	Stationary population n^{L}_{x}	Stationary labor force n^{Lw}_{x}	Expectation of life e_{x}	Expectation of active life e^{w}_{x}
			1937		
5-9	5.0	309,633	15,389	50.4	41.2
10-14	63.4	301,097	190,805	47.4	42.6
15-19	82.4	293,000	241,403	43.5	40.5
20-24	90.6	282,885	256,379	39.8	37.6
25-29	95.9	270,481	259,337	36.4	34.5
30-34	97.3	257,616	250,532	33.0	31.3
35-39	97.7	244,273	238,655	29.7	27.9
40-44	97.9	229,919	225,091	26.1	24.5
45-49	97.7	213,851	208,826	22.7	21.1
50-54	96.5	194,987	188,162	19.4	17.8
55-59	94.8	173,275	164,178	16.3	14.6
60-64	92.3	147,380	135,958	13.3	11.7
65-69	89.4	118,615	106,042	10.5	9.0
70-74	85.3	84,684	72,240	7.9	6.5
75+	79.7	77,141	61,481	5.8	4.6
			1947		
5-9	11.4	350,043	39,940	52.4	41.8
10-14	42.4	340,736	144,540	49.3	42.8
15-19	80.0	332,657	266,225	45.4	41.6
20-24	89.8	323,190	290,095	41.5	38.7
25-29	94.7	312,112	295,695	37.8	35.4
30-34	96.5	299,575	289,000	34.1	31.9
35-39	97.2	285,661	277,720	30.5	28.4
40-44	97.5	270,389	263,629	27.0	24.9
45-49	97.2	253,275	246,183	23.5	21.4
50-54	95.8	233,565	223,709	20.1	18.0
55-59	94.0	210,550	197,875	16.7	14.6
60-64	91.3	183,156	167,166	13.5	11.5
65-69	87.5	148,862	130,254	10.5	8.6
70-74	82.3	106,265	87,403	7.9	6.1
75+	71.7	96,798	69,404	5.8	4.2
			1960		
5-9	11.1	387,412	43,080	60.5	46.4
10-14	28.4	382,494	108,514	56.6	46.4
15-19	68.5	378,467	259,099	52.2	45.5
20-24	86.7	373,865	324,029	47.7	42.6
25-29	96.1	368,379	353,939	43.4	38.8
30-34	97.8	361,835	353,875	39.0	34.6
35-39	98.1	353,933	347,279	34.8	30.3
40-44	98.0	344,271	337,213	30.6	26.1
45-49	97.6	332,174	324,102	26.4	21.0
50-54	96.1	316,199	303,741	22.4	17.9
55-59	94.1	293,834	276,439	18.7	14.0
60-64	84.8	264,201	224,016	15.1	10.4
65-69	73.8	223,237	164,704	11.9	7.3
70-74	63.0	170,199	107,293	9.1	4.9
75+	45.3	190,909	86,425	6.8	3.1

TABLE B.2 (Continued)

Age	Average remaining years in active life	Accession rate	Separation Rates		
			Total	Due to death	Due to retirement
	e_x^{w*}	1000 A_x	1000 Q_x^s	1000 Q_x^d	1000 Q_x^r
		1937			
5-9	49.7	539.5	27.6	27.6	-
10-14	46.6	185.1	26.9	26.9	-
15-19	42.7	79.6	24.5	34.5	-
20-24	38.9	50.2	43.9	43.9	-
25-29	35.4	13.1	47.6	47.6	-
30-34	32.0	4.3	51.8	51.8	-
35-39	28.5	1.9	58.8	58.8	-
40-44	25.0	-	72.3	69.8	2.5
45-49	21.6	-	99.0	87.7	11.2
50-54	18.3	-	127.5	110.4	17.1
55-59	15.3	-	171.9	147.6	24.3
60-64	12.5	-	220.0	192.5	27.6
65-69	9.9	-	318.8	280.9	37.9
70-74	7.5	-	451.0	405.1	45.9
75+	5.6	-	-	-	-
		1947			
5-9	51.3	301.9	26.6	26.6	-
10-14	48.2	367.2	23.7	23.7	-
15-19	44.2	94.5	28.5	28.5	-
20-24	40.3	48.2	34.4	34.4	-
25-29	36.5	16.6	40.2	40.2	-
30-34	32.8	7.2	46.5	46.5	-
35-39	29.2	2.7	53.5	53.5	-
40-44	25.6	-	66.2	63.2	3.0
45-49	22.0	-	91.3	77.3	14.0
50-54	18.6	-	115.5	97.7	17.8
55-59	15.4	-	155.2	128.4	26.8
60-64	12.4	-	220.8	190.0	30.9
65-69	9.6	-	329.0	279.0	50.0
70-74	7.2	-	486.1	395.9	91.0
75+	5.4	-	-	-	-
		1960			
5-9	56.4	170.3	12.7	12.7	-
10-14	53.1	396.7	10.5	10.5	-
15-19	48.6	179.9	12.2	12.2	-
20-24	44.1	92.7	14.7	14.7	-
25-29	39.7	16.9	17.8	17.8	-
30-34	35.3	3.2	21.8	21.8	-
35-39	30.9	-	29.0	27.3	1.7
40-44	26.6	-	38.9	35.1	3.8
45-49	22.5	-	62.8	47.7	15.1
50-54	18.5	-	89.9	70.0	19.9
55-59	14.8	-	189.6	96.1	93.5
60-64	11.6	-	264.8	145.8	118.9
65-69	9.2	-	348.6	222.6	125.9
70-74	7.1	-	526.2	309.6	216.6
75+	5.7	-	-	-	-

APPENDIX C

ANALYSIS OF COMPONENTS OF LABOR FORCE CHANGES

C.1. Factorial Analysis by Standardization

Since the early 1880's, standardization techniques have been in use in demographic research. Their simplest application, which was practiced for most of the period since 1880's, is to secure a reasonably valid comparison between two or more different populations regarding a demographic phenomenon, such as the crude death rate or birth rate, independent of one of the major compositional factors, such as age, by holding that factor constant in the populations to be compared.

In recent decades, in addition to vital rates, the use of standardization has been extended to other fields of demography and other social sciences, and multiple standardization has been developed in order to control more than one factor.

Still more recently, standardization techniques, simple and/or multiple, have been used not only for purposes of "controlled" comparisons but also for factorial analysis. In principle, the latter use is based on the subtraction of the standardized rate, or level, of the phenomenon under investigation from its original, or "crude", counterpart. The result is an estimate of the effect of the factor, or factors, for which standardization was not carried out. The methods used in some works also make allowance for effects of interaction between simultaneous changes in two or more variables.[1]

[1] See Durand, The Labor Force in the United States..., Appendix B, Durand and Miller, Methods of Analyzing Census Data on Economic Activities..., pp. 43-46.

The purpose here is not to review the literature on standardization techniques and their applications.[1] Rather, it is to present a framework for component analysis by standardization that has been developed in this study and applied to Egyptian data for analyzing components of intercensal changes in labor force size due to changes in activity rates, in population size, and in population structure. This scheme also provides estimates of interaction effects between two variables and throws some light on the direction of such effects. The scheme and its applications are described in this section and the following one.

C.1.1. Factorial Analysis of Changes in Labor Force Size:

In general, when estimating the effect of a factor on a phenomenon, one allows this factor to change while holding other factors constant. In studying temporal changes, the question arises, in which direction the changing factor should be allowed to change and at what levels the constant factors should be held. For convenience, let it be called the "Forward" method which takes the direction of the changing factor as it actually occurred with the passage of time. The change in that factor is then equal to its terminal minus its initial value and, in order to conform with the above-mentioned principles. The values of the factors to be held constant are those of the terminal date. The "Reverse" method, on the other hand, deals with the changing factor in the opposite direction and takes the initial values for the constant factors. Most likely, the results obtained by the two methods will be different due to the interaction effect. One way of eliminating the interaction term in the results is to use the

[1] See Bibliography No. 6, 39, 47, 93 and references therein.

"Average" method. The procedures for estimating components of intercensal change of labor force by the three methods may now be described.

Let P represent the size of population at working ages; W, the refined activity rate; LF, labor force size; and $\triangle$ LF, the change in labor force size. Let the components of $\triangle$LF be represented by $\triangle$LF(P), the effect of change in population size (population component); $\triangle$LF(W), the effect of change in the activity rate (activity component); and $\triangle$LF(P,W), the effect of interaction between changes in population size and in activity rate (interaction component).[1] Then

Forward Method:

$$\triangle LF(P) = (P_2 - P_1)\, W_2 \qquad (F.1)$$

$$\triangle LF(W) = (W_2 - W_1)\, P_2 \qquad (F.2)$$

$$\triangle LF(P,W) = (P_2 - P_1)\,(W_2 - W_1) \qquad (F.3)$$

Reverse Method:

$$\triangle LF(P) = (P_1 - P_2)\, W_1 \qquad (R.1)$$

$$\triangle LF(W) = (W_1 - W_2)\, P_1 \qquad (R.2)$$

$$\triangle LF(P,W) = (P_1 - P_2)\,(W_1 - W_2) \qquad (R.3)$$

Average Method:

$$\triangle LF(P) = 1/2\,(P_2 - P_1)\,(W_1 + W_2) \qquad (A.1\text{-a})$$

$$\text{or} = 1/2\,(P_1 - P_2)\,(W_1 + W_2) \qquad (A.1\text{-b})$$

$$\triangle LF(W) = 1/2\,(W_2 - W_1)\,(P_1 + P_2) \qquad (A.2\text{-a})$$

$$\text{or} = 1/2\,(W_1 - W_2)\,(P_1 + P_2) \qquad (A.2\text{-b})$$

where suffixes 1 and 2 denote the initial and terminal values, respectively.[2]

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[1] The method can equally well be used for total population and crude activity rate or any other selected population size and its corresponding activity rate and labor force size.

[2] In other works, the equations used have been different in that crude rates were subtracted from standardized rates for estimating one of the two components, see pages 228 and 229 below.

It can be shown that the equation for the total change in labor force size is,[1]

$$\Delta LF = \Delta LF(P) + \Delta LF(W) - \Delta LF(P,W)$$

whether we use the forward or the reverse method. The equation still holds for the average method, given that the interaction effect is equal to zero.

It can be seen in the equations given above that the estimates of each factor by forward and reverse methods have opposite signs, as should be expected if two-way standardization is carried out with regard to any specific variable. So it should not be surprising that in a country with a growing population, the reverse method gives the population component of labor force growth with a negative sign indicating that the smaller initial size of the population is responsible for the labor force being smaller than it would have been had the initial population been equal to that of the terminal date.

The interaction effect, as defined by the two methods, has an identical value with the same sign. Its value is to be subtracted algebraically in the equation of the total change in the size of the labor force.

These and other points, to be discussed below, may be illustrated by a numerical example. Table C.1 shows estimates of components of change in the Egyptian labor force size between 1907 and 1960. The following are the data on which the calculations are based:

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[1] The forward method gives the total change defined as $LF_2 - LF_1$; while the reverse method gives this change defined as $LF_1 - LF_2$. For the average method, see discussion below.

Year	Population 5 years of age and over (P)	Labor force (LF)	Activity rate (W)
		Males	
1907	4,800,248	3,362,310	70.0445
1960	10,547,211	7,206,792	68.3289
		Females	
1907	4,710,672	171,794	3.6469
1960	10,520,110	625,403	5.9448

Illustrations of the statements above, with regard to the magnitude of effects of the factors as estimated by the three methods and their signs, can easily be found in the table. The nature of the interaction effect, its value in relation to the estimates of other components by forward and reverse method, and the determination of the signs of estimates of the components of change calculated by the average method as well as the way in which the latter method eliminates the interaction effects, require some further discussion.

For estimating the effects of changes in population size by the forward and reverse methods (equations F.1 and R.1 respectively), population size is allowed to change from P_1 to P_2 or P_2 to P_1. In other words, the value of the first term in the two equations is the same with, of course, different signs. If the other factor, which is to be held constant, were the same for the two dates, the absolute values of the estimates of the population component would be the same regardless of the method used. However, when the value of the other factor also changes, the interaction effect must be taken into account. This effect is implied, only once, in

TABLE C.1. COMPONENTS OF LABOR FORCE GROWTH BY SEX, U.A.R., 1907-1960.

Components	Forward method	Reverse method	Average method
		A. Absolute Numbers	
		Males	
Population Component	3,926,836	-4,025,430	3,976,133
Activity Component	-180,948	82,353	-131,651
Interaction Component	-98,595	-98,595	-
Total Change	3,844,482	-3,844,482	3,844,482
		Females	
Population Component	345,361	-211,866	378,614
Activity Component	241,744	-108,247	174,995
Interaction Component	-133,496	-133,496	-
Total Change	453,609	-453,609	453,609
		Both Sexes	
Population Component	4,272,197	-4,237,296	4,254,747
Activity Component	60,796	-25,894	43,344
Interaction Component	-34,902	-34,901	-
Total Change	4,298,091	-4,298,091	4,298,091
		B. Percent of Initial Labor Force	
		Males	
Population Component	116.8	-119.7	118.3
Activity Component	-5.4	2.5	-3.9
Interaction Component	-2.9	-2.9	-
Total Change	114.3	-114.3	114.3
		Females	
Population Component	201.0	-123.3	162.2
Activity Component	140.7	- 63.0	101.9
Interaction Component	-77.7	- 77.7	-
Total Change	264.0	-264.0	264.0
		Both Sexes	
Population Component	120.9	-119.9	120.4
Activity Component	1.7	-.7	1.2
Interaction Component	-1.0	-1.0	-
Total Change	121.6	-121.6	121.6

one or the other of the two estimates depending on how one interprets the data. The same holds with respect to estimates of the activity component.

Since the interaction effect is to be imputed only once in each of the two estimates of a component, its value should be equal to the difference between the two estimates, regardless of sign. For example, in Table C.1, estimates of the population component for males by the forward and reverse methods are +3,926,836 and -4,025,430 respectively, and the difference is equal to the interaction effect (98,595) estimated independently by equation F.3 or R.3. (The difference between the absolute values of the two estimates, however, does not provide the sign of the interaction component.) This relationship can be proved mathematically by means of equations F.1, R.1 and either F.3 or R.3 as follows:

From F.1, $\Delta LF(P) = P_2.W_2 - P_1.W_2$ (1)

From R.1, $\Delta LF(P) = P_1.W_1 - P_2.W_1$ (2)

From F.3 or R.3, $\Delta LF(P,W) = P_1.W_1 - P_1.W_2 + P_2.W_2 - P_2.W_1$ (3)

It will be seen that equation (3) is the algebraic sum of equations (1) and (2). This finding is equally true with regard to the activity component in relation to the interaction component.

While each pair of equations of the average method provides the same absolute value of the estimates of the component of change under investigation, the sign is different, depending upon what equations are used for estimation (A.1-a and A.2-a, or A.1-b and A.2-b above). The obvious reason is that, in effect, averaging the values of the other factor to be held constant neutralizes that factor and so eliminates the effects of simultaneous changes of the two factors. Nevertheless, when using the average method for estimating components of change, one still needs to know the

direction of these estimates. Equations A.1-a and A.2-a vs. A.1-b and A.2-b provide the answer. The first two give the sign of the effects when the changing factor moves from its initial to its terminal levels, while the two latter equations give the sign when the movement is in the opposite direction. In fact, equations A.1-a and A.2-a correspond to equations F.1 and F.2 of the forward method, while equations A.1-b and A.2-b correspond to equations R.1 and R.2 of the reverse method. The only difference is in the averaging process of the "controlled" factor in the average method. To put it differently, equations A.1-a and A.2-a give the components of $LF_2 - LF_1$; while A.1-b and A.2-b indicate the components of $LF_1 - LF_2$. The former have been used in this study.

C.1.2. Factorial Analysis of Intercensal Changes in Crude Activity Rate:

The method described above was used for estimating the contributions of changes in age structure of the population and of changes in age specific activity rates to intercensal changes of the crude activity rate. The equations used may be written as follows:

Forward Method:

$$\Delta W(c_x) = \sum_{x=i}^{\infty} (c_{x,2} - c_{x,1}).w_{x,2} \qquad (F.1)$$

$$\Delta W(w_x) = \sum_{x=i}^{\infty} (w_{x,2} - w_{x,1}).c_{x,2} \qquad (F.2)$$

$$\Delta W(c_x,w_x) = \sum_{x=i}^{\infty} (c_{x,2} - c_{x,1}) (w_{x,2} - w_{x,1}) \qquad (F.3)$$

Reverse Method:

$$\Delta W(c_x) = \sum_{x=i}^{\infty} (c_{x,1} - c_{x,2}).w_{x,1} \qquad (R.1)$$

$$\Delta W(w_x) = \sum_{x=i}^{\infty} (w_{x,1} - w_{x,2}).c_{x,1} \qquad (R.2)$$

$$\Delta W(c_x,w_x) = \sum_{x=i}^{\infty} (c_{x,1} - c_{x,2}) (w_{x,1} - w_{x,2}) \qquad (R.3)$$

Average Method:

$$\Delta W(c_x) = \frac{1}{2} \sum_{x=i}^{\omega} (c_{x,2} - c_{x,1})(w_{x,1} + w_{x,2}) \quad \text{(A.1-a)}$$

$$\text{or} = \frac{1}{2} \sum_{x=i}^{\omega} (c_{x,1} - c_{x,2})(w_{x,1} + w_{x,2}) \quad \text{(A.1-b)}$$

$$\Delta W(w_x) = \frac{1}{2} \sum_{x=i}^{\omega} (w_{x,2} - w_{x,1})(c_{x,1} + c_{x,2}) \quad \text{(A.2-a)}$$

$$\text{or} = \frac{1}{2} \sum_{x=i}^{\omega} (w_{x,1} - w_{x,2})(c_{x,1} + c_{x,2}) \quad \text{(A.2-b)}$$

where W, w_x and c_x represent the crude activity rate, the specific activity rate for age group x, and its share in the total population, respectively. The rest of the symbols are analogous to those used in Section C.1 above. Thus the equation for the total change in crude activity rate will be as follows:

$$\Delta W = \Delta W(c_x) + \Delta W(w_x) - \Delta W(c_x, w_x)$$

For convenience, the definitional equations given above may be rewritten along with the results of the computations for Egyptian males during the 1947-1960 intercensal period, as follows:[1]

Forward Method:

$$\Delta W(c_x) = W_2 - S_1 = -4.03 \quad \text{(F.1)}$$

$$\Delta W(w_x) = W_2 - S_2 = -7.23 \quad \text{(F.2)}$$

$$\Delta W(c_x, w_x) = W_1 + W_2 - S_1 - S_2 = .07 \quad \text{(F.3)}$$

Reverse Method:

$$\Delta W(c_x) = W_1 - S_2 = 4.10 \quad \text{(R.1)}$$

$$\Delta W(w_x) = W_1 - S_1 = 7.32 \quad \text{(R.2)}$$

$$\Delta W(c_x, w_x) = W_1 + W_2 - S_1 - S_2 = .07 \quad \text{(R.3)}$$

[1] Minor differences of these numerical results from those given in Chapter 3 are due to the exclusion of persons in the labor force or the population whose age is not given.

Average Method:

$$\Delta W(c_x) = \frac{1}{2}(W_2 + S_2 - W_1 - S_1) = -4.065 \quad \text{(A.1-a)}$$

$$\text{or} = \frac{1}{2}(W_1 + S_1 - W_2 - S_2) = 4.065 \quad \text{(A.1-b)}$$

$$\Delta W(w_x) = \frac{1}{2}(W_2 + S_1 - W_1 - S_2) = -7.285 \quad \text{(A.2-a)}$$

$$\text{or} = \frac{1}{2}(W_1 + S_2 - W_2 - S_1) = 7.285 \quad \text{(A.2-b)}$$

where W_1 is the crude activity rate for the initial date; W_2, the crude activity rate for the terminal date; S_1, the standardized activity rate as of the terminal date with the age structure of the population of the initial date as weights, i.e., $\sum_{x=i}^{\infty}(w_{x,2} \cdot c_{x,1})$; and S_2, the standardized activity rate for the initial date with the age structure of the population of the terminal date as weights, i.e., $\sum_{x=i}^{\infty}(w_{x,1} \cdot c_{x,2})$.[1]

Without undue repetition, this set of equations and the numerical illustration simply demonstrate that all the findings in Section C.1 are pertinent in this application of the method as well.

Every equation in the analytical scheme described above may answer a specific question under certain restrictions. Thus, the analyst has the choice of selecting any particular equation or combination of equations depending on the question under consideration and the availability of data. But he must always be aware of the relations between the different estimates obtained by different methods and the role of the interaction effect for a proper interpretation of his results.

Wolfbein and Jaffe in a leading article on demographic and socio-economic factors in the growth of the United States labor force used what may be described as equations F.2 and R.1 given above.[2] In fact,

[1] Given that $W_1 = 66.50$; $W_2 = 55.15$; $S_1 = 59.18$; and $S_2 = 62.40$

[2] Provided that the demographic variables they dealt with are represented by c_x values. See S. L. Wolfbein and A. J. Jaffe, "Demographic Factors in Labor Force Growth," American Sociological Review, Vol. XI, No. 4, August 1946, pp. 392-396.

equation (R.1) was used by them with a different sign. This implied that in estimating the two components of changes in the crude activity rate they maintained one direction for the changing variables in the two equations while exchanging the levels of the factors to be held constant. It also implied the estimation of the socio-economic component by subtracting the standardized rate from its crude counterpart, while the demographic component was estimated by subtracting the crude activity rate from its corresponding standardized rate.[1] Aside from these inconsistencies of procedure, their analysis ignored the interaction effect, which might have been significant.[2]

C.2. Components of Intercensal Changes in Industry Sectors

The methods described in Chapter 4, Section 4.2, for estimating components of change in the labor force in terms of entries, retirements, deaths, and net migration, can be considered as a different kind of application of factorial analysis. Analogous methods are applicable to the problem of estimating components of change in industrial and occupational groups of the labor force. An example of such an application is given in this section for estimating components of change in industry sectors of the Egyptian labor force during intercensal periods by means of cohort analysis.

The components of change in the number of a given cohort in a given industry as the cohort advances in age are analogous to those described in

[1] Similar procedure has been used in Durand and Miller, Methods of Analyzing Census Data on Economic Activities..., pp. 43-46.

[2] It may be noted that estimates of the two components by the equations used by them add up to the total change. By the same token, equations F.1 and R.2, with similar modification in sign, give estimates that add up also to the total change but with different magnitudes due to the interaction effect.

Section 4.2 for the total labor force. Net interindustry labor mobility is an additional component of change for industries.[1] However, in the example given here, a complete decomposition of the intercensal changes in industry sectors into all these components is not attempted. Two components are considered: (a) what will be called the "mortality component", although it also includes the net effect of immigration and emigration (which is of negligible importance in the case of Egypt); and (b) "other components", including the changes due to new entries, retirements, and interindustry labor mobility.

The equations used for estimation are the same as those given in Section 4.2 using data for each sector instead of those for the total labor force. Equation (1) gives the estimate of the "other components" as a whole including accessions, retirements, and net mobility.

This application assumes that the mortality component, specific for age and sex, is proportionately the same in the labor force of each industry as it is in the total population. Errors due to variations in this respect are not likely to affect significantly the results for Egypt. Since the population is practically closed, errors in the assumption as regards migration would be negligible, and errors as regards mortality are unlikely to have very great effects although information about mortality differentials is lacking. However, estimates of the mortality and other components are affected by age misreporting and by underenumeration or overenumeration of economically active population by age for each sex. The effects of these factors, as indicated in Section 4.2 for the total labor force, depend

[1] For more details, see Durand and Miller, Methods of Analyzing Census Data on Economic Activities..., pp. 93-101.

on the differences in the extent of such errors between the two censuses and between the labor force and the population. The resulting distortions in the estimates are unlikely to be proportionate among different industries because of differences in associated factors such as illiteracy, status structure, etc. Finally, the varying proportions of economically active persons whose industry is not reported affect the estimates of the activity component for the industries to which they actually belong.

These considerations should be kept in mind in interpreting the figures in Table C.2, which provides intercensal estimates of the components of change in the three major sectors of the labor force as percentages of the initial size for all ages by sex between 1927 and 1960. It should also be born in mind that the last intercensal period is longer than the others.[1]

Estimates of the mortality component vary, to some extent, among the three sectors despite the assumption of equal relative effects by age and sex. These differences reflect the sectoral variation in age composition of the labor force. The sex differences of the mortality component in a given sector and a given period are results of both sex differentials in mortality in the total population and sex differences in age structure of the labor force in that sector. The trend of the mortality component is the net result of mortality trends and changing age structure of the labor force.

The sectoral differences in the other components have been greater than those in the mortality component. The last two intercensal periods

[1] Because of the length of the 1947/1960 intercensal period, 1960 data were adjusted on a linear basis for following the cohorts; the "not adequately described" division was included only in the total figure; the 1917 data were excluded for the same reason mentioned in footnote 2 page 140; and small numbers of persons whose age was not given were ignored. The ill-defined group was excluded from 1917 and 1947 data.

TABLE C.2. COMPONENTS OF INTERCENSAL GROWTH OF LABOR FORCE BY INDUSTRIAL SECTOR AND SEX, U.A.R., 1927-1960.

(Percentages of initial labor force of given sex in each sector)

Sector and component/ Intercensal period		1927/37	1937/47	1947/60
		Males		
Agriculture:	Mortality component	-19.7	-17.9	-18.5
	Other components	39.9	19.1	32.2
	Total	20.1	1.1	13.7
Secondary:	Mortality component	-17.6	-15.5	-22.2
	Other components	14.7	56.8	56.0
	Total	- 2.9	41.3	33.8
Tertiary:	Mortality component	-18.1	-16.4	-18.7
	Other components	27.7	60.4	43.8
	Total	9.5	44.0	25.1
Total:	Mortality component	-19.1	-17.4	-18.3
	Other components	33.7	31.2	40.5
	Total	14.6	13.8	22.2
		Females		
Agriculture:	Mortality component	-18.6	-11.7	-15.5
	Other components	3.3	18.2	-23.4
	Total	-15.2	6.6	-39.0
Secondary:	Mortality component	20.4	-15.9	-20.0
	Other components	37.4	71.0	-15.1
	Total	17.0	55.2	-35.1
Tertiary:	Mortality component	-19.6	-13.2	-15.6
	Other components	28.3	56.3	27.3
	Total	8.7	43.1	11.8
Total:	Mortality component	-18.8	-12.5	-15.8
	Other components	10.8	31.5	.2
	Total	- 8.1	19.0	-15.7
		Both Sexes		
Agriculture:	Mortality component	-19.6	-17.3	-18.2
	Other components	36.7	19.0	26.2
	Total	15.1	1.7	8.0
Secondary:	Mortality component	17.7	-15.5	-22.1
	Other components	15.6	57.5	52.6
	Total	- 2.1	42.0	30.5
Tertiary:	Mortality component	-18.4	-15.9	-18.2
	Other components	27.8	59.7	41.2
	Total	9.4	43.9	23.0
Total:	Mortality component	-19.0	-16.8	-18.0
	Other components	30.7	31.2	36.2
	Total	11.7	14.4	18.2

show considerably greater net effects of other factors on the growth of the labor force in the non-agricultural sectors than in agriculture; a fact that corresponds to changes in the industrial structure during these periods. The opposite was true for the 1927/1937 period. Without any further calculations, it should be obvious that the most distorted element in the estimates of the other components in Table C.2 is entries, mainly because of the varying extent of reporting of females in all sectors as well as young males below age 20 particularly in agriculture.[1]

[1]For detailed methods of estimating new entries, retirements and net mobility, see A. J. Jaffe and R. O. Carleton, Occupational Mobility in the United States, 1930-1960 (New York: King's Crown Press, 1954).

APPENDIX D

REFERENCE TABLES

Notes:

Percent distributions may not add up to 100.00 because of rounding.

Percentages and rates are given to two decimal places for convenience, although the values of the second decimals may not be significant.

See explanations of symbols, page 10.

Except as noted, sources of data are census publications of the years indicated.

TABLE D.1. POPULATION GROWTH AND PROJECTIONS, U.A.R.

Date	Total population	Annual rate of growth since preceding date
Estimates for ancient and medieval Egypt		
Egypt of the Pharaohs	7,000,000	-
6th Century B.C.	18,000,000	-
1500 B.C.	3,000,000	-
A.D. 14	5,000,000	-
69	8,000,000	-
644	13,000,000	-
9th Century	5-6,000,000	-
Nineteenth century estimates		
1800, during the French expedition	2,460,200	-
1821, based on tax lists	2,563,400	.20
1846, based on census of houses	4,476,440	2.23
Censuses		
1882, May 3	6,804,021	1.16
1897, June 1	9,714,525	2.39
1907, April 29	11,287,359	1.53
1917, March 7	12,750,918	1.25
1927, February 19	14,217,864	1.10
1937, March 26	15,932,694	1.13
1947, March 27	19,021,840	1.78
1960, September 21	26,085,326	2.37
1966, May 31	30,075,858	2.53
Projections		
1970, minimum	31,678,000	1.30
maximum	34,459,000	3.40
1980, minimum	36,237,000	1.34
maximum	45,687,000	2.82

Sources:
Ancient and medieval estimates: Cleland, The Population Problem...., pp. 3-6.
Nineteenth century estimates and censuses: U.A.R., Statistical Yearbook, 1964, p. 27, and 1966 Population Census, Vol. II, Table 1.
Projections: U.A.R., Central Statistical Committee, Population Trends..., Part IV.

TABLE D.2. CRUDE BIRTH AND DEATH RATES, RATE OF NATURAL INCREASE AND INFANT MORTALITY RATE, U.A.R., 1906-1960.

Year	Crude birth rate*	Crude death rate*	Rate of natural increase*	Infant mortality rate**	Year	Crude birth rate	Crude death rate	Rate of natural increase	Infant mortality rate
1906	43.2	23.6	19.6	n.a.	1934	42.2	27.7	14.5	166
1907	42.8	26.6	19.2	n.a.	1935	41.3	26.4	14.9	161
1908	44.4	24.7	19.7	n.a.	1936	44.2	28.8	15.3	164
1909	41.6	26.3	15.3	n.a.	1937	43.4	27.1	16.2	165
1910	43.0	26.0	17.0	n.a.	1938	43.2	26.3	16.9	163
1911	42.6	27.4	15.2	n.a.	1939	42.0	25.9	16.1	161
1912	42.2	24.5	17.7	n.a.	1940	41.3	26.3	15.0	162
1913	41.6	25.4	16.2	n.a.	1941	40.4	25.7	14.8	150
1914	42.3	27.0	15.3	n.a.	1942	37.6	28.3	9.4	168
1915	41.6	28.0	13.6	n.a.	1943	38.7	27.7	11.1	160
1916	40.0	29.8	10.2	n.a.	1944	39.8	26.0	13.8	152
1917	40.2	29.4	10.8	n.a.	1945	42.7	27.7	14.9	153
1918	38.9	39.6	- .7	n.a.	1946	41.2	25.0	16.2	141
1919	37.7	29.4	8.3	128	1947	43.7	21.4	22.3	127
1920	42.2	28.0	14.3	137	1948	42.6	20.4	22.2	139
1921	41.8	25.0	16.8	133	1949	41.6	20.5	21.1	135
1922	43.1	25.1	18.0	140	1950	44.2	19.0	25.2	130
1923	43.1	25.8	17.3	143	1951	44.6	19.2	25.4	129
1924	43.8	24.9	18.9	150	1952	45.2	17.8	27.4	127
1925	43.5	26.5	17.0	155	1953	42.6	19.6	23.0	146
1926	44.2	26.7	17.5	146	1954	42.6	17.9	24.7	138
1927	44.0	25.2	18.8	152	1955	40.3	17.6	22.7	136
1928	43.6	26.3	17.3	151	1956	40.7	16.4	24.3	124
1929	44.2	27.6	16.6	159	1957	38.0	17.8	20.2	130
1930	45.4	24.9	20.6	151	1958	41.1	16.6	24.5	112
1931	44.5	26.6	17.9	160	1959	42.8	16.3	26.5	109
1932	42.5	28.5	14.0	174	1960	42.9	16.9	26.0	109
1933	43.8	27.5	16.3	162					

Sources: U.A.R., Statistical Yearbook, 1962, 1964; Cleland, The Population Problem...
* Per 1,000 population ** Per 1,000 live births

TABLE D.3. AGE-SPECIFIC MORTALITY RATES PER 1,000 POPULATION BY SEX, U.A.R., 1937-1960.

Age	1937		1947		1960	
	Males	Females	Males	Females	Males	Females
Under 1	257.6	211.2	219.2	197.3	162.0	163.8
1-4	85.5	72.7	52.3	47.2	38.2	41.0
5-9	8.5	6.7	5.9	4.7	2.5	2.1
10-14	5.1	3.9	5.0	3.5	2.1	1.5
15-19	5.8	4.2	5.2	3.5	2.3	1.8
20-24	8.1	4.3	7.1	4.1	2.7	1.8
25-29	8.8	5.4	8.6	5.5	3.5	2.1
30-34	10.5	7.3	10.8	8.2	4.1	3.1
35-39	10.5	7.2	12.4	8.1	5.0	3.3
40-44	13.7	9.6	14.2	9.9	6.6	4.5
45-49	14.0	8.2	15.2	8.7	8.5	4.4
50-54	21.9	13.9	20.3	12.7	15.2	8.1
55-59	22.1	12.5	22.1	11.0	17.0	7.7
60-64	37.9	22.1	30.3	18.0	27.6	14.8
65-69	45.3	25.3	50.2	31.5	48.5	27.2
70-74	76.4	50.5	70.7	45.7	72.3	46.2
75+	266.9	251.5	237.7	268.2	248.0	232.3

Source: United Nations, Demographic Yearbook, 1948, 1954, 1962.

TABLE D.4. POPULATION BY AGE AND SEX, U.A.R., 1917-1960.

Age	1917	1927	1937	1947	1960
			Males		
5-9	905,015	937,433	1,107,879	1,208,856	1,971,927
10-14	794,232	860,483	1,030,949	1,142,332	1,651,421
15-19	607,648	680,113	713,185	984,033	1,114,149
20-29	938,640	1,096,252	1,156,318	1,363,495	1,780,926
30-39	849,514	987,701	1,158,298	1,279,299	1,654,304
40-49	572,469	661,934	819,874	997,571	1,227,829
50-59	375,088	391,331	475,019	592,327	816,735
60+	468,486	430,040	465,040	519,141	739,069
Not stated		18,325	18,213	25,092	192
5+	5,511,092	6,063,612	6,944,775	8,112,146	10,956,552
15+	3,811,845	4,265,696	4,805,947	5,760,958	7,333,204
			Females		
5-9	897,105	921,958	1,100,958	1,191,197	1,827,076
10-14	668,939	719,395	878,154	1,071,153	1,527,203
15-19	509,853	614,728	633,072	917,427	1,040,286
20-29	1,040,439	1,229,891	1,258,120	1,492,689	1,928,497
30-39	873,159	1,013,522	1,175,185	1,343,194	1,723,289
40-49	569,668	654,451	785,442	981,422	1,191,356
50-59	376,888	409,488	469,752	621,582	818,949
60+	516,921	499,052	548,454	617,877	838,263
Not stated		21,072	19,208	33,263	509
5+	5,452,972	6,083,557	6,868,345	8,269,804	10,895,428
15+	3,886,928	4,442,204	4,889,233	6,007,454	7,541,149
			Both Sexes		
5-9	1,802,120	1,859,391	2,208,837	2,400,053	3,799,003
10-14	1,463,171	1,579,878	1,909,103	2,213,485	3,178,624
15-19	1,117,501	1,294,841	1,346,257	1,901,460	2,154,435
20-29	1,979,079	2,326,143	2,414,438	2,856,184	3,709,423
30-39	1,722,673	2,001,223	2,333,483	2,622,493	3,377,593
40-49	1,142,137	1,316,385	1,605,316	1,978,993	2,419,185
50-59	751,976	800,819	944,771	1,213,909	1,635,684
60+	985,407	929,092	1,013,494	1,137,018	1,577,332
Not stated		39,397	37,421	58,355	701
5+	10,964,064	12,147,169	13,813,120	16,381,950	21,851,980
15+	7,698,773	8,707,900	9,695,180	11,768,412	14,874,353

TABLE D.5. PERCENT AGE DISTRIBUTION OF POPULATION BY SEX, U.A.R., 1907-1960.

Age	1907	1917	1927	1937	1947	1960
			Males			
0-9	30.6	27.8	27.4	26.8	26.6	31.2
10-19	21.5	22.1	21.9	21.9	22.7	21.2
20-29	14.2	14.8	15.6	14.6	14.6	13.6
30-39	12.9	13.4	14.0	14.6	13.7	12.7
40-49	8.7	9.0	9.4	10.3	10.7	9.4
50-59	5.5	5.9	5.6	6.0	6.3	6.3
60-69	3.8	3.6	3.5	3.4	3.6	3.7
70+	2.8	3.4	2.6	2.4	2.0	2.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
			Females			
0-9	29.9	28.3	27.6	27.5	26.2	29.8
10-19	15.9	18.6	18.8	19.1	20.8	19.9
20-29	16.2	16.4	17.3	15.9	15.6	14.9
30-39	14.4	13.8	14.3	14.8	14.1	13.4
40-49	9.5	9.0	9.2	9.9	10.3	9.2
50-59	6.3	6.0	5.8	5.9	6.5	6.3
60-69	4.2	4.1	3.9	3.8	4.0	4.1
70+	3.6	3.8	3.2	3.1	2.5	2.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

TABLE D.6. LABOR FORCE BY AGE AND SEX, U.A.R., 1917-1960.

A. Including Ill-defined

Age	1917	1927	1937	1947	1960
			Males		
5-9	144,282	108,383	55,026	223,283	219,347
10-14	544,507	457,063	653,344	630,547	468,576
15-19	538,935	544,148	587,625	843,997	762,802
20-29	904,491	1,034,496	1,080,346	1,285,942	1,624,386
30-39	833,253	960,179	1,130,233	1,248,578	1,621,132
40-49	560,242	643,567	800,569	975,187	1,200,506
50-59	363,234	374,160	455,382	566,422	778,150
60+	435,068	391,126	407,245	454,759	531,800
Not stated		8,538	13,215	11,872	93
5+	4,324,012	4,521,660	5,182,985	6,240,587	7,206,792
15+	3,635,223	3,956,214	4,474,615	5,386,757	6,518,869
			Females		
5-9	31,638	33,569	19,472	31,836	77,831
10-14	102,579	90,331	70,009	136,337	149,417
15-19	85,865	81,273	64,003	110,898	90,359
20-29	167,023	128,043	122,785	125,157	116,459
30-39	150,278	127,052	135,107	123,068	77,571
40-49	107,195	96,907	103,504	103,721	58,672
50-59	75,062	60,931	59,170	66,446	34,605
60+	133,679	61,519	50,816	53,694	20,447
Not stated		1,760	1,421	2,873	42
5+	853,319	681,385	626,287	754,030	625,403
15+	719,102	557,485	536,806	585,857	398,155
			Both Sexes		
5-9	175,920	141,952	74,498	255,119	297,178
10-14	647,086	547,394	723,353	766,884	617,993
15-19	624,800	625,421	651,628	954,895	853,161
20-29	1,071,514	1,162,539	1,203,131	1,411,099	1,740,845
30-39	983,531	1,087,231	1,265,340	1,371,646	1,698,703
40-49	667,437	740,474	904,073	1,078,908	1,259,178
50-59	438,296	435,091	514,552	632,868	812,755
60+	568,747	452,645	458,061	508,453	552,247
Not stated		10,298	14,636	14,745	135
5+	5,177,331	5,203,045	5,809,272	6,994,617	7,832,195
15+	4,354,325	4,513,699	5,011,421	5,972,614	6,917,024

TABLE D.6. (Continued)

B. Excluding Ill-defined

Age	1917	1927	1937	1947	1960
			Males		
5-9	142,644	108,315	55,014	137,952	217,388
10-14	450,931	456,517	653,314	484,534	464,529
15-19	440,228	542,853	587,592	787,540	759,669
20-29	838,094	1,031,457	1,080,231	1,257,980	1,611,119
30-39	799,231	957,694	1,130,078	1,239,074	1,611,907
40-49	545,292	641,879	800,432	969,810	1,194,448
50-59	354,740	373,198	455,297	561,778	774,772
60+	405,335	390,362	407,196	446,585	529,648
Not stated		8,508	13,215	11,189	65
5+	3,976,495	4,510,783	5,182,369	5,896,442	7,163,545
15+	3,382,920	3,945,951	4,474,041	5,273,956	6,481,628
			Females		
5-9	30,072	33,548	17,502	28,428	76,252
10-14	100,098	90,269	69,369	132,793	148,378
15-19	82,985	81,092	63,915	110,291	89,673
20-29	161,060	127,828	122,758	124,886	114,807
30-39	144,528	126,908	135,087	122,703	76,772
40-49	100,154	96,761	103,482	103,313	58,305
50-59	66,224	60,837	59,150	66,049	34,281
60+	76,799	61,425	50,789	52,991	20,239
Not stated		1,754	1,418	2,787	19
5+	761,920	680,422	623,470	744,241	618,726
15+	631,750	556,605	536,599	583,020	394,096
			Both Sexes		
5-9	172,716	141,863	72,516	166,380	293,640
10-14	551,029	546,786	722,683	617,327	612,907
15-19	523,213	623,945	651,507	897,831	849,342
20-29	999,154	1,159,285	1,202,989	1,382,866	1,725,926
30-39	943,759	1,084,602	1,265,165	1,361,777	1,688,679
40-49	645,446	738,640	903,914	1,073,123	1,252,753
50-59	420,964	434,035	514,447	627,827	809,053
60+	482,134	451,787	457,985	499,576	549,887
Not stated		10,262	14,633	13,976	84
5+	4,738,415	5,191,205	5,805,839	6,640,683	7,782,271
15+	4,014,670	4,502,556	5,010,640	5,856,976	6,875,724

TABLE D.7. ACTIVITY RATES BY AGE AND SEX, U.A.R., 1917-1960.

A. Including Ill-defined

Age	1917	1927	1937	1947	1960*
		Males			
5-9	15.94	11.56	4.97	18.47	11.12
10-14	68.56	53.12	63.37	55.20	28.37
15-19	88.69	80.01	82.39	85.77	68.46
20-29	96.36	94.37	93.43	94.31	91.21
30-39	98.09	97.21	97.58	97.60	97.99
40-49	97.86	97.23	97.65	97.76	97.77
50-59	96.84	95.61	95.87	95.63	95.28
60+	92.87	90.95	87.57	87.60	71.96
Not stated	-	46.59	72.56	47.31	48.44
5+	78.46	74.57	74.63	76.93	65.78
15+	95.37	92.74	93.11	93.50	88.90
Crude activity rate	67.89	64.06	65.06	66.45	55.15
		Females			
5-9	3.53	3.64	1.77	2.67	4.26
10-14	15.33	12.56	7.97	12.73	9.78
15-19	16.84	13.22	10.11	12.09	8.69
20-29	16.05	10.41	9.76	8.38	6.04
30-39	17.21	12.54	11.50	9.16	4.50
40-49	18.82	14.81	13.18	10.57	4.92
50-59	19.92	14.88	12.60	10.69	4.23
60+	25.86	12.33	9.27	8.69	2.44
Not stated	-	8.35	7.40	8.64	8.25
5+	15.65	11.20	9.12	9.12	5.74
15+	18.50	12.55	10.98	9.75	5.28
Crude activity rate	13.44	9.57	7.87	7.87	4.84
		Both Sexes			
5-9	9.76	7.63	3.37	10.63	7.82
10-14	44.22	34.65	37.89	34.65	19.44
15-19	55.91	48.30	48.40	50.22	39.60
20-29	54.14	49.98	49.83	49.41	46.93
30-39	57.09	54.33	54.23	52.30	50.29
40-49	58.44	56.25	56.32	54.52	52.05
50-59	58.29	54.33	54.46	52.13	49.69
60+	57.72	48.72	45.20	44.72	35.01
Not stated	-	26.14	39.11	25.27	19.26
5+	47.22	42.83	42.06	42.70	35.84
15+	56.56	51.83	51.69	50.75	46.50
Crude activity rate	40.71	36.70	36.49	36.88	30.14

*For 1960, activity rate of children of age 5 was assumed to be zero.

TABLE D.7. (Continued)

B. Excluding Ill-defined

Age	1917	1927	1937	1947	1960*
			Males		
5-9	15.76	11.55	4.97	11.41	11.02
10-14	56.78	53.05	63.37	42.42	28.13
15-19	72.45	79.82	82.39	80.03	68.18
20-29	89.29	94.09	93.42	92.26	90.47
30-39	94.08	96.96	97.56	96.86	97.44
40-49	95.25	96.97	97.63	97.22	97.28
50-59	94.58	95.37	95.85	94.84	94.86
60+	86.52	90.77	87.56	86.02	71.66
Not stated	-	46.43	72.56	44.59	33.85
5+	72.15	74.39	74.62	72.69	65.38
15+	88.75	92.50	93.09	91.55	88.39
Crude activity rate	62.43	63.91	65.05	62.78	54.82
			Females		
5-9	3.35	3.64	1.59	2.39	4.17
10-14	14.96	12.55	7.90	12.40	9.72
15-19	16.28	13.19	10.10	12.02	8.62
20-29	15.48	10.39	9.76	8.37	5.95
30-39	16.55	12.52	11.49	9.14	4.45
40-49	17.58	14.79	13.18	10.53	4.89
50-59	17.57	14.86	12.59	10.63	4.19
60+	14.86	12.31	9.26	8.58	2.41
Not stated	-	8.32	7.38	8.38	3.73
5+	13.97	11.18	9.08	9.00	5.68
15+	16.25	12.53	10.98	9.70	5.23
Crude activity rate	12.00	9.56	7.84	7.77	4.79
			Both Sexes		
5-9	9.58	7.63	3.28	6.93	7.73
10-14	37.66	34.61	37.85	27.89	19.28
15-19	46.82	48.19	48.39	47.22	39.42
20-29	50.49	49.84	49.82	48.42	46.53
30-39	54.78	54.20	54.22	51.93	50.00
40-49	56.51	56.11	56.31	54.23	51.78
50-59	55.98	54.20	54.45	51.72	49.46
60+	48.93	48.63	45.19	43.94	34.86
Not stated	-	26.05	39.10	23.95	11.98
5+	43.22	42.74	42.03	40.54	35.61
15+	52.15	51.71	51.68	49.77	46.23
Crude activity rate	37.26	36.61	36.47	35.01	29.95

*For 1960, activity rate of children of age 5 was assumed to be zero.

TABLE D.8. TOTAL POPULATION OF GOVERNORATES AND REGIONS, BY SEX, U.A.R., 1907-1960.

Governorates and regions	1907	1917	1927	1937	1947	1960
			Males			
Cairo	346,965	405,848	558,742	672,539	1,063,353	1,714,305
Alexandria	195,323	226,596	299,135	347,698	464,643	769,705
Canal	33,768	50,204	69,262	83,309	128,835	269,943
Suez	9,907	18,177	22,176	26,159	56,791	105,452
Damietta	a/	15,530	17,746	20,501	27,069	198,197
Dakahlia	452,166	488,068	526,784	599,737	693,478	1,012,607
Sharkia	441,867	471,847	495,495	550,366	666,465	913,878
Kalyubia	217,387	265,612	278,408	306,693	345,495	503,435
Gharbia	734,583	814,296	862,133	955,281	1,130,624	1,337,521
Menoufia	485,303	536,953	546,243	575,970	569,037	676,414
Behera	374,247	443,014	473,208	515,748	598,664	833,418
Giza	233,123	266,025	297,844	347,216	407,693	673,431
Beni Suef	187,708	229,544	253,806	279,080	297,190	422,582
Fayoum	222,286	254,829	276,497	298,639	326,631	415,881
Minya	330,777	386,732	420,504	468,118	515,163	784,669
Asyut	440,269	494,462	543,808	616,785	686,597	676,923
Suhag	398,454	432,787	489,123	577,747	640,181	787,422
Kena	395,510	427,736	454,585	521,213	553,174	673,945
Aswan	107,434	116,559	121,028	144,168	135,528	188,718
Frontier Districts	59,997	24,698	51,546	59,708	85,117	109,566
Lower Egypt	3,291,516	3,736,145	4,149,332	4,654,001	5,744,454	8,334,875
Urban govern.	585,963	700,825	949,315	1,129,705	1,713,622	2,859,405
Non-urban govern.	2,705,553	3,035,320	3,200,017	3,524,296	4,030,832	5,475,470
Upper Egypt	2,315,561	2,608,674	2,857,195	3,252,966	3,562,157	4,623,571
U.A.R. Total	5,667,074	6,369,517	7,058,073	7,966,675	9,391,728	13,068,012

a/ In 1907, Damietta was a part of Dakahlia Governorate.

TABLE. D.8. (Continued)

Governorates and regions	1907	1917	1927	1937	1947	1960
			Females			
Cairo	307,511	385,091	505,825	639,557	1,027,301	1,634,474
Alexandria	174,686	218,021	273,928	338,038	454,381	746,529
Canal	27,564	40,886	60,535	77,837	117,097	259,490
Suez	8,440	12,819	18,347	23,527	50,453	98,158
Damietta		15,454	17,161	19,831	26,562	189,765
Dakahlia	460,262	498,575	553,909	618,765	720,427	1,002,276
Sharkia	444,479	483,650	521,417	570,460	679,364	905,920
Kalyubia	217,188	262,969	280,468	303,464	348,413	484,620
Gharbia	750,231	845,017	929,852	1,012,613	1,196,407	1,350,710
Menoufia	485,713	535,683	558,948	583,731	595,978	671,539
Behera	378,415	449,232	503,757	545,848	645,831	852,261
Giza	226,957	258,327	293,547	338,115	410,475	662,987
Beni Suef	184,704	223,349	254,360	282,232	314,837	437,250
Fayoum	219,297	252,788	277,543	303,483	343,065	423,282
Minya	325,594	377,190	419,186	460,141	529,038	775,642
Asyut	440,415	486,735	534,792	588,536	687,857	652,665
Suhag	399,486	430,447	479,260	540,655	643,287	791,436
Kena	383,727	412,581	447,585	496,356	553,128	677,413
Aswan	127,168	136,781	146,329	160,928	155,314	196,632
Frontier Districts	58,448	23,143	43,042	49,902	75,824	103,040
Lower Egypt	3,254,489	3,747,397	4,224,147	4,733,671	5,862,214	8,195,742
Urban govern.	518,201	656,817	858,635	1,078,959	1,649,232	2,738,651
Non-urban govern.	2,736,288	3,090,580	3,365,512	3,654,712	4,212,982	5,457,091
Upper Egypt	2,307,348	2,578,198	2,852,602	3,170,446	3,637,001	4,617,307
U.A.R. Total	5,620,285	6,348,738	7,119,791	7,954,019	9,575,039	12,916,089

TABLE D.8. (Continued)

Governorates and regions	1907	1917	1927	1937	1947	1960
			Both Sexes			
Cairo	654,476	790,939	1,064,567	1,312,096	2,090,654	3,348,779
Alexandria	370,009	444,617	573,063	685,736	919,024	1,516,234
Canal	61,332	91,090	129,797	161,146	245,932	529,433
Suez	18,347	30,996	40,523	49,686	107,244	203,610
Damietta		30,984	34,907	40,332	53,631	387,962
Dakahlia	912,428	986,643	1,080,693	1,218,502	1,413,905	2,014,883
Sharkia	886,346	955,497	1,016,912	1,120,826	1,345,829	1,819,798
Kalyubia	434,575	528,581	558,876	610,157	693,908	988,055
Gharbia	1,484,814	1,659,313	1,791,985	1,967,894	2,327,031	2,688,231
Menoufia	971,016	1,072,636	1,105,191	1,159,701	1,165,015	1,347,953
Behera	752,662	892,246	976,965	1,061,596	1,244,495	1,685,679
Giza	460,080	524,352	591,391	685,331	818,168	1,336,418
Beni Suef	372,412	452,893	508,166	561,312	612,027	859,832
Fayoum	441,583	507,617	554,040	602,122	669,696	839,163
Minya	656,371	763,922	839,690	928,259	1,044,201	1,560,311
Asyut	880,684	981,197	1,078,600	1,205,321	1,374,454	1,329,588
Suhag	797,940	863,234	968,383	1,118,402	1,283,468	1,578,858
Kena	779,237	840,317	902,170	1,017,569	1,106,302	1,351,358
Aswan	234,602	253,340	267,357	305,096	290,842	385,350
Frontier Districts	118,445	47,841	94,588	109,610	160,941	212,606
Lower Egypt	6,546,005	7,483,542	8,373,479	9,387,672	11,606,668	16,530,617
Urban govern.	1,104,164	1,357,642	1,807,950	2,208,664	3,362,854	5,598,056
Non-urban govern.	5,441,841	6,125,900	6,565,529	7,179,008	8,243,814	10,932,561
Upper Egypt	4,622,909	5,186,872	5,709,797	6,423,412	7,199,158	9,240,878
U.A.R. Total	11,287,359	12,718,255	14,177,864	15,920,694	18,966,767	25,984,101

TABLE D.9. POPULATION 5 YEARS OF AGE AND OVER OF GOVERNORATES AND REGIONS, BY SEX, U.A.R., 1907-1960.

Governorates and regions	1907	1917	1927	1937	1947	1960
			Males			
Cairo	304,890	356,915	487,947	587,428	917,162	1,390,666
Alexandria	170,491	196,905	261,067	302,386	398,703	628,477
Canal	29,252	44,135	59,925	71,892	110,181	214,502
Suez	8,910	16,419	19,412	22,714	47,965	82,379
Damietta	a/	13,012	14,914	17,374	22,967	158,273
Dakahlia	373,994	418,914	441,468	513,007	586,103	805,330
Sharkia	374,823	409,185	421,050	475,739	570,014	727,612
Kalyubia	182,940	229,137	238,066	267,193	296,489	402,463
Gharbia	614,879	699,542	731,040	829,583	969,819	1,078,615
Menoufia	411,951	464,469	468,910	503,121	492,280	547,619
Behera	312,801	380,308	403,974	450,817	513,599	678,693
Giza	197,218	229,865	256,781	304,033	352,483	539,836
Beni Suef	159,431	199,702	221,168	246,810	262,253	345,916
Fayoum	185,298	217,408	237,992	261,167	285,700	334,123
Minya	281,873	337,906	368,751	413,590	455,194	642,052
Asyut	372,521	428,671	470,385	540,659	598,473	547,153
Suhag	335,340	373,198	418,020	502,005	557,092	635,761
Kena	336,768	373,097	394,737	456,591	484,336	544,564
Aswan	90,718	100,251	103,222	125,798	117,506	153,045
Frontier Districts	56,150	22,053	44,783	52,868	73,827	90,132
Lower Egypt	2,784,931	3,228,941	3,547,773	4,041,254	4,925,282	6,714,629
Urban govern.	513,543	614,374	828,351	984,420	1,474,011	2,316,024
Non-urban govern.	2,271,388	2,614,567	2,719,422	3,056,834	3,451,271	4,398,605
Upper Egypt	1,959,167	2,260,098	2,471,056	2,850,653	3,113,037	3,742,450
U.A.R. Total	4,800,248	5,511,092	6,063,612	6,944,775	8,112,146	10,547,211

a/ In 1907, Damietta was a part of Dakahlia Governorate.

TABLE D.9. (Continued)

Governorates and regions	1907	1917	1927	1937	1947	1960
			Females			
Cairo	263,908	335,297	433,989	553,310	883,023	1,328,879
Alexandria	148,775	187,906	234,240	291,917	388,567	611,628
Canal	23,181	35,101	51,197	66,098	98,866	207,011
Suez	7,360	11,084	15,490	20,064	41,712	76,627
Damietta		13,213	14,349	16,792	22,666	152,323
Dakahlia	381,151	428,477	468,199	530,192	614,808	807,679
Sharkia	374,365	419,671	445,841	492,047	582,329	732,382
Kalyubia	180,805	224,514	237,952	261,296	298,954	390,857
Gharbia	625,898	726,743	794,005	878,785	1,032,562	1,103,525
Menoufia	408,700	460,370	478,322	507,208	518,924	551,550
Behera	313,660	383,654	430,366	476,730	556,911	700,173
Giza	188,742	219,864	249,268	290,377	353,691	536,894
Beni Suef	154,314	190,869	218,684	245,864	277,826	363,638
Fayoum	180,094	212,825	237,149	262,073	299,776	346,290
Minya	273,191	323,995	362,917	400,149	465,742	641,435
Asyut	368,789	416,931	457,427	505,373	596,426	531,024
Suhag	331,866	367,342	406,045	460,751	556,493	644,773
Kena	321,200	354,679	384,291	425,648	480,171	548,623
Aswan	110,301	120,132	127,991	140,906	136,515	161,401
Frontier Districts	54,372	20,305	35,835	42,765	63,842	83,398
Lower Egypt	2,727,803	3,226,030	3,603,950	4,094,439	5,039,322	6,662,634
Urban govern.	443,224	569,388	734,916	931,389	1,412,168	2,224,145
Non-urban govern.	2,284,579	2,656,642	2,869,034	3,163,050	3,627,154	4,438,489
Upper Egypt	1,928,497	2,206,637	2,443,772	2,731,141	3,166,640	3,774,078
U.A.R. Total	4,710,672	5,452,972	6,083,557	6,868,345	8,269,804	10,520,110

TABLE D.9. (Continued)

Governorates and regions	1907	1917	1927	1937	1947	1960
			Both Sexes			
Cairo	568,798	692,212	921,936	1,140,738	1,800,185	2,719,545
Alexandria	319,266	384,811	495,307	594,303	787,270	1,240,105
Canal	52,433	79,236	111,122	137,990	209,047	421,513
Suez	16,270	27,503	34,902	42,778	89,677	159,006
Damietta		26,225	29,263	34,166	45,633	310,596
Dakahlia	755,145	847,391	909,667	1,043,199	1,200,911	1,613,009
Sharkia	749,188	828,856	866,891	967,786	1,152,343	1,459,994
Kalyubia	363,745	453,651	476,018	528,489	595,443	793,320
Gharbia	1,240,777	1,426,285	1,525,045	1,708,368	2,002,381	2,182,140
Menoufia	820,651	924,839	947,232	1,010,329	1,011,204	1,099,169
Behera	626,461	763,962	834,340	927,547	1,070,510	1,378,866
Giza	385,960	449,729	506,049	594,410	706,174	1,076,730
Beni Suef	313,745	390,571	439,852	492,674	540,079	709,554
Fayoum	365,392	430,233	475,141	523,240	585,476	680,413
Minya	555,064	661,901	731,668	813,739	920,936	1,283,487
Asyut	741,310	845,602	927,812	1,046,032	1,194,899	1,078,177
Suhag	667,206	740,540	824,065	962,756	1,113,585	1,280,534
Kena	657,968	727,776	779,028	882,239	964,507	1,093,187
Aswan	201,019	220,383	231,213	266,704	254,021	314,446
Frontier Districts	110,522	42,358	80,618	95,633	137,669	173,530
Lower Egypt	5,512,734	6,454,971	7,151,723	8,135,693	9,964,604	13,377,263
Urban govern.	956,767	1,183,762	1,563,267	1,915,809	2,886,179	4,540,169
Non-urban govern.	4,555,967	5,271,209	5,588,456	6,219,884	7,078,425	8,837,094
Upper Egypt	3,887,664	4,466,735	4,914,828	5,581,794	6,279,677	7,516,528
U.A.R. Total	9,510,920	10,964,064	12,147,169	13,813,120	16,381,950	21,067,321

TABLE D.10. LABOR FORCE OF GOVERNORATES AND REGIONS, BY SEX, U.A.R., 1907-1960.

Governorates and regions	1907	1917		1927	1937	1947		1960
		Total	Excl. ill-defined			Total	Excl. ill-defined	
				Males				
Cairo	224,286	260,884	247,116		390,580	671,795	632,683	842,090
Alexandria	126,428	147,502	137,056		199,000	294,807	263,539	380,648
Canal	22,103	34,663	33,164		45,481	81,231	73,095	131,988
Suez	6,856	14,020	13,441		14,884	35,353	32,000	48,839
Damietta	a/	9,081	8,504		11,661	16,227	15,227	106,668
Dakahlia	266,001	332,066	309,980		377,904	441,697	429,355	537,985
Sharkia	265,918	330,206	310,414		365,626	448,762	431,236	514,251
Kalyubia	130,484	183,793	172,466		201,495	230,616	220,032	268,467
Gharbia	425,951	552,397	515,608		637,333	760,801	730,008	734,956
Menoufia	285,409	375,471	353,875		381,976	377,865	370,258	367,814
Behera	207,835	306,996	283,153		348,996	410,743	398,684	496,886
Giza	130,413	182,160	165,653		229,783	272,230	255,431	366,834
Beni Suef	101,997	157,357	145,624		189,791	205,245	196,083	248,027
Fayoum	138,739	172,830	167,790		201,542	228,771	219,463	246,368
Minya	194,274	266,921	240,987		324,415	358,827	339,889	476,959
Asyut	254,725	329,985	288,691		413,499	453,377	417,389	398,003
Suhag	231,924	282,148	240,111		380,701	428,816	391,316	474,348
Kena	236,989	292,218	259,353		344,936	377,630	348,610	403,148
Aswan	63,463	75,918	68,470		84,101	89,361	82,013	104,463
Frontier Districts	48,515	17,396	15,039		39,281	56,433	50,131	57,900
Lower Egypt	1,961,271	2,547,079	2,384,777		2,974,936	3,769,897	3,596,177	4,430,592
Urban govern.	379,673	457,069	430,777		649,945	1,083,186	1,001,317	1,403,565
Non-urban govern.	1,581,598	2,090,010	1,954,000		2,324,991	2,686,711	2,594,800	3,027,027
Upper Egypt	1,352,524	1,759,537	1,576,679		2,168,768	2,414,257	2,250,194	2,718,150
U.A.R. Total	3,362,310	4,324,012	3,976,495		5,182,985	6,240,587	5,896,442	7,206,642

a/ In 1907, Damietta was a part of Dakahlia Governorate.

TABLE D.10. (Continued)

Governorates and regions	1907	1917 Total	1917 Excl. ill-defined	1927	1937	1947 Total	1947 Excl. ill-defined	1960
			Females					
Cairo	17,233	43,576	33,821	47,642	79,726	78,122	118,671
Alexandria	10,707	22,695	17,390	21,790	24,901	23,930	48,317
Canal	956	3,172	2,534	3,136	4,320	4,101	10,269
Suez	168	1,034	747	836	1,203	1,119	2,224
Damietta		1,641	1,338	1,098	1,437	1,411	10,120
Dakahlia	18,176	94,717	88,465	84,626	90,026	89,202	68,365
Sharkia	11,133	73,012	66,623	49,391	56,006	55,520	32,703
Kalyubia	4,227	29,168	25,966	24,001	23,328	23,192	15,637
Gharbia	22,062	157,173	146,606	160,269	178,847	178,126	88,766
Menoufia	8,423	113,487	107,702	66,391	65,941	65,624	19,697
Behera	8,803	70,813	65,347	67,877	84,073	83,632	60,644
Giza	2,162	18,322	14,930	15,243	23,619	23,065	30,084
Beni Suef	2,918	16,871	14,197	10,129	19,242	18,878	11,895
Fayoum	9,049	34,192	30,639	17,112	25,313	25,056	18,789
Minya	4,041	31,717	26,950	19,617	24,596	24,120	32,624
Asyut	6,328	42,196	35,695	11,953	19,133	18,520	17,176
Suhag	5,684	41,737	36,874	9,348	14,755	13,819	20,152
Kena	6,078	39,241	33,787	10,114	11,902	11,400	13,051
Aswan	1,439	15,651	9,800	3,288	3,881	3,760	3,810
Frontier Districts	32,207	2,904	2,509	2,426	1,781	1,644	2,383
Lower Egypt	101,888	610,488	556,539	527,057	609,808	603,979	475,413
Urban govern.	29,064	70,477	54,492	73,404	110,150	107,272	179,481
Non-urban govern.	72,824	540,011	502,047	453,653	499,658	496,707	295,932
Upper Egypt	37,699	239,927	202,872	96,804	142,441	138,618	147,581
U.A.R. Total	171,794	853,319	761,920	626,287	754,030	744,241	625,377

TABLE D.10. (Continued)

Governorates and regions	1907	1917 Total	1917 Excl. ill-defined	1927	1937	1947 Total	1947 Excl. ill-defined	1960
				Both Sexes				
Cairo	241,519	304,460	280,937	399,526	438,222	751,521	710,805	960,761
Alexandria	137,135	170,197	154,446	214,039	220,790	319,708	287,469	428,965
Canal	23,059	37,835	35,698	48,092	48,617	85,551	77,196	142,257
Suez	7,024	15,054	14,188	15,944	15,720	36,556	33,119	51,063
Damietta		10,722	9,842	13,184	12,759	17,664	16,638	116,788
Dakahlia	284,177	426,783	398,445	427,680	462,530	531,723	518,557	606,350
Sharkia	277,051	403,218	377,037	384,628	415,017	504,768	486,756	546,954
Kalyubia	134,711	212,961	198,432	206,079	225,496	253,944	243,224	284,104
Gharbia	448,013	709,570	662,214	724,696	797,602	939,648	908,134	823,722
Menoufia	293,832	488,958	461,577	441,255	448,367	443,806	435,882	387,511
Behera	216,638	377,809	348,500	383,254	416,873	494,816	482,316	557,530
Giza	132,575	200,482	180,583	208,879	245,026	295,849	278,496	396,918
Beni Suef	104,915	174,228	159,821	171,424	199,920	224,487	214,961	259,922
Fayoum	147,788	207,022	198,429	197,447	218,654	254,084	244,519	265,157
Minya	198,315	298,638	267,937	286,028	344,032	383,423	364,009	509,583
Asyut	261,053	372,181	324,386	350,539	425,452	472,510	435,909	415,179
Suhag	237,608	323,885	276,985	317,115	390,049	443,571	405,135	494,500
Kena	243,067	331,459	293,140	301,318	355,050	389,532	360,010	416,199
Aswan	64,902	91,569	78,270	74,275	87,389	93,242	85,773	108,273
Frontier Districts	80,722	20,300	17,548	37,643	41,707	58,214	51,775	60,283
Lower Egypt	2,063,159	3,157,567	2,941,316	3,258,377	3,501,993	4,379,705	4,200,156	4,906,005
Urban govern.	408,737	527,546	485,269	677,601	723,349	1,193,336	1,108,589	1,583,046
Non-urban govern.	1,654,422	2,630,021	2,456,047	2,580,776	2,778,644	3,186,369	3,091,507	3,322,959
Upper Egypt	1,390,223	1,999,464	1,779,551	1,907,025	2,265,572	2,556,698	2,388,812	2,865,731
U.A.R. Total	3,534,104	5,177,331	4,738,415	5,203,045	5,809,272	6,994,617	6,640,683	7,832,019

TABLE D.11. CRUDE ACTIVITY RATES OF GOVERNORATES, BY SEX, U.A.R., 1907-1960.

Governorate	1907	1917 Total	1917 Excl. ill-defined	1927	1937	1947 Total	1947 Excl. ill-defined	1960
				Males				
Cairo	64.64	64.28	60.89		58.08	63.18	59.50	49.12
Alexandria	64.73	65.09	60.48		57.23	63.45	56.72	49.45
Canal	65.46	69.04	66.06		54.59	63.05	56.74	48.89
Suez	69.20	77.13	73.95		56.90	62.25	56.35	46.31
Damietta	a/	58.47	54.76		56.88	59.95	56.25	53.82
Dakahlia	58.83	68.04	63.51		63.01	63.69	61.91	53.13
Sharkia	60.18	69.98	65.79		66.43	67.33	64.70	56.27
Kalyubia	60.02	69.20	64.93		65.70	66.75	63.69	53.33
Gharbia	57.99	67.84	63.32		66.72	67.29	64.57	54.95
Menoufia	58.81	69.93	65.90		66.32	66.40	65.07	54.38
Behera	55.53	69.30	63.92		67.67	68.61	66.60	59.62
Giza	55.94	68.47	62.27		66.18	66.77	62.65	54.47
Beni Suef	54.34	68.55	63.44		68.01	69.06	65.98	58.69
Fayoum	62.41	67.82	65.84		67.49	70.04	67.19	59.24
Minya	58.73	69.02	62.32		69.30	69.65	65.98	60.78
Asyut	57.86	66.74	58.38		67.04	66.03	60.79	58.80
Suhag	58.21	65.19	55.48		65.89	66.98	61.13	60.24
Kena	59.92	68.32	60.63		66.18	68.27	63.02	59.82
Aswan	59.07	65.13	58.74		58.34	65.94	60.51	55.35
Frontier Districts	80.86	70.43	60.89		65.79	66.30	58.90	52.84
U.A.R. Total	59.33	67.89	62.43		65.06	66.45	62.78	55.15

a/ In 1907, Damietta was a part of Dakahlia Governorate.

TABLE D.11. (Continued)

Governorate	1907	1917 Total	1917 Excl. ill-defined	1927	1937	1947 Total	1947 Excl. ill-defined	1960
				Females				
Cairo	5.60	11.32	8.78		7.45	7.76	7.60	7.26
Alexandria	6.13	10.41	7.98		6.45	5.48	5.27	6.47
Canal	3.47	7.76	6.20		4.03	3.69	3.50	3.96
Suez	1.99	8.07	5.83		3.55	2.38	2.22	2.27
Damietta	-	10.62	8.66		5.54	5.41	5.31	5.33
Dakahlia	3.95	19.00	17.74		13.68	12.50	12.38	6.82
Sharkia	2.50	15.10	13.78		8.66	8.24	8.17	3.61
Kalyubia	1.95	11.09	9.87		7.91	6.70	6.66	3.23
Gharbia	2.94	18.60	17.35		15.83	14.95	14.89	6.57
Menoufia	1.73	21.19	20.11		11.37	11.06	11.01	2.93
Behera	2.33	15.76	14.55		12.44	13.02	12.95	7.12
Giza	.95	7.09	5.78		4.51	5.75	5.62	4.54
Beni Suef	1.58	7.55	6.36		3.59	6.11	6.00	2.72
Fayoum	4.13	13.53	12.12		5.64	7.38	7.30	4.44
Minya	1.24	8.41	7.14		4.26	4.65	4.56	4.21
Asyut	1.44	3.67	7.33		2.03	2.78	2.69	2.63
Suhag	1.42	9.70	8.57		1.73	2.29	2.15	2.55
Kena	1.58	9.51	8.19		2.04	2.15	2.06	1.93
Aswan	1.13	11.44	7.16		2.04	2.50	2.42	1.94
Frontier Districts	55.10	12.55	10.84		4.86	2.35	2.17	2.31
U.A.R. Total	3.06	13.44	12.00		7.87	7.87	7.77	4.84

TABLE D.11. (Continued)

Governorate	1907	1917 Total	1917 Excl. ill-defined	1927	1937	1947 Total	1947 Excl. ill-defined	1960
				Both Sexes				
Cairo	36.90	38.49	40.59	37.53	33.40	35.95	34.00	28.69
Alexandria	37.06	38.28	40.14	37.35	32.20	34.79	31.28	28.29
Canal	37.60	41.54	45.05	37.05	30.17	34.79	31.39	26.87
Suez	38.28	48.57	51.59	39.35	31.64	34.09	30.88	25.08
Damietta	a/	34.60	37.53	37.77	31.63	32.94	31.02	30.10
Dakahlia	31.15	43.26	47.02	39.57	37.96	37.61	36.68	30.09
Sharkia	31.26	42.20	45.49	37.82	37.03	37.51	36.17	30.06
Kalyubia	31.00	40.29	43.74	36.87	36.96	36.60	35.05	28.75
Gharbia	30.17	42.76	46.43	40.44	40.53	40.38	39.03	30.64
Menoufia	30.26	45.58	49.91	39.93	38.66	38.09	37.41	28.75
Behera	28.78	42.34	45.62	39.23	39.27	39.76	38.76	33.07
Giza	28.82	38.23	40.15	35.32	35.75	36.16	34.04	29.70
Beni Suef	28.17	38.47	40.92	33.73	35.62	36.68	35.12	30.23
Fayoum	33.47	40.78	46.12	35.64	36.31	37.94	36.51	31.60
Minya	30.21	39.09	40.48	34.06	37.06	36.72	34.86	32.66
Asyut	29.64	37.93	38.36	32.50	35.30	34.38	31.72	31.23
Suhag	29.78	37.52	37.40	32.75	34.88	34.56	31.57	31.32
Kena	31.19	39.44	40.28	33.40	34.89	35.21	32.54	30.80
Aswan	27.66	36.14	35.52	27.78	28.64	32.06	29.49	28.10
Frontier Districts	68.15	42.43	41.43	39.80	38.05	36.17	32.17	28.35
U.A.R. Total	31.31	40.71	43.22	36.70	36.49	36.88	35.01	30.14

a/ In 1907, Damietta was a part of Dakahlia Governorate.

TABLE D.12. REFINED ACTIVITY RATES OF GOVERNORATES, BY SEX, U.A.R., 1907-1960.

Governorate	1907	1917		1927	1937	1947		1960
		Total	Excl. ill-defined			Total	Excl. ill-defined	
				Males				
Cairo	73.56	73.09	69.24		66.49	73.25	68.98	60.55
Alexandria	74.16	74.91	69.61		65.81	73.94	66.10	60.57
Canal	75.56	78.54	75.14		63.26	73.73	66.34	61.53
Suez	76.95	85.39	81.86		65.53	73.71	66.72	59.29
Damietta	a/	69.79	65.36		67.12	70.65	66.30	67.39
Dakahlia	71.12	79.27	74.00		73.66	75.36	73.26	66.80
Sharkia	70.94	80.70	75.86		76.85	78.73	75.65	70.68
Kalyubia	71.33	80.21	75.27		75.41	77.78	74.21	66.71
Gharbia	69.27	78.96	73.71		76.83	78.45	75.27	68.14
Menoufia	69.28	80.84	76.19		75.92	76.76	75.21	67.17
Behera	66.44	80.72	74.45		77.41	79.97	77.63	73.21
Giza	66.13	79.25	72.07		75.58	77.23	72.47	67.95
Beni Suef	63.98	78.80	72.92		76.90	78.26	74.77	71.70
Fayoum	74.87	79.50	77.18		77.17	80.07	76.82	73.74
Minya	68.92	78.99	71.32		78.44	78.83	74.67	74.29
Asyut	68.38	76.98	67.35		76.48	75.76	69.74	72.74
Suhag	69.16	75.60	64.34		75.84	76.97	70.24	74.61
Kena	70.37	78.32	69.51		75.55	77.97	71.98	74.03
Aswan	69.96	75.73	68.30		66.85	76.05	69.79	68.26
Frontier Districts	86.40	78.88	68.19		74.30	76.44	67.90	64.24
U.A.R. Total	70.04	78.46	72.15		74.63	76.93	72.69	68.33

a/ In 1907, Damietta was a part of Dakahlia Governorate.

TABLE D.12. (Continued)

Governorate	1907	1917 Total	1917 Excl. ill-defined	1927	1937	1947 Total	1947 Excl. ill-defined	1960
				Females				
Cairo	6.53	13.00	10.09		8.61	9.03	8.85	8.93
Alexandria	7.20	12.08	9.25		7.46	6.41	6.16	7.90
Canal	4.12	9.04	7.22		4.74	4.37	4.15	4.96
Suez	2.28	9.33	6.74		4.17	2.88	2.68	2.90
Damietta	-	12.42	10.13		6.54	6.34	6.23	6.64
Dakahlia	4.77	22.11	20.65		15.96	14.64	14.51	8.46
Sharkia	2.97	17.40	15.88		10.04	9.62	9.53	4.47
Kalyubia	2.34	12.99	11.57		9.19	7.80	7.76	4.00
Gharbia	3.52	21.63	20.17		18.24	17.32	17.25	8.04
Menoufia	2.06	24.65	23.39		13.09	12.71	12.65	3.57
Behera	2.81	18.46	17.03		14.24	15.10	15.02	8.66
Giza	1.14	8.33	6.79		5.25	6.68	6.52	5.60
Beni Suef	1.89	8.84	7.44		4.12	6.93	6.79	3.27
Fayoum	5.02	16.07	14.40		6.53	8.44	8.36	5.43
Minya	1.48	9.79	8.32		4.90	5.28	5.18	5.09
Asyut	1.72	10.12	8.56		2.37	3.21	3.11	3.23
Suhag	1.71	11.36	10.04		2.03	2.65	2.48	3.13
Kena	1.89	11.06	9.53		2.38	2.48	2.37	2.38
Aswan	1.30	13.03	8.16		2.33	2.84	2.75	2.36
Frontier Districts	59.23	14.30	12.36		5.67	2.79	2.17	2.86
U.A.R. Total	3.65	15.65	13.97		9.12	9.12	9.00	5.94

TABLE D.12. (Continued)

Governorate	1907	1917 Total	1917 Excl. ill-defined	1927	1937	1947 Total	1947 Excl. ill-defined	1960
				Both Sexes				
Cairo	42.46	43.98	35.52	43.34	38.42	41.75	39.49	35.33
Alexandria	42.95	44.23	34.74	43.21	37.15	40.61	36.51	34.59
Canal	43.98	47.75	39.19	43.28	35.23	40.92	36.93	33.75
Suez	43.17	54.74	45.77	45.68	36.75	40.76	36.93	32.11
Damietta	a/	40.88	31.76	45.05	37.34	38.71	36.46	37.60
Dakahlia	37.63	50.36	40.38	47.02	44.34	44.28	43.18	37.59
Sharkia	36.98	48.65	39.46	44.37	42.88	43.80	42.24	37.46
Kalyubia	37.03	46.94	37.54	43.29	42.67	42.65	40.85	35.81
Gharbia	36.11	49.75	39.91	47.52	46.69	46.93	45.35	37.75
Menoufia	35.80	52.87	43.03	46.58	44.38	43.89	43.11	35.25
Behera	34.58	49.45	39.06	45.93	44.94	46.22	45.05	40.43
Giza	34.35	44.58	34.44	41.28	41.22	41.89	39.44	36.86
Beni Suef	33.44	44.61	35.29	38.97	40.58	41.57	39.80	36.63
Fayoum	40.45	48.12	39.09	41.56	41.79	43.40	41.76	38.97
Minya	35.73	45.12	35.07	39.09	42.28	41.63	39.53	39.70
Asyut	35.22	44.01	33.06	37.78	40.67	39.54	36.48	38.51
Suhag	35.61	43.74	32.09	38.48	40.51	39.83	36.38	38.62
Kena	36.94	45.54	34.88	38.68	40.24	40.39	37.33	38.07
Aswan	32.29	41.55	30.90	32.12	32.77	36.71	33.77	34.43
Frontier Districts	73.04	47.92	36.68	46.69	43.61	42.29	37.61	34.74
U.A.R. Total	37.16	47.22	37.26	42.83	42.06	42.70	40.54	37.18

a/ In 1907, Damietta was a part of Dakahlia Governorate.

TABLE D.13. AGE-SPECIFIC ACTIVITY RATES BY SEX, FOR GOVERNORATES, U.A.R., 1960.

Governorate	6-14	15-19	20-24	25-29	30-39	40-49	50-59	60+	Total 6+
				Males					
Cairo	7.13	49.40	77.29	93.61	96.68	96.88	92.31	54.36	60.60
Alexandria	5.86	53.33	80.95	94.92	97.89	97.55	93.72	59.04	60.36
Canal	11.09	55.96	85.88	95.81	97.92	97.67	94.50	59.39	61.47
Suez	3.89	45.41	86.06	97.35	98.80	98.23	94.78	51.38	59.17
Damietta	20.38	74.91	89.12	97.07	98.54	97.98	95.68	72.62	67.39
Dakahlia	21.84	68.70	86.06	96.41	98.57	98.22	96.00	75.28	66.80
Sharkia	28.65	71.97	87.61	96.73	98.56	98.26	96.43	77.90	70.68
Kalyubia	17.97	68.40	86.49	93.15	95.15	95.97	95.06	73.89	66.71
Gharbia	22.64	71.18	87.56	96.40	98.38	98.16	96.08	76.40	68.13
Menoufia	17.51	65.28	85.76	95.77	97.79	98.02	96.64	79.31	67.16
Behera	33.29	80.15	92.16	97.64	98.85	98.61	96.87	79.18	73.21
Giza	18.32	66.11	85.18	96.10	98.53	98.13	95.25	70.50	68.16
Beni Suef	21.24	75.70	91.68	96.97	97.83	97.88	96.20	73.84	71.71
Fayoum	28.45	79.74	93.34	97.93	98.60	98.35	96.44	75.53	73.73
Minya	26.94	78.22	91.72	97.65	98.68	98.40	96.80	78.08	74.28
Asyut	31.15	74.29	89.04	96.74	98.24	98.01	96.43	75.11	72.74
Suhag	34.71	80.05	91.86	97.11	98.49	98.33	96.98	76.50	74.61
Kena	30.31	80.34	92.67	97.45	98.37	98.06	96.67	74.11	74.03
Aswan	18.31	63.58	89.27	97.13	98.36	97.90	96.04	75.38	68.18
Frontier Districts	9.33	63.92	89.35	95.64	97.28	97.43	95.63	71.06	64.23
U.A.R. Total	21.46	68.50	86.78	96.12	98.01	97.89	95.64	72.40	68.37

TABLE D.13. (Continued)

Governorate	6-14	15-19	20-24	25-29	30-39	40-49	50-59	60+	Total 6+
				Females					
Cairo	7.47	13.16	14.32	9.68	7.66	7.93	6.55	4.02	8.84
Alexandria	5.58	12.77	13.15	7.99	6.73	7.93	7.03	4.05	7.75
Canal	4.52	7.43	7.38	3.99	4.24	4.75	4.33	2.47	4.91
Suez	2.76	3.76	5.49	2.64	2.11	2.07	2.26	1.09	2.84
Damietta	6.10	8.78	7.38	5.69	6.19	8.14	7.27	4.18	6.64
Dakahlia	8.90	11.78	10.37	8.47	8.37	8.39	6.03	2.99	8.46
Sharkia	7.34	5.83	3.96	2.69	2.66	3.34	3.15	1.97	4.46
Kalyubia	6.49	4.89	3.60	2.14	2.57	3.38	3.12	1.99	4.00
Gharbia	9.42	12.13	9.04	6.56	6.79	7.55	6.23	3.36	8.04
Menoufia	4.84	5.37	4.24	2.82	2.63	2.98	2.93	1.59	3.57
Behera	14.16	12.80	7.33	4.60	5.16	6.03	4.92	2.72	8.66
Giza	7.42	8.02	6.73	4.57	3.91	4.50	4.14	2.55	5.58
Beni Suef	5.16	4.09	3.86	2.39	2.22	2.67	2.69	1.46	3.27
Fayoum	6.17	6.67	6.14	4.44	4.90	5.81	5.21	3.43	5.42
Minya	9.38	5.93	4.06	3.05	3.22	4.00	3.81	2.51	5.08
Asyut	6.69	3.79	3.04	1.71	1.44	1.67	1.61	1.21	3.23
Suhag	7.31	3.23	2.15	1.23	1.19	1.40	1.48	1.02	3.12
Kena	6.02	2.49	1.84	.91	.71	.95	.96	.68	2.37
Aswan	4.13	2.00	2.29	1.48	1.31	1.93	2.29	1.23	2.34
Frontier Districts	2.52	5.41	3.80	2.43	2.39	2.49	2.49	1.38	2.86
U.A.R. Total	7.64	8.59	7.34	4.81	4.45	4.88	4.19	2.42	5.91

Note: Foreigners are excluded.

TABLE D.14. LABOR FORCE BY INDUSTRY AND SEX, U.A.R., 1907-1960.

	Industry	1907	1917	1927	1937	1947	1960
				Males			
(0)	Agriculture, etc.	2,335,870	2,421,646	2,999,886	3,603,565	3,641,076	4,135,741
(1)	Mining and quarrying	4,112	2,667	9,687	10,789	12,856	20,984
(2-3)	Manufacturing	201,289	261,991	345,946	327,871	522,058	688,214
(4)	Construction	94,898	65,937	124,395	119,796	112,414	158,271
(5)	Electricity, etc.	8,721	11,423	24,286	20,256	20,692	36,517
(6)	Commerce	141,873	216,564	360,203	389,514	529,198	602,640
(7)	Transport and communication	101,026	149,911	129,430	137,899	201,477	257,542
(8)	Services	371,838	453,655	516,950	572,679	856,671	1,124,487
(9)	Not adequately described	102,683	740,218	10,877	616	344,145	182,396
	Total	3,362,310	4,324,012	4,521,660	5,182,985	6,240,587	7,206,792
	Total excl. ill-defined	3,359,246	3,976,495	4,510,783	5,182,369	5,896,442	7,163,545
				Females			
(0)	Agriculture, etc.	104,160	514,706	492,183	416,866	444,594	270,638
(1)	Mining and quarrying	-	26	54	39	109	125
(2-3)	Manufacturing	9,182	28,454	20,771	24,835	38,543	24,886
(4)	Construction	27	649	877	910	947	614
(5)	Electricity, etc.	1	87	1,146	1,680	2,801	291
(6)	Commerce	7,264	36,788	37,530	50,028	61,182	38,768
(7)	Transport and communication	110	722	1,505	1,012	1,858	2,668
(8)	Services	45,144	131,303	126,356	128,100	194,207	244,945
(9)	Not adequately described	5,906	140,584	963	2,817	9,789	42,468
	Total	171,794	853,319	681,385	626,287	754,030	625,403
	Total excl. ill-defined	171,686	761,920	680,422	623,470	744,241	618,726

TABLE D.14. (Continued)

Industry	1907	1917	1927	1937	1947	1960
			Both Sexes			
(0) Agriculture, etc.	2,440,030	2,936,352	3,492,069	4,020,431	4,085,670	4,406,379
(1) Mining and quarrying	4,112	2,693	9,741	10,828	12,965	21,109
(2-3) Manufacturing	210,471	290,445	366,717	352,706	560,601	713,100
(4) Construction	94,925	66,586	125,272	120,706	113,361	158,885
(5) Electricity, etc.	8,722	11,510	25,432	21,936	23,493	36,808
(6) Commerce	149,137	253,352	397,733	439,542	590,380	641,408
(7) Transport and communication	101,136	150,633	130,935	138,911	203,335	260,210
(8) Services	416,982	584,958	643,306	700,779	1,050,878	1,369,432
(9) Not adequately described	108,589	880,802	11,840	3,433	353,934	224,864
Total	3,534,104	5,177,331	5,203,045	5,809,272	6,994,617	7,832,195
Total excl. ill-defined	3,530,932	4,738,415	5,191,205	5,805,839	6,640,683	7,782,271

TABLE D.15. LABOR FORCE 15 YEARS OF AGE AND OVER, BY INDUSTRY AND SEX, U.A.R., 1917-1960.

	Industry	1917	1927	1937	1947	1960
				Males		
(0)	Agriculture, etc.	1,951,466	2,536,398	2,971,525	3,153,288	3,560,009
(1)	Mining and quarrying	2,562	9,138	10,529	12,494	20,623
(2-3)	Manufacturing	235,429	306,626	299,638	473,991	658,344
(4)	Construction	62,853	119,078	117,424	109,998	156,000
(5)	Electricity, etc.	11,077	23,454	19,708	19,971	36,517
(6)	Commerce	207,329	345,524	378,485	505,869	586,869
(7)	Transport and communication	143,747	125,577	135,024	196,810	255,457
(8)	Services	414,956	480,156	541,708	801,535	1,094,011
(9)	Not adequately described	605,804	10,263	574	112,801	151,039
	Total	3,635,223	3,956,214	4,474,615	5,386,757	6,518,869
	Total excl. ill-defined	3,382,920	3,945,951	4,474,041	5,273,956	6,481,628
				Females		
(0)	Agriculture, etc.	411,225	403,368	367,411	359,757	130,921
(1)	Mining and quarrying	25	47	35	95	95
(2-3)	Manufacturing	26,126	18,972	23,466	34,121	21,805
(4)	Construction	523	751	816	851	489
(5)	Electricity, etc.	76	1,090	1,635	2,630	291
(6)	Commerce	35,213	36,399	48,700	58,024	36,052
(7)	Transport and communication	625	1,401	977	1,689	2,547
(8)	Services	119,186	94,577	93,559	125,853	172,231
(9)	Not adequately described	126,103	880	207	2,837	33,724
	Total	719,102	557,485	536,806	585,857	398,155
	Total excl. ill-defined	631,750	556,605	536,599	583,020	394,096

TABLE D.15. (Continued)

	Industry	1917	1927	1937	1947	1960
				Both Sexes		
(0)	Agriculture, etc.	2,362,691	2,939,766	3,338,936	3,513,045	3,690,930
(1)	Mining and quarrying	2,587	9,185	10,564	12,589	20,718
(2-3)	Manufacturing	261,555	325,598	323,104	508,112	680,149
(4)	Construction	63,376	119,829	118,240	110,849	156,489
(5)	Electricity, etc.	11,153	24,544	21,343	22,601	36,808
(6)	Commerce	242,542	381,923	427,185	563,893	622,921
(7)	Transport and communication	144,372	126,978	136,001	198,499	258,004
(8)	Services	534,142	574,733	635,267	927,388	1,266,242
(9)	Not adequately described	731,907	11,143	781	115,638	184,763
	Total	4,354,325	4,513,699	5,011,421	5,972,614	6,917,024
	Total excl. ill-defined	4,014,670	4,502,556	5,010,640	5,856,976	6,875,724

TABLE D.16. MALE LABOR FORCE BY INDUSTRY AND GOVERNORATE, U.A.R., 1907-1960.

Governorate and region	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1907					
Cairo	16,011	845	38,192	21,744	1,030	26,946	19,996	71,094	28,428	224,286
Alexandria	16,560	541	15,149	10,371	913	15,783	20,092	32,858	14,161	126,428
Canal	3,160	1	1,692	1,104	544	4,372	4,484	3,891	2,855	22,103
Suez	1,108	-	453	362	224	801	1,416	1,951	541	6,856
Damietta	-	-	-	-	-	-	-	-	-	-
Dakahlia	195,281	13	14,247	7,522	725	8,509	4,977	27,522	7,205	266,001
Sharkia	202,259	2	11,061	5,893	665	8,920	2,706	28,100	6,312	265,918
Kalyubia	94,685	3	8,278	2,769	442	5,137	2,061	14,660	2,449	130,484
Gharbia	316,819	7	20,373	10,018	1,203	14,148	7,172	43,222	12,989	425,951
Menoufia	220,698	4	16,309	5,481	755	8,146	2,661	27,072	4,283	285,409
Behera	161,638	8	7,318	3,976	737	7,012	4,282	18,616	4,248	207,835
Giza	93,004	1,553	7,597	2,473	235	4,719	6,098	12,224	2,510	130,413
Beni Suef	78,881	268	4,727	2,066	164	3,377	1,888	9,706	920	101,997
Fayoum	108,231	120	8,942	2,105	91	6,566	1,001	10,916	767	138,739
Minya	150,657	170	8,230	3,620	329	6,158	8,487	13,618	3,005	194,274
Asyut	197,054	203	14,946	5,704	196	9,356	4,793	20,422	2,051	254,725
Suhag	187,929	102	12,044	4,386	102	5,103	2,004	16,455	3,799	231,924
Kena	197,505	51	9,650	4,051	172	4,734	3,733	12,726	4,367	236,989
Aswan	49,932	199	1,688	977	186	1,670	2,880	4,512	1,419	63,463
Frontier Districts	44,458	22	393	276	8	416	295	2,273	374	48,515
Lower Egypt	1,228,219	1,424	133,072	69,240	7,238	99,774	69,847	268,986	83,471	1,961,271
Urban gov.	36,839	1,387	55,486	33,581	2,711	47,902	45,988	109,794	45,985	379,673
Non-urban gov.	1,191,380	37	77,586	35,659	4,527	51,872	23,859	159,192	37,486	1,581,598
Upper Egypt	1,063,193	2,666	67,824	25,382	1,475	41,683	30,884	100,579	18,838	1,352,524
U.A.R. Total	2,335,870	4,112	201,289	94,898	8,721	141,873	101,026	371,838	102,683	3,362,310

TABLE D.16. (Continued)

Governorate and region	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1917					
Cairo	11,937	89	46,669	14,456	2,626	35,298	29,685	83,654	36,470	260,884
Alexandria	5,169	118	24,706	5,991	1,444	22,553	23,872	38,106	25,543	147,502
Canal	1,061	306	4,266	1,388	484	6,228	8,715	6,612	5,603	34,663
Suez	1,001	15	1,243	478	254	1,331	4,753	2,560	2,385	14,020
Damietta	606	14	3,019	203	35	1,267	1,047	1,529	1,361	9,081
Dakahlia	191,960	43	14,858	2,805	644	13,518	6,889	31,887	69,462	332,066
Sharkia	225,775	42	15,412	2,485	474	12,469	5,913	30,518	37,118	330,206
Kalyubia	115,925	10	10,078	3,521	537	7,581	4,151	18,856	23,134	183,793
Gharbia	330,983	50	26,041	5,593	1,168	21,476	11,755	57,119	98,212	552,397
Menoufia	257,389	44	18,498	2,789	760	14,505	4,014	37,262	40,210	375,471
Behera	199,581	18	10,485	2,416	522	11,407	6,363	22,921	53,283	306,996
Giza	110,639	224	9,853	4,351	354	7,717	7,103	15,597	26,322	182,160
Beni Suef	107,943	37	6,307	1,879	167	5,703	3,482	13,141	18,698	157,357
Fayoum	127,254	6	10,323	2,267	172	8,663	2,539	12,046	9,560	172,830
Minya	173,507	8	10,808	2,429	501	9,271	6,576	19,975	43,846	266,921
Asyut	189,295	22	17,565	5,148	506	12,634	8,102	23,905	72,808	329,985
Suhag	156,951	23	13,935	3,411	286	12,101	5,805	17,393	72,243	282,148
Kena	158,029	95	14,830	2,917	242	10,018	5,827	14,271	85,989	292,218
Aswan	47,779	59	2,467	960	201	2,471	2,448	4,602	14,931	75,918
Frontier Districts	8,862	1,444	628	450	46	353	872	1,701	3,040	17,396
Lower Egypt	1,341,387	749	175,275	42,125	8,948	147,633	107,157	331,024	392,781	2,547,079
Urban govern.	19,168	528	76,884	22,313	4,808	65,410	67,025	130,932	70,001	457,069
Non-urban govern.	1,322,219	221	98,391	19,812	4,140	82,223	40,132	200,092	322,780	2,090,010
Upper Egypt	1,071,397	474	86,088	23,362	2,429	68,578	41,882	120,930	344,397	1,759,537
U.A.R. Total	2,421,646	2,667	261,991	65,937	11,423	216,564	149,911	453,655	740,218	4,324,012

TABLE D.16. (Continued)

Governorate and region	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1937					
Cairo	15,518	1,235	82,417	32,356	3,636	78,103	31,635	145,578	102	390,580
Alexandria	8,848	902	39,117	13,674	2,187	51,205	23,893	59,157	17	199,000
Canal	4,233	161	5,348	6,145	450	11,373	6,552	11,207	12	45,481
Suez	1,932	15	2,792	1,763	119	2,586	2,050	3,623	4	14,884
Damietta	749	7	4,852	510	69	2,195	1,211	2,067	1	11,661
Dakahlia	283,751	130	18,268	7,667	483	24,452	7,192	35,934	27	377,904
Sharkia	289,337	333	13,414	4,502	456	21,370	3,936	32,243	35	365,626
Kalyubia	147,216	665	13,426	4,010	251	13,276	3,405	19,243	3	201,495
Gharbia	483,937	35	38,401	9,646	1,226	35,338	13,273	55,442	35	637,333
Menoufia	304,429	-	15,182	4,423	304	20,057	4,340	33,226	15	381,976
Behera	286,336	116	11,134	4,072	601	17,168	5,541	24,004	24	348,996
Giza	169,938	1,261	14,088	4,305	324	14,312	5,486	20,031	38	229,783
Beni Suef	151,609	406	5,625	2,687	426	10,954	2,969	15,029	86	189,791
Fayoum	159,745	83	8,371	3,822	971	12,084	1,888	14,558	20	201,542
Minya	264,332	443	10,276	3,292	651	17,195	5,008	23,205	13	324,415
Asyut	337,096	72	13,853	4,497	2,870	20,073	6,198	28,819	21	413,499
Suhag	320,616	75	12,100	3,270	2,815	17,807	4,422	19,587	9	380,701
Kena	285,745	29	15,470	4,502	1,935	14,779	5,043	17,421	12	344,936
Aswan	65,569	662	2,543	2,024	357	3,638	2,648	6,527	133	84,101
Frontier Districts	22,629	4,159	1,194	2,629	125	1,549	1,209	5,778	9	39,281
Lower Egypt	1,826,286	3,599	244,351	88,768	9,782	277,123	103,028	421,724	275	2,974,936
Urban govern.	30,531	2,313	129,674	53,938	6,392	143,267	64,130	219,565	135	649,945
Non-urban govern.	1,795,755	1,286	114,677	34,830	3,390	133,856	38,898	202,159	140	2,324,991
Upper Egypt	1,754,650	3,031	82,326	28,399	10,349	110,842	33,662	145,177	332	2,168,768
U.A.R. Total	3,603,565	10,789	327,871	119,796	20,256	389,514	137,899	572,679	616	5,182,985

TABLE D.16. (Continued)

Governorate and region	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1947					
Cairo	13,640	1,764	150,790	33,261	3,695	121,661	50,327	257,545	39,112	671,795
Alexandria	8,743	509	65,919	10,995	1,964	60,001	30,520	84,888	31,268	294,807
Canal	5,901	30	9,086	2,638	279	14,262	13,726	27,173	8,136	81,231
Suez	3,287	101	3,625	1,059	137	8,797	4,340	10,654	3,353	35,353
Damietta	972	21	6,421	363	77	2,814	1,325	3,234	1,000	16,227
Dakahlia	306,365	10	24,617	6,308	491	32,692	10,821	48,051	12,342	441,697
Sharkia	313,733	165	18,122	4,861	412	28,313	6,931	58,699	17,526	448,762
Kalyubia	143,272	943	26,384	3,390	215	15,704	5,352	24,772	10,584	230,616
Gharbia	516,801	13	64,854	9,331	1,106	47,098	17,245	73,560	30,793	760,801
Menoufia	281,760	16	20,608	3,725	268	22,339	5,429	36,113	7,607	377,865
Behera	309,977	139	21,340	4,396	481	23,238	8,535	30,578	12,059	410,743
Giza	161,841	1,185	23,394	6,410	385	22,389	8,166	31,661	16,799	272,230
Beni Suef	150,081	434	7,052	3,128	368	13,270	3,563	18,187	9,162	205,245
Fayoum	169,188	113	10,038	2,774	871	15,267	2,613	18,599	9,308	228,771
Minya	260,758	467	13,852	3,645	625	23,121	6,830	30,591	18,938	358,827
Asyut	322,041	158	16,573	4,421	3,352	26,200	7,856	36,788	35,988	453,377
Suhag	312,709	241	14,980	3,432	3,278	24,510	6,109	26,057	37,500	428,816
Kena	271,344	525	20,107	5,297	2,190	20,186	6,271	22,690	29,020	377,630
Aswan	59,738	1,155	3,284	1,273	421	4,656	3,161	8,325	7,348	89,361
Frontier Districts	28,925	4,867	1,012	1,707	77	2,680	2,357	8,506	6,302	56,433
Lower Egypt	1,904,451	3,711	411,766	80,327	9,225	376,919	154,551	655,167	173,780	3,769,897
Urban govern.	31,571	2,404	229,420	47,953	6,075	204,721	98,913	380,260	81,869	1,083,186
Non-urban govern.	1,872,880	1,307	182,346	32,374	3,050	172,198	55,638	275,007	91,911	2,686,711
Upper Egypt	1,707,700	4,278	109,280	30,380	11,490	149,599	44,569	192,898	164,063	2,414,257
U.A.R. Total	3,641,076	12,856	522,058	112,414	20,692	529,198	201,477	856,671	344,145	6,240,587

TABLE D.16. (Continued)

Governorate and region	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1960					
Cairo	13,188	2,378	197,430	44,304	13,368	142,715	66,753	316,440	45,514	842,090
Alexandria	18,437	1,213	108,257	15,155	6,345	66,901	33,921	106,160	24,259	380,648
Canal	35,299	658	10,038	5,730	1,756	17,039	17,368	34,058	10,042	131,988
Suez	4,989	847	8,115	3,779	509	8,934	5,993	11,829	3,844	48,839
Damietta	59,517	181	15,597	1,923	82	9,590	4,072	14,308	1,398	106,668
Dakahlia	365,768	122	30,553	7,569	432	38,665	13,784	70,780	10,312	537,985
Sharkia	377,887	223	22,293	4,665	255	29,245	8,634	62,770	8,279	514,251
Kalyubia	155,834	1,180	35,494	3,606	547	17,488	9,682	38,140	6,496	268,467
Gharbia	491,886	96	69,108	9,910	1,682	44,011	19,187	87,320	11,756	734,956
Menoufia	264,318	24	18,197	4,683	672	19,892	6,958	47,226	5,844	367,814
Behera	370,728	298	33,869	5,945	1,193	25,594	9,584	43,632	6,043	496,886
Giza	176,631	1,013	41,744	10,175	3,173	35,198	14,276	73,605	11,019	366,834
Beni Suef	187,314	376	8,823	3,419	616	15,607	4,271	24,739	2,862	248,027
Fayoum	184,839	144	10,550	3,407	464	17,246	3,400	23,159	3,159	246,368
Minya	366,537	507	17,398	4,691	1,057	28,231	9,093	44,179	5,266	476,959
Asyut	302,883	75	14,381	4,531	1,061	24,206	7,737	37,916	5,213	398,003
Suhag	369,698	123	16,657	5,508	798	30,606	7,902	35,691	7,365	474,348
Kena	302,024	743	20,502	9,313	680	21,864	8,122	31,680	8,220	403,148
Aswan	61,145	1,048	7,101	8,084	1,670	5,398	4,136	13,037	2,844	104,463
Frontier Districts	26,819	9,735	2,107	1,874	157	4,210	2,669	7,818	2,511	57,900
Lower Egypt	2,157,851	7,220	548,951	107,269	26,841	420,074	195,936	832,663	133,787	4,430,592
Urban govern.	71,913	5,096	323,840	68,968	21,978	235,589	124,035	468,487	83,659	1,403,565
Non-urban govern.	2,085,938	2,124	225,111	38,301	4,863	184,485	71,901	364,176	50,128	3,027,027
Upper Egypt	1,951,071	4,029	137,156	49,128	9,519	178,356	58,937	284,006	45,948	2,718,150
U.A.R. Total	4,135,741	20,984	688,214	158,271	36,517	602,640	257,542	1,124,487	182,246	7,206,642

(0) Agriculture, Forestry, Hunting and Fishing; (1) Mining and Quarrying; (2-3) Manufacturing; (4) Construction; (5) Electricity, Gas, Water and Sanitary Services; (6) Commerce; (7) Transport and Communication; (8) Services; (9) Not Adequately described.

TABLE D.17. TOTAL LABOR FORCE, BOTH SEXES, BY INDUSTRY AND GOVERNORATE, U.A.R., 1907-1960.

Governorate and region	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1907					
Cairo	16,144	845	38,377	21,747	1,030	28,009	20,009	86,100	29,258	241,519
Alexandria	16,724	541	15,249	10,380	913	16,339	20,123	42,056	14,810	137,135
Canal	3,161	1	1,701	1,104	544	4,414	4,486	4,712	2,936	23,059
Suez	1,108	-	453	362	224	814	1,416	2,106	541	7,024
Damietta	-	-	-	-	-	-	-	-	-	-
Dakahlia	208,881	13	14,693	7,524	725	9,217	5,006	30,012	8,106	284,177
Sharkia	210,609	2	11,185	5,893	665	9,381	2,721	29,932	6,663	277,051
Kalyubia	97,474	3	8,385	2,769	442	5,503	2,066	15,394	2,675	134,711
Gharbia	333,375	7	20,642	10,024	1,203	15,072	7,178	46,790	13,722	448,013
Menoufia	226,220	4	16,453	5,481	755	8,641	2,661	28,449	5,168	293,832
Behera	168,065	8	7,534	3,976	737	7,582	4,283	19,823	4,630	216,638
Giza	93,799	1,553	7,681	2,475	236	5,000	6,098	12,994	2,739	132,575
Beni Suef	80,471	268	4,829	2,066	164	3,610	1,889	10,546	1,072	104,915
Fayoum	108,974	120	14,681	2,105	91	7,104	1,001	12,894	818	147,788
Minya	153,082	170	8,609	3,622	329	6,441	8,488	14,405	3,169	198,315
Asyut	200,723	203	15,580	5,704	196	9,788	4,798	21,865	2,196	261,053
Suhag	191,863	102	12,350	4,387	102	5,225	2,004	17,701	3,874	237,608
Kena	202,361	51	9,808	4,053	172	4,848	3,734	13,637	4,403	243,067
Aswan	50,868	199	1,741	977	186	1,715	2,880	4,904	1,432	64,902
Frontier Districts	76,128	22	520	276	8	434	295	2,662	377	80,722
Lower Egypt	1,281,761	1,424	134,672	69,260	7,238	104,972	69,949	305,374	88,509	2,063,159
Urban govern.	37,137	1,387	55,780	33,593	2,711	49,576	46,034	134,974	47,545	408,737
Non-urban govern.	1,244,624	37	78,892	35,667	4,527	55,396	23,915	170,400	40,964	1,654,422
Upper Egypt	1,082,141	2,666	75,279	25,389	1,476	43,731	30,892	108,946	19,703	1,390,223
U.A.R. Total	2,440,030	4,112	210,471	94,925	8,722	149,137	101,136	416,982	108,589	3,534,104

TABLE D.17. (Continued)

Governorate and region	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1917					
Cairo	13,606	89	47,809	14,515	2,653	38,460	29,847	110,296	47,185	304,460
Alexandria	5,313	119	25,346	6,019	1,477	23,932	24,019	52,316	31,656	170,197
Canal	1,104	306	4,448	1,398	487	6,420	8,751	8,563	6,358	37,835
Suez	1,142	15	1,273	478	254	1,374	4,763	3,058	2,697	15,054
Damietta	651	14	3,498	206	35	1,345	1,050	2,240	1,683	10,722
Dakahlia	251,580	47	17,351	2,883	646	17,277	6,943	41,035	89,021	426,783
Sharkia	280,695	47	16,675	2,536	475	14,633	5,929	36,308	45,920	403,218
Kalyubia	135,568	10	10,672	3,537	538	9,258	4,163	21,764	27,451	212,961
Gharbia	436,236	51	27,694	5,755	1,172	27,700	11,853	75,073	124,036	709,570
Menoufia	347,333	47	19,511	2,804	760	20,291	4,031	45,152	49,029	488,958
Behera	250,053	19	11,815	2,490	523	13,561	6,369	29,217	63,762	377,809
Giza	119,512	227	10,297	4,369	358	9,200	7,128	19,001	30,390	200,482
Beni Suef	117,661	40	6,750	1,895	169	6,792	3,511	15,732	21,678	174,228
Fayoum	146,631	6	15,969	2,284	173	9,965	2,556	16,160	13,278	207,022
Minya	191,220	8	12,723	2,439	504	11,315	6,583	24,429	49,417	298,638
Asyut	212,302	23	19,615	5,165	507	14,566	8,113	31,370	80,520	372,181
Suhag	181,661	24	17,381	3,436	286	12,950	5,828	23,457	78,862	323,885
Kena	180,947	95	16,926	2,957	243	10,903	5,861	20,193	93,334	331,459
Aswan	53,993	60	3,314	970	203	3,032	2,463	6,509	21,025	91,569
Frontier Districts	9,144	1,446	1,378	450	47	378	872	3,085	3,500	20,300
Lower Egypt	1,723,281	764	186,092	42,621	9,020	174,251	107,718	425,022	488,798	3,157,567
Urban govern.	21,165	529	78,876	22,410	4,871	70,186	67,380	174,233	87,896	527,546
Non-urban govern.	1,702,116	235	107,216	20,211	4,149	104,065	40,338	250,789	400,902	2,630,021
Upper Egypt	1,203,927	483	102,975	23,515	2,443	78,723	42,043	156,851	388,504	1,999,464
U.A.R. Total	2,936,352	2,693	290,445	66,586	11,510	253,352	150,633	584,958	880,802	5,177,331

TABLE D.17. (Continued)

Governorate and region	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1927					
Cairo	19,376	1,882	83,832	30,780	4,673	71,460	29,980	155,104	2,439	399,526
Alexandria	8,243	873	42,571	18,370	2,508	49,071	23,740	66,035	2,628	214,039
Canal	3,484	38	7,697	7,211	581	11,246	4,981	12,338	516	48,092
Suez	1,583	136	2,253	2,867	220	3,144	1,894	3,681	166	15,944
Damietta	879	9	5,571	619	93	2,210	1,006	2,761	36	13,184
Dakahlia	322,101	11	21,129	5,914	807	26,665	7,033	43,452	568	427,680
Sharkia	299,884	114	16,727	4,643	595	22,087	3,707	36,529	342	384,628
Kalyubia	151,016	641	12,202	2,989	395	14,337	3,217	21,094	188	206,079
Gharbia	549,223	57	36,953	8,977	1,670	41,658	11,694	73,097	1,367	724,696
Menoufia	348,659	3	18,496	4,205	845	25,965	3,906	38,877	299	441,255
Behera	308,799	27	14,017	4,805	823	19,471	5,441	29,350	521	383,254
Giza	145,580	1,198	13,489	4,569	328	14,775	5,571	23,231	138	208,879
Beni Suef	131,464	390	6,705	2,791	482	10,432	2,832	16,212	116	171,424
Fayoum	149,683	123	13,996	3,017	992	12,528	1,522	15,439	147	197,447
Minya	219,264	395	13,089	4,194	1,004	17,061	5,052	25,733	236	286,028
Asyut	263,049	157	18,700	5,936	3,545	20,563	6,491	30,669	1,429	350,539
Suhag	253,541	157	14,998	4,475	3,291	16,409	4,260	19,713	271	317,115
Kena	238,312	36	17,983	5,921	2,128	13,942	4,622	18,184	190	301,318
Aswan	55,629	164	3,842	1,414	384	3,318	2,689	6,650	185	74,275
Frontier Districts	22,300	3,330	2,467	1,575	68	1,391	1,297	5,157	58	37,643
Lower Egypt	2,013,247	3,791	261,448	91,380	13,210	287,314	96,599	482,318	9,070	3,258,377
Urban govern.	32,686	2,929	136,353	59,228	7,982	134,921	60,595	237,158	5,749	677,601
Non-urban govern.	1,980,561	862	125,095	32,152	5,228	152,393	36,004	245,160	3,321	2,580,776
Upper Egypt	1,456,522	2,620	102,802	32,317	12,154	109,028	33,039	155,831	2,712	1,907,025
U.A.R. Total	3,492,069	9,741	366,717	125,272	25,432	397,733	130,935	643,306	11,840	5,203,045

TABLE D.17. (Continued)

Governorate and region	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1937					
Cairo	15,886	1,237	83,578	32,474	3,921	83,071	31,983	185,138	934	438,222
Alexandria	8,989	914	40,698	13,724	2,308	54,064	24,158	75,463	472	220,790
Canal	4,522	161	5,456	6,173	455	11,674	6,589	13,328	259	48,617
Suez	2,012	15	2,818	1,765	119	2,652	2,065	4,238	36	15,720
Damietta	756	8	5,072	511	70	2,251	1,213	2,873	5	12,759
Dakahlia	351,263	132	19,892	7,755	652	29,773	7,231	45,663	169	462,530
Sharkia	328,390	336	14,302	4,532	549	24,807	3,956	38,038	107	415,017
Kalyubia	164,886	668	14,024	4,020	308	16,247	3,414	21,899	30	225,496
Gharbia	615,497	35	40,323	9,777	1,591	44,108	13,357	72,703	211	797,602
Menoufia	356,099	-	15,799	4,476	451	27,224	4,358	39,924	36	448,367
Behera	344,282	116	11,827	4,143	788	19,829	5,560	30,303	25	416,873
Giza	178,968	1,268	14,811	4,331	358	16,601	5,508	23,142	39	245,026
Beni Suef	157,645	406	5,881	2,700	449	12,466	2,981	17,278	114	199,920
Fayoum	166,130	83	15,030	3,834	1,037	13,450	1,904	17,114	72	218,654
Minya	276,796	443	11,172	3,329	665	19,808	5,022	26,643	154	344,032
Asyut	342,952	72	14,840	4,506	2,907	21,641	6,224	32,142	168	425,452
Suhag	325,108	76	13,393	3,280	2,841	18,523	4,438	22,176	214	390,049
Kena	289,612	29	18,506	4,528	1,965	15,756	5,069	19,376	209	355,050
Aswan	67,342	662	3,091	2,040	367	4,018	2,671	7,028	170	87,389
Frontier Districts	23,296	4,167	2,193	2,808	135	1,579	1,210	6,310	9	41,707
Lower Egypt	2,192,582	3,622	253,789	89,350	11,212	315,700	103,884	529,570	2,284	3,501,993
Urban govern.	31,409	2,327	132,550	54,136	6,803	151,461	64,795	278,167	1,701	723,349
Non-urban govern.	2,161,173	1,295	121,239	35,214	4,409	164,239	39,089	251,403	583	2,778,644
Upper Egypt	1,804,553	3,039	96,724	28,548	10,589	122,263	33,817	164,899	1,140	2,265,572
U.A.R. Total	4,020,431	10,828	352,706	120,706	21,936	439,542	138,911	700,779	3,433	5,809,272

TABLE D.17. (Continued)

Governorate and region	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1947					
Cairo	14,103	1,776	153,187	33,447	4,009	127,743	51,028	325,512	40,716	751,521
Alexandria	9,129	511	67,598	11,102	2,036	62,586	30,898	103,609	32,239	319,708
Canal	6,023	30	9,189	2,656	293	14,725	13,834	30,446	8,355	85,551
Suez	3,335	102	3,666	1,062	139	8,928	4,390	11,497	3,437	36,556
Damietta	984	21	6,576	367	79	2,879	1,332	4,400	1,026	17,664
Dakahlia	374,844	10	26,507	6,414	715	38,837	10,905	60,325	13,166	531,723
Sharkia	355,318	171	19,406	4,896	530	32,087	6,970	67,378	18,012	504,768
Kalyubia	158,344	950	27,712	3,408	292	18,835	5,370	28,313	10,720	253,944
Gharbia	655,176	15	68,434	9,518	1,731	57,576	17,382	98,302	31,514	939,648
Menoufia	329,554	16	21,534	3,772	497	30,772	5,457	44,280	7,924	443,806
Behera	377,375	139	23,904	4,459	851	26,631	8,596	40,361	12,500	494,816
Giza	173,620	1,191	24,537	6,441	481	26,397	8,218	37,611	17,353	295,849
Beni Suef	161,738	448	7,680	3,148	463	16,034	3,579	21,871	9,526	224,487
Fayoum	176,372	113	21,227	2,787	1,081	17,417	2,625	22,897	9,565	254,084
Minya	273,959	487	14,855	3,677	711	26,069	6,864	37,387	19,414	383,423
Asyut	329,600	159	18,722	4,437	3,457	28,626	7,898	43,010	36,601	472,510
Suhag	319,606	241	17,167	3,444	3,335	25,347	6,145	29,850	38,436	443,571
Kena	275,555	535	23,019	5,321	2,258	21,262	6,291	25,769	29,522	389,532
Aswan	61,249	1,165	4,396	1,285	453	4,903	3,175	9,147	7,469	93,242
Frontier Districts	29,786	4,885	1,285	1,720	82	2,726	2,378	8,913	6,439	58,214
Lower Egypt	2,284,185	3,741	427,713	81,101	11,272	421,599	156,162	814,323	179,609	4,379,705
Urban govern.	32,590	2,419	233,640	48,267	6,477	213,982	100,150	471,064	84,747	1,193,336
Non-urban govern.	2,251,595	1,322	194,073	32,834	4,695	207,617	56,012	343,359	94,862	3,186,369
Upper Egypt	1,771,699	4,339	131,603	30,540	12,239	166,055	44,795	227,542	167,886	2,556,698
U.A.R. Total	4,085,670	12,965	560,601	113,361	23,493	590,380	203,335	1,050,878	353,934	6,994,617

TABLE D.17. (Continued)

Governorate and region	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1960					
Cairo	13,488	2,418	202,473	44,442	13,502	152,268	68,116	406,383	57,671	960,761
Alexandria	19,894	1,228	112,621	15,202	6,463	70,261	34,405	138,639	30,252	428,965
Canal	36,770	658	10,356	5,739	1,761	17,887	17,651	39,877	11,558	142,257
Suez	5,063	854	8,167	3,781	509	9,072	6,020	13,450	4,147	51,063
Damietta	63,857	181	16,353	1,934	82	9,832	4,081	18,287	2,181	116,788
Dakahlia	412,522	125	31,120	7,637	438	41,783	13,863	84,802	14,060	606,350
Sharkia	396,777	223	22,863	4,685	255	30,988	8,657	72,317	10,189	546,954
Kalyubia	163,942	1,180	36,011	3,617	547	18,952	9,710	42,392	7,753	284,104
Gharbia	549,531	97	71,389	10,047	1,695	48,479	19,275	107,952	15,257	823,722
Menoufia	274,171	24	18,338	4,707	672	22,141	6,969	53,574	6,915	387,511
Behera	418,718	298	34,871	5,975	1,193	26,922	9,604	52,182	7,767	557,530
Giza	183,661	1,027	42,611	10,204	3,183	38,006	14,403	90,784	13,039	396,918
Beni Suef	192,681	376	8,951	3,433	616	16,729	4,281	29,053	3,802	259,922
Fayoum	190,181	144	15,730	3,412	465	18,815	3,427	28,545	4,438	265,157
Minya	386,776	539	17,893	4,710	1,057	30,551	9,115	51,998	6,944	509,583
Asyut	312,408	76	15,077	4,543	1,064	25,233	7,752	42,952	6,074	415,179
Suhag	383,492	123	17,406	5,522	799	31,307	7,922	39,746	8,183	494,500
Kena	310,868	743	20,964	9,330	680	22,376	8,146	34,336	8,756	416,199
Aswan	63,872	1,048	7,145	8,087	1,670	5,548	4,143	13,755	3,005	108,273
Frontier Districts	27,707	9,747	2,761	1,878	157	4,258	2,670	8,408	2,697	60,283
Lower Egypt	2,354,733	7,286	564,562	107,766	27,117	448,585	198,351	1,029,855	167,750	4,906,005
Urban govern.	75,215	5,158	333,617	69,164	22,235	249,488	126,192	598,349	103,628	1,583,046
Non-urban govern.	2,279,518	2,128	230,945	38,602	4,882	199,097	72,159	431,506	64,122	3,322,959
Upper Egypt	2,023,939	4,076	145,777	49,241	9,534	188,565	59,189	331,169	54,241	2,865,731
U.A.R. Total	4,406,379	21,109	713,100	158,885	36,808	641,408	260,210	1,369,432	224,688	7,832,019

(0) Agriculture, Forestry, Hunting and Fishing; (1) Mining and Quarrying; (2-3) Manufacturing; (4) Construction; (5) Electricity, Gas, Water and Sanitary Services; (6) Commerce; (7) Transport and Communication; (8) Services; (9) Not adequately described.

TABLE D.18. PERCENT SHARE OF EACH INDUSTRY IN TOTAL LABOR FORCE, BOTH SEXES, FOR GOVERNORATES, U.A.R., 1907-1960.

Governorate	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)
					1907				
Cairo	6.68	.35	15.89	9.00	.43	11.60	8.28	35.65	12.11
Alexandria	12.20	.39	11.12	7.57	.67	11.91	14.67	30.67	10.80
Canal	13.71	...	7.38	4.79	2.36	19.14	19.45	20.43	12.73
Suez	15.77	-	6.45	5.15	3.19	11.59	20.16	29.98	7.70
Damietta	-	-	-	-	-	-	-	-	-
Dakahlia	73.50	...	5.17	2.65	.26	3.24	1.76	10.56	2.85
Sharkia	76.02	...	4.04	2.13	.24	3.39	.98	10.80	2.40
Kalyubia	72.36	...	6.22	2.06	.33	4.09	1.53	11.43	1.99
Gharbia	74.41	...	4.61	2.24	.27	3.36	1.60	10.44	3.06
Menoufia	76.99	...	5.60	1.87	.26	2.94	.91	9.68	1.76
Behera	77.58	...	3.48	1.84	.34	3.50	1.98	9.15	2.14
Giza	70.75	1.17	5.79	1.87	.18	3.77	4.60	9.80	2.07
Beni Suef	76.70	.26	4.60	1.97	.16	3.44	1.80	10.05	1.02
Fayoum	73.74	.08	9.93	1.42	.06	4.81	.68	8.72	.55
Minya	77.19	.09	4.34	1.83	.17	3.25	4.28	7.26	1.60
Asyut	76.89	.08	5.97	2.18	.08	3.75	1.84	8.38	.84
Suhag	80.75	.04	5.20	1.85	.04	2.20	.84	7.45	1.63
Kena	83.25	.02	4.04	1.67	.07	1.99	1.54	5.61	1.81
Aswan	78.38	.31	2.68	1.51	.29	2.64	4.44	7.56	2.21
Frontier Districts	94.31	.03	.64	.34	.01	.54	.37	3.30	.47
U.A.R. Total	69.04	.12	5.96	2.69	.25	4.22	2.86	11.80	3.07

TABLE D.18. (Continued)

Governorate	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)
					1917				
Cairo	4.47	.03	15.70	4.77	.87	12.63	9.80	36.23	15.50
Alexandria	3.12	.07	14.89	3.54	.87	14.06	14.11	30.74	18.60
Canal	2.92	.81	11.76	3.69	1.29	16.97	23.13	22.63	16.80
Suez	7.59	.10	8.46	3.18	1.69	9.13	31.64	20.31	17.92
Damietta	6.07	.13	32.62	1.92	.33	12.54	9.79	20.89	15.70
Dakahlia	58.95	.01	4.07	.68	.15	4.05	1.63	9.61	20.86
Sharkia	69.61	.01	4.14	.63	.12	3.63	1.47	9.00	11.39
Kalyubia	63.66	...	5.01	1.66	.25	4.35	1.95	10.22	12.89
Gharbia	61.48	.01	3.90	.81	.17	3.90	1.67	10.58	17.48
Menoufia	71.04	.01	3.99	.57	.16	4.15	.82	9.23	10.03
Behera	66.19	.01	3.13	.66	.14	3.59	1.69	7.73	16.88
Giza	59.61	.11	5.14	2.18	.18	4.59	3.56	9.48	15.16
Beni Suef	67.53	.02	3.87	1.09	.10	3.90	2.02	9.03	12.44
Fayoum	70.83	...	7.71	1.10	.08	4.81	1.23	7.81	6.41
Minya	64.03	...	4.26	.82	.17	3.79	2.20	8.18	16.55
Asyut	57.04	.01	5.27	1.39	.14	3.91	2.18	8.43	21.63
Suhag	56.09	.01	5.37	1.06	.09	4.00	1.80	7.24	24.35
Kena	54.59	.03	5.11	.89	.07	3.29	1.77	6.09	28.16
Aswan	58.96	.07	3.62	1.06	.22	3.31	2.69	7.11	22.96
Frontier Districts	45.04	7.12	6.79	2.22	.23	1.86	4.30	15.20	17.24
U.A.R. Total	56.72	.05	5.61	1.29	.22	4.89	2.91	11.30	17.01

TABLE D.18. (Continued)

Governorate	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)
				1917 (Excluding ill-defined)					
Cairo	4.84	.03	17.02	5.17	.94	13.69	10.62	39.26	8.42
Alexandria	3.44	.08	16.41	3.90	.96	15.50	15.55	33.87	10.30
Canal	3.09	.86	12.46	3.92	1.36	17.98	24.51	23.99	11.82
Suez	8.05	.11	8.97	3.37	1.79	9.68	33.57	21.55	12.91
Damietta	6.61	.14	35.54	2.09	.36	13.67	10.67	22.76	8.16
Dakahlia	63.14	.01	4.35	.72	.16	4.34	1.74	10.30	15.23
Sharkia	74.45	.01	4.42	.67	.13	3.88	1.57	9.63	5.24
Kalyubia	68.32	.01	5.38	1.78	.27	4.67	2.10	10.97	6.51
Gharbia	65.88	.01	4.18	.87	.18	4.18	1.79	11.34	11.58
Menoufia	75.25	.01	4.23	.61	.16	4.40	.87	9.78	4.69
Behera	71.75	.01	3.39	.71	.15	3.89	1.83	8.38	9.89
Giza	66.18	.13	5.70	2.42	.20	5.09	3.95	10.52	5.81
Beni Suef	73.62	.02	4.22	1.19	.11	4.25	2.20	9.84	4.55
Fayoum	73.90	...	8.05	1.15	.09	5.02	1.29	8.14	2.36
Minya	71.37	...	4.75	.91	.19	4.22	2.46	9.12	6.99
Asyut	65.45	.01	6.05	1.59	.16	4.49	2.50	9.67	10.09
Suhag	65.59	.01	6.28	1.24	.10	4.68	2.10	8.47	11.54
Kena	61.73	.03	5.77	1.01	.08	3.72	2.00	6.89	18.77
Aswan	68.98	.08	4.23	1.24	.26	3.87	3.15	8.32	9.87
Frontier Districts	52.11	8.24	7.85	2.56	.27	2.15	4.97	17.58	4.26
U.A.R. Total	61.97	.06	6.13	1.41	.24	5.35	3.18	12.34	9.33

TABLE D.18. (Continued)

Governorate	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)
					1927				
Cairo	4.85	.47	20.98	7.70	1.17	17.89	7.50	38.82	.61
Alexandria	3.85	.41	19.89	8.58	1.17	22.93	11.09	30.85	1.23
Canal	7.24	.08	16.00	14.99	1.21	23.39	10.36	25.65	1.07
Suez	9.93	.85	14.13	17.98	1.38	19.72	11.88	23.09	1.04
Damietta	6.67	.07	42.26	4.70	.71	16.76	7.63	20.94	.27
Dakahlia	75.31	...	4.94	1.38	.19	6.23	1.64	10.16	.13
Sharkia	77.97	.03	4.35	1.21	.15	5.74	.96	9.50	.09
Kalyubia	73.28	.31	5.92	1.45	.19	6.96	1.56	10.24	.09
Gharbia	75.79	.01	5.10	1.24	.23	5.75	1.61	10.09	.19
Menoufia	79.02	...	4.19	.95	.19	5.88	.89	8.81	.07
Behera	80.57	.01	3.66	1.25	.21	5.08	1.42	7.66	.14
Giza	69.70	.57	6.46	2.19	.16	7.07	2.67	11.12	.07
Beni Suef	76.69	.23	3.91	1.63	.28	6.09	1.65	9.46	.07
Fayoum	75.81	.06	7.09	1.53	.50	6.34	.77	7.82	.07
Minya	76.66	.14	4.58	1.47	.35	5.96	1.77	9.00	.08
Asyut	75.04	.04	5.33	1.69	1.01	5.87	1.85	8.75	.41
Suhag	79.95	.05	4.73	1.41	1.04	5.17	1.34	6.22	.09
Kena	79.09	.01	5.97	1.97	.71	4.63	1.53	6.03	.06
Aswan	74.90	.22	5.17	1.90	.52	4.47	3.62	8.95	.25
Frontier Districts	59.24	8.85	6.55	4.18	.18	3.70	3.45	13.70	.15
U.A.R. Total	67.12	.19	7.05	2.41	.49	7.64	2.52	12.36	.23

TABLE D.18. (Continued)

Governorate	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)
					1937				
Cairo	3.63	.28	19.07	7.41	.89	18.96	7.30	42.25	.21
Alexandria	4.07	.41	18.43	6.22	1.05	24.49	10.94	34.18	.21
Canal	9.30	.33	11.22	12.70	.94	24.01	13.55	27.41	.53
Suez	12.80	.10	17.93	11.23	.76	16.87	13.14	26.96	.23
Damietta	5.93	.06	39.75	4.01	.55	17.64	9.51	22.52	.04
Dakahlia	75.94	.03	4.30	1.68	.14	6.44	1.56	9.87	.04
Sharkia	79.13	.08	3.45	1.09	.13	5.98	.95	9.17	.03
Kalyubia	73.12	.30	6.22	1.78	.14	7.21	1.51	9.71	.01
Gharbia	77.17	...	5.06	1.23	.20	5.53	1.67	9.12	.03
Menoufia	79.42	-	3.52	1.00	.10	6.07	.97	8.90	.01
Behera	82.59	.03	2.84	.99	.19	4.76	1.33	7.27	.01
Giza	73.04	.52	6.04	1.77	.15	6.78	2.25	9.44	.02
Beni Suef	78.85	.20	2.94	1.35	.22	6.24	1.49	8.64	.06
Fayoum	75.98	.04	6.87	1.75	.47	6.15	.87	7.83	.03
Minya	80.46	.13	3.25	.97	.19	5.76	1.46	7.74	.04
Asyut	80.61	.02	3.49	1.06	.68	5.09	1.46	7.55	.04
Suhag	83.35	.02	3.43	.84	.73	4.75	1.14	5.69	.05
Kena	81.57	.01	5.21	1.28	.55	4.44	1.43	5.46	.06
Aswan	77.06	.76	3.54	2.33	.42	4.60	3.06	8.04	.19
Frontier Districts	55.86	9.99	5.26	6.73	.32	3.79	2.90	15.13	.02
U.A.R. Total	69.21	.19	6.07	2.08	.38	7.57	2.39	12.06	.06

TABLE D.18. (Continued)

Governorate	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)
					1947				
Cairo	1.88	.24	20.38	4.45	.53	17.00	6.79	43.31	5.42
Alexandria	2.86	.16	21.14	3.47	.64	19.58	9.66	32.41	10.08
Canal	7.04	.04	10.74	3.10	.34	17.21	16.17	35.59	9.77
Suez	9.12	.28	10.03	2.91	.38	24.42	12.01	31.45	9.40
Damietta	5.57	.12	37.23	2.08	.45	16.30	7.54	24.91	5.81
Dakahlia	70.50	...	4.99	1.21	.13	7.30	2.05	11.35	2.48
Sharkia	70.39	.03	3.84	.97	.10	6.36	1.38	13.35	3.57
Kalyubia	62.35	.37	10.91	1.34	.11	7.42	2.11	11.15	4.22
Gharbia	69.73	...	7.28	1.01	.18	6.13	1.85	10.46	3.35
Menoufia	74.26	...	4.85	.85	.11	6.93	1.23	9.98	1.79
Behera	76.27	.03	4.83	.90	.17	5.38	1.74	8.16	2.53
Giza	58.69	.40	8.29	2.18	.16	8.92	2.78	12.71	5.87
Beni Suef	72.05	.20	3.42	1.40	.21	7.14	1.59	9.74	4.24
Fayoum	69.41	.04	8.35	1.10	.43	6.85	1.03	9.01	3.76
Minya	71.45	.13	3.87	.96	.19	6.80	1.79	9.75	5.06
Asyut	69.76	.03	3.96	.94	.73	6.06	1.67	9.10	7.75
Suhag	72.05	.05	3.87	.78	.75	5.71	1.39	6.73	8.67
Kena	70.74	.14	5.91	1.37	.58	5.46	1.62	6.62	7.58
Aswan	65.69	1.25	4.71	1.38	.49	5.26	3.41	9.81	8.01
Frontier Districts	51.17	8.39	2.21	2.95	.14	4.68	4.08	15.31	11.06
U.A.R. Total	58.41	.19	8.01	1.62	.34	8.44	2.91	15.02	5.06

TABLE D.18. (Continued)

Governorate	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)
				1947 (Excluding ill-defined)					
Cairo	1.98	.25	21.55	4.71	.56	17.97	7.18	45.79	-
Alexandria	3.18	.18	23.51	3.86	.71	21.77	10.75	36.04	-
Canal	7.80	.04	11.90	3.44	.38	19.07	17.92	39.44	-
Suez	10.07	.31	11.07	3.21	.42	26.96	13.26	34.71	-
Damietta	5.91	.13	39.52	2.21	.47	17.30	8.01	26.45	-
Dakahlia	72.29	...	5.11	1.24	.14	7.49	2.10	11.63	-
Sharkia	73.00	.04	3.99	1.01	.11	6.59	1.43	13.84	-
Kalyubia	65.10	.39	11.39	1.40	.12	7.74	2.21	11.64	-
Gharbia	72.15	...	7.54	1.05	.19	6.34	1.91	10.82	-
Menoufia	75.61	...	4.94	.87	.11	7.06	1.25	10.16	-
Behera	78.24	.03	4.96	.92	.18	5.52	1.78	8.37	-
Giza	62.34	.43	8.81	2.31	.17	9.48	2.95	13.50	-
Beni Suef	75.24	.21	3.57	1.46	.22	7.46	1.66	10.17	-
Fayoum	72.13	.05	8.68	1.14	.44	7.12	1.07	9.36	-
Minya	75.26	.13	4.08	1.01	.20	7.16	1.89	10.27	-
Asyut	75.61	.04	4.29	1.02	.79	6.57	1.81	9.87	-
Suhag	78.89	.06	4.24	.85	.82	6.26	1.52	7.37	-
Kena	76.54	.15	6.39	1.48	.63	5.91	1.75	7.16	-
Aswan	71.41	1.36	5.13	1.50	.53	5.72	3.70	10.66	-
Frontier Districts	57.53	9.44	2.48	3.32	.16	5.26	4.59	17.21	-
U.A.R. Total	61.52	.20	8.44	1.71	.35	8.89	3.06	15.82	-

TABLE D.18. (Continued)

Governorate	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)
					1960				
Cairo	1.40	.25	21.07	4.63	1.41	15.85	7.09	42.30	6.00
Alexandria	4.64	.29	26.25	3.54	1.51	16.38	8.02	32.32	7.05
Canal	25.85	.46	7.28	4.03	1.24	12.57	12.41	28.03	8.12
Suez	9.92	1.67	15.99	7.40	1.00	17.77	11.79	26.34	8.12
Damietta	54.68	.15	14.00	1.66	.07	8.42	3.49	15.66	1.87
Dakahlia	68.03	.02	5.13	1.26	.07	6.89	2.29	13.99	2.32
Sharkia	72.54	.04	4.18	.86	.05	5.67	1.58	13.22	1.86
Kalyubia	57.70	.42	12.68	1.27	.19	6.67	3.42	14.92	2.73
Gharbia	66.71	.01	8.67	1.22	.21	5.89	2.34	13.11	1.85
Menoufia	70.75	.01	4.73	1.21	.17	5.71	1.80	13.83	1.78
Behera	75.10	.05	6.25	1.07	.21	4.83	1.72	9.36	1.39
Giza	46.27	.26	10.74	2.57	.80	9.58	3.63	22.87	3.29
Beni Suef	74.13	.14	3.44	1.32	.24	6.44	1.65	11.18	1.46
Fayoum	71.72	.05	5.93	1.29	.18	7.10	1.29	10.77	1.67
Minya	75.90	.11	3.51	.92	.21	6.00	1.79	10.20	1.36
Asyut	75.25	.02	3.63	1.09	.26	6.08	1.87	10.35	1.46
Suhag	77.55	.02	3.52	1.12	.16	6.33	1.60	8.04	1.65
Kena	74.69	.18	5.04	2.24	.16	5.38	1.96	8.25	2.10
Aswan	58.99	.97	6.60	7.47	1.54	5.12	3.83	12.70	2.78
Frontier Districts	45.96	16.17	4.58	3.12	.26	7.06	4.43	13.95	4.47
U.A.R. Total	56.26	.27	9.10	2.03	.47	8.19	3.32	17.49	2.87

(0) Agriculture, Forestry, Hunting and Fishing; (1) Mining and Quarrying; (2-3) Manufacturing; (4) Construction; (5) Electricity, Gas, Water and Sanitary Services; (6) Commerce; (7) Transport and Communication; (8) Services; (9) Not Adequately Described.

TABLE D.19. PERCENT SHARE OF EACH GOVERNORATE IN TOTAL LABOR FORCE, BOTH SEXES, BY INDUSTRY, U.A.R., 1907-1960.

Governorate	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1907					
Cairo	.66	20.55	18.23	22.91	11.81	18.78	19.78	20.65	26.94	6.83
Alexandria	.69	13.16	7.25	10.93	10.47	10.96	19.90	10.09	13.64	3.88
Canal	.13	.02	.81	1.16	6.24	2.96	4.44	1.13	2.70	.65
Suez	.05	-	.22	.38	2.57	.55	1.40	.51	.50	.20
Damietta	-	-	-	-	-	-	-	-	-	-
Dakahlia	8.56	.32	6.98	7.93	8.31	6.18	4.95	7.20	7.46	8.04
Sharkia	8.63	.05	5.31	6.21	7.62	6.29	2.69	7.18	6.14	7.84
Kalyubia	3.99	.07	3.98	2.92	5.07	3.69	2.04	3.69	2.46	3.81
Gharbia	13.66	.17	9.81	10.56	13.79	10.11	7.10	11.22	12.68	12.68
Menoufia	9.27	.10	7.82	5.77	8.66	5.79	2.63	6.82	4.76	8.31
Behera	6.89	.19	3.58	4.19	8.45	5.08	4.23	4.75	4.26	6.13
Giza	3.84	37.77	3.65	2.61	2.71	3.35	6.03	3.12	2.52	3.75
Beni Suef	3.30	6.52	2.29	2.18	1.88	2.42	1.87	2.53	.99	2.97
Fayoum	4.47	2.92	6.98	2.22	1.04	4.76	.99	3.09	.75	4.18
Minya	6.27	4.13	4.09	3.82	3.77	4.32	8.39	3.45	2.92	5.61
Asyut	8.23	4.94	7.40	6.01	2.25	6.56	4.74	5.24	2.02	7.39
Suhag	7.86	2.48	5.87	4.62	1.17	3.50	1.98	4.25	3.57	6.72
Kena	8.29	1.24	4.66	4.27	1.97	3.25	3.69	3.27	4.05	6.88
Aswan	2.08	4.84	.83	1.03	2.13	1.15	2.85	1.18	1.32	1.84
Frontier Districts	3.12	.54	.25	.29	.09	.29	.29	.64	.35	2.28
U.A.R. Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

TABLE D.19. (Continued)

Governorate	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1917					
Cairo	.46	3.30	16.46	21.80	23.05	15.18	19.81	18.86	5.36	5.88
Alexandria	.18	4.42	8.73	9.04	12.83	9.45	15.95	8.94	3.59	3.29
Canal	.04	11.36	1.53	2.10	4.23	2.53	5.81	1.46	.72	.73
Suez	.04	.56	.44	.72	2.21	.54	3.16	.52	.31	.29
Damietta	.02	.52	1.20	.31	.30	.53	.70	.38	.19	.21
Dakahlia	8.57	1.75	5.97	4.33	5.61	6.82	4.61	7.02	10.11	8.24
Sharkia	9.56	1.75	5.74	3.81	4.13	5.78	3.94	6.21	5.21	7.79
Kalyubia	4.62	.37	3.67	5.31	4.67	3.65	2.76	3.72	3.12	4.11
Gharbia	14.86	1.89	9.54	8.64	10.18	10.93	7.87	12.83	14.08	13.71
Menoufia	11.83	1.75	6.72	4.21	6.60	8.01	2.68	7.72	5.57	9.44
Behera	8.52	.71	4.07	3.74	4.54	5.35	4.23	4.99	7.24	7.30
Giza	4.07	8.43	3.55	6.56	3.11	3.63	4.73	3.25	3.45	3.87
Beni Suef	4.01	1.49	2.32	2.85	1.47	2.68	2.33	2.69	2.46	3.37
Fayoum	4.99	.22	5.50	3.43	1.50	3.93	1.70	2.76	1.51	4.00
Minya	6.51	.30	4.38	3.66	4.38	4.47	4.37	4.18	5.61	5.77
Asyut	7.23	.85	6.75	7.76	4.40	5.75	5.39	5.36	9.14	7.19
Suhag	6.19	.89	5.98	5.16	2.48	5.11	3.87	4.01	8.95	6.26
Kena	6.16	3.53	5.83	4.44	2.11	4.30	3.89	3.45	10.60	6.40
Aswan	1.84	2.23	1.14	1.46	1.76	1.20	1.64	1.11	2.39	1.77
Frontier Districts	.31	53.69	.47	.68	.41	.15	.58	.53	.40	.39
U.A.R. Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

TABLE D.19. (Continued)

Governorate	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1927					
Cairo	.55	19.32	22.86	24.57	18.37	17.97	22.90	24.11	20.60	7.68
Alexandria	.24	8.96	11.61	14.66	9.86	12.34	18.13	10.26	22.20	4.11
Canal	.10	.39	2.10	5.76	2.28	2.83	3.80	1.92	4.36	.92
Suez	.05	1.40	.61	2.29	.87	.79	1.45	.57	1.40	.31
Damietta	.03	.09	1.52	.49	.37	.56	.77	.43	.30	.25
Dakahlia	9.22	.11	5.76	4.72	3.17	6.70	5.37	6.75	4.80	8.22
Sharkia	8.59	1.17	4.56	3.71	2.34	5.55	2.83	5.68	2.89	7.39
Kalyubia	4.32	6.58	3.33	2.39	1.55	3.60	2.46	3.28	1.59	3.96
Gharbia	15.73	.59	10.08	7.17	6.57	10.47	8.93	11.36	11.55	13.93
Menoufia	9.98	.03	5.04	3.36	3 32	6.53	2.98	6.04	2.53	8.48
Behera	8.84	.28	3.82	3.84	3.24	4.90	4.16	4.56	4.40	7.37
Giza	4.17	12.30	3.68	3.65	1.29	3.71	4.25	3.61	1.17	4.01
Beni Suef	3.76	4.00	1.83	2.23	1.90	2.62	2.16	2.52	.98	3.29
Fayoum	4.29	1.26	3.82	2.41	3.90	3.15	1.16	2.40	1.24	3.79
Minya	6.28	4.06	3.57	3.35	3.95	4.29	3.86	4.00	1.99	5.50
Asyut	7.53	1.61	5.10	4.74	13.94	5.17	4.96	4.77	12.07	6.74
Suhag	7.26	1.61	4.09	3.57	12.94	4.13	3.25	3.06	2.29	6.09
Kena	6.82	.37	4.90	4.73	8.37	3.51	3.53	2.83	1.60	5.79
Aswan	1.59	1.68	1.05	1.13	1.51	.83	2.05	1.03	1.56	1.43
Frontier Districts	.64	34.19	.67	1.26	.27	.35	.99	.80	.49	.72
U.A.R. Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

TABLE D.19. (Continued)

Governorate	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1937					
Cairo	.40	11.42	23.70	26.90	17.87	18.90	23.02	26.42	27.21	7.54
Alexandria	.22	8.44	11.54	11.37	10.52	12.30	17.39	10.77	13.75	3.80
Canal	.11	1.49	1.55	5.11	2.07	2.66	4.74	1.90	7.54	.84
Suez	.05	.14	.80	1.46	.54	.60	1.49	.60	1.05	.27
Damietta	.02	.07	1.44	.42	.32	.51	.87	.42	.15	.22
Dakahlia	8.74	1.22	5.64	6.42	2.97	6.77	5.21	6.52	4.92	7.96
Sharkia	8.17	3.10	4.05	3.75	2.50	5.64	2.85	5.43	3.12	7.15
Kalyubia	4.10	6.17	3.98	3.33	1.40	3.70	2.46	3.12	.87	3.88
Gharbia	15.31	.32	11.43	8.10	7.25	10.03	9.62	10.37	6.15	13.73
Menoufia	8.86	-	4.48	3.71	2.06	6.19	3.14	5.70	1.05	7.72
Behera	8.56	1.07	3.35	3.43	3.59	4.51	4.00	4.32	.73	7.18
Giza	4.45	11.71	4.20	3.59	1.63	3.78	3.97	3.30	1.14	4.22
Beni Suef	3.92	3.75	1.67	2.24	2.05	2.84	2.15	2.47	3.32	3.44
Fayoum	4.13	.77	4.26	3.18	4.73	3.06	1.37	2.44	2.10	3.76
Minya	6.88	4.09	3.17	2.76	3.03	4.51	3.62	3.80	4.49	5.92
Asyut	8.53	.66	4.21	3.73	13.25	4.92	4.48	4.59	4.89	7.32
Suhag	8.09	.70	3.80	2.72	12.95	4.21	3.19	3.16	6.23	6.71
Kena	7.20	.27	5.25	3.75	8.96	3.58	3.65	2.76	6.09	6.11
Aswan	1.67	6.11	.88	1.69	1.67	.91	1.92	1.00	4.95	1.50
Frontier Districts	.58	38.48	.62	2.33	.62	.36	.87	.90	.26	.72
U.A.R. Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

TABLE D.19. (Continued)

Governorate	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1947					
Cairo	.35	13.70	27.33	29.50	17.06	21.64	25.10	30.98	11.50	10.75
Alexandria	.22	3.94	12.06	9.79	8.67	10.60	15.20	9.86	9.11	4.57
Canal	.15	.23	1.64	2.34	1.25	2.49	6.80	2.90	2.36	1.22
Suez	.08	.79	.65	.94	.59	1.51	2.16	1.09	.97	.52
Damietta	.02	.16	1.17	.32	.34	.49	.66	.42	.29	.25
Dakahlia	9.17	.08	4.73	5.66	3.04	6.58	5.36	5.74	3.72	7.60
Sharkia	8.70	1.32	3.46	4.32	2.26	5.43	3.43	6.41	5.09	7.22
Kalyubia	3.88	7.33	4.94	3.01	1.24	3.19	2.64	2.69	3.03	3.63
Gharbia	16.04	.12	12.21	8.40	7.37	9.75	8.55	9.35	8.90	13.44
Menoufia	8.07	.12	3.84	3.33	2.12	5.21	2.68	4.21	2.24	6.34
Behera	9.24	1.07	4.26	3.93	3.62	4.51	4.23	3.84	3.53	7.07
Giza	4.25	9.19	4.38	5.68	2.05	4.47	4.04	3.58	4.90	4.23
Beni Suef	3.96	3.46	1.37	2.78	1.97	2.72	1.76	2.08	2.69	3.21
Fayoum	4.32	.87	3.79	2.46	4.60	2.95	1.29	2.18	2.70	3.63
Minya	6.71	3.76	2.65	3.24	3.03	4.42	3.38	3.56	5.49	5.48
Asyut	8.07	1.23	3.34	3.91	14.72	4.85	3.88	4.09	10.34	6.76
Suhag	7.82	1.86	3.06	3.04	14.20	4.29	3.02	2.84	10.86	6.34
Kena	6.74	4.13	4.11	4.69	9.61	3.60	3.09	2.45	8.34	5.57
Aswan	1.50	8.99	.78	1.13	1.93	.83	1.56	.87	2.11	1.33
Frontier Districts	.73	37.68	.23	1.52	.35	.46	1.17	.85	1.82	.83
U.A.R. Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

TABLE D.19. (Continued)

Governorate	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1960					
Cairo	.31	11.45	28.39	27.97	36.68	23.74	26.18	29.68	25.67	12.27
Alexandria	.45	5.82	15.79	9.57	17.56	10.95	13.22	10.12	13.46	5.48
Canal	.83	3.12	1.45	3.61	4.78	2.79	6.78	2.91	5.14	1.82
Suez	.11	4.05	1.15	2.38	1.38	1.41	2.31	.98	1.85	.65
Damietta	1.45	.86	2.29	1.22	.22	1.53	1.57	1.34	.97	1.49
Dakahlia	9.36	.59	4.36	4.81	1.19	6.51	5.33	6.19	6.26	7.74
Sharkia	9.00	1.06	3.21	2.95	.69	4.83	3.33	5.28	4.53	6.98
Kalyubia	3.72	5.59	5.05	2.28	1.49	2.95	3.73	3.10	3.45	3.63
Gharbia	12.47	.46	10.01	6.32	4.60	7.56	7.41	7.88	6.79	10.52
Menoufia	6.22	.11	2.57	2.96	1.83	3.45	2.68	3.91	3.08	4.95
Behera	9.50	1.41	4.89	3.76	3.24	4.20	3.69	3.81	3.46	7.12
Giza	4.17	4.87	5.98	6.42	8.65	5.93	5.54	6.63	5.80	5.07
Beni Suef	4.37	1.78	1.26	2.16	1.67	2.61	1.65	2.12	1.69	3.32
Fayoum	4.32	.68	2.21	2.15	1.26	2.93	1.32	2.08	1.98	3.39
Minya	8.78	2.55	2.51	2.96	2.87	4.76	3.50	3.80	3.09	6.51
Asyut	7.09	.36	2.11	2.86	2.89	3.93	2.98	3.14	2.70	5.30
Suhag	8.70	.58	2.44	3.48	2.17	4.88	3.04	2.90	3.64	6.31
Kena	7.05	3.52	2.94	5.87	1.85	3.49	3.13	2.51	3.90	5.31
Aswan	1.45	4.96	1.00	5.09	4.54	.86	1.59	1.00	1.34	1.38
Frontier Districts	.63	46.17	.39	1.18	.43	.66	1.03	.61	1.20	.77
U.A.R. Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

(0) Agriculture, Forestry, Hunting and Fishing; (1) Mining and Quarrying; (2-3) Manufacturing; (4) Construction; (5) Electricity, Gas, Water and Sanitary Services; (6) Commerce; (7) Transport and Communication; (8) Services; (9) Not Adequately described.

TABLE D.20. LABOR FORCE BY INDUSTRY, AGE AND SEX, U.A.R., 1917-1960.

Age	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1917 Males					
5-9	119,158	13	5,052	475	43	1,433	1,104	6,865	10,139	144,282
10-14	351,022	92	21,510	2,609	303	7,802	5,060	31,834	124,275	544,507
15-19	276,425	283	28,828	5,854	788	15,260	11,546	45,130	154,821	538,935
20-29	469,416	911	57,808	16,391	2,761	40,834	37,097	110,748	168,525	904,491
30-39	444,422	715	58,771	17,513	3,257	52,392	41,191	106,573	108,419	833,253
40-49	304,380	355	40,122	11,085	2,121	43,431	26,724	71,301	60,723	560,242
50-59	207,275	179	24,603	6,482	1,183	28,355	14,611	43,203	37,343	363,234
60+	249,548	119	25,297	5,528	967	27,057	12,578	38,001	75,973	435,068
Total 5+	2,421,646	2,667	261,991	65,937	11,423	216,564	149,911	453,655	740,218	4,324,012
Total 15+	1,951,466	2,562	235,429	62,853	11,077	207,329	143,747	414,956	605,804	3,635,223
Excl. ill-defined	-	-	-	-	-	-	-	-	353,501	3,382,920
					Females					
5-9	24,003	-	706	36	1	422	36	1,545	4,889	31,638
10-14	79,478	1	1,622	90	10	1,153	61	10,572	9,592	102,579
15-19	57,761	2	2,447	96	8	1,377	129	15,014	9,031	85,865
20-29	110,510	5	5,764	109	7	3,918	188	32,412	14,110	167,023
30-39	93,881	4	5,947	102	14	7,760	99	28,094	14,377	150,278
40-49	61,908	9	4,612	94	9	7,940	89	18,801	13,733	107,195
50-59	40,206	3	3,213	67	16	6,375	55	11,966	13,161	75,062
60+	46,959	2	4,143	55	22	7,843	65	12,899	61,691	133,679
Total 5+	514,706	26	28,454	649	87	36,788	722	131,303	140,584	853,319
Total 15+	411,225	25	26,126	523	76	35,213	625	119,186	126,103	719,102
Excl. ill-defined	-	-	-	-	-	-	-	-	38,751	631,750

TABLE D.20.(Continued)

Age	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1927 Males					
5-9	93,764	58	6,130	574	100	1,687	539	5,463	68	108,383
10-14	369,724	491	33,190	4,743	732	12,992	3,314	31,331	546	457,063
15-19	398,975	1,023	45,039	11,777	1,797	28,209	9,652	46,381	1,295	544,148
20-29	654,666	2,868	81,377	30,816	5,376	79,895	37,458	139,001	3,039	1,034,496
30-39	582,068	2,584	75,787	33,040	6,420	89,051	36,149	132,595	2,485	960,179
40-49	387,347	1,416	50,985	23,033	4,565	69,608	23,041	81,884	1,688	643,567
50-59	234,723	643	27,617	11,376	2,671	41,564	11,090	43,514	962	374,160
60+	273,873	593	25,127	8,696	2,566	36,462	7,666	35,379	764	391,126
Not stated	4,746	11	694	340	59	735	521	1,402	30	8,538
Total 5+	2,999,886	9,687	345,946	124,395	24,286	360,203	129,430	516,950	10,877	4,521,660
Total 15+	2,536,398	9,138	306,626	119,078	23,454	345,524	125,577	480,156	10,263	3,956,214
Excl. ill-defined	-	-	-	-	-	-	-	-	-	3,945,951
					Females					
5-9	26,315	-	437	25	11	203	32	6,525	21	33,569
10-14	62,500	7	1,362	101	45	928	72	25,254	62	90,331
15-19	57,379	5	1,986	173	63	1,700	466	19,320	181	81,273
20-29	98,077	12	4,016	168	127	4,216	448	20,774	215	128,053
30-39	96,429	10	4,001	166	243	7,575	208	18,276	144	127,052
40-49	68,757	4	3,470	110	275	8,672	128	15,345	146	96,907
50-59	40,998	9	2,412	60	194	6,553	71	10,540	94	60,931
60+	40,681	7	3,027	69	183	7,568	68	9,812	94	61,509
Not stated	1,047	-	60	5	5	115	12	510	6	1,760
Total 5+	492,183	54	20,771	877	1,146	37,530	1,505	126,356	963	681,385
Total 15+	403,368	47	18,972	751	1,090	36,399	1,401	94,577	880	557,485
Excl. ill-defined	-	-	-	-	-	-	-	-	-	556,605

TABLE D.20.(Continued)

Age	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1937 Males					
5-9	47,030	19	2,877	134	43	934	279	3,698	12	55,026
10-14	585,010	241	25,356	2,238	505	10,095	2,596	27,273	30	653,344
15-19	463,570	751	41,692	7,029	1,125	25,842	6,990	40,593	33	587,625
20-29	717,298	3,142	77,504	27,368	4,258	79,123	31,321	140,217	115	1,080,346
30-39	707,068	3,292	73,827	34,758	5,831	103,704	42,659	158,939	155	1,130,233
40-49	491,945	1,886	53,817	26,317	4,337	83,054	29,686	109,390	137	800,569
50-59	291,518	877	29,830	13,725	2,299	48,579	14,766	53,703	85	455,382
60+	293,161	548	21,765	7,860	1,717	37,090	8,803	36,252	49	407,245
Not stated	6,965	33	1,203	367	141	1,093	799	2,614	-	13,215
Total 5+	3,603,565	10,789	327,871	119,796	20,256	389,514	137,899	572,679	616	5,182,985
Total 15+	2,971,525	10,529	299,638	117,424	19,708	378,485	135,024	541,708	574	4,474,615
Excl. ill-defined	-	-	-	-	-	-	-	-	-	4,474,041
					Females					
5-9	10,076	1	183	9	3	186	7	7,037	1,970	19,472
10-14	39,379	3	1,186	85	42	1,142	28	27,504	640	70,009
15-19	40,634	6	2,085	142	72	2,184	82	18,710	88	64,003
20-29	88,558	11	4,566	188	197	5,757	474	23,007	27	122,785
30-39	99,586	6	5,142	174	381	10,536	163	19,099	20	135,107
40-49	70,881	1	4,567	155	443	12,047	114	15,274	22	103,504
50-59	37,606	7	3,217	88	287	8,656	69	9,220	20	59,170
60+	29,542	2	3,825	65	246	9,384	70	7,655	27	50,816
Not stated	604	2	64	4	9	136	5	594	3	1,421
Total 5+	416,866	39	24,835	910	1,680	50,028	1,012	128,100	2,817	626,287
Total 15+	367,411	35	23,466	816	1,635	48,700	977	93,559	207	536,806
Excl. ill-defined	-	-	-	-	-	-	-	-	-	536,599

TABLE D.20.(Continued)

Age	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1947 Males					
5-9	119,597	28	5,030	180	75	2,614	663	9,765	85,331	223,283
10-14	368,191	334	43,037	2,236	646	20,715	4,004	45,371	146,013	630,547
15-19	553,529	1,272	86,986	7,393	1,682	47,852	14.529	74,297	56,457	843,997
20-29	731,845	3,374	131,182	21,542	4,098	102,812	48,064	215,063	27,962	1,285,942
30-39	701,014	3,460	107,758	30,196	5,126	125,316	54,444	211,760	9,504	1,248,578
40-49	541,889	2,369	75,347	26,129	4,779	112,679	44,449	162,169	5,377	975,187
50-59	325,066	1,259	42,135	15,127	2,640	67,197	22,621	85,733	4,644	566,422
60+	295,826	721	29,858	9,402	1,603	49,098	12,160	47,917	8,174	454,759
Not stated	4,119	39	725	209	43	915	543	4,596	683	11,872
Total 5+	3,641,076	12,856	522,058	112,414	20,692	529,198	201,477	856,671	344,145	6,240,587
Total 15+	3,153,288	12,494	473,991	109,998	19,971	505,869	196,810	801,535	112,801	5,386,757
Excl. ill-defined	-	-	-	-	-	-	-	-	-	5,273,956
					Females					
5-9	17,285	1	599	18	23	558	38	9,906	3,408	31,836
10-14	67,552	13	3,823	78	148	2,600	131	58,448	3,544	136,337
15-19	63,026	19	5,616	215	189	4,504	459	36,263	607	110,898
20-29	80,767	32	6,730	212	265	6,993	606	29,281	271	125,157
30-39	84,052	14	6,598	177	547	11,087	251	19,977	365	123,068
40-49	64,960	13	6,049	123	739	13,625	179	17,625	408	103,721
50-59	37,570	2	4,464	72	527	11,189	108	12,117	397	66,446
60+	28,301	11	4,493	45	356	10,310	77	9,398	703	53,694
Not stated	1,081	4	171	7	7	316	9	1,192	86	2,873
Total 5+	444,594	109	38,543	947	2,801	61,182	1,858	194,207	9,789	754,030
Total 15+	359,757	95	34,121	851	2,630	58,024	1,689	125,853	2,837	585,857
Excl. ill-defined	-	-	-	-	-	-	-	-	-	583,020

TABLE D.20.(Continued)

Age	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1960 Males					
6-9	201,029	54	3,078	330	-	3,514	330	4,341	6,671	219,347
10-14	374,703	307	26,792	1,941	-	12,257	1,755	26,135	24,686	468,576
15-19	504,920	1,138	96,914	10,871	1,271	39,028	9,952	58,755	39,953	762,802
20-29	867,729	5,788	190,438	39,356	7,428	124,090	57,507	276,608	55,442	1,624,386
30-39	813,341	6,700	172,821	42,576	10,748	155,696	80,771	314,897	23,582	1,621,132
40-49	609,835	4,243	107,182	31,679	8,862	124,589	57,990	240,466	15,660	1,200,506
50-59	413,323	2,012	58,577	20,445	6,593	83,171	35,777	147,776	10,476	778,150
60+	350,846	741	32,401	11,066	1,615	60,289	13,458	55,486	5,898	531,800
Not stated	15	1	11	7	-	6	2	23	28	93
Total 6+	4,135,741	20,984	688,214	158,271	36,517	602,640	257,542	1,124,487	182,396	7,206,792
Total 15+	3,560,009	20,623	658,344	156,000	36,517	586,869	255,457	1,094,011	151,039	6,518,869
Excl. ill-defined	-	-	-	-	-	-	-	-	113,798	6,481,628
					Females					
6-9	59,508	12	739	49	-	1,036	54	13,196	3,237	77,831
10-14	80,209	18	2,342	76	-	1,680	67	59,518	5,507	149,417
15-19	34,006	8	5,809	75	28	2,468	235	38,250	9,480	90,359
20-29	29,370	60	5,960	194	141	6,572	1,662	61,820	10,680	116,459
30-39	27,836	15	3,822	102	59	7,354	435	31,241	6,707	77,571
40-49	21,530	9	2,900	58	40	7,956	140	21,777	4,262	58,672
50-59	11,598	2	1,881	46	19	6,417	59	12,623	1,960	34,605
60+	6,575	1	1,432	14	4	5,283	16	6,514	608	20,447
Not stated	6	-	1	-	-	2	-	6	27	42
Total 6+	270,638	125	24,886	614	291	38,768	2,668	244,945	42,468	625,403
Total 15+	130,921	95	21,805	489	291	36,052	2,547	172,231	33,724	398,155
Excl. ill-defined	-	-	-	-	-	-	-	-	29,675	394,096

(0) Agriculture, Forestry, Hunting and Fishing; (1) Mining and Quarrying; (2-3) Manufacturing; (4) Construction; (5) Electricity, Gas, Water and Sanitary Services; (6) Commerce; (7) Transport and Communication; (8) Services; (9) Not adequately described. In 1917, persons whose age was "not stated" were included in age group 60+.

TABLE D.21. PERCENT AGE DISTRIBUTION OF THE LABOR FORCE BY INDUSTRY AND SEX, U.A.R., 1917-1960.

Age	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1917					
					Males					
5-9	4.92	.49	1.93	.72	.38	.66	.74	1.51	1.37	3.34
10-14	14.50	3.45	8.21	3.96	2.65	3.60	3.38	7.02	16.79	12.59
15-19	11.41	10.61	11.00	8.88	6.90	7.05	7.70	9.95	20.92	12.46
20-29	19.38	34.16	22.06	24.86	24.17	18.86	24.75	24.41	22.77	20.92
30-39	18.35	26.81	22.43	26.56	28.51	24.19	27.48	23.49	14.65	19.27
40-49	12.57	13.31	15.31	16.81	18.57	20.05	17.83	15.72	8.20	12.96
50-59	8.56	6.71	9.39	9.83	10.36	13.09	9.75	9.52	5.04	8.40
60+	10.30	4.46	9.66	8.38	8.47	12.49	8.39	8.38	10.26	10.06
Total 5+	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
					Females					
5-9	4.66	-	2.48	5.55	1.15	1.15	4.99	1.18	3.48	3.71
10-14	15.44	3.85	5.70	13.87	11.49	3.13	8.45	8.05	6.82	12.02
15-19	11.22	7.69	8.60	14.79	9.20	3.74	17.87	11.43	6.42	10.06
20-29	21.47	19.23	20.26	16.80	8.05	10.65	26.04	24.68	10.04	19.57
30-39	18.24	15.38	20.90	15.72	16.09	21.09	13.71	21.40	10.23	17.61
40-49	12.03	34.62	16.21	14.48	10.34	21.58	12.33	14.32	9.77	12.56
50-59	7.81	11.54	11.29	10.32	18.39	17.33	7.62	9.11	9.36	8.80
60+	9.12	7.69	14.56	8.47	25.29	21.32	9.00	9.82	43.88	15.67
Total 5+	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

TABLE D.21. (Continued)

Age	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1927					
					Males					
5-9	3.13	.60	1.77	.46	.41	.47	.42	1.06	.63	2.40
10-14	12.32	5.07	9.59	3.81	3.01	3.61	2.56	6.06	5.02	10.11
15-19	13.30	10.56	13.02	9.47	7.40	7.83	7.46	8.97	11.91	12.03
20-29	21.82	29.61	23.52	24.77	22.14	22.18	28.94	26.89	27.94	22.88
30-39	19.40	26.67	21.91	26.56	26.43	24.72	27.93	25.65	22.85	21.24
40-49	12.91	14.62	14.74	18.52	18.80	19.32	17.80	15.84	15.52	14.23
50-59	7.82	6.64	7.98	9.15	11.00	11.54	8.57	8.42	8.84	8.27
60+	9.13	6.12	7.26	6.99	10.57	10.12	5.92	6.84	7.02	8.65
Not stated	.16	.11	.20	.27	.24	.20	.40	.27	.28	.19
Total 5+	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
					Females					
5-9	5.35	-	2.10	2.85	.96	.54	2.13	5.16	2.18	4.93
10-14	12.70	12.96	6.56	11.52	3.93	2.47	4.78	19.99	6.44	13.26
15-19	11.66	9.26	9.56	19.73	5.50	4.53	30.96	15.29	18.80	11.93
20-29	19.93	22.22	19.33	19.16	11.08	11.23	29.77	16.44	22.33	18.79
30-39	19.59	18.52	19.26	18.93	21.20	20.18	13.82	14.46	14.95	18.65
40-49	13.97	7.41	16.71	12.54	24.00	23.11	8.50	12.14	15.16	14.22
50-59	8.33	16.67	11.61	6.84	16.93	17.46	4.72	8.34	9.76	8.94
60+	8.27	12.96	14.57	7.87	15.97	20.17	4.52	7.77	9.76	9.03
Not stated	.21	-	.29	.57	.44	.31	.80	.40	.62	.26
Total 5+	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

TABLE D.21. (Continued)

Age	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1937 Males					
5-9	1.31	.18	.88	.11	.21	.24	.20	.65	1.95	1.06
10-14	16.23	2.23	7.73	1.87	2.49	2.59	1.88	4.76	4.87	12.61
15-19	12.86	6.96	12.72	5.87	5.55	6.63	5.07	7.09	5.36	11.34
20-29	19.91	29.12	23.64	22.85	21.02	20.31	22.71	24.48	18.67	20.84
30-39	19.62	30.51	22.52	29.01	28.79	26.62	30.93	27.75	25.16	21.81
40-49	13.65	17.48	16.41	21.97	21.41	21.32	21.53	19.10	22.24	15.45
50-59	8.09	8.13	9.10	11.46	11.35	12.47	10.71	9.38	13.80	8.79
60+	8.14	5.08	6.64	6.56	8.48	9.52	6.38	6.33	7.95	7.86
Not stated	.19	.31	.37	.31	.70	.28	.58	.46	-	.25
Total 5+	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
					Females					
5-9	2.42	2.56	.74	.99	.18	.37	.69	5.49	69.93	3.11
10-14	9.45	7.69	4.78	9.34	2.50	2.28	2.77	21.47	22.72	11.18
15-19	9.75	15.38	8.40	15.60	4.29	4.37	8.10	14.61	3.12	10.22
20-29	21.24	28.21	18.39	20.66	11.73	11.51	46.84	17.96	.96	19.61
30-39	23.89	15.38	20.70	19.12	22.68	21.06	16.11	14.91	.71	21.57
40-49	17.00	2.56	18.39	17.03	26.37	24.08	11.26	11.92	.78	16.53
50-59	9.02	17.95	12.95	9.67	17.08	17.30	6.82	7.20	.71	9.45
60+	7.09	5.13	15.40	7.14	14.64	18.76	6.92	5.98	.96	8.11
Not stated	.14	5.13	.26	.44	.54	.27	.49	.46	.11	.23
Total 5+	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

TABLE D.21. (Continued)

Age	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1947 Males					
5-9	3.28	.22	.96	.16	.36	.49	.33	1.14	24.80	3.58
10-14	10.11	2.60	8.24	1.99	3.12	3.91	1.99	5.30	42.43	10.10
15-19	15.20	9.89	16.66	6.58	8.13	9.04	7.21	8.67	16.41	13.52
20-29	20.10	26.24	25.13	19.16	19.80	19.43	23.86	25.10	8.13	20.61
30-39	19.25	26.91	20.64	26.86	24.77	23.68	27.02	24.72	2.76	20.01
40-49	14.88	18.43	14.43	23.24	23.10	21.29	22.06	18.93	1.56	15.63
50-59	8.93	9.79	8.07	13.46	12.76	12.70	11.23	10.01	1.35	9.08
60+	8.12	5.61	5.72	8.36	7.75	9.28	6.04	5.59	2.38	7.29
Not stated	.11	.30	.14	.19	.21	.17	.27	.54	.20	.19
Total 5+	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
					Females					
5-9	3.89	.92	1.55	1.90	.82	.91	2.05	5.10	34.81	4.22
10-14	15.19	11.93	9.92	8.24	5.28	4.25	7.05	30.10	36.20	18.08
15-19	14.18	17.43	14.57	22.70	6.75	7.36	24.70	18.67	6.20	14.71
20-29	18.17	29.36	17.46	22.39	9.46	11.43	32.62	15.08	2.77	16.60
30-39	18.91	12.84	17.12	18.69	19.53	18.12	13.51	10.29	3.73	16.32
40-49	14.61	11.93	15.69	12.99	26.38	22.27	9.63	9.08	4.17	13.76
50-59	8.45	1.83	11.58	7.60	18.81	18.29	5.81	6.24	4.06	8.81
60+	6.37	10.09	11.66	4.75	12.71	16.85	4.14	4.84	7.18	7.12
Not stated	.24	3.67	.44	.74	.25	.52	.48	.61	.88	.38
Total 5+	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

TABLE D.21. (Continued)

Age	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)	Total
					1960 Males					
6-9	4.86	.26	.45	.21	-	.58	.13	.39	3.66	3.04
10-14	9.06	1.46	3.89	1.23	-	2.03	.68	2.32	13.53	6.50
15-19	12.21	5.42	14.08	6.87	3.48	6.48	3.86	5.23	21.90	10.58
20-29	20.98	27.58	27.67	24.87	20.34	20.59	22.33	24.60	30.40	22.54
30-39	19.67	31.93	25.11	26.90	29.43	25.84	31.36	28.00	12.93	22.49
40-49	14.75	20.22	15.57	20.02	24.27	20.67	22.52	21.38	8.59	16.66
50-59	9.99	9.59	8.51	12.92	18.05	13.80	13.89	13.14	5.74	10.80
60+	8.48	3.53	4.71	6.99	4.42	10.00	5.23	4.93	3.23	7.38
Not stated	...	...	...	...	-	...	...	...	...	-
Total 6+	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
					Females					
6-9	21.99	9.60	2.97	7.98	-	2.67	2.02	5.39	7.62	12.44
10-14	29.64	14.40	9.41	12.38	-	4.33	2.51	24.30	12.97	23.89
15-19	12.57	6.40	23.34	12.21	9.62	6.37	8.81	15.62	22.32	14.45
20-29	10.85	48.00	23.95	31.60	48.45	16.95	62.29	25.24	25.15	18.62
30-39	10.29	12.00	15.36	16.61	20.27	18.97	16.30	12.75	15.79	12.40
40-49	7.96	7.20	11.65	9.45	13.75	20.52	5.25	8.89	10.04	9.38
50-59	4.29	1.60	7.56	7.49	6.53	16.55	2.21	5.15	4.62	5.53
60+	2.43	.80	5.75	2.28	1.37	13.63	.60	2.66	1.43	3.27
Not stated	...	-	...	-	-	...	-	...	.06	.01
Total 6+	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

(0) Agriculture, Forestry, Hunting and Fishing; (1) Mining and Quarrying; (2-3) Manufacturing; (4) Construction; (5) Electricity, Gas, Water and Sanitary Services; (6) Commerce; (7) Transport and Communication; (8) Services; (9) Not Adequately described. In 1917, persons whose age was "not stated" were included in age group 60+.

TABLE D.22. PERCENT DISTRIBUTION BY INDUSTRY OF THE LABOR FORCE FOR AGE GROUPS BY SEX, U.A.R., 1917-1960.

Age	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)
					1917 Males				
5-9	82.59	.01	3.50	.33	.03	.99	.77	4.76	7.03
10-14	64.47	.02	3.95	.48	.06	1.43	.93	5.85	22.82
15-19	51.29	.05	5.35	1.09	.15	2.83	2.14	8.37	28.73
20-29	51.90	.10	6.39	1.81	.31	4.51	4.10	12.24	18.63
30-39	53.34	.09	7.05	2.10	.39	6.29	4.94	12.79	13.01
40-49	54.33	.06	7.16	1.98	.38	7.75	4.77	12.73	10.84
50-59	57.06	.05	6.77	1.78	.33	7.81	4.02	11.89	10.28
60+	57.36	.03	5.81	1.27	.22	6.22	2.89	8.73	17.46
Total 5+	56.00	.06	6.06	1.52	.26	5.01	3.47	10.49	17.12
					Females				
5-9	75.87	-	2.23	.11	-	1.33	.11	4.88	15.45
10-14	77.48	...	1.58	.09	.01	1.12	.06	10.31	9.35
15-19	67.27	...	2.85	.11	.01	1.60	.15	17.49	10.52
20-29	66.16	...	3.45	.07	...	2.35	.11	19.41	8.45
30-39	62.47	...	3.96	.07	.01	5.16	.07	18.69	9.57
40-49	57.75	.01	4.30	.09	.01	7.41	.08	17.54	12.81
50-59	53.56	...	4.28	.09	.02	8.49	.07	15.94	17.53
60+	35.13	...	3.10	.04	.02	5.87	.05	9.65	46.15
Total 5+	60.32	...	3.33	.08	.01	4.31	.08	15.39	16.47

TABLE D.22. (Continued)

Age	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)
					1927 Males				
5-9	86.51	.05	5.66	.53	.09	1.56	.50	5.04	.06
10-14	80.89	.11	7.26	1.04	.16	2.84	.73	6.85	.12
15-19	73.32	.19	8.28	2.16	.33	5.18	1.77	8.52	.24
20-29	63.28	.28	7.87	2.98	.52	7.72	3.62	13.44	.29
30-39	60.62	.27	7.89	3.44	.67	9.27	3.76	13.81	.26
40-49	60.19	.22	7.92	3.58	.71	10.82	3.58	12.72	.26
50-59	62.73	.17	7.38	3.04	.71	11.11	2.96	11.63	.26
60+	70.02	.15	6.42	2.22	.66	9.32	1.96	9.05	.20
Not stated	55.59	.13	8.13	3.98	.69	8.61	6.10	16.42	.35
Total 5+	66.34	.21	7.65	2.75	.54	7.97	2.86	11.43	.24
					Females				
5-9	78.39	-	1.30	.07	.03	.60	.10	19.44	.06
10-14	69.19	.01	1.51	.11	.05	1.03	.08	27.96	.07
15-19	70.60	.01	2.44	.21	.08	2.09	.57	23.77	.22
20-29	76.59	.01	3.14	.13	.10	3.29	.35	16.22	.17
30-39	75.90	.01	3.15	.13	.19	5.96	.16	14.38	.11
40-49	70.95	...	3.58	.11	.28	8.95	.13	15.83	.15
50-59	67.29	.01	3.96	.10	.32	10.75	.12	17.30	.15
60+	66.14	.01	4.92	.11	.30	12.30	.11	15.95	.15
Not stated	59.49	-	3.41	.28	.28	6.53	.68	28.98	.34
Total 5+	72.23	.01	3.05	.13	.17	5.51	.22	18.54	.14

TABLE D.22. (Continued)

Age	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)
					1937 Males				
5-9	85.47	.03	5.23	.24	.08	1.70	.51	6.72	.02
10-14	89.54	.04	3.88	.34	.08	1.55	.40	4.17	...
15-19	78.89	.13	7.10	1.20	.19	4.40	1.19	6.91	.01
20-29	66.40	.29	7.17	2.53	.39	7.32	2.90	12.98	.01
30-39	62.56	.29	6.53	3.08	.52	9.18	3.77	14.06	.01
40-49	61.45	.24	6.72	3.29	.54	10.37	3.71	13.66	.02
50-59	64.02	.19	6.55	3.01	.50	10.67	3.24	11.79	.02
60+	71.99	.13	5.34	1.93	.42	9.11	2.16	8.90	.01
Not stated	52.71	.25	9.10	2.78	1.07	8.27	6.05	19.78	...
Total 5+	69.53	.21	6.33	2.31	.39	7.52	2.66	11.05	.01
					Females				
5-9	51.75	.01	.94	.05	.02	.96	.04	36.14	10.12
10-14	56.25	...	1.69	.12	.06	1.63	.04	39.29	.91
15-19	63.49	.01	3.26	.22	.11	3.41	.13	29.23	.14
20-29	72.12	.01	3.72	.15	.16	4.69	.39	18.74	.02
30-39	73.71	...	3.81	.13	.28	7.80	.12	14.14	.01
40-49	68.48	...	4.41	.15	.43	11.64	.11	14.76	.02
50-59	63.56	.01	5.44	.15	.49	14.63	.12	15.58	.03
60+	58.14	...	7.53	.13	.48	18.47	.14	15.06	.05
Not stated	42.51	.14	4.50	.28	.63	9.57	.35	41.80	.21
Total 5+	66.56	.01	3.97	.15	.27	7.99	.16	20.45	.45

TABLE D.22. (Continued)

Age	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)
					1947 Males				
5-9	53.56	.01	2.25	.08	.03	1.17	.30	4.37	38.22
10-14	58.39	.05	6.83	.35	.10	3.29	.64	7.20	23.16
15-19	65.58	.15	10.31	.88	.20	5.67	1.72	8.80	6.69
20-29	56.91	.26	10.20	1.68	.32	8.00	3.74	16.72	2.17
30-39	56.14	.28	8.63	2.42	.41	10.04	4.36	16.96	.76
40-49	55.57	.24	7.73	2.68	.49	11.55	4.56	16.63	.55
50-59	57.39	.22	7.44	2.67	.47	11.86	3.99	15.14	.82
60+	65.05	.16	6.57	2.07	.35	10.80	2.67	10.54	1.80
Not stated	34.70	.33	6.11	1.76	.36	7.71	4.57	38.71	5.75
Total 5+	58.35	.21	8.37	1.80	.33	8.48	3.23	13.73	5.51
					Females				
5-9	54.29	-	1.88	.06	.07	1.75	.12	31.12	10.70
10-14	49.55	.01	2.80	.06	.11	1.91	.10	42.87	2.60
15-19	56.83	.02	5.06	.19	.17	4.06	.41	32.70	.55
20-29	64.53	.03	5.38	.17	.21	5.59	.48	23.40	.22
30-39	68.30	.01	5.36	.14	.44	9.01	.20	16.23	.30
40-49	62.63	.01	5.83	.12	.71	13.14	.17	16.99	.39
50-59	56.54	...	6.72	.11	.79	16.84	.16	18.24	.60
60+	52.71	.02	8.37	.08	.66	19.20	.14	17.50	1.31
Not stated	37.63	.14	5.95	.24	.24	11.00	.31	41.49	2.99
Total 5+	58.96	.01	5.11	.13	.37	8.11	.25	25.76	1.30

TABLE D.22. (Continued)

Age	(0)	(1)	(2-3)	(4)	(5)	(6)	(7)	(8)	(9)
					1960				
					Males				
6-9	91.65	.02	1.40	.15	-	1.60	.15	1.98	3.04
10-14	79.97	.07	5.72	.41	-	2.62	.37	5.58	5.27
15-19	66.19	.15	12.71	1.43	.17	5.12	1.30	7.70	5.24
20-29	53.42	.36	11.72	2.42	.46	7.64	3.54	17.03	3.41
30-39	50.17	.41	10.66	2.63	.66	9.60	4.98	19.42	1.45
40-49	50.80	.35	8.93	2.64	.74	10.38	4.83	20.03	1.30
50-59	53.12	.26	7.53	2.63	.85	10.69	4.60	18.99	1.35
60+	65.97	.14	6.09	2.08	.30	11.34	2.53	10.43	1.11
Not stated	16.13	1.08	11.83	7.53	-	6.45	2.15	24.73	30.11
Total 6+	57.39	.29	9.55	2.20	.51	8.36	3.57	15.60	2.53
					Females				
6-9	76.46	.02	.95	.06	-	1.33	.07	16.95	4.16
10-14	53.68	.01	1.57	.05	-	1.12	.04	39.83	3.69
15-19	37.63	.01	6.43	.08	.03	2.73	.26	42.33	10.49
20-29	25.22	.05	5.12	.17	.12	5.64	1.43	53.08	9.17
30-39	35.88	.02	4.93	.13	.08	9.48	.56	40.27	8.65
40-49	36.70	.02	4.94	.10	.07	13.56	.24	37.12	7.26
50-59	33.52	.01	5.44	.13	.05	18.54	.17	36.48	5.66
60+	32.16	...	7.00	.07	.02	25.84	.08	31.86	2.97
Not stated	14.29	-	2.38	-	-	4.76	-	14.29	64.29
Total 6+	43.27	.02	3.98	.10	.05	6.20	.43	39.17	6.79

(0) Agriculture, Forestry, Hunting and Fishing; (1) Mining and Quarrying; (2-3) Manufacturing; (4) Construction; (5) Electricity, Gas, Water and Sanitary Services; (6) Commerce; (7) Transport and Communication; (8) Services; (9) Not adequately described. In 1917, persons whose age was "not stated" were included in age group 60+.

TABLE D.23. LABOR FORCE BY OCCUPATION AND GOVERNORATE, BY SEX, U.A.R., 1960.

Governorate and region	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7/8)	(9)	(X)	Total*
						Males					
Cairo	51,817	32,081	86,278	120,312	18,617	1,197	54,086	295,990	133,565	29,677	823,620
Alexandria	16,522	11,031	36,926	52,062	19,365	451	20,394	144,362	53,386	17,575	372,074
Canal	3,334	2,226	8,154	15,492	31,465	63	9,435	31,510	17,138	6,192	125,009
Suez	1,697	753	3,452	6,591	5,114	322	4,397	16,884	6,531	2,180	47,921
Damietta	2,013	894	2,065	9,012	51,375	15	3,530	19,779	6,699	691	96,073
Dakahlia	10,676	3,016	11,704	35,527	312,748	61	14,135	52,229	34,289	4,507	478,892
Sharkia	8,136	2,246	9,914	27,421	316,851	178	8,537	39,017	31,187	4,886	448,373
Kalyubia	4,525	1,178	6,500	16,572	138,863	928	6,761	49,984	19,481	4,505	249,297
Gharbia	12,722	3,770	15,729	40,088	419,039	23	16,677	92,809	47,640	8,023	656,520
Menoufia	8,841	1,459	7,402	19,045	237,839	24	6,490	31,892	23,098	4,602	340,692
Behera	6,200	1,675	7,718	23,974	297,119	417	9,040	47,474	25,020	4,092	422,729
Giza	11,448	5,385	14,778	30,966	156,622	554	14,663	62,192	34,377	7,556	338,541
Beni Suef	3,915	1,171	3,842	14,547	168,620	74	4,148	16,480	14,042	2,115	228,954
Fayoum	3,038	915	3,237	15,562	160,143	63	3,280	17,802	13,057	1,867	218,964
Minya	6,462	1,721	6,859	26,016	318,917	284	8,208	31,145	26,856	3,411	429,879
Asyut	6,279	1,498	6,017	22,282	253,337	13	7,572	28,176	20,283	3,353	348,810
Suhag	5,070	1,331	4,917	28,313	308,234	78	6,802	31,294	19,322	3,663	409,024
Kena	4,296	1,031	4,796	20,484	260,199	681	6,451	37,551	17,637	3,950	357,076
Aswan	2,457	686	2,468	5,035	53,291	865	3,894	17,818	7,157	2,444	96,115
Frontier Districts	1,479	356	2,641	2,819	25,322	5,626	2,277	9,019	3,487	2,739	55,765
Lower Egypt	137,931	65,714	210,620	397,062	2,005,017	4,233	168,145	884,122	432,411	94,486	4,399,741
Urban govern.	73,370	46,091	134,810	194,457	74,561	2,033	88,312	488,746	210,620	55,624	1,368,624
Non-urban govern.	53,113	14,238	61,032	171,639	1,773,834	1,646	65,170	333,184	187,414	31,306	2,692,576
Upper Egypt	42,965	13,738	46,914	163,205	1,679,363	2,612	55,018	242,458	152,731	28,359	2,427,363
U.A.R. Total	170,927	74,423	245,397	532,120	3,553,080	11,917	210,777	1,073,407	554,252	118,028	6,544,328

TABLE D.23. (Continued)

Governorate and region	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7/8)	(9)	(X)	Total*
						Females					
Cairo	19,674	1,779	8,135	6,456	240	4	538	7,720	34,810	9,801	89,157
Alexandria	6,550	449	2,761	2,005	991	-	253	5,409	14,839	4,715	37,972
Canal	1,265	98	307	525	923	-	49	846	2,115	1,159	7,287
Suez	474	29	137	99	35	-	7	60	455	201	1,497
Damietta	773	61	29	222	3,022	-	2	1,172	1,332	358	6,971
Dakahlia	2,528	126	146	2,841	30,113	-	50	2,673	4,557	2,271	45,305
Sharkia	1,892	93	52	1,413	7,582	-	15	1,798	3,162	979	16,986
Kalyubia	1,008	70	72	1,354	2,598	-	3	881	1,438	980	8,404
Gharbia	3,134	174	145	4,245	34,729	-	55	4,403	8,171	2,582	57,638
Menoufia	1,461	88	39	2,190	4,459	-	23	875	2,547	860	12,542
Behera	1,247	56	54	1,122	21,392	-	11	1,751	3,702	1,343	30,678
Giza	3,021	320	722	2,330	2,486	1	48	1,345	7,342	1,586	19,201
Beni Suef	1,041	78	40	1,067	2,043	-	4	578	1,721	778	7,350
Fayoum	990	81	40	1,495	2,033	-	27	5,727	1,983	1,003	13,379
Minya	1,365	84	48	2,087	8,228	-	5	1,075	3,708	1,363	17,963
Asyut	1,285	103	74	859	2,120	-	7	784	2,037	571	7,840
Suhag	842	51	15	528	3,029	-	4	938	1,782	515	7,704
Kena	691	35	24	384	1,511	-	10	650	1,025	358	4,688
Aswan	282	16	22	134	1,164	-	-	87	252	142	2,099
Frontier Districts	108	18	13	34	634	2	2	531	225	136	1,703
Lower Egypt	43,027	3,343	12,599	24,802	108,570	5	1,054	28,933	84,470	26,835	333,638
Urban govern.	27,963	2,355	11,340	9,085	2,189	4	847	14,035	52,219	15,876	135,913
Non-urban govern.	12,043	668	537	13,387	103,895	-	159	13,553	24,909	9,373	178,524
Upper Egypt	9,517	768	985	8,884	22,614	1	105	11,184	19,850	6,316	80,224
U.A.R. Total	49,631	3,809	12,875	31,390	129,332	7	1,113	39,303	97,203	31,701	396,364

TABLE D.23. (Continued)

Governorate and region	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7/8)	(9)	(X)	Total*
						Both Sexes					
Cairo	71,491	33,860	94,413	126,768	18,857	1,201	54,624	303,710	168,375	39,478	912,777
Alexandria	23,072	11,480	39,687	54,067	20,356	451	20,647	149,771	68,225	22,290	410,046
Canal	4,599	2,324	8,461	16,017	32,388	63	9,484	32,356	19,253	7,351	132,296
Suez	2,171	782	3,589	6,690	5,149	322	4,404	16,944	6,986	2,381	49,418
Damietta	2,786	955	2,094	9,234	54,397	15	3,532	20,951	8,031	1,049	103,044
Dakahlia	13,204	3,142	11,850	38,368	342,861	61	14,185	54,902	38,846	6,778	524,197
Sharkia	10,028	2,339	9,966	28,834	324,433	178	8,552	40,815	34,349	5,865	465,359
Kalyubia	5,533	1,248	6,572	17,926	141,461	928	6,764	50,865	20,919	5,485	257,701
Gharbia	15,856	3,944	15,874	44,333	453,768	23	16,732	97,212	55,811	10,605	714,158
Menoufia	10,302	1,547	7,441	21,235	242,298	24	6,513	32,767	25,645	5,462	353,234
Behera	7,447	1,731	7,772	25,096	318,511	417	9,051	49,225	28,722	5,435	453,407
Giza	14,469	5,705	15,500	33,296	159,108	555	14,711	63,537	41,719	9,142	357,742
Beni Suef	4,956	1,249	3,882	15,614	170,663	74	4,152	17,058	15,763	2,893	236,304
Fayoum	4,028	996	3,277	17,057	162,176	63	3,307	23,529	15,040	2,870	232,343
Minya	7,827	1,805	6,907	28,103	327,145	284	8,213	32,220	30,564	4,774	447,842
Asyut	7,564	1,601	6,091	23,141	255,457	13	7,579	28,960	22,320	3,924	356,650
Suhag	5,912	1,382	4,932	28,841	311,263	78	6,806	32,232	21,104	4,178	416,728
Kena	4,987	1,066	4,820	20,868	261,710	681	6,461	38,201	18,662	4,308	361,764
Aswan	2,739	702	2,490	5,169	54,455	865	3,894	17,905	7,409	2,586	98,214
Frontier Districts	1,587	374	2,654	2,853	25,956	5,628	2,279	9,550	3,712	2,875	57,468
Lower Egypt	166,489	63,352	207,719	388,568	1,954,479	3,683	154,488	849,518	475,162	112,179	4,375,637
Urban govern.	101,333	48,446	146,150	203,542	76,750	2,037	89,159	502,781	262,839	71,500	1,504,537
Non-urban govern.	65,156	14,906	61,569	185,026	1,877,729	1,646	65,329	346,737	212,323	40,679	2,871,100
Upper Egypt	52,482	14,506	47,899	172,089	1,701,977	2,613	55,123	253,642	172,581	34,675	2,507,587
U.A.R. Total	220,558	78,232	258,272	563,510	3,682,412	11,924	211,890	1,112,710	651,455	149,729	6,940,692

(0) Professional, Technical, etc.; (1) Administrative, Managerial, etc.; (2) Clerical workers; (3) Sales workers; (4) Farmers, Fishermen, etc.; (5) Miners and Quarrymen; (6) Workers in Transport; (7/8) Craftsmen and production-process workers; (9) Service and Sport workers; (X) Workers not classifiable by occupation. For 1947 data refer to persons 5 years of age and over; in 1960 they refer to ages 15 and above.

*Persons "not seeking work" whose occupations were reported are included.

TABLE D.24. PERCENT SHARE OF EACH OCCUPATIONAL GROUP IN THE LABOR FORCE, FOR GOVERNORATES, BY SEX, U.A.R., 1960.

Governorate	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7/8)	(9)	(X)
					Males					
Cairo	6.29	3.90	10.48	14.61	2.26	.14	6.57	35.94	16.22	3.60
Alexandria	4.44	2.96	9.92	13.99	5.20	.12	5.48	38.80	14.35	4.72
Canal	2.67	1.78	6.52	12.39	25.17	.05	7.55	25.21	13.71	4.95
Suez	3.54	1.57	7.20	13.75	10.67	.67	9.18	35.23	13.63	4.55
Damietta	2.10	.93	2.15	9.38	53.47	.02	3.67	20.59	6.97	.72
Dakahlia	2.23	.63	2.44	7.42	65.31	.01	2.95	10.91	7.16	.94
Sharkia	1.81	.50	2.21	6.12	70.67	.04	1.90	8.70	6.96	1.09
Kalyubia	1.82	.47	2.61	6.65	55.70	.37	2.71	20.05	7.81	1.81
Gharbia	1.94	.57	2.40	6.11	63.83	...	2.54	14.14	7.26	1.22
Menoufia	2.60	.43	2.17	5.59	69.81	...	1.90	9.36	6.78	1.35
Behera	1.47	.40	1.83	5.67	70.29	.10	2.14	11.23	5.92	.97
Giza	3.38	1.59	4.37	9.15	46.26	.16	4.33	18.37	10.15	2.23
Beni Suef	1.71	.51	1.68	6.35	73.65	.03	1.81	7.20	6.13	.92
Fayoum	1.39	.42	1.48	7.11	73.14	.03	1.50	8.13	5.96	.85
Minya	1.50	.40	1.60	6.05	74.19	.07	1.91	7.24	6.25	.79
Asyut	1.80	.43	1.73	6.39	72.63	...	2.17	8.08	5.81	.96
Suhag	1.24	.33	1.20	6.92	75.36	.02	1.66	7.65	4.72	.90
Kena	1.20	.29	1.34	5.74	72.87	.19	1.81	10.52	4.94	1.11
Aswan	2.56	.71	2.57	5.24	55.44	.90	4.05	18.54	7.45	2.54
Frontier Districts	2.65	.64	4.74	5.06	45.41	10.09	4.08	16.17	6.25	4.91
U.A.R. Total	2.61	1.14	3.75	8.13	54.29	.18	3.22	16.40	8.47	1.80

TABLE D.24. (Continued)

Governorate	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7/8)	(9)	(X)
					Females					
Cairo	22.07	2.00	9.12	7.24	.27	...	.60	8.66	39.04	10.99
Alexandria	17.25	1.18	7.27	5.28	2.61	-	.67	14.24	39.08	12.42
Canal	17.36	1.34	4.21	7.20	12.67	-	.67	11.61	29.02	15.91
Suez	31.66	1.94	9.15	6.61	2.34	-	.47	4.01	30.39	13.43
Damietta	11.09	.88	.42	3.18	43.35	-	.03	16.81	19.12	5.14
Dakahlia	5.58	.28	.32	6.27	66.47	-	.11	5.90	10.06	5.01
Sharkia	11.14	.55	.31	8.32	44.64	-	.09	10.59	18.62	5.76
Kalyubia	11.99	.83	.86	16.11	30.91	-	.04	10.48	17.11	11.66
Gharbia	5.44	.30	.25	7.36	60.25	-	.10	7.64	14.18	4.48
Menoufia	11.65	.70	.31	17.46	35.55	-	.18	6.98	20.31	6.86
Behera	4.06	.18	.18	3.66	69.73	-	.04	5.71	12.07	4.38
Giza	15.73	1.67	3.76	12.13	12.95	.01	.25	7.00	38.24	8.26
Beni Suef	14.16	1.06	.54	14.52	27.80	-	.05	7.86	23.41	10.59
Fayoum	7.40	.61	.30	11.17	15.20	-	.20	42.81	14.82	7.50
Minya	7.60	.47	.27	11.62	45.81	-	.03	5.98	20.64	7.59
Asyut	16.39	1.31	.94	10.96	27.04	-	.09	10.00	25.98	7.28
Suhag	10.93	.66	.19	6.85	39.32	-	.06	12.18	23.13	6.68
Kena	14.74	.75	.51	8.19	32.23	-	.21	13.87	21.86	7.64
Aswan	13.43	.76	1.05	6.38	55.45	-	-	4.14	12.01	6.77
Frontier Districts	6.34	1.06	.76	2.00	37.23	.12	.12	31.18	13.21	7.99
U.A.R. Total	12.52	.96	3.25	7.92	32.63	...	.28	9.92	24.52	8.00

TABLE D.24. (Continued)

Governorate	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7/8)	(9)	(X)
					Both Sexes					
Cairo	7.83	3.71	10.34	13.89	2.06	.13	5.98	33.27	18.45	4.32
Alexandria	5.63	2.80	9.67	13.18	4.96	.11	5.04	36.52	16.64	5.44
Canal	3.48	1.76	6.40	12.11	24.48	.05	7.17	24.46	14.55	5.55
Suez	4.39	1.58	7.26	13.54	10.42	.65	8.91	34.29	14.14	4.82
Damietta	2.70	.93	2.03	8.96	52.79	.01	3.43	20.33	7.79	1.02
Dakahlia	2.52	.60	2.26	7.32	65.41	.01	2.71	10.47	7.41	1.29
Sharkia	2.15	.50	2.14	6.20	69.72	.04	1.84	8.77	7.38	1.26
Kalyubia	2.15	.48	2.55	6.96	54.89	.36	2.62	19.74	8.12	2.13
Gharbia	2.22	.55	2.22	6.21	63.54	...	2.34	13.61	7.81	1.48
Menoufia	2.92	.44	2.11	6.01	68.59	.01	1.84	9.28	7.26	1.55
Behera	1.64	.38	1.71	5.53	70.25	.09	2.00	10.86	6.33	1.20
Giza	4.04	1.59	4.33	9.31	44.48	.16	4.11	17.76	11.66	2.56
Beni Suef	2.10	.53	1.64	6.61	72.22	.03	1.76	7.22	6.67	1.22
Fayoum	1.73	.43	1.41	7.34	69.80	.03	1.42	10.13	6.47	1.24
Minya	1.75	.40	1.54	6.28	73.05	.06	1.83	7.19	6.82	1.07
Asyut	2.12	.45	1.71	6.49	71.63	...	2.13	8.12	6.26	1.10
Suhag	1.42	.33	1.18	6.92	74.69	.02	1.63	7.73	5.06	1.00
Kena	1.38	.29	1.33	5.77	72.34	.19	1.79	10.56	5.16	1.19
Aswan	2.79	.71	2.54	5.26	55.45	.88	3.96	18.23	7.54	2.63
Frontier Districts	2.76	.65	4.62	4.96	45.17	9.79	3.97	16.62	6.46	5.00
Lower Egypt	3.80	1.45	4.75	8.88	44.67	.08	3.53	19.41	10.86	2.56
Urban governorates	6.74	3.22	9.71	13.53	5.10	.14	5.93	33.42	17.47	4.75
Non-urban governorates	2.27	.52	2.14	6.44	65.40	.06	2.28	12.08	7.40	1.42
Upper Egypt	2.09	.58	1.91	6.86	67.87	.10	2.20	10.11	6.88	1.38
U.A.R. Total	3.18	1.13	3.72	8.12	53.06	.17	3.05	16.03	9.39	2.16

(0) Professional, technical, etc.; (1) Administrative, managerial, etc.; (2) Clerical workers; (3) Sales workers; (4) Farmers, fishermen, etc.; (5) Miners and quarrymen; (6) Workers in transport; (7/8) Craftsmen and production-process workers; (9) Service and sport workers; (X) Workers not classifiable by occupation. For 1947 data refer to persons 5 years of age and over; in 1960 they refer to ages 15 and above.

TABLE D.25. LABOR FORCE BY INDUSTRY AND OCCUPATION BY SEX, U.A.R., 1960.

	Industry	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7/8)	(9)	(X)	Total
						Males						
(0)	Agriculture, etc.	2,682	238	7,105	1,321	3,515,594	17	4,787	9,547	16,797	859	3,558,947
(1)	Mining and quarrying	809	229	937	53	36	11,061	674	5,616	849	133	20,397
(2-3)	Manufacturing	8,110	8,129	24,928	4,796	1,155	217	5,947	582,680	11,803	2,169	649,934
(4)	Construction	2,693	6,541	2,321	614	112	114	1,102	139,453	1,517	329	154,796
(5)	Electricity, etc.	1,205	325	3,221	9	485	11	1,439	27,715	1,362	300	36,072
(6)	Commerce	4,481	7,159	31,998	503,849	2,391	40	4,960	13,313	7,992	680	576,863
(7)	Transport and communication	4,603	4,779	19,555	549	554	10	144,799	64,519	11,289	1,471	252,128
(8)	Services	140,239	42,860	138,495	6,231	16,691	233	39,274	188,184	486,239	19,847	1,078,293
(9)	Not adequately described	2,175	707	9,109	3,984	5,059	151	3,738	26,077	5,632	92,057	148,689
	Total	166,997	70,967	237,669	521,406	3,542,077	11,854	206,720	1,057,104	543,480	117,845	6,476,119
						Females						
(0)	Agriculture, etc.	33	5	28	36	129,038	-	22	73	48	1,615	130,898
(1)	Mining and quarrying	18	6	37	1	-	7	4	8	3	8	92
(2-3)	Manufacturing	228	95	1,444	137	7	-	37	18,943	173	389	21,453
(4)	Construction	6	6	60	1	-	-	3	341	2	41	460
(5)	Electricity, etc.	13	8	136	-	-	-	5	71	15	29	277
(6)	Commerce	215	185	3,524	30,133	51	-	64	587	72	107	34,938
(7)	Transport and communication	110	93	1,051	5	10	-	694	134	156	102	2,355
(8)	Services	47,023	3,141	4,458	235	19	-	153	17,941	94,223	400	167,593
(9)	Not adequately described	271	23	600	183	87	-	21	414	388	31,218	33,205
	Total	47,917	3,562	11,338	30,731	129,212	7	1,003	38,512	95,080	33,909	391,271

TABLE D.25. (Continued)

	Industry	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7/8)	(9)	(X)	Total
						Both Sexes						
(0)	Agriculture, etc.	2,715	243	7,133	1,357	3,644,632	17	4,809	9,620	16,845	2,474	3,689,845
(1)	Mining and quarrying	827	235	974	54	36	11,068	678	5,624	852	141	20,489
(2-3)	Manufacturing	8,338	8,224	26,372	4,933	1,162	217	5,984	601,623	11,976	2,558	671,387
(4)	Construction	2,699	6,547	2,381	615	112	114	1,105	139,794	1,519	370	155,256
(5)	Electricity, etc.	1,218	333	3,357	9	485	11	1,444	27,786	1,377	329	36,349
(6)	Commerce	4,696	7,344	35,522	533,982	2,442	40	5,024	13,900	8,064	787	611,801
(7)	Transport and communication	4,713	4,872	20,606	554	564	10	145,493	64,653	11,445	1,573	254,483
(8)	Services	187,262	46,001	142,953	6,466	16,710	233	39,427	206,125	580,462	20,247	1,245,886
(9)	Not adequately described	2,446	730	9,709	4,167	5,146	151	3,759	26,491	6,020	123,275	181,894
	Total	214,914	74,529	249,007	552,137	3,671,289	11,861	207,723	1,095,616	638,560	151,754	6,867,390

(0) Professional, technical, etc.; (1) Administrative, managerial, etc.; (2) Clerical workers; (3) Sales workers; (4) Farmers, fishermen, etc. (5) Miners and quarrymen; (6) Workers in transport; (7/8) Craftsmen and production-process workers; (9) Service and sport workers; (X) Workers not classifiable by occupation. Data refer to ages 15 and above. Foreigners are excluded.

TABLE D.26. PERCENT SHARE OF EACH INDUSTRY IN THE LABOR FORCE, BY OCCUPATION AND SEX, U.A.R., 1960.

Industry	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7/8)	(9)	(X)	Total
Males											
(0) Agriculture, etc.	1.61	.34	2.99	.25	99.25	.14	2.31	.90	3.09	.73	54.95
(1) Mining and quarrying	.48	.32	.39	.01	...	93.31	.33	.53	.16	.11	.31
(2-3) Manufacturing	4.86	11.45	10.49	.92	.03	1.83	2.88	55.12	2.17	1.84	10.04
(4) Construction	1.61	9.22	.98	.12	...	.96	.53	13.19	.28	.28	2.39
(5) Electricity, etc.	.72	.46	1.36	...	.01	.09	.70	2.62	.25	.25	.56
(6) Commerce	2.68	10.09	13.46	96.63	.07	.34	2.40	1.26	1.47	.58	8.91
(7) Transport and communication	2.76	6.73	8.23	.11	.02	.08	70.04	6.10	2.08	1.25	3.89
(8) Services	83.98	60.39	58.27	1.20	.47	1.96	19.00	17.80	89.47	16.84	16.65
(9) Not adequately described	1.30	1.00	3.83	.76	.14	1.27	1.81	2.47	1.04	78.12	2.30
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Females											
(0) Agriculture, etc.	.07	.14	.25	.12	99.86	-	2.19	.19	.05	4.76	33.45
(1) Mining and quarrying	.04	.17	.33	...	-	100.00	.40	.02	...	.02	.02
(2-3) Manufacturing	.48	2.67	12.74	.44	...	-	3.69	49.19	.18	1.15	5.48
(4) Construction	.01	.17	.53	...	-	-	.30	.88	...	.12	.12
(5) Electricity, etc.	.03	.22	1.20	-	-	-	.50	.18	.02	.08	.07
(6) Commerce	.45	5.19	31.08	98.05	.04	-	6.38	1.52	.08	.32	8.93
(7) Transport and communication	.23	2.61	9.27	.02	.01	-	69.19	.35	.16	.30	.60
(8) Services	98.13	88.18	39.32	.76	.01	-	15.25	46.58	99.10	1.18	42.83
(9) Not adequately described	.56	.64	5.29	.60	.07	-	2.09	1.07	.41	92.06	8.49
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

TABLE D.26. (Continued)

	Industry	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7/8)	(9)	(X)	Total
						Both Sexes						
(0)	Agriculture, etc.	1.26	.33	2.86	.24	99.27	.14	2.32	.88	2.64	1.63	53.73
(1)	Mining and quarrying	.38	.32	.39	.01	...	93.31	.33	.51	.13	.09	.30
(2-3)	Manufacturing	3.88	11.03	10.59	.89	.03	1.83	2.88	54.91	1.88	1.68	9.78
(4)	Construction	1.26	8.78	.96	.11	...	.96	.53	12.76	.24	.24	2.26
(5)	Electricity, etc.	.57	.45	1.35	...	.01	.09	.70	2.54	.22	.22	.53
(6)	Commerce	2.18	9.85	14.26	96.71	.07	.34	2.42	1.27	1.26	.52	8.91
(7)	Transport and communication	2.19	6.54	8.28	.10	.02	.08	70.04	5.90	1.79	1.04	3.71
(8)	Services	87.13	61.72	57.41	1.17	.46	1.96	18.98	18.81	90.90	13.34	18.14
(9)	Not adequately described	1.14	.98	3.90	.75	.14	1.27	1.81	2.42	.94	81.23	2.65
	Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

(0) Professional, technical, etc.; (1) Administrative, managerial, etc.; (2) Clerical workers; (3) Sales workers; (4) Farmers, fishermen, etc.; (5) Miners and quarrymen; (6) Workers in transport; (7/8) Craftsmen and production-process workers; (9) Service and sport workers; (X) Workers not classifiable by occupation. Data refer to ages 15 and above. Foreigners are excluded.

TABLE D.27. LABOR FORCE BY STATUS, AGE AND SEX, U.A.R., 1960.

Age	Employers	Own account workers	Employees	Family workers	Unemployed and ill-defined	Total
			Males			
6-9	95	326	36,732	175,709	6,428	219,290
10-14	720	3,822	133,638	307,734	22,438	468,352
15-19	9,530	56,076	361,291	294,747	37,397	759,041
20-24	20,854	105,042	436,657	200,330	30,146	793,029
25-29	38,620	169,442	461,420	136,885	14,138	820,505
30-34	51,698	202,159	448,613	72,563	8,274	783,307
35-39	70,719	252,352	451,613	44,736	6,823	826,243
40-44	66,050	209,110	345,107	16,661	5,498	642,426
45-49	69,149	188,427	279,448	7,996	4,531	549,551
50-54	65,970	167,390	229,928	3,346	4,413	471,047
55-59	49,975	108,723	138,746	1,438	2,920	301,802
60-64	51,669	113,809	101,648	1,001	2,337	270,464
65+	65,403	118,512	72,037	1,007	1,652	258,611
Not stated	5	9	43	3	33	93
6+	560,457	1,695,199	3,496,921	1,264,156	147,028	7,163,761
15+	559,642	1,691,051	3,326,551	780,713	118,162	6,476,119
			Females			
6-9	2	36	22,410	52,327	2,984	77,759
10-14	18	358	77,959	65,232	5,599	149,166
15-19	189	2,519	54,963	22,288	9,025	88,984
20-24	287	2,480	46,829	8,321	5,855	63,772
25-29	538	3,772	35,176	7,475	3,446	50,407
30-34	864	4,839	23,459	5,865	2,979	38,006
35-39	1,547	6,722	21,444	5,403	3,168	38,284
40-44	1,795	6,815	17,947	3,313	2,344	32,214
45-49	1,625	6,128	13,294	2,724	1,721	25,492
50-54	1,733	6,531	12,167	1,549	1,255	23,235
55-59	905	3,316	5,140	854	547	10,762
60-64	1,060	4,106	5,131	483	319	11,099
65+	1,151	3,628	3,615	361	219	8,974
Not stated	2	4	4	1	31	42
6+	11,716	51,254	339,538	176,196	39,492	618,196
15+	11,696	50,860	239,169	58,637	30,909	391,271
			Both Sexes			
6-9	97	362	59,142	228,036	9,412	297,049
10-14	738	4,180	211,597	372,966	28,037	617,518
15-19	9,719	58,595	416,254	317,035	46,422	848,025
20-24	21,141	107,522	483,486	208,651	36,001	856,801
25-29	39,158	173,214	496,596	144,360	17,584	870,912
30-34	52,562	206,998	472,072	78,428	11,253	821,313
35-39	72,266	259,074	473,057	50,139	9,991	864,527
40-44	67,845	215,925	363,054	19,974	7,842	674,640
45-49	70,774	194,555	292,742	10,720	6,252	575,043
50-54	67,703	173,921	242,095	4,895	5,668	494,282
55-59	50,880	112,039	143,886	2,292	3,467	312,564
60-64	52,729	117,915	106,779	1,484	2,656	281,563
65+	66,554	122,140	75,652	1,368	1,871	267,585
Not stated	7	13	47	4	64	135
6+	572,173	1,746,453	3,836,459	1,440,352	186,520	7,781,957
15+	571,338	1,741,911	3,565,720	839,350	149,071	6,867,390

Foreigners are excluded.

TABLE D.28. PERCENT DISTRIBUTION BY AGE OF THE LABOR FORCE FOR EACH STATUS, BY SEX, U.A.R., 1960.

Age	Employers	Own account workers	Employees	Family workers	Unemployed and ill-defined	Total
			Males			
6-9	.02	.02	1.05	13.90	4.37	3.06
10-14	.13	.23	3.82	24.34	15.26	6.54
15-19	1.70	3.31	10.33	23.32	25.44	10.60
20-24	3.72	6.20	12.49	15.85	20.50	11.07
25-29	6.89	10.00	13.20	10.83	9.62	11.45
30-34	9.22	11.93	12.83	5.74	5.63	10.93
35-39	12.62	14.89	12.91	3.54	4.64	11.53
40-44	11.79	12.34	9.87	1.32	3.74	8.97
45-49	12.34	11.12	7.99	.63	3.08	7.67
50-54	11.77	9.87	6.58	.26	3.00	6.58
55-59	8.92	6.41	3.97	.11	1.99	4.21
60-64	9.22	6.71	2.91	.08	1.59	3.78
65+	11.67	6.99	2.06	.08	1.12	3.61
Not stated	...	...	...	...	...	...
Total 6+	100.00	100.00	100.00	100.00	100.00	100.00
			Females			
6-9	.02	.07	6.60	29.70	7.56	12.58
10-14	.15	.70	22.96	37.02	14.18	24.13
15-19	1.61	4.91	16.19	12.65	22.85	14.39
20-24	2.45	4.84	13.79	4.72	14.83	10.32
25-29	4.59	7.36	10.36	4.24	8.73	8.15
30-34	7.37	9.44	6.91	3.33	7.54	6.15
35-39	13.20	13.12	6.32	3.07	8.02	6.19
40-44	15.32	13.30	5.29	1.88	5.93	5.21
45-49	13.87	11.96	3.92	1.55	4.36	4.12
50-54	14.79	12.74	3.58	.88	3.18	3.76
55-59	7.72	6.47	1.51	.48	1.39	1.74
60-64	9.05	8.01	1.51	.27	0.81	1.80
65+	9.82	7.08	1.06	.20	0.55	1.45
Not stated	.02	.01	...	...	0.08	.01
Total 6+	100.00	100.00	100.00	100.00	100.00	100.00
			Both Sexes			
6-9	.02	.02	1.54	15.83	5.05	3.82
10-14	.13	.24	5.52	25.89	15.04	7.94
15-19	1.70	3.36	10.85	22.01	24.90	10.90
20-24	3.69	6.16	12.60	14.49	19.31	11.01
25-29	6.84	9.92	12.94	10.02	9.43	11.19
30-34	9.19	11.85	12.30	5.45	6.04	10.55
35-39	12.63	14.83	12.33	3.48	5.36	11.11
40-44	11.86	12.36	9.46	1.39	4.21	8.67
45-49	12.37	11.14	7.63	.74	3.35	7.39
50-54	11.83	9.96	6.31	.34	3.04	6.35
55-59	8.89	6.42	3.75	.16	1.86	4.02
60-64	9.22	6.75	2.78	.10	1.42	3.62
65+	11.63	6.99	1.97	.09	1.00	3.44
Not stated	...	...	...	...	0.03	...
Total 6+	100.00	100.00	100.00	100.00	100.00	100.00

Foreigners are excluded.

TABLE D.29. LABOR FORCE BY STATUS AND SEX FOR GOVERNORATES AND REGIONS, U.A.R., 1960.

Governorates and regions	Employers	Own account workers	Employees	Family workers	Unemployed and ill-defined	Total
			Males			
Cairo	33,147	129,758	632,830	12,184	34,171	842,090
Alexandria	17,886	54,038	280,909	7,097	20,718	380,648
Canal	9,432	23,354	78,760	11,544	8,898	131,988
Suez	2,062	8,259	33,753	1,271	3,494	48,839
Damietta	8,906	22,878	55,360	18,304	1,220	106,668
Dakahlia	51,839	128,896	227,279	121,533	8,438	537,985
Sharkia	42,730	158,866	171,360	134,127	7,168	514,251
Kalyubia	14,117	78,179	119,614	51,383	5,174	268,467
Gharbia	56,547	199,554	289,466	180,456	8,933	734,956
Menoufia	44,017	109,171	120,527	89,182	4,917	367,814
Behera	44,270	110,722	199,401	137,820	4,673	496,886
Giza	10,979	106,292	185,147	56,357	8,059	366,834
Beni Suef	23,834	71,249	106,423	43,989	2,532	248,027
Fayoum	29,040	78,135	83,306	53,068	2,819	246,368
Minya	41,237	106,094	253,104	72,056	4,468	476,959
Asyut	42,097	79,077	203,241	68,898	4,690	398,003
Suhag	48,939	111,781	200,647	106,447	6,534	474,348
Kena	33,608	81,548	204,014	76,529	7,449	403,148
Aswan	8,105	26,392	53,415	14,823	1,728	104,463
Frontier Districts	1,671	16,324	30,198	7,557	2,150	57,900
Lower Egypt	324,953	1,023,675	2,209,259	764,901	107,804	4,430,592
Urban govern.	62,527	215,409	1,026,252	32,096	67,281	1,403,565
Non-urban govern.	262,426	808,266	1,183,007	732,805	40,523	3,027,027
Upper Egypt	237,839	660,568	1,289,297	492,167	38,279	2,718,150
U.A.R. Total	564,463	1,700,567	3,528,754	1,264,625	148,233	7,206,642
			Females			
Cairo	706	6,501	99,243	989	11,232	118,671
Alexandria	255	2,060	38,976	1,322	5,704	48,317
Canal	305	764	6,747	951	1,502	10,269
Suez	17	137	1,754	64	252	2,224
Damietta	92	649	7,378	1,194	807	10,120
Dakahlia	1,130	4,463	34,909	24,366	3,497	68,365
Sharkia	1,223	3,419	12,918	13,265	1,878	32,703
Kalyubia	297	2,381	5,145	6,667	1,147	15,637
Gharbia	1,986	8,687	39,858	35,112	3,123	88,766
Menoufia	589	3,064	8,131	6,887	1,026	19,697
Behera	976	2,733	25,766	29,530	1,639	60,644
Giza	243	3,132	18,877	6,004	1,828	30,084
Beni Suef	405	1,409	5,302	3,907	872	11,895
Fayoum	964	4,888	6,320	5,326	1,291	18,789
Minya	1,656	3,140	13,653	12,624	1,551	32,624
Asyut	413	1,119	8,219	6,577	848	17,176
Suhag	461	1,117	6,808	11,005	761	20,152
Kena	197	707	4,036	7,583	528	13,051
Aswan	22	829	860	1,968	131	3,810
Frontier Districts	15	378	834	958	198	2,383
Lower Egypt	7,576	34,858	280,825	120,347	31,807	475,413
Urban govern.	1,283	9,462	146,720	3,326	18,690	179,481
Non-urban govern.	6,293	25,396	134,105	117,021	13,117	295,932
Upper Egypt	4,361	16,341	64,075	54,994	7,810	147,581
U.A.R. Total	11,952	51,577	345,734	176,299	39,815	625,377

TABLE D.29. (Continued)

Governorates and regions	Employers	Own account workers	Employees	Family workers	Unemployed and ill-defined	Total
			Both Sexes			
Cairo	33,853	136,259	732,073	13,173	45,403	960,761
Alexandria	18,141	56,098	319,885	8,419	26,422	428,965
Canal	9,737	24,118	85,507	12,495	10,400	142,257
Suez	2,079	8,396	35,507	1,335	3,746	51,063
Damietta	8,998	23,527	62,738	19,498	2,027	116,788
Dakahlia	52,969	133,359	262,188	145,899	11,935	606,350
Sharkia	43,953	162,285	184,278	147,392	9,046	546,954
Kalyubia	14,414	80,560	124,759	58,050	6,321	284,104
Gharbia	58,533	208,241	329,324	215,568	12,056	823,722
Menoufia	44,606	112,235	128,658	96,069	5,943	387,511
Behera	45,246	113,455	225,167	167,350	6,312	557,530
Giza	11,222	109,424	204,024	62,361	9,887	396,918
Beni Suef	24,239	72,658	111,725	47,896	3,404	259,922
Fayoum	30,004	83,023	89,626	58,394	4,110	265,157
Minya	42,893	109,234	266,757	84,680	6,019	509,583
Asyut	42,510	80,196	211,460	75,475	5,538	415,179
Suhag	49,400	112,898	207,455	117,452	7,295	494,500
Kena	33,805	82,255	208,050	84,112	7,977	416,199
Aswan	8,127	27,221	54,275	16,791	1,859	108,273
Frontier Districts	1,686	16,702	31,032	8,515	2,348	60,283
Lower Egypt	332,529	1,058,533	2,490,084	885,248	139,611	4,906,005
Urban govern.	63,810	224,871	1,172,972	35,422	85,971	1,583,046
Non-urban govern.	268,719	833,662	1,317,112	849,826	53,640	3,322,959
Upper Egypt	242,200	676,909	1,353,372	547,161	46,089	2,865,731
U.A.R. Total	576,415	1,752,144	3,874,488	1,440,924	188,048	7,832,019

TABLE D.30. PERCENT DISTRIBUTION OF THE LABOR FORCE BY STATUS, FOR GOVERNORATES, BY SEX, U.A.R., 1960.

Governorate	Employers	Own account workers	Employees	Family workers	Unemployed and ill-defined
			Males		
Cairo	3.94	15.41	75.15	1.45	4.06
Alexandria	4.70	14.20	73.80	1.86	5.45
Canal	7.15	17.69	59.67	8.75	6.74
Suez	4.22	16.91	69.11	2.60	7.15
Damietta	8.35	21.45	51.90	17.16	1.15
Dakahlia	9.64	23.96	42.25	22.59	1.57
Sharkia	8.31	30.89	33.32	26.08	1.40
Kalyubia	5.26	29.12	44.55	19.14	1.93
Gharbia	7.69	27.15	39.39	24.55	1.22
Menoufia	11.97	29.68	32.77	24.25	1.33
Behera	8.91	22.28	40.13	27.74	.94
Giza	2.99	28.98	50.47	15.36	2.20
Beni Suef	9.61	28.73	42.91	17.74	1.02
Fayoum	11.79	31.71	33.81	21.54	1.14
Minya	8.65	22.24	53.07	15.11	.94
Asyut	10.58	19.87	51.07	17.31	1.18
Suhag	10.32	23.57	42.30	22.44	1.38
Kena	8.34	20.23	50.61	18.98	1.85
Aswan	7.76	25.26	51.13	14.19	1.65
Frontier Districts	2.89	28.19	52.16	13.05	3.71
U.A.R. Total	7.83	23.60	48.97	17.55	2.06
			Females		
Cairo	.59	5.48	83.63	.83	9.46
Alexandria	.53	4.26	80.67	2.74	11.81
Canal	2.97	7.44	65.70	9.26	14.63
Suez	.76	6.16	78.87	2.88	11.33
Damietta	.91	6.41	72.91	11.80	7.97
Dakahlia	1.65	6.53	51.06	35.64	5.12
Sharkia	3.74	10.45	39.50	40.56	5.74
Kalyubia	1.90	15.23	32.90	42.64	7.33
Gharbia	2.24	9.79	44.90	39.56	3.51
Menoufia	2.99	15.56	41.28	34.96	5.21
Behera	1.61	4.51	42.49	48.69	2.71
Giza	.81	10.41	62.75	19.96	6.08
Beni Suef	3.40	11.85	44.57	32.85	7.33
Fayoum	5.13	26.02	33.64	28.35	6.87
Minya	5.08	9.62	41.85	38.70	4.75
Asyut	2.40	6.51	47.85	38.29	4.94
Suhag	2.29	5.54	33.78	54.61	3.77
Kena	1.51	5.42	30.92	58.10	4.05
Aswan	.58	21.76	22.57	51.65	3.43
Frontier Districts	.63	15.86	35.00	40.20	8.31
U.A.R. Total	1.91	8.25	55.28	28.19	6.36

TABLE D.31. LABOR FORCE BY STATUS, INDUSTRY, AND SEX, U.A.R., 1937-1960.

	Industry	Employers	Own account workers	Employees	Family workers	Unemployed and ill-defined	Total
				1937			
				Both Sexes			
(0)	Agriculture, etc.	695,854	717,382	2,581,756	932	24,507	4,020,431
(1)	Mining and quarrying	81	563	9,996	145	43	10,828
(2-3)	Manufacturing	24,621	111,732	204,838	7,297	4,218	352,706
(4)	Construction	3,378	25,312	86,481	4,181	1,354	120,706
(5)	Electricity, etc.	637	5,878	15,214	122	85	21,936
(6)	Commerce	39,186	270,448	122,346	3,446	4,116	439,542
(7)	Transport and communication	6,172	41,241	88,127	1,763	1,608	138,911
(8)	Services	21,503	150,371	517,385	5,225	6,295	700,779
(9)	Not adequately described	-	-	-	-	3,433	3,433
	Total	791,432	1,322,927	3,626,143	23,111	45,659	5,809,272
				1947 (excluding ill-defined)			
				Males			
(0)	Agriculture, etc.	610,512	750,958	1,251,104	990,953	37,549	3,641,076
(1)	Mining and quarrying	116	1,123	11,400	140	77	12,856
(2-3)	Manufacturing	24,517	129,904	330,171	29,242	8,224	522,058
(4)	Construction	1,345	17,787	89,879	1,585	1,818	112,414
(5)	Electricity, etc.	271	2,883	16,975	415	148	20,692
(6)	Commerce	42,779	307,774	121,969	52,754	3,922	529,198
(7)	Transport and communication	5,025	46,195	140,898	7,201	2,158	201,477
(8)	Services	28,624	151,380	628,288	18,052	30,327	856,671
(9)	Not adequately described	-	-	-	-	-	-
	Total excl. ill-defined	713,189	1,408,004	2,590,684	1,100,342	84,223	5,896,442

TABLE D.31. (Continued)

	Industry	Employers	Own account workers	Employees	Family workers	Unemployed and ill-defined	Total
				Females			
(0)	Agriculture, etc.	32,532	99,391	133,004	179,202	465	444,594
(1)	Mining and quarrying	1	23	78	7	-	109
(2-3)	Manufacturing	1,518	19,021	10,411	6,871	722	38,543
(4)	Construction	9	79	789	40	30	947
(5)	Electricity, etc.	17	772	1,832	139	41	2,801
(6)	Commerce	2,843	42,285	5,157	10,438	459	61,182
(7)	Transport and communication	18	310	1,351	152	27	1,858
(8)	Services	745	16,620	173,447	1,979	1,416	194,207
(9)	Not adequately described	-	-	-	-	-	-
	Total excl. ill-defined	37,683	178,501	326,069	198,828	3,160	744,241
				Both Sexes			
(0)	Agriculture, etc.	643,044	850,349	1,384,108	1,170,155	38,014	4,085,670
(1)	Mining and quarrying	117	1,146	11,478	147	77	12,965
(2-3)	Manufacturing	26,035	148,925	340,582	36,113	8,946	560,601
(4)	Construction	1,354	17,866	90,668	1,625	1,848	113,361
(5)	Electricity, etc.	288	3,655	18,807	554	189	23,493
(6)	Commerce	45,622	350,059	127,126	63,192	4,381	590,380
(7)	Transport and communication	5,043	46,505	142,249	7,353	2,185	203,335
(8)	Services	29,369	168,000	801,735	20,031	31,743	1,050,878
(9)	Not adequately described	-	-	-	-	-	-
	Total excl. ill-defined	750,872	1,586,505	2,916,753	1,299,170	87,383	6,640,683

TABLE D.31. (Continued)

	Industry	Employers	Own account workers	Employees	Family workers	Unemployed and ill-defined	Total
				1960			
				Males			
(0)	Agriculture, etc.	424,718	1,101,554	1,443,888	1,162,444	2,021	4,134,625
(1)	Mining and quarrying	81	267	20,224	151	35	20,758
(2-3)	Manufacturing	27,867	85,722	539,982	25,181	1,001	679,753
(4)	Construction	7,728	20,404	125,591	3,172	172	157,067
(5)	Electricity, etc.	-	-	36,072	-	-	36,072
(6)	Commerce	62,867	329,454	156,549	43,478	268	592,616
(7)	Transport and communication	4,883	27,661	215,545	5,881	232	254,202
(8)	Services	31,729	126,350	927,718	22,213	707	1,108,717
(9)	Not adequately described	584	3,787	31,352	1,636	142,592	179,951
	Total	560,457	1,695,199	3,496,921	1,264,156	147,028	7,163,761
				Females			
(0)	Agriculture, etc.	8,817	12,733	85,958	162,833	261	270,602
(1)	Mining and quarrying	4	2	93	23	-	122
(2-3)	Manufacturing	514	5,113	14,934	3,939	26	24,526
(4)	Construction	6	26	449	103	1	585
(5)	Electricity, etc.	-	-	277	-	-	277
(6)	Commerce	1,282	23,307	7,629	5,400	26	37,644
(7)	Transport and communication	13	40	2,306	115	-	2,474
(8)	Services	1,050	9,761	225,758	3,315	165	240,049
(9)	Not adequately described	30	272	2,134	468	39,013	41,917
	Total	11,716	51,254	339,538	176,196	39,492	618,196

TABLE D.31. (Continued)

	Industry	Employers	Own account workers	Employees	Family workers	Unemployed and ill-defined	Total
				Both Sexes			
(0)	Agriculture, etc.	433,535	1,114,287	1,529,846	1,325,277	2,282	4,405,227
(1)	Mining and quarrying	85	269	20,317	174	35	20,880
(2-3)	Manufacturing	28,381	90,835	554,916	29,120	1,027	704,279
(4)	Construction	7,734	20,430	126,040	3,275	173	157,652
(5)	Electricity, etc.	-	-	36,349	-	-	36,349
(6)	Commerce	64,149	352,761	164,178	48,878	294	630,260
(7)	Transport and communication	4,896	27,701	217,851	5,996	232	256,676
(8)	Services	32,779	136,111	1,153,476	25,528	872	1,348,766
(9)	Not adequately described	614	4,059	33,486	2,104	181,605	221,868
	Total	572,173	1,746,453	3,836,459	1,440,352	186,520	7,781,957

TABLE D.32. PERCENT DISTRIBUTION OF THE LABOR FORCE BY STATUS, FOR EACH INDUSTRY BY SEX, U.A.R., 1937-1960.

	Industry	Employers	Own account workers	Employees	Family workers	Unemployed and ill-defined
				1937 Both Sexes		
(0)	Agriculture, etc.	17.31	17.84	64.22	.02	.61
(1)	Mining and quarrying	.75	5.20	92.32	1.34	.40
(2-3)	Manufacturing	6.98	31.68	58.08	2.07	1.20
(4)	Construction	2.80	20.97	71.65	3.46	1.12
(5)	Electricity, etc.	2.90	26.80	69.36	.56	.39
(6)	Commerce	8.92	61.53	27.83	.78	.94
(7)	Transport and communication	4.44	29.69	63.44	1.27	1.16
(8)	Services	3.07	21.46	73.83	.75	.90
(9)	Not adequately described	-	-	-	-	100.00
	Total	13.62	22.77	62.42	.40	.79
				1947 (excluding ill-defined) Males		
(0)	Agriculture, etc.	16.77	20.62	34.36	27.22	1.03
(1)	Mining and quarrying	.90	8.74	88.67	1.09	.60
(2-3)	Manufacturing	4.70	24.88	63.24	5.60	1.58
(4)	Construction	1.20	15.82	79.95	1.41	1.62
(5)	Electricity, etc.	1.31	13.93	82.04	2.01	.71
(6)	Commerce	8.08	58.16	23.05	9.97	.75
(7)	Transport and communication	2.49	22.93	69.93	3.57	1.07
(8)	Services	3.34	17.67	73.34	2.11	3.54
(9)	Not adequately described	-	-	-	-	-
	Total	12.10	23.88	43.94	18.66	1.43

TABLE D.32. (Continued)

	Industry	Employers	Own account workers	Employees	Family workers	Unemployed and ill-defined
				Females		
(0)	Agriculture, etc.	7.32	22.36	29.92	40.31	.10
(1)	Mining and quarrying	.92	21.10	71.56	6.42	-
(2-3)	Manufacturing	3.94	49.35	27.01	17.83	1.87
(4)	Construction	.95	8.34	83.32	4.22	3.16
(5)	Electricity, etc.	.61	27.56	65.41	4.96	1.47
(6)	Commerce	4.65	69.11	8.43	17.06	.75
(7)	Transport and communication	.97	16.68	72.71	8.18	1.45
(8)	Services	.38	8.56	89.31	1.02	.73
(9)	Not adequately described	-	-	-	-	-
	Total	5.06	23.98	43.81	26.72	.42
				Both Sexes		
(0)	Agriculture, etc.	15.74	20.81	33.88	28.64	.93
(1)	Mining and quarrying	.90	8.84	88.53	1.13	.60
(2-3)	Manufacturing	4.64	26.57	60.75	6.44	1.60
(4)	Construction	1.19	15.76	79.98	1.43	1.63
(5)	Electricity, etc.	1.23	15.56	80.05	2.36	.80
(6)	Commerce	7.73	59.29	21.53	10.70	.74
(7)	Transport and communication	2.48	22.87	69.96	3.62	1.07
(8)	Services	2.79	15.99	76.29	1.91	3.02
(9)	Not adequately described	-	-	-	-	-
	Total	11.31	23.89	43.92	19.56	1.32

TABLE D.32. (Continued)

Industry	Employers	Own account workers	Employees	Family workers	Unemployed and ill-defined
			1960 Males		
(0) Agriculture, etc.	10.27	26.64	34.92	28.11	.05
(1) Mining and quarrying	.39	1.29	97.43	.73	.17
(2-3) Manufacturing	4.10	12.61	79.44	3.70	.15
(4) Construction	4.92	12.99	79.96	2.02	.11
(5) Electricity, etc.	-	-	100.00	-	-
(6) Commerce	10.61	55.59	26.42	7.34	.05
(7) Transport and communication	1.92	10.88	4.79	2.31	.09
(8) Services	2.86	11.40	83.67	2.00	.06
(9) Not adequately described	.32	2.10	17.42	.91	79.24
Total	7.83	23.60	48.97	17.55	2.06
			Females		
(0) Agriculture, etc.	3.26	4.71	31.77	60.17	.10
(1) Mining and quarrying	3.28	1.64	76.23	18.85	-
(2-3) Manufacturing	2.10	20.85	60.89	16.06	.11
(4) Construction	1.03	4.44	76.75	17.61	.17
(5) Electricity, etc.	-	-	100.00	-	-
(6) Commerce	3.41	61.91	20.27	14.34	.07
(7) Transport and communication	.53	1.62	93.21	4.65	-
(8) Services	.44	4.07	94.05	1.38	.07
(9) Not adequately described	.07	.65	5.09	1.12	93.07
Total	1.91	8.25	55.28	28.19	6.36

TABLE D.32. (Continued)

	Industry	Employers	Own account workers	Employees	Family workers	Unemployed and ill-defined
				Both Sexes		
(0)	Agriculture, etc.	9.84	25.29	34.73	30.08	.05
(1)	Mining and quarrying	.41	1.29	97.30	.83	.17
(2-3)	Manufacturing	4.03	12.90	78.79	4.13	.15
(4)	Construction	4.91	12.96	79.95	2.08	.11
(5)	Electricity, etc.	-	-	100.00	-	-
(6)	Commerce	10.18	55.97	26.05	7.76	.05
(7)	Transport and communication	1.91	10.79	84.87	2.34	.09
(8)	Services	2.43	10.09	85.52	1.89	.06
(9)	Not adequately described	.28	1.83	15.09	.95	81.85
	Total	7.35	22.44	49.30	18.51	2.40

Foreigners are excluded.

TABLE D.33. PERCENT DISTRIBUTION BY INDUSTRY OF LABOR FORCE IN EACH STATUS, BY SEX, U.A.R., 1947-1960.

Industry	Employers	Own account workers	Employees	Family workers	Unemployed and ill-defined	Total
			1947 (excluding ill-defined)			
			Males			
(0) Agriculture, etc.	85.60	53.33	48.29	90.06	44.58	61.75
(1) Mining and quarrying	.02	.08	.44	.01	.08	.22
(2-3) Manufacturing	3.44	9.23	12.74	2.66	9.76	8.85
(4) Construction	.19	1.26	3.47	.14	2.16	1.91
(5) Electricity, etc.	.04	.20	.66	.04	.18	.35
(6) Commerce	6.00	21.86	4.71	4.79	4.66	8.97
(7) Transport and communication	.70	3.28	5.44	.65	2.56	3.42
(8) Services	4.01	10.75	24.25	1.64	36.01	14.53
(9) Not adequately described	-	-	-	-	-	-
			Females			
(0) Agriculture, etc.	86.33	55.68	40.79	90.13	14.72	59.74
(1) Mining and quarrying	...	.01	.02	...	-	.01
(2-3) Manufacturing	4.03	10.66	3.19	3.46	22.85	5.18
(4) Construction	.02	.04	.24	.02	.94	.13
(5) Electricity, etc.	.05	.43	.56	.07	1.30	.38
(6) Commerce	7.54	23.69	1.58	5.25	14.53	8.22
(7) Transport and communication	.05	.17	.41	.08	.85	.25
(8) Services	1.98	9.31	53.19	1.00	44.81	26.09
(9) Not adequately described	-	-	-	-	-	-

TABLE D.33. (Continued)

	Industry	Employers	Own account workers	Employees	Family workers	Unemployed and ill-defined	Total
				Both Sexes			
(0)	Agriculture, etc.	85.64	53.60	47.45	90.07	43.50	61.52
(1)	Mining and quarrying	.02	.07	.40	.01	.09	.20
(2-3)	Manufacturing	3.47	9.39	11.68	2.78	10.24	8.44
(4)	Construction	.18	1.13	3.11	.12	2.11	1.71
(5)	Electricity, etc.	.04	.23	.64	.04	.22	.35
(6)	Commerce	6.07	22.06	4.36	4.86	5.01	8.89
(7)	Transport and communication	.67	2.93	4.88	.57	2.50	3.06
(8)	Services	3.91	10.59	27.49	1.54	36.33	15.82
(9)	Not adequately described	-	-	-	-	-	-
				1960 Males			
(0)	Agriculture, etc.	75.78	64.98	41.29	91.95	1.37	57.72
(1)	Mining and quarrying	.01	.02	.58	.01	.02	.29
(2-3)	Manufacturing	4.97	5.06	15.44	1.99	.68	9.49
(4)	Construction	1.38	1.20	3.59	.25	.12	2.19
(5)	Electricity, etc.	-	-	1.03	-	-	.50
(6)	Commerce	11.22	19.43	4.48	3.44	.18	8.27
(7)	Transport and communication	.87	1.63	6.16	.47	.16	3.55
(8)	Services	5.66	7.45	26.53	1.76	.48	15.48
(9)	Not adequately described	.10	.22	.90	.13	96.98	2.51

TABLE D.33. (Continued)

	Industry	Employers	Own account workers	Employees	Family workers	Unemployed and ill-defined	Total
				Females			
(0)	Agriculture, etc.	75.26	24.84	25.32	92.42	.66	43.77
(1)	Mining and quarrying	.03	...	.03	.01	-	.02
(2-3)	Manufacturing	4.39	9.98	4.40	2.24	.07	3.97
(4)	Construction	.05	.05	.13	.06	...	.09
(5)	Electricity, etc.	-	-	.08	-	-	.04
(6)	Commerce	10.94	45.47	2.25	3.06	.07	6.09
(7)	Transport and communication	.11	.08	.68	.07	-	.40
(8)	Services	8.96	19.04	66.49	1.88	.42	38.83
(9)	Not adequately described	.26	.53	.63	.27	98.79	6.78
				Both Sexes			
(0)	Agriculture, etc.	75.77	63.80	39.88	92.01	1.22	56.61
(1)	Mining and quarrying	.01	.02	.53	.01	.02	.27
(2-3)	Manufacturing	4.96	5.20	14.46	2.02	.55	9.05
(4)	Construction	1.35	1.17	3.29	.23	.09	2.03
(5)	Electricity, etc.	-	-	.95	-	-	.47
(6)	Commerce	11.21	20.20	4.28	3.39	.16	8.10
(7)	Transport and communication	.86	1.59	5.68	.42	.12	3.30
(8)	Services	5.73	7.79	30.07	1.77	.47	17.33
(9)	Not adequately described	.11	.23	.87	.15	97.36	2.85

TABLE D.34. LABOR FORCE BY STATUS, OCCUPATION, AND SEX, U.A.R., 1960.

Status	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7/8)	(9)	(X)	Total
						Males					
Employers	3,425	19,796	395	62,074	423,343	-	3,140	34,090	13,133	246	559,642
Own account workers	7,138	235	2,943	332,764	1,096,101	-	26,210	149,557	75,150	953	1,691,051
Employees	155,567	50,766	232,875	91,943	1,308,691	11,776	170,847	830,587	442,386	31,113	3,326,551
Family workers	135	74	484	31,869	707,781	49	4,544	25,553	9,131	1,093	780,713
Unemployed and ill-defined	732	96	972	2,756	6,161	29	1,979	17,317	3,680	84,440	118,162
Total	166,997	70,967	237,669	521,406	3,542,077	11,854	206,720	1,057,104	543,480	117,845	6,476,119
						Females					
Employers	64	297	5	1,239	8,755	-	2	1,147	107	80	11,696
Own account workers	265	3	18	23,513	12,576	-	15	12,690	1,567	213	50,860
Employees	47,343	3,258	11,245	2,956	57,892	6	981	21,151	92,386	1,951	239,169
Family workers	33	3	20	2,963	49,843	1	3	3,191	697	1,883	58,637
Unemployed and ill-defined	212	1	50	60	146	-	2	333	323	29,782	30,909
Total	47,917	3,562	11,338	30,731	129,212	7	1,003	38,512	95,080	33,909	391,271
						Both Sexes					
Employers	3,489	20,093	400	63,313	432,098	-	3,142	35,237	13,240	326	571,338
Own account workers	7,403	238	2,961	356,277	1,108,677	-	26,225	162,247	76,717	1,166	1,741,911
Employees	202,910	54,024	244,120	94,899	1,366,583	11,782	171,828	851,738	534,772	33,064	3,565,720
Family workers	168	77	504	34,832	757,624	50	4,547	28,744	9,828	2,976	839,350
Unemployed and ill-defined	944	97	1,022	2,816	6,307	29	1,981	17,650	4,003	114,222	149,071
Total	214,914	74,529	249,007	552,137	3,671,289	11,861	207,723	1,095,616	638,560	151,754	6,867,390

(0) Professional, technical, etc.; (1) Administrative, managerial, etc.; (2) Clerical workers; (3) Sales workers; (4) Farmers, fishermen, etc.; (5) Miners and quarrymen; (6) Workers in transport; (7/8) Craftsmen and production-process workers; (9) Service and sport workers; (X) Workers not classifiable by occupation. Data refer to persons 15 years of age and over excluding foreigners.

TABLE D.35. PERCENT DISTRIBUTION OF THE LABOR FORCE BY OCCUPATION, FOR EACH STATUS, BY SEX, U.A.R., 1960.

Status	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7/8)	(9)	(X)	Total
Males											
Employers	.61	3.54	.07	11.09	75.64	-	.56	6.09	2.35	.04	100.00
Own account workers	.42	.01	.17	19.68	64.82	-	1.55	8.84	4.44	.06	100.00
Employees	4.68	1.53	7.00	2.76	39.34	.35	5.14	24.97	13.30	.94	100.00
Family workers	.02	.01	.06	4.08	90.66	.01	.58	3.27	1.17	.14	100.00
Unemployed and ill-defined	.62	.08	.82	2.33	5.21	.02	1.67	14.66	3.11	71.46	100.00
Total	2.58	1.10	3.67	8.05	54.69	.18	3.19	16.32	8.39	1.82	100.00
Females											
Employers	.55	2.54	.04	10.59	74.85	-	.02	9.81	.91	.68	100.00
Own account workers	.52	.01	.04	46.23	24.73	-	.03	24.95	3.08	.42	100.00
Employees	19.79	1.36	4.70	1.24	24.21	...	.41	8.84	38.63	.82	100.00
Family workers	.06	.01	.03	5.05	85.00	...	.01	5.44	1.19	3.21	100.00
Unemployed and ill-defined	.69	...	.16	.19	.47	-	.01	1.08	1.04	96.35	100.00
Total	12.25	.91	2.90	7.85	33.02	...	.26	9.84	24.30	8.67	100.00
Both Sexes											
Employers	.61	3.52	.07	11.08	75.63	-	.55	6.17	2.32	.06	100.00
Own account workers	.42	.01	.17	20.45	63.65	-	1.51	9.31	4.40	.07	100.00
Employees	5.69	1.52	6.85	2.66	38.33	.33	4.82	23.89	15.00	.93	100.00
Family workers	.02	.01	.05	4.15	90.26	.06	.54	3.42	1.17	.35	100.00
Unemployed and ill-defined	.63	.06	.69	1.89	4.23	.02	1.33	11.84	2.69	76.62	100.00
Total	3.13	1.09	3.63	8.04	53.46	.17	3.02	15.95	9.30	2.21	100.00

(0) Professional, technical, etc.; (1) Administrative, managerial, etc.; (2) Clerical workers; (3) Sales workers; (4) Farmers, fishermen, etc.; (5) Miners and quarrymen; (6) Workers in transport; (7/8) Craftsmen and production-process workers; (9) Service and sport workers; (X) Workers not classifiable by occupation. Data refer to persons 15 years of age and over excluding foreigners.

BIBLIOGRAPHY

Books and Articles:

Abdel-Atty, S., "Life-Table Functions for Egypt Based on Model Life-Tables and Quasi Stable Theory," Milbank Memorial Fund Quarterly, Vol. XXXIX, No. 2, April 1961.

Abdel-Rahman, A.G., The Egyptian National Life-Tables No. 2 (Cairo: Government Press, 1948).

Abud-Lughod, J., "Urbanization in Egypt: Present State and Future Prospects," Economic Development and Cultural Change, Vol. XIII, No. 3, April 1965.

Azumi, K., "Length of Working Life of Japanese Men, 1930 and 1955," Monthly Labor Review, December 1958.

Bancroft, G., The American Labor Force, Its Growth and Changing Composition (New York: John Wiley, 1958).

Barclay, G.W., Techniques of Population Analysis (New York: John Wiley, 1958).

Blau, P.M. and Duncan, O.D., The American Occupational Structure (New York: John Wiley, 1967).

Brown, E.H. Phelps, The Economics of Labor (New Haven: Yale University Press, 1962).

Clark, C., The Conditions of Economic Progress (London: Macmillan, 1957), Third edition.

Cleland, W., The Population Problem in Egypt (Lancaster: Science Press, 1936).

Davis, K. and Golden, H., "Urbanization and the Development of Preindustrial Areas," in D.M. Heer, (ed.), Readings on Population (New Jersey: Prentice Hall, 1968).

Douglas, P., The Theory of Wages (New York: Augustus M. Kelley, Reprints of Economic Classics, 1964).

Dovring, F., "The Share of Agriculture in a Growing Population," Monthly Bulletin of Agricultural Economics and Statistics, Food and Agriculture Organization of the United Nations, Vol. VIII, No. 8/9, August-September 1959.

Ducoff, L.J. and Hagood, M.J., Labor Force Definition and Measurement (New York: Social Science Research Council Bulletin 56, 1947).

BIBLIOGRAPHY (Continued)

Durand, J.D., The Labor Force in the United States, 1890-1960 (New York: Social Science Research Council, 1948).

_____, "Population Structure as a Factor in Manpower and Dependency Problems of Underdeveloped Countries," Population Bulletin of United Nations No. 3, October 1953.

_____, "Demographic Aspects of Manpower," draft chapter for revised edition of the U.N. publication, The Determinants and Consequences of Population Trends (mimeographed, 1967).

_____ and Miller, A.R., Methods of Analyzing Census Data on Economic Activities of the Population (U.N., Department of Economic and Social Affairs, ST/SOA/Ser.A/43, 1968).

Easterlin, R.A., Population, Labor Force and Long Swings in Economic Growth (New York: National Bureau of Economic Research, 1968).

El-Badry, M.A., "Some Demographic Measurements for Egypt Based on the Stability of Census Age Distributions," Milbank Memorial Fund Quarterly, Vol. XXXIII, No. 3, July 1955.

_____, "Trends in Components of Population Growth in the Arab Countries of the Middle East," Demography, Vol. II, 1965.

_____ and Rizk, H., "Regional Fertility Differences Between Socio-economic Groups in U.A.R.," U.N., Department of Economic and Social Affairs, Proceedings of World Population Conference, 1965, Vol. II.

El-Ghonemy, M.R., "The Investment Effects of the Land Reform in Egypt," L'Égypte Contemporaine, No. 278, October 1954.

El-Shafei, A., "The Current Labor Force Sample Survey in Egypt (U.A.R.)," International Labor Review, Vol. 82, No. 5, November 1960.

El-Shanawany, M., "The First National Life-Table of Egypt," L'Égypte Contemporaine, No. 162, March 1936.

El-Tawil, B. and Tabbarah, R., "Population and Labor Force Growth in Selected African Countries," U.N., Proceedings of World Population Conference, 1965, Vol. IV.

El-Tomy, M. and Hansen, B., The Seasonal Employment Profile in Egyptian Agriculture (Cairo: Institute of National Planning, Memo. No. 501, October 1964).

Farrag, A.M., A Review of U.A.R. Activities in Related Fields to Manpower Planning (Cairo: Institute of National Planning, Memo. No. 150, 1962).

_____, "The Occupational Structure of the Labour Force: Patterns and Trends in Selected Countries," Population Studies, Vol. XVIII, No. 1, July 1964.

BIBLIOGRAPHY (Continued)

Garfinkle, S., "The Lengthening of Working Life and Its Implications," U.N., Department of Economic and Social Affairs, Proceedings of World Population Conference, 1965, Vol. IV.

Gnanasekaran, K.S., Interrelations Between Industrial and Occupational Changes in Manpower: United States, 1950-1960 (Philadelphia: University of Pennsylvania, Population Studies Center, Analytical and Technical Report No. 6, 1966).

Hagen, E.E., The Economics of Development (Homewood, Illinois: Richard D. Irwin, 1968).

Hansen, B., "Marginal Productivity Wage Theory and Subsistence Wage Theory in Egyptian Agriculture," The Journal of Development Studies, Vol. II, No. 4, July 1966.

_____ and Marzouk, G.A., Development and Economic Policy in the U.A.R. (Egypt) (Amsterdam: North-Holland Publishing Company, 1965).

Harbison, F.H. and Myers, C.A., Education, Manpower and Economic Growth: Strategies of Human Resource Development (New York: McGraw-Hill, 1964).

Husein, H., "Population in Relation to Development in Agriculture in Egypt," U.N., World Population Conference, 1954. 5 (22), Rome, Italy.

Issawi, C., Egypt in Revolution: An Economic Analysis (London: Oxford University Press, 1963).

Jaffe, A.J., "Working Force," in P.M. Hauser and O.D. Duncan, (eds.), The Study of Population, An Inventory and Appraisal (Chicago: The University of Chicago Press, 1959).

_____, Handbook of Statistical Methods for Demographers (Washington: U.S. Government Printing Office, 1960).

_____, "From Entries to Retirement: The Changing Age Composition of the U.S. Male Labor Force," Demography, Vol. IV, No. 1, 1967.

_____ and Carleton, R.O., Occupational Mobility in the United States, 1930-1960 (New York: King's Crown Press, 1954).

_____ and Froomkin, J.N., "Economic Development and Jobs - A Comparison of Japan and Panama, 1950 to 1960," Symposium No. 1 on Population Problems in the Pacific, 11th Pacific Science Congress, Tokyo, August 1966.

_____ and _____, Technology and Jobs: Automation in Perspective (New York: Frederick A. Praeger, 1968).

_____ and Stewart, C.D., Manpower Resources and Utilization, Principles of Working Force Analysis (New York: John Wiley, 1951).

BIBLIOGRAPHY (Continued)

Kheir El-Dine, H., The Cotton Production Function in the U.A.R. and its Relation to Technical Progress and to Disguised Unemployment (Cairo: Institute of National Planning, Memo. No. 370, September 1963).

Kiser, C., "The Demographic Position of Egypt," Milbank Memorial Fund, Demographic Studies of Selected Areas of Rapid Growth (New York: 1944).

Kitagawa, E.M., "Standardized Comparisons in Population Research," Demography, Vol. I, 1964.

Kuznets, Simon, Modern Economic Growth: Rate Structure and Speed (New Haven: Yale University Press, 1966).

_____, "Quantitative Aspects of the Economic Growth of Nations: II, Industrial Distribution of National Product and Labor Force," Economic Development and Cultural Change, Vol. V, No. 4, July 1957 (Supplement).

Lebergott, S., Manpower in Economic Growth (New York: McGraw-Hill, 1964).

Lee, Everett S., "A Theory of Migration," Demography, Vol. III, No. 1, 1966.

Mabro, R., "Industrial Growth, Agricultural Under-employment and the Lewis Model. The Egyptian Case, 1937-1965," The Journal of Development Studies, Vol. III, No. 4, July 1967.

Makar, R., The Egyptian National Life Table No. 3 for 1947 (Cairo: Government Press, 1957).

Mead, D.C., Growth and Structural Change in the Egyptian Economy (Homewood: Illinois: Richard D. Irwin, 1967).

Mellor, J.W., The Economics of Agricultural Development (Ithaca, New York: Cornell University Press, 1966).

Miller, A.R., "Labor Force Trends and Differentials," in S. Kuznets et al., Population Redistribution and Economic Growth, United States, 1870-1950: Analysis of Economic Change, Vol. II (Philadelphia: The American Philosophical Society, 1960).

_____, "Migration Differentials in Labor Force Participation: United States, 1960," Demography, Vol. III, No. 1, 1966.

Mincer, J., "Labor Force: Participation," International Encyclopedia of the Social Sciences.

Moustafa, M.D., Population Trends and Female Labor Force by Educational Status (Cairo: Ministry of Planning, Memo No. 674, in Arabic).

Myrdal, G., Asian Drama, An Inquiry into the Poverty of Nations (New York: Twentieth Century Fund, 1968), Vol. II.

BIBLIOGRAPHY (Continued)

Nassef, A., "Analytical Study of the Results of Manpower Sample Survey in U.A.R.," University of Pennsylvania, Unpublished paper, 1966.

_____, "Urbanization in U.A.R. (Egypt)," University of Pennsylvania, Unpublished paper, 1966.

New Zealand, Census and Statistics Department, Tables of Working Life, 1951: Male Population (Including Maoris), (Wellington, 1955).

Organization for Economic Co-operation and Development, Productivity Measurements, three volumes (Paris, 1955-1966).

_____, Manpower Resources in the Service Sector (Paris: 1967).

Parnes, H.S., Research on Labor Mobility: An Appraisal of Research Findings in the United States (New York: Social Science Research Council Bulletin 65, 1954).

Sadie, J.L., "Demographic Aspects of Labor Supply and Employment," U.N., World Population Conference, 1965 (Background Paper: A.5/19/E/484).

Said, A., The Growth and Development of Urbanization in Egypt (Social Research Center, The American University at Cairo, 1960).

Sarhan, A.E., "Mortality Trends in the United Arab Republic," U.N., Department of Economic and Social Affairs, Proceedings of World Population Conference, 1965, Vol. II.

Saw, S.H., "Malaya: Tables of Male Working Life," Journal of the Royal Statistical Society, Series A, Vol. 128, No. 3, 1965.

Seklani, M.M., "Population Active et Structures Économiques de L'Égypte," Population, Vol. XVII, No. 3, July-September 1962.

Sovani, N., "The Analysis of Overurbanization," Economic Development and Cultural Change, Vol. XII, No. 2, January 1964.

Spiegelman, M., Introduction to Demography (Cambridge, Massachusetts: Harvard University Press, 1968), revised edition.

Thomas, B., The Economics of International Migration (London: Macmillan, 1958).

Thomas, D.S., Research Memorandum on Migration Differentials (New York: Social Science Research Council Bulletin 43, 1938).

United Arab Republic, Central Statistical Committee, Population Trends in U.A.R. (Cairo: The General Organization for Government Printing Office, 1962).

_____, The Population Census, 1966, Vol. II.

BIBLIOGRAPHY (Continued)

_____, National Planning Committee, General Frame of the Five-Year Plan for Economic and Social Development, July 1960-June 1965 (Cairo, 1960).

United Kingdom, Ministry of Labor, The Length of Working Life in Great Britain (London, 1959).

United Nations, Department of Economic and Social Affairs, Application of International Standards to Census Data on the Economically Active Population (ST/SOA/Ser.A.9, 1951).

_____, _____, The Development of Manufacturing Industry in Egypt, Israel and Turkey (E.3111, ST/ECA/54, 1958).

_____, _____, Demographic Aspects of Manpower, Report 1. Sex and Age Patterns of Participation in Economic Activities (ST/SOA/Ser.A.33, 1962).

_____, _____, Population Bulletin No. 7 (ST/SOA/Ser.N/7, 1965).

_____, _____, Proceedings of World Population Conference, 1954 (E.CONF.13/416), Vol. IV.

_____, _____, Proceedings of World Population Conference, 1965 (E.CONF.41.5; New York, 1967), Vol. IV.

_____, _____, Principles and Recommendations for the 1970 Population Censuses (ST/STAT/Ser.M/44, 1967).

_____, Department of Social Affairs, Determinants and Consequences of Population Trends (ST/SOA/Ser.A-17, New York, 1953).

_____, Economic and Social Council, Inquiry Among Governments on Problems Resulting from the Reciprocal Action of Economic Development and Population Changes, Report of the Secretary-General (E/3895/Rev. 1).

_____, Statistical Office, The International Standard Classification of All Economic Activities (Statistical Papers, Series M, No. 4, Rev. 1, 1958)

_____, _____, Handbook of Population Census Methods (Statistical Papers, Series F, No. 5, Rev. 1, 1958), Vol. II.

_____, _____, Principles and Recommendations for National Population Censuses (Statistical Papers, Series M, No. 27, 1958).

United States, Bureau of Labor Statistics, Tables of Working Life - Length of Working Life for Men, Bulletin No. 1001, Washington, 1950.

_____, Department of Commerce, Bureau of the Census, The International Standard Industrial Classification and the U.S. Standard Industrial Classification, Technical Paper No. 14 (Washington, D.C.: U.S. Government Printing Office, 1965).

BIBLIOGRAPHY (Continued)

Wolfbein, S.L., "The Length of Working Life," Population Studies, Vol. III, No. 3, December 1949.

_____, Employment and Unemployment in the United States (Chicago: Science Research Associates, 1964).

_____ and Jaffe, A.J., "Demographic Factors in Labor Force Growth," American Sociological Review, Vol. XI, No. 4, August 1946.

Zachariah, K.C., "Sex-Age Pattern of Population Mobility in the U.A.R.: With Some International Comparisons," a paper presented at the International Union for the Scientific Study of Population London Conference, 1969.

Statistical Sources:

Egypt, The Census of Egypt (Cairo: National Printing Department, 1909).

_____, Ministry of Finance, Statistical and Census Department, The Census of Egypt (Cairo: Government Press, 1920-1921), Vol. II, 1921.

_____, _____, _____, Population Census of Egypt, 1927 (Cairo: Government Press, 1931), Part I, General Tables.

_____, _____, _____, Population Census of Egypt, 1937 (Cairo: Government Press, 1942), General Tables.

_____, _____, _____, Population Census of Egypt, 1947 (Cairo: Government Press, 1954), General Tables.

United Arab Republic, Department of Statistics and Census, 1960 Census of Population (Cairo: S.O.P. Press, 1963), 2 vols.

_____, Statistical Yearbook, 1962, 1964.

United Nations, Demographic Yearbook, 1948, 1954, 1962, 1964, 1965, 1966.

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