POPULATION AND DEVELOPMENT IN THE MIDDLE EAST

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FOREWORD

One of the stated aims of the population programme of ECWA is to enrich the population literature relevant to the region it serves. It is doing this in two ways: First through publications that are designed to assist researchers in undertaking research on Arab population questions and, second, through the actual publication of high quality population research undertaken by experts on the region or by the professional staff of the Population Division of ECWA. The present volume falls under the second category of publications and includes the edited versions of contributions made by outside experts and ECWA staff on questions of population and development relevant to conditions in the Arab world.

The importance of the subject derives not only from the crucial role being played by the population factor in Arab development but also from the fact that the literature on the subject, though expanding, is still very limited. As pointed out in the papers of this volume, an unusual situation with regard to population growth is developing in this region characterized by extremely high birth rates and extremely low death rates. Furthermore, nowhere in the world are population movements more intense than in this region, creating unique situations with regard to both the rapidity of urban population growth and the rational composition of populations. While these situations are the direct result of a peculiar development situation, they are themselves affecting the nature and structure of development. Understanding this relationship is crucial to the formulation of rational development policies and it is hoped that this book will contribute to this understanding and will stimulate research on the subject.

M.S. Al-Attar
Executive Secretary
ECWA

CHAPTER 1. INTRODUCTION AND OVERVIEW

This volume consists of the edited versions of selected papers presented at two regional conferences on population and development. The conferences were organized and sponsored by the United Nations Economic Commission for Western Asia (ECWA) and financed by the United Nations Fund for Population Activities (UNFPA). The first was held in Amman, Jordan, from 18 to 30 November 1978, the second in Damascus, Syrian Arab Republic, from 1 to 5 December 1979.

In the aggregate, the papers printed in this volume serve three purposes. First, they answer questions about the relationship between population and development within the region, which contains some countries that are experiencing very rapid economic growth and others that are experiencing relatively little growth. Second, they present data that other persons may find useful in answering other related questions. In a region characterized by an inadequate, but growing, data base, this is a significant contribution. Finally, the papers raise questions and issues to be dealt with in future research. In the remainder of this chapter we shall present a brief summary of each author's study.

Riad Tabbarah defines economic development as the optimal use of scarce resources for the continuous and maximal increase in the total welfare of society. Resources are traditionally defined as land, labour and capital. These are not always scarce. The American and colonial experience is best understood in terms of a virtually unlimited supply of land; the experience of developing countries such as India involved an unlimited supply of labour; and in some Arab countries development can only be understood in terms of an unlimited supply of capital.

Because the supply of labour is not unlimited, manpower shortages have occurred in many of the Arab countries. The oil-exporting nations have attempted to deal with these shortages by importing Arab workers from such countries as Jordan, Yemen, Lebanon and Egypt as well as non-Arab workers from outside the region.

Despite these overall manpower shortages, much Arab manpower remains underutilized or misutilized. Qualified manpower is concentrated in a few occupations requiring liberal arts training, which results in a surplus in some occupations (e.g., law) and a shortage in most technical and professional fields (e.g., engineering, medicine and mechanical and electric repair). Moreover, in many Arab countries vast numbers of the population are relatively uneducated and incapable of participating effectively in the development of the

region. Finally, large numbers of highly qualified Arab manpower are emigrating from the region itself.

The nature of Arab development has created a major gap between social and economic indicators because the economy has grown faster than the quality of life of the population has improved. In turn, this gap has important demographic consequences affecting the supply and distribution of human resources within the region. For one, the increases in income without commensurate improvements in social and economic conditions have increased the demand for children. At the same time, the reproductive capacities of couples have been increased and mortality has decreased because of improvements in health. The result has been rapid population growth produced by high birth rates and low death rates. In some instances massive immigration has also contributed to rapid population growth.

The migration patterns prevailing in the region have been dysfunctional as well as beneficial. Labour-exporting countries may have initially experienced reductions in unemployment because of massive emigration, but now many of the sending countries are experiencing labour shortages and are attempting to regulate the volume of emigration and the characteristics of the emigrants themselves. At the same time, the volume of remittances from workers abroad is considerable, often substantially offsetting or even exceeding the amount of total imports. The effects of these remittances are unknown and constitute a subject upon which additional research is badly needed.

The experience of the labour-importing countries has not been entirely favourable either. Because they are dependent upon foreign labourers, the labour force is relatively unstable (which lowers productivity). Also, the presence of so many non-nationals poses threats to internal security and provides an impetus to the dilution of the national culture. And the migrants themselves have often been treated arbitrarily by the governments of the various countries concerned. Tabbarah concludes that action needs to be taken on several fronts. Knowledge of the supply of human resources and of their requirements, problems and policy options has to be improved through intensified research. High priority should be given to eliminating the gap between the social and economic aspects of development; the Arab brain drain should be reversed; and a regional policy needs to be developed that co-ordinates the movement of labour and capital among the Arab countries and at the same time protects the interests of the migrants and promotes their welfare.

Yusef Sayigh also presents a comprehensive view of development, which he sees as not only increasing the levels of economic performance and growth, but also benefiting the general population and achieving certain social, political and economic goals. Foremost among these are attaining security as well as economic and agricultural independence; increasing the level of manpower skills and maximizing the opportunities for gainful and rewarding employment; promoting Arab identity and co-operation; and contributing to the establishment of a new world economic order. Thus, improvements in

the quality of the potential labour force (and hence the quality of life of the general population) are seen as an end of development as well as a means through which development may be achieved.

Paul Shaw presents the thesis that inequity in the distribution of human and non-human resources is more problematic for Middle Eastern countries than is population growth *per se*. His argument is that (1) the concept of "over-population" is of little immediate use to policy makers concerned with breaking into the "vicious circle of underemployment"; (2) the concept of over-population is so concentrated on the ratio of resources to people that the problems arising from distribution of resources within the population are ignored; and (3) even if population growth could be drastically reduced, the *status quo* of the population would remain unchanged unless substantial social and economic change also occurred.

To illustrate these points, Shaw examines five "hard-core" less developed countries–Yemen, Democratic Yemen, Sudan, Somalia and Mauritania. These countries may be characterized as having very rapid population growth, high dependency ratios created by high fertility and relatively low mortality, low rates of female labour force participation, low rates of savings and investment, a rapidly increasing school-age population and labour force, and extremely high rates of urban growth.

In short, Shaw argues, these countries possess exactly the type of characteristics that lead demographers to propose special programmes to reduce fertility in order to reduce population growth. He contends that such a programme would be of limited utility to the policy maker. Often, desired family size is greater than actual family size because of a high incidence of sub-fecundity, and desired family size would decrease only in response to changes in the socio-economic situation of the families. The lower socio-economic status of the poor is attributable to inequalities in the distribution of income and owned land rather than high fertility. Likewise, the major barriers to increased female labour force participation are socialization processes and lack of opportunity rather than high fertility. Finally, Shaw argues that population policies cannot curb rural-urban migration and urban congestion as long as migrants respond to severe income inequalities in the rural and urban political and economic contexts.

Instead of a programme to reduce population growth, Shaw proposes a reallocation of investments and activities that generate employment and improve welfare. In the past, because of an "urban bias" by investors and policy makers, these activities and investments have been located in one or two urban centres to the virtual exclusion of the rest of the country (see the treatment of urban primacy in chapters 15 and 16). Thus the solution involves massive rural development programmes, which will increase rural non-farm employment opportunities, reduce pressures on the land,and ease the massive rural-urban exodus that is currently taking place.

John and Pat Caldwell consider three alternative approaches to studying fertility in the ECWA region. Demographic transition theory is rejected because of its lack of explanatory power and the extreme variability of

thresholds in other variables that are necessary to bring about reductions in fertility. Likewise, the approach of the household economists is rejected because it was developed in order to explain fertility trends and differentials within societies with low or declining fertility rather than to demonstrate the mechanisms of stable high fertility and the factors causing the initial declines in fertility. Instead, the authors adopt the approach of wealth-flows theory (cf. Caldwell 1976), which assumes that fertility behaviour is economically rational in all societies and that, in terms of the perceived economic ends of the society, fertility will change only if those in control of fertility decision making find it to their advantage.

Fertility is high in the ECWA region, with crude birth rates typically around 50 and total fertility rates around 7.0. With the exceptions of Lebanon and Egypt, there are only minor signs of fertility declines, despite massive and rather impressive economic change within the region. Caldwell and Caldwell postulate that fertility is high within the region because the social context makes high fertility neither socially nor economically disadvantageous. There is early and universal marriage; women occupy a subservient position; Arab children work hard and have clearly defined duties to their parents; schooling costs are minimal; and the Koran admonishes young men to relieve their fathers of work. Moreover, high fertility fosters security by increasing the number of relatives and ensuring that parents will not be abandoned in their old age. Privacy in behaviour and/or the decision-making process is absent, and the system of kin relationships and family budgeting often operates as in an extended family, although family members do not necessarily share the same household.

Caldwell and Caldwell argue that in this context the chief decision makers are not only socially advantaged but also economically advantaged by high fertility. Change has occurred only among the urban middle classes of Egypt and Lebanon, both of which are identified as small sub-populations "where the extended budgetary and fertility decision-making family has been eroded the most."

Richard Easterlin posits that fertility is determined by the interaction of three factors: the potential supply of children, the demand for children, and the costs of regulating family size. The potential supply of children is the number of children a household would have if fertility were not deliberately limited. Thus it has two components—natural fertility and the probability that an infant will survive to adulthood. Natural fertility depends upon coital frequency, biological factors that influence fecundity or the ability to carry a foetus to full term, and the effects of disease and malnutrition upon these factors. Cultural factors also influence natural fertility through various social customs or events that inadvertently affect coital frequency, fecundity or foetal mortality. Examples include intercourse taboos during lactation, the physical separation of spouses, and extended lactation itself.

The second determinant of fertility is the demand for children. Easterlin posits that this is determined by the household's balancing of its subjective tastes for goods and children against externally determined constraints of price and income in a way that maximizes satisfaction. Other things being

equal, the number of children desired would be expected to vary directly with household income and the price of goods relative to children and inversely with the strength of tastes for goods relative to children. Allowance is made for variations in child quality by viewing it as an additional good.

Unless the demand for children is lower than the potential output of children, there is no motivation for fertility regulation and parents will have as many children as possible. On the other hand, if the potential output exceeds demand, parents are faced with the prospect of having unwanted children and will be motivated to regulate their fertility. However, whether fertility control will actually be used depends on how the costs of fertility regulation compare with the motivation to limit fertility.

There are two types of costs involved in fertility regulation. Psychic costs include the displeasure associated with the idea or practice of fertility control. Market costs are the time and money necessary to learn about and use specific techniques. Other things being equal, there is an inverse relationship between the costs of fertility regulation and its adoption.

Easterlin then attempts to link each of these factors to some of the major societal changes that accompany modernization—innovations in public health and medical care, innovations in formal schooling and mass media, urbanization, the introduction of new goods and per capita income growth. He concludes that in pre-modern situations fertility is governed by natural fertility and child survival prospects and that actual family size may increase during the early stages of modernization because modernization typically has a positive impact upon each of these factors. Thus the establishment of a family planning programme at this point would have little or no effect because there would be insufficient motivation to regulate fertility.

However, eventually fertility turns downward as deliberate control of fertility expands. This may be due partly to a gradual reduction in desired family size and in the costs of fertility regulation. Increases in the potential output of children raise the family's prospective number of unwanted children. Finally, the modernization process creates such fundamental changes in the circumstances of family reproduction that childbearing is no longer "taken for granted" but is viewed as posing difficult problems of individual choice regarding the limitation of family size. Here, according to Easterlin, the household decision-making approach comes into its own.

Easterlin concludes the paper by presenting two cross-sectional analyses of data collected in Jordan and Taiwan and attempts to place them within his theoretical framework.

The **ECWA** paper on mortality uses direct as well as indirect measures to study mortality differences between and within countries. Although the different techniques produce different absolute levels, the overall patterns are very similar.

Rather large differences exist between the countries studied. Disregarding the crude death rate because of its sensitivity to variations in the age composition, Kuwait has the lowest mortality level and Democratic Yemen and Yemen have the highest levels. These mortality levels appear to fluctuate

according to the country's level of economic well-being, urbanization and health care delivery. All of the countries studied have experienced significant and steady decreases in mortality since 1950.

Within countries, urban mortality is lower than rural mortality, male mortality is higher than female levels, and there tends to be an inverse association between indicators of socio-economic status and mortality. The age-specific rates show the *U* shape typical of many LDCs. ECWA concludes that: (1) the shortage and inaccuracy of available data on mortality have been the principal reasons for the inability to study mortality differentials accurately; (2) mortality differentials among the ECWA countries or among different parts of the same country appear to be related to differences in social and economic levels; and (3) a great deal of research remains to be done.

The critical issue in **Samuel Preston**'s paper is how cheaply a certain reduction in mortality can be made when produced by one source as opposed to another. In the past the LDCs relied upon health-input factors to supplement the gains accompanying any socio-economic development that occurred. Yet some persons believe that the possibilities of health interventions to reduce mortality have reached a stage of diminishing returns (cf. Valaoras' paper). The major health problems remaining are those associated with underdevelopment: poor nutrition and housing, unsanitary living conditions, lack of access to medical care, etc. In this context it is argued that the best way to reduce mortality is through general socio-economic development of the country. Thus it may be inefficient to divert money into public health programmes that could be used to encourage economic growth.

As Preston sees it, the trouble with this line of reasoning is that empirical studies show that gains in the standard of living are having markedly diminished returns in their mortality effects. Basing his conclusions on a number of case studies, Preston argues that the solution to the dilemma lies in structured development—particularly in the realm of increasing literacy—as well as programmes to spread public health and nutritional information widely among the population.

International migration is an extremely important variable in the Middle East. **Georges Tapinos** examines some of the economic issues involved in international migration and sets forth several very useful generalizations. The first is that migration is a process consisting of a succession of phases that must be understood in their entirety. The emigrant's decision to emigrate is not merely a decision to leave but part of a plan for his life. Also, migratory flows can generate their own momentum and may even perpetuate themselves after the original factors that produced them have disappeared. Because of this, the country of origin may find it extremely difficult to keep emigration at some optimal level.

Tapinos' second major point is that migration is an all-encompassing social fact. Thus the determinants of migration are complex and transcend simple economic rationality. Also, the effects of migration encompass the social as well as the economic field. Indirect as well as direct effects must be taken into account. Tapinos illustrates this point by considering the effect of

migration upon the balance of payments and the relationship between migration and technical progress.

The final section of the paper is concerned with policy implications and makes some very useful distinctions. The potential conflict between the aspirations of individuals and the collective public interest is noted, as is the difference between the short-term and long-term objectives of both the society and the individual migrants.

Zafer Ecevit documents the extent to which a number of countries in the region import labour and the extent to which Egypt, Jordan, the Syrian Arab Republic and Yemen export it. In 1975 the importing countries contained over 2 million immigrant workers, who constituted 2.6 per cent of their total population and 11 per cent of their labour force. These are only average figures. Some of the countries rely much more heavily upon imported labour. For instance, in Kuwait, Qatar and the United Arab Emirates over 70 per cent of the total number employed is immigrant labour.

With numbers of this magnitude, the resulting flows of capital between the countries are considerable. Thus, even excluding remittances in kind and those sent through unofficial channels, the flow of remittances in 1977 to Egypt, Jordan, the Syrian Arab Republic, Yemen and Democratic Yemen was about 3.8 billion dollars.

Ecevit attempts to uncover the macro-economic implications of these flows of capital and manpower for the various countries involved. In doing so, he demonstrates a number of gaps in our knowledge in this area and establishes the need for a great deal of additional research. The immigrant labourers are predominantly male, between 18 and 35 years old, and unskilled or semi-skilled. The major industries in the importing countries are construction, commerce and finance, and services—although exceptions do occur. The occupational and industrial composition of the immigrant labourers are presented in detail, but comparable data for non-migrant labourers in the sending and receiving countries are not presented.

The effect of exporting labour on the sending country depends upon a number of factors, but the major variables are identified as follows: (1) the volume of the outflow; (2) the employment and occupational status of the migrants *before* departure; (3) how much the migrants save and remit from abroad; (4) the pattern of expenditures for these remittances; (5) the effects of these remittances upon price levels; (6) whether the emigrants acquire skills that can be used when they return; (7) how many emigrants return; and (8) the extent to which the government can effectively organize and control the flows and remittances.

In Kuwait, where over two-thirds of the labour force consists of non-Kuwaitis, the stability of the immigrant labour force is of vital importance. **Safouh Al-Akhras** examines four variables he postulates to be related to the labour force stability of the immigrants—duration of residence, family size

(number of accompanying dependants), the sex ratio and the number of mixed marriages. His hypothesis is that, other things being equal, the greater the duration of residence, the larger the family size, the lower the sex ratio, and the greater the number of mixed marriages, the greater will be the stability of the immigrant population and hence the immigrant labourers.

He does not test these hypotheses but provides us with relatively detailed data on each of the independent variables. Almost half of the non-Kuwaiti population (12 years and over) have been in Kuwait less than 5 years, and this does not vary by economic activity status. On the other hand, about 23 per cent have been there 10 or more years, and close to 10 per cent have been there 15 or more years. The average duration of residence is higher for the economically inactive than for the active population and for males than for females. He also examines duration of residence by nationality of the immigrant.

About half of the non-Kuwaiti families contain fewer than 5 persons, and the average is 2.2. This varies according to the nationality of the immigrant. Family size is much lower among the non-Kuwaitis in Kuwait than it is in their respective countries of origin.

The sex ratio is 166 males per 100 females and varies by the age, nationality and duration of residence of the immigrants.

There are more marriages between non-Kuwaiti females and Kuwaiti males than between Kuwaiti females and non-Kuwaiti males. However, mixed marriages are uncommon and Al-Akhras sees little hope that intermarriage will lead to labour force stability in the near future.

The transfer of talent from one geographic area to another is often a consequence of migration, especially when educational selectivity is involved in the migration process. When an area loses more "talent" through the net migration process than it gains, we often speak of a "brain drain" from that area. Although this phenomenon is usually discussed with reference to international migration patterns—with high-level manpower (HLM) flowing from LDCs to the more technologically developed countries of the west—**A.B. Zahlan** points out that there are a variety of flows: from rural to urban areas, from one country to another within the same region, from one country to another outside the region of origin, and a non-geographic one involving inter-occupational movement. Frequently these are combined. For instance, rural-to-urban movement may also cross national or even regional boundaries.

Zahlan attempts to measure the flow of HLM from the Arab countries, to relate this flow to policies and conditions of the receiving countries, and to discuss its causes. He concludes that the principal issue is why more HLM do not migrate to other countries. Rather than place the "blame" for any brain drain on the more developed countries, he posits that the brain drain is merely an indicator of events and processes occurring in LDCs, and that changing these factors is the best way to alter the volume and direction of the flow.

J.S. Birks and **C.A. Sinclair** study the phenomenon of international migration within the Arab region and some of the problems that arise from its large volume. They divide the countries into two categories—the capital-rich

and the capital-poor. Since 1950 there has been a steady transfer of labour from the latter to the former, and this transfer has accelerated since 1973. Its causes are high levels of unemployment and underemployment in the capital-poor nations and a relatively small indigenous work-force and increased demand for labour on the part of the capital-rich countries. Its results include an intensive concentration of non-national labour in the receiving countries. In the aggregate, one-half of the work-force in the capital-rich countries (Saudi Arabia, the Libyan Arab Jamahiriya, Kuwait, the United Arab Emirates, Bahrain and Qatar) consists of non-nationals. In some individual countries, the figures are much higher. At the same time, some of the capital-poor nations have a significant proportion of their potential work-force employed in other countries. This is especially true of Jordan (East Bank), Oman, Yemen and Democratic Yemen. In an effort to fill their increased demand for labour in the face of a contracting supply created by the return migration of Iranians and Iraqis following the rapid expansion of the Iranian and Iraqi economies in the mid-1970s, the capital-rich countries have increasingly turned to Asian nations as a source of labour.

This, then, is the situation described by Birks and Sinclair. They see the flow as problematic in several respects. According to them, the capital-poor states have also begun to experience shortages of skilled manpower because of the brain drain involved (see Zahlan's treatment of this problem). Also, the workers' remittances to their native countries have contributed to inflation—a possibility also raised by Ecevit. The dependence of the capital-rich states on immigrant labour is not entirely healthy because it hinders the development of indigenous human resources and makes the economies of these countries vulnerable to fluctuations in the volume of return migration. Moreover, competition between countries for immigrant labour has raised the price of this labour considerably and created manpower bottle-necks.

According to Birks and Sinclair, the solution is a regional manpower programme, which they propose to accomplish by the following means: (1) having their own paper discussed as widely as possible; (2) holding a series of seminars and workshops; (3) paying closer attention to the regional component of human resources development in project documents and technical assistance programmes; (4) making some agency responsible for producing an annual evaluation of the demand for, and supply of, labour in the region and an annual study of labour market problems in the Arab region; and (5) establishing a common policy and approach to human resources that enhances the economic development of the capital-poor as well as the capital-rich countries.

Fathi Abu-Aianah traces the development and growth of world urbanization, beginning with the first settlements in the alluvial plains of the Middle East and ending with megalopolis. The variety of functional types among the early cities is described. Thus the first settlements were agricultural communities in the lower Nile valley, the lower reaches of the Tigris and Euphrates rivers, and the plains of the Indus River. The regular pattern of river inundation and the use of the plough facilitated the production of a surplus of

food, which then supplied a large number of people not directly involved in food production. These settlements formed military, cultural and administrative centres. Later, cities developed, exploiting their geographic location to become commercial centres, which grew rich by supplying services to the inhabitants of neighbouring regions. Largely coastal, these were concentrated in the Middle East and Mediterranean area.

The Greek city-states began to develop and expand during the eighth and seventh centuries B.C., specializing in the production of tools and manufactured goods, which they traded for wheat imported from the coasts of Macedonia and the Black Sea. After the Romans defeated the Greeks in Italy and Sicily and began to expand their empire, urban life developed even more. Cities appeared north of the Alps and in England. According to Abu-Aianah, the defensive and administrative functions of these cities were more important than their commercial function. At the same time, the importance of older cities increased as a result of commercial specialization—e.g., the Egyptian cities on the Red Sea, Alexandria, and the caravan cities on the edge of the Syrian desert.

The fall of the Roman Empire in the fifth century B.C. led to a waning of urban life in the absence of the stability created by the Romans; but later, under Islamic rule, urban development flourished and cities appeared that played an important role in the dissemination of culture and the promotion of trade. Still later, a number of medieval cities were developed that flourished as centres of commerce, trade and the production of goods.

However, large-scale urbanization and urban growth did not become possible until the Industrial Revolution, which greatly increased agricultural productivity, expanded the amount of land that could be utilized for food production, and facilitated the transportation of food from one area to another. Consequently, in the past 175 years cities have grown faster than in any other period of history. It is estimated that by the end of this century over one-half of the world's population will be urban. This figure will be 81 per cent in the developed countries and 43 per cent in the developing areas. Along with this growth, the development of very large cities containing a million or more inhabitants has occurred: in 1950 there were only 75 such cities; in 1970 there were 162. It is estimated that there will be 273 such cities by 1985, most of which will be in the developing world. Internal migration patterns are one factor that produces this growth.

These very large cities exercise primacy over the urban socio-economic and political life of their respective countries, a feature examined in several other papers in this volume, including the following paper, also by Abu-Aianah, who documents the extent to which Arab countries deviate from the rank-size rule of urban hierarchy. According to this rule, there should be a definite relationship between a city's size and its rank in the hierarchy, so that

$$\text{size of city } x = \frac{\text{size of largest city}}{\text{rank of city } x}.$$

Thus the second-largest city should have about one-half as many people as the largest city in that country, the third-largest city should have about one-third as many people, and so forth. Examination of the available data shows that in most of the Arab countries, as in developing countries in general, the rank-size rule does not apply. Instead, one must apply the law of the primate city, in which one city—usually the capital—towers above the others and contains a disproportionate share of the population, the country's administrative functions, its skilled labour force, and its cultural and commercial functions. According to Abu-Aianah, the primate city is, in effect, the country in some places.

These primate cities are characterized by extremely high rates of urban growth. This rapid growth strains the ability of the city's economy to provide employment, housing and social services. Consequently, the influx of in-migrants from rural areas has resulted in many unemployed or semi-employed persons living in squatter settlements in the cities. Such settlements constitute at least one-third of the population of many cities in the region. Other cities within the country are unable to compete for economic activity and services with the central city, which continues to polarize the population despite its numerous difficulties in absorbing additional people and activities.

John Clarke documents the rapid growth of the urban population in the Middle East. After describing the major factors affecting the degree of international comparability in the region—differences in definition, even the absence of an official definition in some countries, the variable quality of available data, and the absence of recent census data in some countries—Clarke estimates that the urban population grew between 3 and 8 per cent from 1970 to 1975. Between 1960 and 1975 the percentage of the population living in urban areas also increased considerably, in some cases even doubling. A considerable amount of variability in the level of urbanization exists. For instance, in 1975 the per cent urban ranged from 9 in Yemen to 89 in Kuwait. Most of this growth occurred in the large, primate cities in each country. As is the case with urban growth and the level of urbanization, there is a great deal of variability in the degree of urban primacy, the phenomenon being most pronounced in Iran, Iraq, Lebanon and Sudan.

Vasilios Valaoras ascribes the unprecedented rate of world population growth to an imbalance between birth and death rates, which was sparked by a falling death rate and a birth rate that remained high. According to him, effective means and organized social action for the control of mortality became available when the medical sciences recognized the cause of, and developed effective measures for the reduction of, infectious diseases. Moreover, an innate enmity against death exists, but no similar motive exists for the avoidance of excessive fertility, and natality is even viewed as a blessing.

This imbalance between birth and death rates is likely to continue in much of the world's population. In addition to creating rapid rates of population growth, the imbalance also creates an age structure that is unfavourable for the achievement of social and economic progress. The optimal age composition is about 25 per cent aged 0-14 years, about 65 per cent aged 15-64,

and 10 per cent aged 65 and over. By contrast, young age compositions are typically 45-55-5, while aged populations are near to 20-62-18. Rapid declines in mortality that are not accompanied by similar declines in fertility produce a young population, such as those of Africa, South Asia and Latin America. The ECWA populations also have a young age composition and may be expected to double in size every 26.5 years if current growth continues. Valaoras concludes that social efforts should be directed to the curtailment of excessive fertility as well as mortality.

William Brass discusses the measurement of mortality differentials and attempts to draw policy implications from temporal trends in these differentials. The measurement of mortality differentials can be in terms of absolute spreads or relative levels. Brass uses the latter to show that, although absolute levels of mortality declined at all socio-economic levels, socio-economic differentials in mortality in the developed countries have not diminished. In the developing countries, Brass finds differential mortality by sex, with males usually having higher levels than females. Differentials by ethnic groups are also discussed, as are infant mortality differentials by socio-economic characteristics such as income, occupation and education. Jordanian data are presented that show higher childhood mortality for rural than for urban areas and for persons with smaller amounts of schooling. Kuwaiti data show almost no differences in the childhood mortality of Kuwaiti and non-Kuwaiti residents and higher childhood mortality for males than for females.

Brass concludes with a discussion of the policy implications of his findings. He posits that effective policy formulation of measures to eliminate mortality differentials depends upon prior knowledge of the magnitude of the differentials and their determinants. Of course, such knowledge is often missing, particularly in the developing countries. Brass suggests that, based upon what we do know, measures aimed at eliminating differential mortality (as opposed to lowering absolute levels) will be successful only if they eliminate differences among families in their ability to control their environment and living conditions. Thus he poses a dual challenge—to demographers, who must produce the basic knowledge necessary to formulate policy, and to the policy designers themselves, who must discover methods of equalizing control capacities and opportunities among families with widely disparate skills and resources.

Lincoln Day believes that a well-designed programme for the reduction of fertility would: (1) incorporate a high degree of flexibility, (2) provide for the collection of appropriate data and continuous monitoring of the programme and its successes and failures, (3) emphasize inducements rather than negative sanctions, (4) be tailored to meet the diverse needs and situations of the population, (5) be based as much as possible on a sound understanding of the socio-cultural setting, and (6) recognize the distinction between benefits to the aggregate and benefits to the individual.

He sees two ways of doing this. One involves ensuring the availability of birth limitation techniques—either through contraception or abortion—to all who need them, with as few social, psychological and economic costs

attached to their use as possible. This would have two effects. The direct effect would be to reduce the number of unwanted children and, thereby, completed family size. By reducing completed family size, an alternative to high fertility would be presented to people and an indirect effect—on the behaviour of others—might occur through this change in the demographic context of the society.

The second way of realizing these general criteria of a well-designed programme to reduce fertility is to use different approaches for the various subgroups and to increase the range of behaviour and thought patterns available to people. Identification of distinct subgroups—statistical, cultural or behavioural minorities—serves two purposes. It allows the programme administrators to design special features for the different needs and interests of these people. Moreover, it may also yield insights into the process of demographic change in the broader society and how to effect such changes efficiently. To the extent that diversity is perceived by the general population, the belief that one's condition in life may be altered will be accepted—other things being equal.

Within this context, Day discusses four specific measures that he views as desirable because of their effect on fertility, their potential to enhance the quality of life, and their positive impact on the ability to predict and control important events in the life cycle. One measure is development and increased use of the mass communications media. In addition to spreading information about specific methods of birth control and the local availability of related services (a very important function among largely illiterate populations who are poorly informed about such matters), these media could also deliver indirect messages about alternative life-styles, raise levels of aspiration, promote acceptance of new roles for women, and generally create a climate more favourable to the adoption of new modes of thought and behaviour.

Day also recommends the development of public transportation. This would give people a greater range of employment and housing opportunities, better access to community services, more intellectual stimuli, and a heightened sense of being able to exercise control over their own lives.

Greater diversity in occupations is also desirable, for men as well as women. The expansion of formal schooling is another means of achieving greater diversity. One direct effect is to lower fertility by raising the age at marriage and by raising the costs of children. It would also help to create new roles for women. Following the lead of Ruth Dixon, Day recommends the establishment in rural villages and towns of small-scale, collective light industries that would employ only women. While minimizing the widespread fear of indiscriminant association with men, this would draw women out of the home, offer them an economic return for their time and effort, and present alternatives to the traditional mode of behaviour—early marriage and high fertility.

Unlike Day, **Adnan Mroueh** recognizes the importance of expanding health services to reduce infant mortality as a measure likely to result in reductions in family size (in the long run). Mroueh also recognizes the uneven nature of current health care delivery systems, which he characterizes as

concentrated primarily in large cities and towns, predominantly curative rather than preventive, and available only to the privileged few. The rural population and the poor are often without care.

Mroueh posits that family planning should be an integral part of a government's efforts to increase the health status of the population. Apart from its demographic, social and humanitarian value, altering fertility patterns can have beneficial effects on the mother and the children. The postponement of fertility until late adolescence or the early twenties would reduce the health risks to the mother as well as the infant. Elimination of births among women over age 40 or beyond the fourth child would also reduce maternal mortality. Providing longer intervals between births would decrease the deleterious effects of successive pregnancies and enable mothers to replenish their bodily reserves between births.

W.R. Böhning traces the development of the idea of compensation and international migration. According to him, the idea first began to receive serious consideration by scholars in the late 1960s when Jagdish Bhagwati proposed to levy a surtax on the income accruing to brain drain categories in developed countries with a view to paying the receipts over to developing countries. Subsequently, the idea has been discussed at several international conferences and by the General Assembly of the United Nations.

The compensation would take the form of financial payments or assistance to the developing countries by the recipients of the brain drain. The revenue could be raised in several ways: the migrants themselves could be taxed; the developed countries could share their tax revenues with the developing countries; special tax allowances could be extended to individual migrant taxpayers in the developed countries so that they might earmark part of their income for remittance to their native country or to a designated UN agency for development spending; or some other migrant-related tax measure could be implemented.

The idea of compensation for international migration is based on four premises: (1) most international migration occurs for economic purposes; (2) the country of origin incurs certain costs for housing, schooling and personal maintenance before the person migrates; (3) emigration is detrimental to the country of origin; and (4) the country of destination benefits from the immigration.

George Dib attempts to summarize the complex web of laws concerning the migration of Arabs between the various Arab countries. Postulating that there is a right to migrate supported by the Universal Declaration of Human Rights, Dib examines the extent to which this right is recognized by various countries. His thesis is that laws or directives that attempt to limit the freedom of individuals to emigrate not only abrogate a basic human right but also are relatively ineffective. Instead there should be some sort of multilateral agreement between the sending and the receiving countries. The exact nature of this agreement is not spelled out, however.

The basic mechanism by which sending nations attempt to limit emigration is the issuance of travel documents, usually vested in the Ministry of the

Interior or one of its organizations such as the *Sûreté Générale*. These offices are granted a wide degree of discretionary power and often there is no appeal (except to the office itself). However, the *de facto* situation is that persons circumvent the laws. They do this in two ways. One is to migrate to a third country before migrating to the final country of their choice. Another method involves obtaining travel documents for religious purposes and then obtaining a work contract in the foreign country, which their native country is obliged to honour.

Once they are given permission to emigrate, the migrants are subject to further regulation by the receiving countries. They must enter through certain points controlled by the police, have valid travel documents, and, often, a work permit obtained in advance. Residence permits are frequently necessary. The right of an alien to depart is not an absolute right but in some cases is regulated by the Ministry of the Interior. Aliens are also subject to deportation or expulsion for a wide variety of reasons. Usually the Minister of the Interior has a discretionary power that enables him to judge (by himself) whether an alien has become a threat to public interest, public security or public morals—without necessity to show cause. The only appeal is to the Minister himself, who does not even have to reply to this appeal.

To correct the potential abuses to the freedom of movement of persons within the region—a principle endorsed by the members of the Arab League themselves—Dib proposes the following measures. First, there should be a uniform passport cover for the citizens of all Arab countries. Second, the Arab nations should establish the explicit right of every Arab citizen to reside in another Arab country for at least 5 years. Third, the process of granting residence permits should be kept separate from that of granting work permits. Fourth, departure from a country should not be subject to previous authorization. Fifth, after the citizens of the country involved, first priority in employment should be given to aliens from other Arab countries. Sixth, the migrant should be given a legally binding right to have the members of his family with him. And finally, expulsion should be according to due process of law and the responsible officials should be legally bound to show cause.

PART I. THE BASIC ISSUES

CHAPTER 2. POPULATION, HUMAN RESOURCES, AND DEVELOPMENT IN THE ARAB WORLD*

*Riad Tabbarah***

In view of the great abundance of capital resources in relation to land and, more particularly, to labour, Arab development has been described as "development with unlimited supply of capital" (Tabbarah forthcoming). In the major oil-exporting Arab countries, namely, Iraq, Kuwait, the Libyan Arab Jamahiriya, Qatar, Saudi Arabia, and the United Arab Emirates (U.A.E.), the over-abundance of capital—in terms of financial resources derived mainly from the export of oil—superimposed on an underdeveloped social and human resources infrastructure, has created a unique development situation. For the first time in history, poverty and underdevelopment have been clearly separated, giving rise to a new economic phenomenon—"the rich developing country." Furthermore, while a principal aim of economic development has been defined as that of diminishing capital aid from the more developed countries (Bannock *et al.* 1973, p. 130), the major oil-exporting Arab countries, underdeveloped by any standard except per capita income, are themselves exporting substantial amounts of capital resources to the more developed countries. This has given rise to another new economic phenomenon—"the capital-exporting developing country." Finally, the overflow of funds to the neighbouring poor and relatively poor countries (e.g., Yemen, Jordan, and Lebanon) with an unusually limited absorptive capacity resulted in another new phenomenon—"the capital-exporting low-income country."

One of the most important consequences of this over-abundance of capital is the pressure being placed in Arab development on the other factors of production, particularly human resources. Because the approach to development in the region—in terms of both policies and institutions—continues to be of the most traditional kind, irresponsive to the uniqueness of the Arab development experience and characterized by minimal effort towards regional co-ordination and harmonization, the state of human resources has become riddled with contradictions and, in many of its aspects, near-chaotic. The purpose of this paper is to give a brief analysis of this aspect of Arab development and to suggest, in broad terms, an outline for a course of action that would improve the contribution of human resources to development and promote the rationalization of the Arab development process.

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The Meaning of Human Resources Development

The idea of human resources development is still vague in spite of the increasing literature on the subject. A major reason for this is that various authors have defined this area of development in various ways. At one extreme, the field has been defined to encompass not only the development of human "skills, abilities, and attitudes instrumental in promoting economic growth, work productivity and efficiency, but also a much wider range of social, psycho-social, and cultural elements such as spiritual qualities necessary for citizenship, 'open-mindedness' allowing one to lead a richer life, or the general welfare of society" (Gostkowski n.d., p. 15). At the other extreme, human resources development has been restricted in its application to measures leading to the development of the efficiency of workers in corporations, governments, and other organizational structures (Patten 1971, p. 3). In between these two extremes, human resources development has been variously defined, but principally with reference to the human inputs into the productive process, making it analogous to the accepted definitions of natural and capital resources development (Parnes 1965, p. 16).

In the present paper, human resources development is defined on both the *micro* and the *macro* levels. On the *micro* level, human resources development focuses on the individual in a society and on the institutions that give him the skills and other basic requirements necessary for a dignified existence and an adequate degree of social participation.[1] The major institutions that may be identified in this regard are the family, which has "primary responsibility for the nurturing and initial socialization of the child"; the school, which later "assumes a major complementary role, particularly in the development of the child's cognitive skills"; the employing organization, insofar as it affects the skill and dignity of individuals; and the social security and welfare systems, which provide the "more vulnerable with essential income support" (Ginzberg 1976, pp. 33-35).[2]

On the *macro* level, human resources development focuses on aggregate concepts relating to the supply and utilization of human resources. In this respect three areas may be identified: the first relates to the growth, structure, and spatial movements of the population and the labour force; the second to the conventional field of manpower planning; and the third to the development and integration of unutilized and underutilized pools of human resources. These three areas deal, respectively, with (1) the population base from which the *supply* of human resources is obtained, (2) the process of insuring the best utilization of *available* manpower in development efforts, and (3) the effective incorporation of *potential* human resources into the development process.

[1] "Human capital," which is accumulated by an individual principally through education and which results in future increase in work remuneration, may be viewed as part of the definition. For a basic text on this subject see Becker (1975, p. 10).

[2] Ginzberg does not include the employing organization in his list.

It is clear that, as defined here, human resources development is a broad interdisciplinary idea, and a systematic analysis of human resources development in the Arab world, however cursory, would require much more space than is available for this paper. In what follows, therefore, the analysis will be restricted to the *macro* level and will cover only selected aspects of the three areas just mentioned. First a section will be devoted to the discussion of the unique gap between social and economic factors observed in the development of major Arab oil-exporting countries; a second section will analyse principal population trends and issues resulting from the peculiar nature of Arab development; this will be followed by a critical look at some questions relating to both the utilization of existing manpower and the development of human resources potential. Finally, a conclusion will summarize the main findings and propose steps for improving the effectiveness of the human resources component in the Arab development process.

Socio-Economic Consequences of Oil

Although Arab oil was discovered in the 1920s and 1930s, its impact on the development of the countries concerned and the Arab region as a whole began to be significantly felt only during the Second World War, and, more clearly, during the 1950s (Al-Attar 1977). Nevertheless, surpluses in the balance of payments of the major Arab oil-exporting countries and the accumulation of capital abroad did not reach extreme proportions until the 1970s, in particular 1974, following the first major increase in oil prices decided on by the Organization of Arab Petroleum Exporting Countries (OAPEC) subsequent to the 1973 Arab-Israeli conflict.

The present overwhelming dominance of oil in the economies of the major OAPEC countries is incontestable. As can be seen from table 1, oil accounts for between 90 and 100 per cent of total exports of these countries and, more significantly, between 50 and 90 per cent of their gross domestic products. The sudden and tremendous increase in income of these countries in the past 30 years has transformed them, within one generation, from some of the poorest to the richest countries of the world. The speed and magnitude of this transformation and the "exogeneity" of the moving force behind it created an unprecedented development situation. Because they are considered developing countries but at the same time enjoy very high per capita incomes, most OAPEC countries are generally referred to as "rich developing countries," a contradiction in terms according to the conventional wisdom of development economics.

The gap between the "social" and "economic" aspects of development in these countries is so great that it is often not fully appreciated. One summary, but admittedly rough, way of showing the magnitude of this gap is through a comparison between the Physical Quality of Life Index (PQLI) and the corresponding per capita GNP. The PQLI, which may be taken as

a rough index of social well-being, is composed of three indicators—infant mortality, life expectancy, and basic literacy—that are known to be highly correlated with other "social" indicators (Morris 1979, pp. 20-34). Per capita GNP, on the other hand, remains the most convenient index of "economic" development. Table 2 is constructed on the basis of results of regression analysis,[3] using the most recent data on PQLI and per capita GNP of 154 countries.[4] The data in the table relate to the major Arab oil-exporting countries and a number of other oil-exporting countries around the world. In data columns 1 and 2, the 1977 figures on per capita GNP and PQLI are shown. Regression on the per capita GNP showed a "normal"—that is, expected—PQLI for each country, and these values appear in column 3. Column 4 shows the number of standard errors that the actual PQLI deviates from the "normal." Reversing the regression (i.e., per capita GNP on PQLI), the "normal" per capita GNP and the corresponding distances of actual per capita GNP from it in terms of standard errors are given for each country in columns 5 and 6, respectively. Finally, in column 7 the ratios of actual to "normal" GNP are shown.

TABLE 1 VALUE OF OIL EXPORTS AS A PER CENT OF TOTAL EXPORTS AND OF GDP IN ARAB OIL-EXPORTING COUNTRIES, 1970 AND 1977

Country	1970		1977	
	Per cent of total exports	Per cent of GDP	Per cent of oil exports	Per cent of GDP
Algeria	67.5	14.7	95.3	28.8
Bahrain	75.7	67.6	78.4	87.4
Iraq	92.6	22.2	98.4	52.8
Kuwait	94.2	59.3	90.1	66.8
Libyan Arab Jamahiriya	99.7	76.0	99.9	50.3
Oman	99.5	76.5	99.3	61.6[a]
Qatar	96.1	62.8	99.1	88.1
Saudi Arabia	99.6	60.8	99.8	63.9[a]
United Arab Emirates	95.0	68.8[b]	96.0	70.1

Sources: IMF 1978; United Nations 1979; World Bank 1978.

[a] 1976.

[b] 1973.

[3] Two separate regression exercises were undertaken: the first of PQLI (y) on per capita GNP (x) and the second of per capita GNP (y) on PQLI (x). For the first exercise, the

A number of salient facts emerge from this table:

(1) Among the major Arab oil-exporting countries, there are the rich (Bahrain, Saudi Arabia, the Libyan Arab Jàmahiriya, and, to some extent, Oman), the super rich (Kuwait, Qatar, and the United Arab Emirates), and the not so rich (Algeria and Iraq). Among the other oil-exporting countries in the table, only Gabon and, to some extent, Venezuela could be considered rich countries (column 1).

(2) As expected, for all rich and super-rich Arab oil-exporting countries, the actual social level (PQLI) is always substantially lower than the "normal" for countries with comparable levels of per capita GNP. In terms of standard errors, the distance between the actual and the "normal" PQLI varies from minus 6.3 for Kuwait, the most socially advanced, to minus 17.4 for Qatar (columns 2, 3, and 4). Conversely, for these same countries, actual per capita GNP is higher than the "normal" obtained in countries with comparable social levels (PQLI) by 4 (Oman) to 25 (U.A.E.) standard errors (columns 1, 5, and 6). Since, by definition, the actual levels (of GNP or PQLI) for 99 per cent of the countries of the world fall within three standard errors of the corresponding normal values—i.e., of the trend line—the Arab countries in question not only diverge from the rest of the world, but, from the statistical point of view, they belong to an entirely different universe insofar as the extent of the gap between social and economic aspects of development is concerned.

The last column of table 2 makes the same point in a somewhat less technical manner. For the rich and super-rich Arab countries in 1977, actual per capita GNP was between 4 times (Bahrain) and more than 35 times (Qatar and U.A.E.) the per capita GNP expected to be found in countries with similar social levels. Thus, for Qatar and the U.A.E., to take the clearest

scatter diagram showed a pronounced positive relationship up to between $2,000 and $2,500 per capita GNP. After this range a considerable flattening out took place and seven countries (Bahrain, Kuwait, the Libyan Arab Jamahiriya, Qatar, Saudi Arabia, the United Arab Emirates, and Gabon) fell substantially lower than the rest. Accordingly, two linear regressions were made: the first was for countries with per capita GNP of $2,500 or less and the second for countries with per capita GNP of more than $2,500 (excluding the seven above-mentioned countries). The first regression resulted in a regression line equation, $Y = 31.2 + .029X$; a correlation coefficient of .71; and standard error of estimate $S_y = 16.9$. The number of countries N was 112. The second regression showed $Y = 85.0 + .0013X$; $r = .61$, $S_y = 3.96$ and $N = 35$. Regarding the reverse regression exercise, of per capita GNP on PQLI, the dividing line between the two trends occurred around PQLI = 90. Only the regression for countries with PQLI less than 90 was needed and this was made excluding the above seven countries and Sri Lanka and Western Samoa, which were out of line in the opposite direction. The following was obtained: $Y = 393.5 + 23.4X$; $r = .71$; $S_y = 560$; and $N = 116$.

[4] The data were obtained from Population Reference Bureau (1979).

TABLE 2 ACTUAL AND "NORMAL" PER CAPITA GNP (US $) AND PQLI FOR MAJOR ARAB AND SELECTED NON-ARAB OIL-EXPORTING COUNTRIES

Country	1977 per capita GNP	1977 PQLI	Normal PQLI	Standard errors (PQLI)	Normal per capita GNP	Standard errors (GNP)	Actual GNP / Normal GNP
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Arab oil-exporting							
Algeria	1,100	41	63	- 1.3	570	+ 1.0	1.9
Bahrain	3,790	61	90	- 7.3	1,040	+ 4.9	3.6
Iraq	1,530	45	76	- 1.8	660	+ 1.6	2.3
Kuwait	12,700	75	100	- 6.3	1,360	+ 20.3	9.3
Libyan Arab Jamahiriya	6,680	43	94	-12.9	610	+ 10.8	11.0
Oman	2,520	27	88	-15.4	240	+ 4.1	10.5
Qatar	11,670	31	100	-17.4	330	+ 20.3	35.4
Saudi Arabia	4,980	29	91	-15.7	290	+ 8.4	17.2
United Arab Emirates	14,420	34	100	-16.7	400	+ 25.0	36.1
Other oil-exporting							
Gabon	3,730	21	90	-17.4	99	+ 6.4	37.7
Mexico	1,110	75	63	+ .7	1,360	- .4	.84
Romania	1,580	91	77	+ .8	1,740	- .3	.9
Venezuela	2,820	79	89	- 2.5	1,460	+ 2.4	1.9

Sources: Data in columns 1 and 2 from Population Reference Bureau 1979; data in other columns calculated by the author.

examples,per capita GNP expected to be found in countries with comparable social levels was $330 and $400, respectively (column 5), while the actual GNP was $11,670 and $14,420, respectively (column 1). This extreme situation occurs only in relation to Gabon among the non-Arab oil-exporting countries. For Mexico and Romania, by contrast, actual per capita GNP was, in fact, slightly *higher* than the "normal."

(3) Finally, for the not-so-rich Arab oil-exporting countries (Algeria and Iraq), actual social levels (PQLI) appear to lag only moderately behind the "normal" (minus 1.3 and minus 1.8 standard errors,respectively), but this is only because of the lower per capita GNP obtained in these countries and not because of higher social levels.

Population Trends and Issues

The very high levels of income in the oil-exporting Arab countries, together with the unusual gap between social and economic aspects of development, have had important demographic consequences affecting the supply and distribution of population and labour force in the region. With regard to *population growth*, the following situation, simply stated, seems to be prevailing in some countries and developing in others:

First, the sudden and tremendous increase in income, because it was not accompanied by reasonably comparable improvements in educational levels[5] and general social conditions (except in the health sector), resulted in a significant increase in the already high demand for children.

Second, improvements in health conditions raised the reproductive capacity (fecundity) of couples, permitting them, increasingly, to translate the high demand for children into actual fertility and very high crude birth rates (CBR).

Third, improvements in health conditions also resulted in a relatively high expectation of life at birth, which, due to the extreme youthfulness of the population, caused mainly by high fertility, was reflected in very low crude death rates (CDR).

Finally, extremely high CBRs accompanied by very low CDRs inevitably resulted in unusually high rates of natural increase.

A good illustration of this is given by Kuwait, a major Arab oil-exporting country, which is at a relatively advanced stage of demographic development and, as such, may be considered a pace-setter for the other rich Arab countries. In Kuwait the crude birth rate rose during the past two decades to reach, in 1980, 52 per 1,000 for the Kuwaiti population, a level

[5] In many Arab countries, emphasis has been placed on male education (see table 9 below), which was found to reduce fertility much less than female education. One interesting reason for this differential effect appears to be the fact that educated females always marry males with similar or higher levels of education, thus moving into a modern household, while educated males often marry less educated, sometimes even illiterate, females and may have a modern working life together with a traditional household (Kandis 1977).

very rarely attained in the world today. Mainly as a result of this high fertility, the proportion of the Kuwaiti population under 15 years of age was at the very high level of approximately 42 per cent, while the proportion in the population 65 years and over did not exceed 4.8 per cent. Because of the great and largely successful efforts towards health improvement, expectation of life at birth for Kuwaitis during the same year reached 70 years, a level not much lower than that found in the most developed countries. Due to the youthfulness of the Kuwaiti population, the crude death rate associated with this life expectancy was extremely low (5 per 1,000), lower, in fact, than that prevailing in the most developed countries (between 9 and 13 per 1,000), which have slightly higher expectations of life but much older populations. As a result, the rate of natural increase for the Kuwaiti population reached the yet unknown level of over 4.7 per cent a year. In contrast, most less developed countries have rates of natural increase between 2 and 3 per cent, and almost nowhere do these rates exceed 3.5 per cent (United Nations, Department of Economic and Social Affairs 1979b).

Table 3 gives total population and components of reproductive change for the Arab countries in 1980, including the major oil-exporting countries. For the latter group, crude birth rates (among nationals) vary mostly in the narrow but very high range of 45 to 52 per 1,000; crude death rates, being less uniform, vary mostly between 5 and 15 per 1,000. Consequently, rates of natural increase are in the range of 3.2 to 4.7 per cent. Since fertility does not yet show signs of impending decline, while mortality is rapidly declining, rates of natural increase are expected to reach uniformly higher levels more or less comparable to those presently found in Kuwait.

In the Arab countries with strong labour-market ties with the oil-rich countries, three situations may be identified with regard to the components of population change. There is first a group, notably Jordan and the Syrian Arab Republic, with rates of natural increase reaching close to 4 per cent caused by very high crude birth rates and relatively low, and still declining, crude death rates. For this group, rates of natural increase are likely to remain constant or even rise slightly in the foreseeable future[6] before beginning their traditional decline. Arab countries with rates of natural increase of less than 3 per cent are in two distinct situations: the two Yemens, for example, have relatively moderate rates only because high fertility is still accompanied by high mortality. Since fertility shows no sign of abatement (and may indeed rise),[7] while mortality has begun its traditional long-term decline, rising rates of natural increase are likely to materialize in these countries in the near future. Egypt, Lebanon, and Tunisia,

[6] In Jordan, for example, between 1950-1954 and 1980 the CBR rose from 41 to 47 per 1,000 while the CDR fell from 18 to 7 per 1,000. As a result, the rate of natural increase rose from 2.3 to 4.0 per cent (Jordan n.d., p. 26 and table 3).

[7] Two major factors may cause this rise: the return of emigrants and general improvements in health and fecundity.

on the other hand, have moderate rates of natural increase because both fertility and mortality are relatively low, that is, because they have reached a more advanced stage of demographic development. Rates of natural increase in these countries should thus continue their slow decline. All in all, however, the Arab region, which already has rates of natural increase that are higher on average than those of other regions in the world, is likely to be characterized by still higher rates between now and the end of this century.

Population distribution within each Arab country, including trends and patterns of urbanization, has also been greatly affected by this unique development situation. While development traditionally proceeds from the primary to the secondary to the tertiary sector, the magnitude and rapidity of the oil-generated economic boom resulted, for most Arab countries (particularly those in the ECWA region), in a pattern of development that greatly favoured the tertiary sector, virtually bypassing the secondary. The management of large funds (including their investment abroad), together with a rapid increase in consumption levels (and hence imports), generated a substantial growth in banking activities, tourism (hotels and restaurants), and commercial and trade services, all of which located in the capital cities, where the airports, the centralized activities of government, and the economies of scale were to be found (see Costello 1977, p. 30). The accompanying construction boom naturally took place in the same urban areas. Even the limited manufacturing activities that did develop found it uneconomical to locate farther away than the outskirts of the major towns, particularly in view of the general absence of effective population distribution and regional development policies. As a result, capital cities not only grew very rapidly, they grew abnormally in relation to other urban areas, thus dominating the urban structure and becoming the primate cities of their respective countries (Ibrahim 1974; Abu-Aianah, chapter 15 below).

The first data column of table 4 gives, for Arab countries and selected developed countries, the per cent of total urban population living in the major agglomeration—a simple index of urban primacy. For the Arab countries most affected by the oil boom (roughly, the ECWA countries), this index is almost invariably higher than 50 per cent, reaching 100 per cent in some instances. The Syrian Arab Republic appears to offer an exception, but this is only because of the existence of two primate cities, i.e., of "dual primacy." Only Saudi Arabia and Yemen have more than two major cities. In Saudi Arabia, for example, four major urban agglomerations may be identified: Riyadh, the capital; Jeddah, the western port town; Mecca and Medina, the pilgrimage towns; and the Dammam-Dhahran-Al Khobar oil triangle in the east.

These levels of urban primacy are unknown in the developed countries, where corresponding ratios are almost always below 20 per cent. They can hardly be observed in Asia outside of Thailand (64 per cent) and Mongolia (52 per cent)—except, of course, for the few Asian city-states or territories such as Singapore, Hong Kong, and Macao—or in Latin America outside of Costa Rica (64 per cent), Guyana (53 per cent), Panama (66 per cent), Uruguay (53 per cent) and the Caribbean Islands. The only major concentration

TABLE 3 TOTAL POPULATION AND COMPONENTS OF POPULATION CHANGE IN THE ARAB COUNTRIES, 1980

Country	Mid-year population estimate (de facto in thousands)	Crude birth rate (per thousand)	Crude death rate (per thousand)	Natural increase (per cent)	Population growth (per cent)
Major oil-exporting countries					
Algeria	18,594	47	13	3.4	3.4
Bahrain	344	35	7	2.8	5.6
National	237	40	7	3.3	3.1
Non-national	107	23	5	1.8	11.0
Iraq	13,025	45	13	3.2	3.3
Kuwait	1,374	41	5	3.6	6.9
National	566	52	5	4.7	4.7
Non-national	808	34	5	2.9	8.4
Libyan Arab Jamahiriya	2,977	46	12	3.4	3.9
Oman	984	45	13	3.2	4.7
National	805	48	15	3.3	3.3
Non-national	179	32	4	2.8	11.2
Qatar	243	29	5	2.4	8.8
National	65	51	10	4.1	4.1
Non-national	178	21	4	1.7	10.5
Saudi Arabia	9,229	42	12	3.0	6.3
National	7,079	47	14	3.3	3.3
Non-national	2,150	26	4	2.2	16.0
United Arab Emirates	983	26	5	2.1	13.9
National	237	45	9	3.6	3.6
Non-national	746	20	3	1.6	17.2

TABLE 3–Continued

Country	Mid-year population estimate (de facto in thousands)	Crude birth rate (per thousand)	Crude death rate (per thousand)	Natural increase (per cent)	Population growth (per cent)
Other Arab countries					
Democratic Yemen	1,858	48	20	2.8	2.2
Djibouti	119	48	24	2.4	2.4
Egypt	40,085	39	13	2.7	2.6
Jordan (East Bank only)	2,202	47	7	4.0	5.0
Lebanon	2,452	27	7	2.0	0.0
Mauritania	1,634	50	22	2.8	2.8
Morocco	20,296	45	13	3.2	3.2
Somalia	3,645	48	20	2.8	2.8
Sudan	18,371	45	17	2.8	2.8
Syrian Arab Republic	8,979	46	8	3.8	3.5
Tunisia	6,363	36	11	2.5	2.5
Yemen	5,225	46	22	2.4	1.9

Sources: ECWA countries: United Nations, ECWA 1982;
Other countries: United Nations, Department of Economic and Social Affairs 1979b.

TABLE 4 PER CENT URBAN (1980), URBAN PRIMACY (1980), AND URBAN GROWTH (1975-1980) IN ARAB COUNTRIES AND SELECTED NON-ARAB COUNTRIES

Country	Major agglomeration[a] as a per cent of total urban[b] 1980	Urban growth 1975-1980			Percentage of total population urban 1980
		Major agglomeration	Other urban	Total urban	
ECWA countries					
Bahrain	80	N.A.	N.A.	7.0	85
Democratic Yemen	67	N.A.	N.A.	N.A.	25
Egypt	50	3.8	4.4	4.1	45
Iraq	47	6.0	4.5	5.2	65
Jordan	75	2.8	2.3	2.7	68
Kuwait	77	5.3	12.4	6.7	96
Lebanon[c]	75	6.6	1.9	4.9	64
Oman	50	11.0	11.0	11.0	22
Qatar	100	8.7	–	8.7	87
Saudi Arabia	23	10.0	10.0	10.0	54
Syrian Arab Republic					
(Damascus)	30	4.2	4.5	4.4	48
(Damascus and Aleppo)	53	4.2	4.6	4.4	48
United Arab Emirates	29	12.9	11.3	11.8	81
By Emirate:					
Abu Dhabi	71	12.9	13.9	13.2	75
Dubai	100	7.8	–	7.8	95
Sharjah	92	15.4	11.9	15.0	85
Ajman	100	17.1	–	17.1	93
Umm Al Qiwain	100	10.4	–	10.4	77
Ras Al Khaima	100	11.8	–	11.8	56
Fujairah	100	29.5	–	29.5	40
Yemen	25	6.2	8.8	8.1	11

TABLE 4–Continued

Country	Major agglomeration as a per cent of total urban 1980	Urban growth 1975-1980			Percentage of total population urban 1980
		Major agglomeration	Other urban	Total urban	
Other Arab countries					
Algeria	12	2.9	6.2	5.8	61
Djibouti	100	2.5	–	2.5	74
Libyan Arab Jamahiriya					
(Tripoli)	64	7.4	5.7	6.8	52
(Tripoli and Benghazi)	92	6.9	5.6	6.8	52
Mauritania	39	10.4	4.0	7.0	36
Morocco	27	3.7	5.0	4.6	41
Somalia	34	6.5	4.9	5.4	30
Sudan	31	7.4	7.0	7.1	25
Tunisia	31	3.3	4.9	4.3	52
Non-Arab countries					
Denmark	32	-0.1	1.2	0.8	84
Sweden	14	-0.3	1.5	1.2	87
United Kingdom	20	-0.3	0.9	0.6	91
United States of America	13	0.6	1.5	1.4	73

Table 4--Continued

Sources: ECWA countries: Compiled or estimated by the author from data in national population censuses and statistical publications; Other countries : United Nations 1980.

N.A. : Not available.

[a] Major agglomerations:
Bahrain: Manama, Muharraq and Jiddhaf town.
Democratic Yemen: Aden and Shaab Directorates, Hotta, Ga'ar, Mukalla, Shehr, Sayoon, and Tareem towns.
Egypt: Greater Cairo.
Iraq: Baghdad.
Jordan: Amman, Zarqa districts.
Kuwait: Kuwait City, Hawalli, and towns of 10,000 and over in Ahmadi Governorate.
Lebanon: Beirut and suburbs.
Oman: Muscat and Mutrah.
Qatar: Doha.
Saudi Arabia: towns of 10,000 and over.
Syrian Arab Republic: Damascus and Aleppo.
United Arab Emirates: Abu Dhabi – Abu Dhabi City (Al Asima, Al Khalidya, Al Shabia, Al Bateen, Masfah).
Dubai – Dubai City (Daira, Al Merkabat, Al Kasis, Al Rachidiya, Al Rafaah, Bar Dubai).
Sharjah – Al Sharjah City (Al Buheira, Al Ghowai, Al Hira), Khorfakan City.
Ajman – Ajman City (Al Keyada).
Umm Al Qiwain – Umm Al Qiwain City (Al Keyada).
Ras Al Khaimah – Ras Al Khaimah City (Al Keyada, Al Mamura).
Fujairah – Fujairah City (Al Keyada).
Yemen: Sana'a.

Algeria: Algiers.
Djibouti: Djibouti.
Libyan Arab Jamahiriya: Tripoli, Tripoli and Benghazi.

Table 4–Continued

Mauritania: Nouakchott.
Morocco: Casablanca.
Somalia: Mogadiscio.
Sudan: Khartoum and Omdurman.
Tunisia: Tunis.

Denmark: Copenhagen.
Sweden: Stockholm.
United Kingdom: London.
United States of America: New York (New York - northeastern New Jersey).

b Official definition where no such definition exists: agglomerations of 10,000 persons and over.

c First and last columns are for 1975; urban growth 1970-1975.

of primate cities outside West Asia is to be found in Africa south of the Sahara, where in some 12 countries[8] the major agglomeration accounts for between 50 and 100 per cent of the total urban population, but the major reason here is to be found primarily in the nature of the colonial settlement experience.

Table 4 also shows the differential rates of growth of the major agglomerations and the other urban areas. For practically all countries most affected by the oil boom (and for which data exist), urban primacy is fairly constant or increasing. An extreme case is presented by Lebanon where, at least before the present conflict, "Beirut and suburbs," which already constituted 75 per cent of the urban population of the country, was growing at 6.6 per cent a year compared with 1.9 per cent for the other urban areas. Short of drastic policies to reverse the trends (which do not seem to be forthcoming), urban primacy in the Arab East is likely to continue for some time in the future.

Another related phenomenon that seems to be prevalent in the Arab East is that of the "ruralization of cities." In this regard, urbanization may be viewed as a dialectic process in which the two forces at play are the urbanization (or modernization) of the rural migrants by the city and the ruralization of the city by the migrants. The outcome of this dialectic process at a given time is a synthesis determining the organic structure of the city; it leans towards the urban or the rural depending on the relative strengths of the two forces. These relative strengths are, in turn, largely determined by three factors: (1) the relative intensity of the migration flow, i.e., the numbers of migrants entering the city in a given period of time in relation to the population of the city; (2) the degree of preparation of the migrants for city life; and (3) the absorptive capacity of the city, i.e., the capacity of its social infrastructure and institutions to modernize the migrants. Thus if, as in most of the developed countries today for example, (1) the intensity of the migration flow is relatively low, (2) most of the migrants come from small towns and villages with reasonably good social services and amenities and (3) adequate educational, health, and housing services are available in the host city, the ruralization effect of the migrants on the city is barely felt and the dialectic nature of the urbanization process is hardly noticeable.

In many of the Arab countries today, however, all three factors seem to be operating in the contrary manner. First, the intensity of the rural-to-urban migration flow is extreme (table 4). Very high rates of urbanization prevail, resulting mostly from rural-to-urban migration and the natural increase of recently arrived migrants. Second, the degree of preparation of migrants for city life is unusually low since, as was just explained, most migration in these countries is of the one-step kind, from backward rural areas to the metropolis; this is the inevitable result of the lack of an urban network of cities of various sizes. Finally, the absorptive capacity of most Arab cities is unusually limited due to the near absence of the concept of city planning in the region. Migrants generally find no adequate housing, schooling, or health services and tend to band together and perpetuate

[8] Angola, Benin, Burundi, Gabon, Gambia, Guinea, Kenya, Mozambique, Senegal, Togo, Uganda, and Zimbabwe.

the rural life-style of their home regions (for details see Costello 1977, particularly pp. 48-68). As a result, one cannot but notice the gradual ruralization of many Arab cities, such as Beirut, Cairo, and Damascus. In these circumstances, the migrants who come to the major cities to be integrated into the development process and to share in the spoils of the economic boom become alienated when they find themselves closer to the centre but still at the periphery of development.

A still more unique demographic feature of this region, which is in no small measure the consequence of oil, is that relating to the magnitude and pattern of *international migration*. As was already noted, an oil-generated economic boom began to take place in the oil-exporting countries soon after the Second World War. Because these were mostly countries with populations that were small relative to their oil revenues, an enormous demand for labour was created, and it was accentuated by the greatly underdeveloped social and human resource infrastructure. The great abundance of wealth in these countries made them capable of offering imported labour—mostly from underdeveloped Arab and other Asian countries—remunerations that compensated for the harsh climate and the often unpleasant conditions of work at that time. As a result, there were great movements of labour into these countries. The earliest pole of attraction was Kuwait; heavy immigration began in the late 1940s, when population growth rates reached around 5 per cent a year (possibly half of which was due to immigration) and rose to between 8 and 10 per cent a year during the period 1950 to 1970. Other Gulf countries soon followed suit. For the United Arab Emirates, for example, heavy immigration began around 1960, when rates of population growth approached 5 per cent; soon thereafter they peaked, reaching the unprecedented levels of 20 to 30 per cent a year during the 1965-1970 period (U.S., Bureau of the Census 1978).

An extremely unusual international composition of population and labour force in these Arab labour-importing countries resulted from these relatively heavy labour movements. As is shown in table 5, the proportion of foreign to total population varied, in 1980, from around 18 per cent in Oman to more than 70 per cent in the United Arab Emirates. Since many migrant workers were not accompanied by their families, the proportions of foreign to total labour force were even higher. They ranged from 37 per cent in Oman to around 91 per cent in the United Arab Emirates. By way of comparison, except for a few small countries and territories (notably Hong Kong and Singapore), the highest proportions of foreign population are found in Europe, particularly in Switzerland and Luxembourg, where they are around 18 per cent (United Nations, Department of Economic and Social Affairs 1979a, pp. 171-172), and the proportions of foreign labour force hardly ever exceed 25 per cent.

By far the strongest pole of attraction for labour has been Saudi Arabia, which accounted for 43.3 per cent of the total migrant labour force in the major labour-importing Arab countries in 1980. It was followed by the United Arab Emirates (19.3 per cent); the Libyan Arab Jamahiriya and

TABLE 5 TOTAL AND FOREIGN POPULATION AND LABOUR FORCE IN LABOUR-IMPORTING ARAB COUNTRIES, 1980

Country	Total population (in thousands)	Foreign population (in thousands)	Per cent population foreign	Total labour force (in thousands)	Foreign labour force (in thousands)	Per cent labour force foreign
Bahrain	344	107	31.1	119	65	54.6
Kuwait	1,356	794	58.6	453	342	75.5
Libyan Arab Jamahiriya[a]	2,430	532	21.9	782	332	42.5
Oman	984	179	18.2	303	113	37.3
Qatar	243	178	73.3	130	116	89.2
Saudi Arabia	9,229	2,150	23.3	2,375	1,125	47.4
United Arab Emirates	1,043	794	76.1	554	502	90.6

Sources: Calculated on basis of data in United Nations, ECWA 1982.

[a] Figures are for 1975. Birks and Sinclair 1980.

Kuwait (about 13 per cent each). While a clear majority (between 63 and 94 per cent) of migrant labour in Bahrain, Oman, Qatar, and the United Arab Emirates were non-Arab Asians (mostly Indians and Pakistanis), Arabs constituted large majorities in Kuwait, the Libyan Arab Jamahiriya, and Saudi Arabia (table 6) and about 55 per cent of all migrant labour in the major Arab labour-importing countries. Practically all Arab migrants are Egyptians, Yemenis (both Yemens), Jordanians and Palestinians or Lebanese.[9]

TABLE 6 PER CENT DISTRIBUTION OF FOREIGN LABOUR FORCE BY AREA OF ORIGIN IN LABOUR-IMPORTING ARAB COUNTRIES, 1980

Country	Arabs	Asians	Europeans and Americans	Other	Total
Bahrain	6.4	85.1	8.3	.2	100.0
Kuwait	82.2	16.8	0.9	.1	100.0
Libyan Arab Jamahiriya[a]	93.4	4.5	2.1	–	100.0
Oman	1.9	94.2	3.6	.3	100.0
Qatar	33.2	63.3	3.4	.1	100.0
Saudi Arabia	57.3	35.9	5.6	1.2	100.0
United Arab Emirates	28.4	68.5	2.4	–	100.0

Source: Estimated by the author from national sources (censuses and statistical abstracts) using data on stocks of migrants, entry and exit, residence permits and working permits.

[a] Figures are for 1975. Birks and Sinclair 1980.

A number of Arab countries (notably Jordan, Oman, and, to some extent, Yemen) have become both importers and exporters of labour. The major reason for this is the tremendous drain on their human resources that was caused by migration of their nationals to the oil-rich Arab countries. In these three countries, between 20 and 30 per cent of the labour force worked abroad in 1975 (Birks and Sinclair 1980) and labour shortages constituted major bottle-necks in the execution of national development plans and programmes. Even in Egypt, the traditional labour surplus country of the Middle East, where only slightly more than 3 per cent of the labour force

[9] According to the World Bank (1978, p. 4), the 1975 proportions of Arab migrants from the first three national groups were 27, 49, and 12, respectively, for a total of 88 per cent. The proportions of Lebanese became significant after 1975 (Tabbarah 1982).

worked abroad in 1975, shortages among high-level and skilled occupations have already disrupted certain development efforts. Thus, while early emigration from labour-exporting Arab countries must have contributed to relieving unemployment, it has now reached such levels as to create, to varying degrees, labour shortages in the sending countries (World Bank 1980, pp. 21-23). As a result, regulations restricting emigration and calls for compensation have begun to emanate from these countries.[10]

Intraregional migration has a number of major benefits, not least of which is its contribution to the cultural integration of the countries of the region. From the social and economic points of view, intraregional migration contributes to a better distribution of income both among and within countries of the region. These redistributional effects are obtained mainly through the remittances of individuals from the poorer countries working in the oil-rich countries of the region. At least since 1974, the value of these remittances has been quite substantial. It has been estimated, for example, that in 1977 remittances met 27 per cent of total imports in Egypt, 38 per cent in Jordan, 49 per cent in Democratic Yemen, 88 per cent in Lebanon, and 139 per cent in Yemen (Ecevit, chapter 10 below; World Bank 1978, p. 18; Tabbarah 1982). Even in relation to total GNP, these remittances have been quite significant: 12 per cent of GNP in Egypt, 24 per cent in Jordan, 32 per cent in Democratic Yemen, 35 per cent in Lebanon, and 48 per cent in Yemen (table 7). As can also be seen from the table, both the value and the economic importance of remittances appear to be rapidly increasing.

It has been argued recently, on the basis of "expert opinion" rather than hard empirical evidence, that a large part of remittances is probably expended on the purchase of imported goods and housing and only a small part on productive investment (Ecevit, chapter 10 below; Böhning 1979) and that this has not only reduced the balance of payments benefits but has also resulted in demand-pull inflation, which has been magnified by the cost-push inflation arising from the labour shortages created by the heavy emigration (Böhning 1979). Neither the facts nor proper economic inference seem to support this position. Thus, for example, in Yemen during the period 1974-1977, while current transfers from the rest of the world (mainly remittances) increased by 667 per cent, private consumption increased by 234 per cent—but net domestic investment increased by 462 per cent. Again, in Jordan during the same period, while current transfers increased by 254 per cent, private consumption increased by 168 per cent—but net domestic investment rose by 292 per cent (Tabbarah forthcoming). In both cases, therefore, increases in current transfers were accompanied by proportionately much larger increases in investment than in private consumption. Furthermore, even when remittances go for consumption purposes, they tend to alleviate poverty and reduce the maldistribution of income in the sending countries since a large proportion of migrant workers come from the less privileged groups in society. A similarly

[10] It is quite significant that Crown Prince Hassan of Jordan has taken the lead, at ILO conferences and elsewhere, in demanding "the establishment of an International Labour Compensatory Facility." See Böhning (1979, p. 20).

TABLE 7 REMITTANCES PER CAPITA AND GNP PER CAPITA (IN US$) FOR EGYPT, JORDAN, LEBANON, YEMEN, AND DEMOCRATIC YEMEN, 1976 AND 1977

Country	1976 Remittances per capita	1977 Remittances per capita	1976 GNP per capita	1977 GNP per capita	1976 Remittances as per cent of GNP	1977 Remittances as per cent of GNP
Egypt	20	38	280	310	7.1	12.3
Jordan	139	170	650	710	21.4	24.0
Lebanon	12	450	850	1,300	1.4	34.6
Yemen	98	186	300	397	32.7	47.7
Democratic Yemen	66	101	270	320	24.4	31.6

Sources: Calculated by author on basis of data in Ecevit (chapter 10 below); United Nations, ECWA (1982); World Bank (1978); Population Reference Bureau (1979); Birks and Sinclair (1980); and Tabbarah (1982).

beneficial redistributional effect is likely to result from the cost-push inflation since, in such situations, labour costs tend to lead the inflationary trend.[11]

It is unfortunate, however, that the lack of regional efforts to harmonize the migratory process and to protect and promote the welfare of the migrants and their families has resulted in a number of serious problems relating, particularly, to the stability and well-being of migrants. One such problem arises from the legal and administrative restrictions on the immigration of dependants of migrant workers. In all Gulf countries, the law relegates to a minister (usually of the interior) discretionary power to authorize the immigration of dependants, and generally such authorizations have been relatively difficult to obtain (Dib 1978, pp. 60-61). Recently, in fact, Saudi Arabia, the largest importer of foreign labour in the region, promulgated a series of measures through the Ministry of the Interior that would make it impossible for the dependants of migrant workers to join them, excepting certain highly skilled categories of workers and those who have been residing in Saudi Arabia for at least 5 years. The reason given was the need to relieve the great pressure on public services in the country (*As Safir* 30 August 1980, p. 1). As a result of such restrictions, the foreign populations of most Gulf countries are characterized by unusual sex ratios, which vary from 143 males for every 100 females in Kuwait to around 350 in the United Arab Emirates. More significantly, for the age group 20-49, these ratios vary from 185 in Kuwait to approximately 500 in the U.A.E.[12]

Nor is there much opportunity for the non-married male migrant to marry from among the native populations. Thus in Kuwait, where the foreign population, being largely Arab, is better integrated than in the other Gulf countries, only 3.4 per cent of marriages registered in 1975 were of Kuwaiti women with non-Kuwaiti men, and these were almost exclusively with Arab men (Kuwait 1977, pp. 46-47). The situation is exacerbated by the fact that Kuwaiti men tend, to a much greater degree than Kuwaiti women, to choose non-Kuwaiti spouses. In 1975, for example, 12.4 per cent of all registered marriages were of this type (Kuwait 1977; Al-Akhras, chapter 11 below). The situation is probably more critical in the other Gulf countries, if only because the sex ratios are generally higher than in Kuwait and the foreign populations contain larger proportions of non-Arabs.

Contributing also to the instability of the migrants are the legal provisions governing residence and expulsion in the major labour-importing Arab countries. In practically all of these countries, residence permits are given for only 1 year at a time (5 years in Kuwait) and are conditional on the possession

[11] What is alarming in relation to the use of remittances, however, is the incapability of the domestic economies to absorb them. Thus, in 1976 and 1977, the last two years for which data are available, both Jordan and Yemen had, in spite of significant increases in both consumption and domestic investment, substantial net capital outflow—on average around 12 per cent of national disposable income (Tabbarah forthcoming). The reasons for this limited absorption capacity are complex and outside the scope of this paper (see Tabbarah forthcoming).

[12] Calculated by the author from national sources.

of a work permit by the applicant. Expulsion, on the other hand, is left to the discretion of the minister of the interior, who determines whether an alien has committed acts contrary to the public interest, security, or morals. What this actually means is that the minister of the interior can expel any alien by a simple administrative decree (and not necessarily by court order), without necessity to show cause; and there is no authority to which an alien can appeal, except the minister of the interior himself (Dib 1978, pp. 49-51, and chapter 22 below).

Actual and potential cases of mass expulsion have begun to emerge in the regional press. Thus, in a recent interview on Saudi television, the Saudi minister of the interior reportedly declared that 88,000 migrants had been deported in a period of 4 months for entering the country illegally and that all aliens whose contracts terminated or who entered illegally would also be deported (*IKE* 1979). In the United Arab Emirates, on the other hand, a labour regulation was recently passed stipulating that expatriates had to meet all the legal requirements for staying in the country or face immediate deportation. The number of migrants affected, particularly Indians and Pakistanis, is believed to run into the thousands, and the Gulf Indians Welfare Association has appealed to Prime Minister Indira Gandhi to intervene (*IKE* 1980). In both cases, the high proportion of foreign workers in the country appeared to have been among the major causes. Accordingly, Gulf countries are increasingly opting for "turnkey projects," whereby the contractor engages to import the necessary labour, who are settled in "enclaves" during the life of the project and returned to their home countries upon the project's completion. One must add to this the instability of foreign workers, which is due to shifting patterns of political tensions among countries of the region. It has recently been reported, for example, that in the 2 or 3 years following the final break in relations between Egypt and the Libyan Arab Jamahiriya, the Egyptian community in the latter country declined from about 500,000 to some 60,000 persons (Ibrahim 1980, p. 4).

In brief, the benefits of intraregional migration—namely, the improvement of income and wealth distribution within and among countries of the region and the promotion of greater economic, social, and cultural integration of Arab countries—are being greatly minimized by the lack of regional coordination and harmonization in this regard. Countries are acting individually from the narrow angle of national interest in areas where collaborative action is both called for and advantageous to all concerned. Regulations restricting emigration in labour-exporting countries are now being formulated as reactions to measures by labour-importing countries that encourage immigration,[13] and the harmonization of these measures and regulations should prove

[13] In the Syrian Arab Republic, for example, a presidential decree was recently passed giving employees who have left Syria without permission six months to return or be subject to jail and fine (*An Nahar* 1980a, p. 1); Lebanon, on the other hand, which has never restricted emigration before, passed a law in 1977 which, *inter alia*, will gradually eliminate private employment agencies, the major institutions for recruitment of Lebanese for employment in the Gulf countries.

to be to the benefit of both types of countries as well as to the migrants themselves. Similarly, the sudden expulsion of large numbers of workers from receiving countries results in serious economic crises in the sending countries as well as untold problems for the migrants and their families, which could all be alleviated by bilateral and multilateral agreements. Such agreements could lead to the channelling of part of the remittances to productive investment and promote the eventual orderly return of migrants to their home countries. Even the question of compensation cannot be resolved except through bilateral and multilateral arrangements.

The Utilization and Development of Human Resources

Perhaps the most paradoxical aspect of the human resources situation in the Arab world is that, in spite of the tremendous demand for labour in the region, an expanding emigration stream has been flowing from the main Arab labour-exporting countries to Europe, the Americas, Australia, and other traditional receiving areas outside the Arab region. The exact magnitude of this movement is difficult to ascertain because of data problems as well as insufficiency of research. Nevertheless, a close look at relevant data from the U.S., Canada, and Australia, together with some conjecture regarding Arab migration to the remaining non-Arab countries, seems to indicate that a conservative estimate of *permanent* Arab migration to countries outside the Arab world was around 180,000 persons a year during the period 1975-1980, largely from a few Arab countries, particularly Egypt, Jordan (and Palestine), Lebanon, and the Syrian Arab Republic.

An important feature of Arab emigration is the unusually high qualifications of the migrants. U.S. immigration data show, for example, that in 1977 the proportions of "immigrants" in the professional and managerial categories were 40 per cent for those migrating from Jordan and the Syrian Arab Republic, 42 per cent for those migrating from Iraq, 48 per cent for those migrating from Lebanon, and 70 per cent for those migrating from Egypt (table 8); and these proportions were several times higher than those obtained in these sending countries and generally even higher than those obtained in the U.S. itself (around 25 per cent). It has recently been estimated that 50 per cent of all Arab Ph.D. scientists and engineers have emigrated (Zahlan 1981). In Egypt, a country where an unusually high proportion of emigrants are in the high-level manpower category, 70 per cent of emigrants have doctorates, and 17 per cent had master's degrees (Salman 1980). Not only has the outflow of high-level Arab manpower been increasing, but a comparable increase in the inflow of non-Arab manpower, often with similar qualifications, has been taking place simultaneously (Salman 1980, pp. 4, 18).

Many reasons have recently been advanced for this Arab brain drain, from the most general (e.g., "intellectual imperialism" of the West [Boukraa 1980, p. 6]) to the most specific (e.g., "optimization of personal choice" [Zahlan, chapter 12 below]), which, if anything, shows the great complexity of the

causal factors underlying this phenomenon (e.g., references in Zahlan, chapter 12 below). Neither space nor the scope of this paper allows a comprehensive investigation of these factors, but a brief discussion of a few of those most neglected in the literature is perhaps in order.

TABLE 8 PER CENT IN PROFESSIONAL AND MANAGERIAL CATEGORIES OF ECONOMICALLY ACTIVE IMMIGRANTS TO THE U.S. AND CANADA FROM MAJOR ARAB EMIGRATION COUNTRIES, 1977

Country	U.S.	Canada
Egypt	70.3	37.5
Iraq	41.8	19.5
Jordan	40.0	18.9
Lebanon	48.0	21.1
Syrian Arab Republic	39.5	20.5

Sources: U.S., Immigration and Naturalization Service 1977; Canada n.d.

While the number of Arab universities has rapidly increased in recent years, their structures and curricula have, in general, closely followed Western patterns, particularly those of the more traditional kind. This limited responsiveness of the advanced educational system has resulted in an increasing supply of university graduates specialized in surplus disciplines (Salman 1980, p. 17), which has been intensified by a similar pattern of training for those studying abroad, mainly in Western universities. On the other hand, universities in the region have so far failed to move beyond the realm of training institutions into major centres for research on regional problems and issues (Salman 1980, p. 19; Zahlan 1981, p. 3). The generally heavy teaching loads and the lack of research traditions in most universities reflect an approach to university training similar to the educational approach of secondary schools in more advanced countries. Consequently, universities in the Arab world generally have not developed into major centres of attraction for Arab intellectuals and scientists, and although some such scholars are inevitably members of their faculties, large numbers have sought and obtained appointments on the faculties of Western, particularly American, universities.

Neither has this research tradition developed significantly outside the university system. In fact, research funds from within the region have been extremely scarce, and an appropriate institutional structure has yet to develop. Arab development funds have generally been established, or have operated, as loan-giving institutions and have concentrated their assistance on projects with provable economic returns.[14] The few development research centres that have recently emerged cover a limited area of scientific research and have yet to prove their scientific worth and their intellectual independence in order to become major centres of attraction for Arab intellectua talent.

In addition to this exodus of Arab manpower, which is accompanied by an inflow of non-Arab manpower, there is a large potential of human resources in the Arab world that has not been properly integrated into the development process. In spite of intensive and largely successful efforts at alleviating or eliminating poverty in some Gulf countries, notably Kuwait, in most Arab countries significant proportions of the population still live in poverty and ignorance and are therefore incapable of contributing fully to national or regional development. While data on income distribution and poverty are scanty, it is clear that most Arab countries are characterized by large income disparities among population and social groups—e.g., rural and urban (Tuma 1979)—and that large numbers in Egypt, Sudan, Somalia, the two Yemens, Oman, and other Arab countries still live below internationally acceptable standards of living. Estimates for 1980 of illiteracy for 15 Arab countries (table 9) show that, except for Lebanon and Kuwait, illiteracy rates are invariably higher than 40 per cent, reaching 74 per cent in Morocco, 78 per cent in Sudan, 84 per cent in Saudi Arabia, and 92 per cent in Yemen. While major progress is being made in some Arab countries towards the elimination of illiteracy, as evidenced particularly by the projection of illiteracy rates to 1990 for the age group 15-19, illiteracy in many Arab countries is likely to remain substantial at least until the end of this century. This is particularly true of women. Even by 1990 it is not expected that female illiteracy rates will fall significantly below 40 per cent, except in Lebanon and Kuwait. For Morocco the 1990 rate is estimated to be around 70 per cent, for Saudi Arabia 79 per cent, for Sudan 84 per cent, and for Yemen 99 per cent. Arab countries not represented in the table are all likely to have very high illiteracy rates.

Conclusion

The discovery of oil in relatively small Arab countries created, in these countries at least, a yet unknown development situation in which, of the three factors of production—land, labour, and capital—the last was in great abundance relative to the other two. One of the first results of this situation was the present transitional stage with its tremendous gap between the social

[14] For a recent listing of these projects, see Fodayl (1979, annex B).

TABLE 9 PER CENT ILLITERATE BY SEX IN SELECTED ARAB COUNTRIES, 1980 AND 1990

Country		Age group and year		
		15 and over 1980	15 and over 1990	15-19 1990
Algeria	T	58.2	42.4	4.9
	M	44.4	31.1	0.9
	F	70.9	53.1	9.0
Egypt	T	45.7	38.3	11.6
	M	32.7	26.6	3.6
	F	58.8	50.1	20.0
Tunisia	T	51.1	38.7	4.3
	M	37.3	27.7	0.7
	F	63.9	49.0	8.0
Morocco	T	74.4	62.4	38.9
	M	63.3	54.2	36.3
	F	85.1	70.4	41.5
Sudan	T	78.4	66.6	44.4
	M	63.5	49.2	26.5
	F	93.5	84.1	62.8
Iraq	T	56.6	42.2	6.6
	M	37.1	26.8	0.5
	F	76.6	58.0	12.9
Libyan Arab Jamahiriya	T	41.9	26.1	N.A.
	M	24.5	13.4	N.A.
	F	60.8	39.6	N.A.
Jordan	T	42.0	32.3	N.A.
	M	31.1	25.1	N.A.
	F	53.4	39.7	N.A.
Kuwait	T	37.3	32.7	N.A.
	M	30.6	28.4	N.A.
	F	45.8	37.7	N.A.
Lebanon	T	23.5	16.5	6.2
	M	14.6	9.5	4.0
	F	32.3	23.6	8.5
Saudi Arabia	T	83.8	63.6	28.7
	M	70.1	48.2	16.9
	F	97.7	79.1	40.9

TABLE 9–Continued

Country		Age group and year		
		15 and over 1980	15 and over 1990	15-19 1990
Syrian Arab Republic	T	45.0	33.7	14.4
	M	29.1	22.8	13.9
	F	61.5	44.9	15.0
Yemen	T	91.7	78.2	51.5
	M	84.1	57.7	19.5
	F	99.5	98.9	84.5
Democratic Yemen	T	61.0	40.6	6.2
	M	33.4	18.7	0.8
	F	89.1	62.8	11.7

Source: UNESCO 1978.

N.A. = Not available.

and economic aspects of development, specifically, a very high level of per capita income and wealth associated with an underdeveloped social and human resources infrastructure. These less developed countries reversed the traditional situation and became the first to export capital (in terms of financial assets) and to import agricultural products and labour.

Important demographic consequences resulted from this unusual situation. High incomes associated with low levels of education, particularly of females, and traditional family relations created strong demand for large families; and improvements in health, which inevitably preceded other aspects of social development, made such desires realizable for a large majority of these populations. Therefore, in some of the oil-exporting Arab countries, such as Kuwait, present rates of natural increase of the native population reached levels that are unknown in the rest of the world.

The large increases in income resulted in similarly large increases in consumption levels, and hence in imports, together with a rapid development in financial and related institutions. Arab development was thus biased towards the tertiary sector and, particularly, towards commercial, touristic, and financial services that tended to congregate in the capital cities. The resulting rapid growth of these cities in relation to the rest of the urban structure and, indeed, to the rest of the country, created, in this region of the world, a unique concentration of primate cities. Furthermore, because in some Arab countries, particularly those neighbouring the oil-rich countries, large numbers of rural migrants, who were unprepared for urban life, were moving to major cities inadequately prepared to assimilate them, many of these cities were more ruralized by the migrants than the migrants were urbanized by them. The ruralization of such cities as Beirut, Cairo, and Damascus has become apparent to the most casual observer.

The over-abundance of capital resulted, naturally, in great financial surpluses. The institutional structure through which these funds were channelled was overwhelmingly favourable to those investments with maximum short-term economic returns and concentrated on limited and traditional areas of investment, such as stocks, bonds, and real estate. The Arab development funds not only accounted for a small proportion of total investment, they also functioned primarily as loan-giving institutions and invested in projects with provable economic returns. Given these constraints and the large surpluses, a major part of Arab financial capital inevitably ended up outside the Arab region,[15] mostly in the developed countries of Europe and North America (Tabbarah forthcoming).

But in spite of this flight of capital (which considerably deflated the demand for human resources) and the high rates of natural increase, particularly in the oil-exporting countries (which inevitably inflated the supply of human resources), large imports of foreign manpower still took place in these

[15] The minister of finance of Saudi Arabia recently expressed the hope that "the economic development of Arab countries...will soon make the volume of Arab capital invested inside the Arab world surpass that invested abroad" (*An Nahar* 1980b, p. 1).

countries. Consequently, the proportion of foreign labour force at present greatly exceeds any levels known in the world today. Since most imported labour has come from the neighbouring Arab countries, serious manpower shortages are now being experienced by these traditionally labour-surplus countries. Exacerbating this situation is the fact that large numbers of Arabs remain basically outside the mainstream of development because of tradition, illiteracy, or general poverty, while increasing numbers are leaving the Arab world each year, mostly as emigrants to the traditional receiving countries of the United States, Canada, and Australia. Furthermore, unusually large proportions of these Arab emigrants are in professional, technical, managerial, or other high-level manpower categories.

This exodus of Arab manpower has been accompanied by an inflow of non-Arab manpower, often of comparable qualifications. It is important to note in this regard the relatively new and increasingly popular policy of "turnkey projects" in the oil-exporting Arab countries. This policy, whose appeal derives from political as well as economic considerations, is increasingly contributing to the substitution of non-Arab (Korean, Filipino, etc.) for Arab manpower.

Neither the relative magnitude of Arab migration nor its complexity has prompted the Arab countries to undertake serious efforts to rationalize and harmonize these movements. Arab labour-importing countries formulate policies to attract labour irrespective of their effects on Arab labour-exporting countries, while the latter countries are increasingly resorting to measures to restrict the exodus of their labour force. In the middle of this tug of war, the principal losers are inevitably the migrants and their families, whose welfare and stability are being jeopardized continuously.

In order to remedy this situation and to place Arab development on the proper track, action needs to be taken on several fronts. An agenda for such action must include the following: (1) efforts to improve knowledge of the human resources supply, requirements, problems, and policy options through intensified activities in data collection, training, and research; (2) the creation of institutions that would insure the channelling of funds into social and cultural projects within the Arab world and contribute to the speedy elimination of the gap between the social and economic aspects of development; (3) the elaboration of a series of social, intellectual, and economic measures and incentives that will induce high-level Arab manpower either not to leave the region or to return to it; (4) the formulation of a regional policy to rationalize population movements by co-ordinating actions of receiving and sending countries and by elaborating economic alternatives to migration, including the transfer of capital from receiving to sending countries; and (5) the elaboration and implementation of a regional covenant, supported by compatible national laws, that will protect the interests of migrants and promote their welfare and their stability. These are admittedly difficult and complex tasks, but ones that urgently need to be undertaken lest the increasing political and social tensions in the region eventually dissipate the large economic gains of the past decades.

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CHAPTER 3. A STRATEGY FOR ARAB DEVELOPMENT*

*Yusef A. Sayegh***

General Framework and Definition of Basic Terms

A brief look at the language of books and magazines these days will attest to the widespread use of the term *strategy* in a variety of fields and with a variety of meanings. Sometimes it denotes a plan or design, other times a method, procedure, or policy. In still other cases, the term strategy is used as a synonym for *tactic* or *manoeuvre*. Its meaning may be as narrow as that of *programme* or as broad as that of *general conception*.

The word strategy comes from the Greek word *strategos* meaning the art of command or leadership. However, beginning a half century ago, the complaint arose that, with increased use, the meaning of the term had changed and broadened, especially in comparison with the restricted meaning it had when first used in the early eighteenth century.[1] Because many elements of development strategy are common to military strategy—the word was originally used in the latter context—it would be useful first to review the concept of strategy in the abstract.

Many elements enter into a strategy. Foremost among these are a variety of effective combat units characterized by mobility and dynamism; an integrated plan of action; and the relationship between the human and material costs and the material, geographic, or even moral results, such as victory or breaking the enemy's resistance. Also included are one's intended objectives, the means immediately or potentially at one's disposal, and the possible or desired length of the war or confrontation. Added to this is the ability to employ strategems to order the battles during the campaign or war and to co-ordinate all factors in such a way as to achieve the military objective. In another sense, the term strategy refers to the dynamics of the overall, or master, war plan, the design of a pattern or general course proposed for the different battles constituting parts or stages of the conflict, and the organization of the battles themselves. Here, of course, the policies drawn up for the conflict by the political leadership come in.

* This paper was translated into English from Arabic by ECWA.

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[1] See the *Encyclopaedia Britannica*, vol. 21, 14th printing, 1929.

It was within the context of the latter meaning that the term strategy was used when "A Strategy for Arab Development" was being conceptualized, for development does not simply mean investing in order to achieve higher growth. Rather, it implies a broad and profound, multi-faceted process whose elements move through different channels in response to a global concept or plan designed to meet the combined economic, social, and national objectives of development. There appears to be a contradiction here between the simplicity of the higher strategy and the complexity of its components whether the reference is to military or development strategy.

Discussions of development strategy tend to focus on its broad lines. For example, it is sometimes suggested that a sound development strategy basically involves the process of industrialization with effects that extend horizontally and vertically throughout the Arab economy and society in a series of interrelated changes. Other examples are (1) the suggestion that a sound strategy depends on the development of manpower skills within a particular economic and social system in such a way as to make them in some way compatible with the material resources, capabilities, and institutional structure of the system and (2) the suggestion that development depends on one variable or a combination of several.

It should be recognized, however, that behind this apparent simplicity are concealed numerous complexities, ramifications, and interactions among the many related forces and factors, and these act according to different modes and laws as they steer the economy and society in the developmental direction desired. This is exactly what occurs in the context of war. Military strategy is laid out in broad but simple lines, while the tactics of war—the partial strategies that operate within the grand strategy and the variety of related factors—are many in number, complicated, and interdependent. However, the point is to direct these elements within the framework of a general, or grand, strategy for the purpose of achieving the objectives of the conflict or war.

Nevertheless, at the risk of prolonging this introduction somewhat, it should be pointed out that development strategies are not always so clear and explicit; they may involve the establishment of development plans without any conscious idea of strategy. In such cases the strategy is implicit and unconscious. However, on closer examination, it can usually be discerned. In extreme cases there may be no explicit or implicit development strategy, as if development were restricted and confined to the mere accumulation of industrial, agricultural, construction, and infrastructural projects without any causal relationship among them. Even when there is the desire to set down a clear development strategy, past strategies and development policies in a particular economy may make the forming of new strategies more difficult. This will depend on whether attitudes are susceptible to change or, on the contrary, remain fixated on previous conceptions and methodologies, making for less receptivity to new ideas.

Where does strategy fit into the overall development process? This question merits answering, for often these matters are equally confusing to

scholars, planners, and decision makers. In the opinion of the author, the development process requires answers to a number of questions in a context or sequence that makes the underlying strategy clear. The first question concerns the concept and nature of development as distinguished from growth and modernization, for these are the main notions with which development is most often confused. To understand what development is, one must ask the basic question, What new man do we wish to develop and what society do we wish to build? Absence of a clear vision in this regard will confuse the course of development and deprive it of the orientation it needs. For this reason, it is necessary to answer this basic question at an early stage of development planning. One must then identify the major development objectives and, more precisely, specify measurable quantitative and qualitative goals, such as the growth of overall and per capita GNP, the construction of roads and schools, the training of medical auxiliaries and agricultural advisers, and so forth. It is only after this has been done that a development strategy, that is the broad lines of the development approach that will further the identified goals, can be elaborated. Then and only then is the preparation of a development plan with its policies, programmes, and projects in order. This is the proper sequence as we see it and the one that, if applied and adhered to, will put development on a straight course.

While there is no need to dwell on all the questions posed here, one of them, the identity of the major development goals, will be taken up in the next part of the paper. In the treatment of this question, the nature of development as defined here will become clear along with its contents, scope, and long-range goals. At the same time, the ways in which development is distinct from the concepts of both growth and modernization will become evident.

Finally, the process of outlining a general framework and defining basic terms requires that we specify what is meant by the word Arab in the title of this paper. Here it should be stressed that development strategy may vary sharply from one Arab country to another and that consequently it is impossible to work out a single strategy that is appropriate for all time and for all Arab countries. Nevertheless, while recognizing this regional disparity, there is enough common ground to make possible the formulation of strategies that are generally applicable throughout the Arab world.

The title, "A Strategy for Arab Development," indicates best of all the intellectual premise of this paper, which is that national and Arab regional development can take place simultaneously and that they interact in myriad ways, feeding, consolidating, and promoting each other. The attempt to draw up an Arab development strategy is no more than an attempt to select that strategy capable of promoting both courses of development with a view to achieving the 10 major goals that will be taken up here. In other words, the strategy whose broad outlines are traced at the end of this paper is meant to promote both national and Arab regional development so that they harmonize and interact positively and impel each other forward with greater force.

Tracing the lines of an Arab development strategy (alongside national development strategies) is not merely an intellectual exercise, nor is it a matter of recording some hopeless ambition or dream. While recognizing the realities of the situation in the different Arab countries—the prevailing trend away from pan-Arabism and the weakness of the Arab national commitment to serious joint activity—one can nevertheless insist that there does exist a common Arab economic sector embracing dozens of joint programmes, projects, and institutions. While most of these may be slow moving and of limited effectiveness, some are dynamic and successful. This fact points to the possibility of expanding this sector and gradually transforming it into a framework for economic interaction and more coherent integration, eventually leading to an organic fusion. Though still entailing certain difficulties, this would become a real possibility through the fulfillment of economic, psychological, and Arab national pre-conditions.

Two factors would serve to help advance Arab development and enhance its credibility to public as well as private sector organizations and to those in positions of political, economic, and intellectual leadership. These would be the ability, on the one hand, to show to the several parties and to the region as a whole the existence of economic benefit from common activities and institutions and, on the other, to demonstrate that intensive Arab economic co-operation is needed precisely in order to promote the development and national security of the several states.

Major Development Goals: Future Economic Tasks[1]

It will be evident from our presentation of these goals that the economic tasks of the future are far-reaching. Along with economic and social development, these tasks are linked to the fate of the Arab nation itself and its position in the world economic order and, indeed, to the fate of the world order itself as well as to Arab security and the tasks of liberation and emancipation. The vast scope of these tasks is easy to explain. After all, profound and comprehensive economic development means the liberation of the Arab man and his potential as well as of the whole society through the launching of the development revolution. Just as any revolution has to contend with counter-revolution or attempts at counter-revolution, so does development; for its progress is impeded by opposing economic, social, and political factors originating from economic and social attitudes, narrow partisan interests, and external forces seeking to curb the development revolution and to thwart it after it has started. The gains of the development revolution, indeed the revolution itself, will therefore have to be protected by those forces that

[1] The main reference for this section of the paper is my article entitled "Arab Economic Tasks at the Close of the 20th Century," which appeared in the October 1979 issue of *Arab Oil and Co-operation,* vol. 5, no. 3. The author has borrowed extensively from this article for the purpose of clarifying the nature of the economic goals and tasks whose implementation should form the basis of development strategy although these goals are merely listed therein with only a summary characterization of each.

favour it, carry its burdens, and derive the most benefit from it. This point will be taken up in a later section of the paper. First, however, the major objectives of development will be identified.

Raising Performance and Growth Levels: The Purely Economic Aspect

As part of this objective, one must both raise the productivity of each of the productive factors and, by their judicious use, increase the overall level of production. This action is essential if one is to create a national product sufficient to provide the material basis for all the other tasks of development and make possible a better distribution of that product; for as long as the GNP remains insufficient, there can be but a meagre share for the individual, however equitable the pattern of distribution.

But to begin with, it is not possible to raise the level of production without first raising the performance standards of the region's manpower and providing a proper mixture of capital and labour.

Raising the Level of Manpower Skills as Both a Means and an End of Development

Manpower is regarded as the primary instrument for raising the level of economic performance. Manpower development may take place in four different ways: (1) educating and training human resources; (2) instilling the work ethic in society as one of its dominant values; (3) habituating the citizenry as much as possible to consumer discipline so that conspicuous consumption does not inordinately absorb resources that would better be channelled into savings and, eventually, investment; and (4) providing the incentives and the climate that will encourage enterprise and economic initiative in both the public and private sectors and in the mixed sector (resulting from co-operation between them). Of course, efficient organization and administration within the framework of a suitable social and economic system endowed with effective institutions must be provided as well if the labour force is to be enabled to optimize its contribution to the productive process.

Moreover, those men and women who have been referred to as the primary means for development are also its primary end. It is they, after all, who are the ultimate beneficiaries of the fruits of development, the combined efforts of society in all its facets.

Maximizing Opportunities for Gainful and Rewarding Employment

It is most unfortunate that in the first, and even in part of the second, generation of development projects and programmes demographic and, more particularly, manpower planning were neglected. It would appear that development thinking had placed only cursory and minimal emphasis on raising

the level of gainful employment as a major development goal. This was true whether the goal was to improve the income and purchasing power of the mass of citizens or to provide work opportunities and combat unemployment in order to enhance human dignity. Thus, for example, development projects have focused on raising average growth while blithely ignoring the increase in manifest, let alone disguised, unemployment.

If one adds to this the inadequacy of the means of production and the low level of training, one will have completed or nearly completed the list of factors that beset employment. Hence a dangerous situation currently prevails in which unemployment is on the increase, affecting an estimated one-fourth of the potential labour force. This phenomenon results in a waste of human potential, especially in the case of women.

Moreover, World Bank estimates (as published in the 1979 World Development Report) indicate that employment opportunities will have to be provided for some 500 million additional persons between the years 1979 and 2000, an age of growing automation and rising energy costs. The Arab world will no doubt have to cope with its due share of these additional numbers and with the unemployment problem that is sure to flare up as a result.

Another question related to employment that deserves mention is the flow of some 3 million Arabs to jobs in Arab countries other than their own. This is in effect a healthy phenomenon because it constitutes a challenge, however modest, to national border restrictions. On the other hand, one should caution against another parallel trend that could be extremely dangerous. This is the flow of workers from non-Arab eastern countries to the oil countries of the Gulf, a phenomenon whose proportions are a cause for alarm, for in some cases this trend threatens to de-Arabize the population structure. This could constitute a time bomb in some of the more sensitive Arab regions.

The importation of non-Arab workers because they do not speak Arabic and consequently do not constitute carriers of undesirable social and political opinions and principles is a dangerous practice that also entails other problems. First, the regions concerned cannot at the same time open themselves up economically and remain closed in socially. Another problem is that the Arab character of these countries may be diluted and their membership in the Arab nation weakened. Furthermore, the absence of a common language makes it diffiuclt for Arab nationals to benefit from the presence of non-Arab workers and, through close contact and interaction with them, to acquire the skills they possess.

Striving for Economic and Social Balance at the National and Regional Levels

Making up this overall objective are a number of important secondary objectives. Foremost among these are (1) improving the pattern of distribution of wealth and income both within each country and among the different countries, (2) diversifying the economy by increasing the contributions to the

more backward sectors, and (3) making sure that development is balanced geographically so that certain regions within each country do not lag behind other regions enjoying developmental progress. Finally, a developmental balance must be created among the different countries through a better distribution of labour and investment capital at the Arab regional level. In the present context, however, attention will be focused on two questions relating, nationally and regionally, to the distribution of resources and income.

Many development plans, especially those of the first generation, ignored the basic question, Who will benefit from the development process? While these plans may have stressed social justice and paid lip service to raising the standard of living, too often their expressed aims were given no concrete form in actual programmes, projects, and policies and remained at the level of general aspirations and eloquent rhetoric. The first task of the future, to which some countries have begun to turn their attention, is to identify the social classes that will be given priority among the beneficiaries of the development process in such a way that the neediest classes are placed in a high position on the priority scale, especially since it is these classes—i.e., workers, peasants, teachers, lower-level employees, and craftsmen—that contribute the most to the GNP.

The task related to the second question involves making this pattern of distribution more equitable among the different countries. This task, however, is more difficult than that involved in domestic distribution. This is true despite the existence (in the case of domestic distribution) of sectional interests that may stand in the way of achieving a more equitable distribution within a single country despite the inevitable influence of the particular ideological and socio-economic systems prevailing there. For at the level of the Arab region as a whole, there is no sovereign authority as effective as the several national authorities and no strong and effective pan-Arab feeling that would press for improving the regional distribution pattern.

Therefore, improving the distribution pattern within the Arab region as a whole can only come about through Arab economic co-operation, integration, and fusion founded on acceptance of the general principle of regional integration. Specifically, narrowing the gap in resources and income among the different countries will never be achieved practically except by reliance on the principle of investment and development at the regional level. This will involve raising the base level of resources and income in the countries with modest investment resources by means of large-scale investment on the part of the richer countries (with the participation of the poorer countries). If this is done, it will lead to a restructuring of the Arab economies and an acceleration of their development. This condition will never be met as long as the wealthy countries, especially the oil-producing countries with limited population and non-oil natural resources, refuse to see the other countries as their *strategic depth* in economic terms. This view should spring from an awareness that the adoption of such a concept by the wealthy countries is a matter of self-interest and of safeguarding both national

and regional security and not merely a question of catering to pan-Arab sentiment or offering charity.

Promoting Science and Research and Adapting Technology to Arab Needs

Special attention is devoted to this objective because of its vital importance. The promotion of science and research endows the Arab man with more refined and effective skills in relation to his role as a means of development just as it serves him in his capacity as development's ultimate beneficiary. This is obvious.

Less obvious, however, is the need to select the appropriate technology, to transform and adapt it, and to consider this task from a regional, not only a national, angle in terms of that combination of skills and human and material resources it demands. Likewise, the term *technology transfer* has been avoided because of the implied belief or illusion that technology is a commodity that can be passed from hand to hand and from one region to another. On the contrary, the point is to acquire an *autonomous* technological capability by creating the proper climate for science and research (both theoretical and practical) and the proper climate for training. This is a long and difficult process and implies an acceptance of the principles of trial and error and learning by doing. Anyone who thinks that he can shorten and compress the process by importing capital goods and foreign expertise is mistaken. Suitable technology can be transformed and adapted only through the gradual progression from mere importation to the modification and adaptation of technological specifications in accordance with national requirements, then to local design and production, and finally to innovation.

Formulating Natural Resource (Especially Oil) Policies Concordant with National and Regional Interests

In this section attention will be focused on oil policies, for it appears to this author, as an observer and analyst of these policies, that they are overwhelmingly determined by narrow and short-term national interests, on the one hand, and by considerations of international responsibility, on the other, to the serious detriment of long-term national and regional interests. Production volumes, export directions, and price levels are determined primarily on the basis of how certain producers imagine that the major consumers conceive of this responsibility and their definition of it.

It can readily be granted at the outset that the questions of production volume, export directions, and price levels are highly complex and that the different components of the world economy are so intimately linked that a policy maker cannot, and must not, adopt the point of view of his country or region without concern for the repercussions it may have on the rest of the world. This author is convinced, nonetheless, that there have been cases in the last 6 years (i.e., since the Arab oil-producing countries took over control

of their resources), in which sensitivity to international repercussions and consciousness of international responsibility have prevailed over national and regional considerations to an extent unjustified by objective factors. Whether one considers that oil policy should be determined by economic or by geopolitical considerations, one arrives at the same conclusion, namely, that Arab oil policies could have been firmer both in terms of production volume and the conservation of non-renewable petroleum resources and in terms of a more favourable adjustment of prices.

To conclude this brief treatment of petroleum resource policies, three principles that might constitute the basis for these policies should be mentioned. The first principle is that oil stored in the bowels of the earth is more useful to the Arabs than oil extracted and exported as crude. In addition to the virtual certainty that the future price of oil will be higher than it is today, the Arab industrial surge in the coming years will find itself at a great advantage if it has its own oil and gas requirements under Arab soil.

The second principle is that the oil countries should not be taken in by Western intellectual blackmail, which tries to scare them with the suggestion that technological change may render their oil worthless in the more or less distant future. In fact, oil and gas have a great number of uses that will continue to exist into the foreseeable future. Moreover, any decrease in the need for oil and gas as fuel should be a source of satisfaction for us because our hydrocarbon resources can then be directed towards more profitable and advantageous uses in closer conformity with our social needs.

The third and last principle is that the sense of international responsibility should be a two-way street. A proper regard for this responsibility should not require that the oil-producing Arabs suffer all the negative consequences while all the benefits go to the big consumers. As it is, the Arabs have agreed to let the volume of production expand so much that their revenues now exceed not only their national needs (consumption, investment, and defense), but also regional needs of all sorts (even taking into account Arab contributions to certain international needs) and still leave them a large financial surplus. This gives rise to inflation, reduced purchasing power, and stagnation, all because the big consumers in the industrialized countries need a fuel that is relatively cheaper than the available energy alternatives. At the very least, to the extent that certain Arab oil-producing countries are assuming this kind of responsibility, they should be met with a corresponding sense of international responsibility among the industrialized nations. This could be manifested in three ways: (1) by facilitating the acquisition and mastery by the Arabs of real technological capability at a reasonable cost instead of concentrating either on the export (at artificially high prices) of merchandise incorporating a technology they wish to market or on the export of arms to places where there is neither sufficient awareness of who the real enemy is nor any clear determination to use these arms where they should be used; (2) by engaging in friendly economic co-operation through all channels and especially co-operation in building a New World Economic Order with features acceptable to the Third World; and (3) by offering

effective and genuine support for the Arabs in their confrontation with Israel and world Zionism.

Arab Economic Integration

The next objective for the future is to bring Arab economic co-operation to an advanced stage, which could rightly be termed the integration, or fusion, stage. This would entail structural transformations in the Arab economies whereby they would become organically intermeshed. It would also be necessary to standardize legal, financial, and other frameworks related to such integration. All that has been achieved so far is a certain degree of co-operation leading to the creation and expansion of a common Arab economic sector based on commodity exchanges, financial flows, and across-the-border labour movements. Although these activities are important, they do not in effect constitute a real fusion linking economies together through the horizontal and/or vertical integration of the means of production. A comprehensive and well-financed Arab development plan is not present. Such a plan would produce fusion of the national economies through recognition of the role of pan-Arab science, research, and technology; the sharing of economic decisions; and the integration of development projects through a regional distribution of labour that utilized the relative advantages of each Arab country.

No attempt will be made here to treat the obstacles standing in the way of integration, of which the most stubborn are the following: the strong pressure of national interests, the emergence of an exaggerated tendency towards narrow "state" nationalism, the mutual suspicions of capitalist and socialist systems, and, finally, the vagaries of Arab political life, which are reflected in economic relations. There is an urgent need for the Arab countries to rise above these obstacles and find solutions to the practical and theoretical problems they embody. Solutions are possible and, though some of the problems are real, most are imaginary. Surmounting these obstacles is an urgent necessity if the following four major regional objectives are to be achieved: (1) regional security, including military, food, and technological security; (2) acceleration of development through fusion and through material and human integration and the savings this implies; (3) improvement of the regional pattern of distribution by narrowing the gaps in economic performance; and (4) liberation from economic dependency and greater economic self-reliance at the regional level.

Strengthening all Facets of Regional Security and Setting Up a Strong Economic Foundation for Defence and Security

Although this task has political and military implications, some of which fall outside the economic context, it is also, properly speaking, an economic task. Strengthening regional security and securing the means necessary for establishing a strong foundation for military defence effectively entail, *inter alia*, the same requirements as economic achievement and a sound develop-

ment course. Likewise, achieving a reasonable degree of regional security and an effective defense capability constitutes a protective shield for safeguarding the products of development. Therefore, regional security and development are in no way contradictory if each is given its due share of the region's material and human resources. On the contrary, when the policies regarding them are well designed and the right balance is observed in distributing resources between them, they actually complement each other.

It is both unfortunate and alarming that the Arab nation has not yet ensured for itself a sufficient degree of regional security capable of safeguarding the interests of the people and their resources. This is especially true given that some of these resources that are of a strategic importance, such as oil, are the target of foreign ambitions; the policies regarding them are exposed to many hostile pressures. While it might have been possible a few years ago to use oil as an instrument of pressure against the countries supporting Israel and Zionism, a number of ill-conceived Arab oil, financial, and political policies applied since the beginning of 1974 have provided the other party with an instrument of counter-pressure, which it can in its turn use on the Arabs. This has effectively blunted the Arab oil weapon and made it relatively ineffective except under circumstances that are not easy to bring about in the current political and social climate.

The situation is made more dangerous by the fact that Arab food security does not exist. Despite its vast agricultural potential, the Arab world is obliged to import several billion dollars' worth of food every year (imports reached $6,850 million in 1977). This frightening exposure to the whims of foreign exporters of agricultural foodstuffs (most of whom belong to countries whose relations with the Arabs are characterized by suspicion, if not enmity) opens a wide breach in Arab security as a whole and greatly weakens the effectiveness of those means of economic pressure still available. It is urgent and essential that regional security—including food security—be bolstered if the struggle for the liberation of Palestine and for Arab dignity in general is to acquire credibility and effectiveness.

Ending Economic Dependency and Raising the Degree of Regional Self-Reliance

This task has more external ramifications than the others we have discussed up to now. Here it should be frankly recognized that the Arab development effort during the third of a century that has passed since the Second World War has not been inspired by a comprehensive vision of development as an indigenous process that must be carried out primarily with one's own capabilities and potential. What is meant here is that the general development framework has not included as a goal the elimination of Arab economic dependency on the industrialized world, especially on those industrialized countries with a record of colonialism and imperialism, which still practise a large measure of economic and technological domination, including economic exploitation with its attendant political and intellectual "terrorism" and blackmail.

Clearly, the degree of reliance on the advanced industrialized countries and multinational corporations is very high. Indeed, it has increased with the onrush of economic construction and the attendant need to import more capital goods and technological expertise. Rising incomes have led in turn to a tremendous increase in the importation of consumer goods. The growing reliance on the outside has taken on the aspect of dependency because the increase in the Arabs' own productive capacity has not begun to keep pace with the increase in imports. The situation has been made more complicated and distressing by the increase in the *degree* of dependency that has accompanied the oil price adjustments and the rapid increase in oil revenues since the fall of 1973. Perhaps at the root of this dependency is a serious laxity resulting from financial abundance itself as well as poor choice of particular patterns of development and industrialization in a number of oil countries.

It should be pointed out that the self-reliance referred to here does not mean isolation, nor does it mean that each Arab country should build a protective wall around its economy. What is meant is self-reliance that entails dynamic and progressive acquisition of all stages of productive capability from design to execution. From this perspective, there is no reason to fear trade relations with the rest of the world, because they will have become relations among peers characterized by equality and a division of labour different from that inherited from colonial days. The geographical reference of the self-reliance advocated here is not the individual country, but the region as a whole. Whereas no one Arab country is capable of achieving by itself an acceptable degree of self-reliance in the foreseeable future, this important objective can be fulfilled through co-operation leading to Arab economic integration only if a sincere effort is made in the right direction and if appropriate policies are applied towards its attainment.

Contributing to the Establishment of a New World Economic Order

Given the abundance of literature on this subject that appeared throughout the seventies, whether focused on exposing the drawbacks of the present system or on describing the new system sought after, it is not necessary to repeat what is now widely known. It might be stressed simply that the new system should be more equitable in the distribution of opportunities and benefits, more efficient, less wasteful of resources, and less polluting of the environment. Improvements should likewise be fundamental and radical. Marginal, cosmetic ameliorations accompanying the perpetuation of the structure of the inherited colonial system are of little value.

The Arab world has a responsibility to make its intellectual contribution to the formulation of the guidelines and policies of the New World Economic Order and to the struggle to achieve it. It must join in this effort along with other Third World countries and regions and with the progressive forces of the advanced industrialized world, which agree on the need to replace the old system and to bring about the new order.

Present Resources and Future Potential

It is impossible to formulate any development strategy without taking into account the human and material means or resources available, including the "institutional framework," if this can be counted as a resource. Thus a survey should be made of these resources from both a static perspective, i.e., a listing of the resources presently available, and a dynamic perspective, namely, an assessment of the resources likely to become available in the future.

In addition, one should define the time span within which the new resources will be uncovered and expectations will be established. Such expectations should be guided by the major development objectives set down.

However, the available resources will not be listed here because the question of available resources has been widely studied, at least in the circles of Arab specialists. By the same token, the question of new resources will not be treated here because such a treatment would require the possession and presentation of extensive data and the formulation of numerous hypotheses quite beyond the scope of this paper. Therefore, the present discussion will be confined to describing the resources that must be assembled if the strategy is to be successful and listing available and potential resources and means. The Arab development strategy proposed in this paper can then be presented.

Available and Potentially Available Resources

Here shall be recorded six categories ot resources or means, some of them material, some human, and others moral and institutional. The nature of the latter will be clarified in the remainder of this section of the paper.

The first category of resources is material resources such as land, water, climate, and underground minerals whether already exploited or potentially exploitable. (It is not within the scope of this paper to detail the kinds and quantities of these resources.) It should be noted that the natural resources mentioned, i.e., land and water, are not generously bestowed. Good agricultural lands make up only a modest proportion of the total surface area of the Arab world, the available water is poorly distributed geographically, and the rains are seasonal and generally scarce throughout the area. But despite their limited availability, both of these resources could be much better exploited than they are at present. The depletable resources—mainly oil, gas, and phosphates—have come to play a prominent role in providing financial resources and in stimulating the development process, despite the problems that derive from the production, price, and oil revenue utilization policies of the oil countries, which limit the effectiveness of development in the national and the regional spheres.

The second category, manpower at all levels of training, skill, and experience is a major development resource, especially if one takes into account those latent capabilities not yet well developed, widely used, or given improved

opportunities and strong work incentives. The development objectives related to human resources were pointed out in the second part of this paper, "Major Development Goals," which also mentions the low level of training and skill, the weakness of incentives, and the unemployment of all types besetting these human resources. Yet manpower is at once the primary means of production and the ultimate end of all economic effort. The level of manpower skill could be as high in the future as it is low today if the right policies were applied and the necessary resources and efforts were channelled into its development.

A similar case can be made for the institutional framework (the third category in our classification here). The institutional context, especially the politico-administrative framework (included here are the degree of stability, security, and justice provided and the different departments and bodies, especially those dealing with the planning, implementation, and follow-up involved in rationalizing the distribution and use of resources). This framework is riddled with gaps and deficiencies. Clearly, it must be put right, developed, and activated so that it may play its leading role in the development process by (1) providing the organizational machinery and the climate necessary for creativity and (2) taking in hand, orienting, and rationalizing the production process.

However, the fourth category—the three supports that must be oriented in convergence towards development: the popular will, leadership, and community organization—is rarely classified among the means and resources necessary for development. This may be due to ignorance of its importance, to an assumption that it already exists, or to a view of development and its mechanisms too narrow to encompass factors such as those listed at the beginning of this paragraph. The importance of the convergence of these three factors cannot be overemphasized. All of them involve willful, purposeful action without which the development process in the true sense cannot begin, no matter how great the financial means or how generous the material resources provided by nature.

The fifth category is intensive and rational Arab economic co-operation oriented towards development, with an emphasis on increasing the effectiveness of this co-operation as it becomes more intensive and approaches a state of integration and fusion. The central position occupied by this factor is due to the fact that (1) such co-operation gives an additional dimension to the performance of all Arab national economies and societies and (2) there are Arab regional objectives that require for their achievement a common Arab effort transcending national borders. Co-operation takes many shapes and forms and follows a gradually escalating course. However, the scope of this paper does not permit an elaboration of these aspects, as important as they are for understanding the role of Arab co-operation and, consequently, for increasing it in the interest of more positive results.

Finally, there is three-way dynamic and effective interaction with development of the factors represented by the desire for Arab unity, social justice, and democracy and political participation. In other words, while all these

factors must be provided separately, their existence and interaction together constitute an additional factor with its own dynamism and impact on the development process.

The desire for Arab unity, social justice (i.e., a proper distribution of resources and income both nationally and regionally), and political participation (as a manifestation of democracy) constitute together a very important triangle in relation to co-operation for development. Each angle can be considered a development factor in itself and a *sine qua non* for the smooth progress of development. Yet together, they are also characterized by interlocking, interacting relationships. The desire for Arab unity that is embodied in joint activity raises the yield of national development efforts and produces a regional yield as well. Social justice works to bring about a fair distribution of resources both within and among the different countries, strengthens the incentives for the participants in production, and increases the sense that they are deriving a just benefit from the fruits of production, thus moving them to exert a corresponding effort in the service of development. Political participation provides a dimension that is indispensable if there is to be a spirit of commitment to development effort, for where there is no genuine political participation, there is no effective commitment. Obviously, it is through the interaction of these three factors both with each other and with the development process as a whole that the course of development is reinforced and its fruits multiplied. This is a reciprocal relationship that merits greater consideration and emphasis (it rarely receives either). However, no more than this brief mention can be made here.

The Time Span Required

It is virtually impossible to predict at what point the Arab development process will reach take-off or when it will attain a satisfactory stage of achievement. Nevertheless, it would be difficult to make available the six categories of means listed above and launch the development process through them in less than 20 to 25 years. In other words, the time period necessary for the development of Arab co-operation as conceived herein (with its 10 objectives as listed under "Major Development Goals") spans to the late twentieth and early twenty-first centuries. This 20-year time span is necessary for the different institutional, political, social, cultural, and economic factors that interact with the launching of the development process in its national, regional, and international dimensions to mature to the extent that the many conditions of the development process can be satisfied. This time span is also necessary for the strengthening of Arab security, which must run parallel to development. Security matches development in necessity and importance for Arab society and individual alike.

The Development Strategy

Any study such as this, concerned with formulating an Arab development strategy, must pose and attempt to answer the following three central

questions: Why development? With what means? In what way? The first question was perhaps largely answered in the introduction and in the ensuing presentation of the 10 objectives or tasks of development. In the final analysis, the objectives of development can be summarized as follows: meeting the essential needs of the population (in quantity, quality, and diversity); raising the level of self-sufficiency of the society and of the national and regional economies; promoting freedom; and, finally, furthering liberation and security.

As for the second question, concerning what means development is to use, a brief answer was attempted in the section on the means and resources, both available and potential, that must be assembled in the service of the campaign against backwardness and in the interest of development in the widest sense of the term.

There remains the third question: How is development to be achieved? The attempt to answer this question will eventually require the formulation of a strategy that conforms with the established objectives and takes into account the available and potentially available means. It is this question that will be taken up in the fourth and last part of the paper.

The foregoing review and discussion helps us to determine the nature of the proper strategy and the areas for emphasis therein. These areas will be a function of the relative importance given the 10 objectives in the overall development process (and, consequently, in the strategy) and of the relative importance given the 6 categories of means and resources needed before development can begin on its way to achieving the objectives. When the task is thus simplified, one moves closer to the formulation of a strategy and its implementation becomes easier. In addition, with respect to the preparation of the formulation, a number of the objectives and resource categories constitute components of the strategy, i.e., either elements of its internal structure or stages of its progress. This explains what may appear to be a repetition of some of the items mentioned earlier in the paper. In fact, this is not a repetition. Rather, some of the factors (such as manpower development or intensive Arab economic co-operation, to cite just two examples) are mentioned once as objectives, again as development means or resources, and still again as elements at the core of the strategy and its mechanisms. The factors thus repeated have different functions, their nature changes, and they are reviewed from different angles according to their three roles.

Let us cite Arab economic co-operation as an example of what is meant. The achievement of an increase in co-operation is a major and urgent Arab economic objective. But it is also a push factor in the course of development, as was briefly shown in the preceding section. Finally, it has a rightful place as one of the components of development strategy. The same can be said for manpower development, the oil sector, or the adaptation of technology. It may be added that, unlike these three components, not all of the other factors perform three functions. Some perform only two—the developmental orientation of the leadership, for example, which constitutes both a moral developmental resource and a strategy component.

Following this introduction, what, then, is the proposed strategy? This strategy is made up of two major components and a method or pattern of action. The first component embodies the dynamic factors of the strategy, and the second involves the priorities or points of emphasis determined for it. The pattern of action describes the way the dynamic factors and the priorities are related to each other. It also describes the way the strategy is to move in order to achieve the established development objectives, given the available and potential resources.

The Dynamic Factors in the Strategy

While one could go into a great number of dynamic factors of varying degrees of power and effectiveness, it would be more appropriate to emphasize here those without which economic effort can never advance beyond the stage of achieving development in the narrow sense. The reason for this is that, despite their importance, the secondary or supporting factors (including material and financial resources) can attain to the status of determinants only if they produce an impact strong enough to jolt the society and to activate its institutions and forces. This rarely occurs. Hence we have selected 10 factors for discussion.

A positive Arab attitude on the question of regional development. This is an indispensable condition if the idea of regional development is to be adopted and if the consequent redefinition of the concept of national sovereignty is to be accepted with the effective and intensive co-operation and co-ordination that would follow. This attitude should be manifested in the national arenas as well as in regional institutions, from summit conferences, the League of Arab States, the Economic and Social Council, the Council for Economic Unity (including the secretariat and ministerial council of these last two), on down to regional organizations, federations, companies, and joint ventures of all sorts.

A development orientation on the part of leaders. This includes those in positions of national political, intellectual, informational, and economic leadership—including official, popular, party, association, and labour union leaders. To this must be added stability, security, the rule of law, and the social cohesion that make possible productive interaction within the network of socio-cultural and economic relationships.

An acceptable degree of social dynamism. This should exist throughout the society along with widespread concern over the state of underdevelopment. As stated earlier, the objectives of social development and social change should be comprehensive in scope and should not be limited to the needs and desires of the affluent, the powerful, and the influential; they should meet the basic needs of the masses and of society as a whole. At the same time, these needs must be seen in a dynamic, not a static, way since the scope of these two areas of need will widen and the quality improve as the development process succeeds in meeting them.

Society's acceptance of technological change. This must occur in the light of the need to improve performance and to increase the readiness of society to work towards acquiring and adapting suitable technological capability and know-how. By raising the level of science, research, experimentation, education, and vocational and technical training, performance standards are improved.

A socio-economic system capable of providing sufficient incentive to encourage the labour force at all levels. Care must be taken, however, that the incentives are neither so high that they create huge gaps in wealth and income leading to social tension, social and political disintegration, and economic frustration, nor so low that they result in the frustration of low-income skilled workers.

What is meant is that the socio-economic system should provide a reasonably fair distribution of income and make work and educational opportunities as well as health and social insurance available to all. The factor under consideration here is thus related to the training and adequate preparation of the labour force, providing it with satisfactory incentives and attractions and creating a suitable and encouraging work "climate."

Establishing the institutional framework for planning. This should include the capacity for planning and follow-up, mobilizing investment resources, ensuring their wise use, activating those existing institutions concerned with implementation and administration, and prescribing the areas of activity of the private, public, and mixed sectors.

Mobilizing the available resources and actively striving to uncover potential resources. In particular, this entails the devising of policies and programmes that would serve to enhance the development role of manpower, particularly in the hydrocarbon sector, which occupies a special position in the Arab world.

Providing a sufficient measure of free participation in political and economic life. In addition to the political and cultural aspects of this question, such participation would serve to deepen the commitment of the citizenry to the development projects and make it easier for them to accept the mobilization, effort, and sacrifice required for their implementation.

Co-operation at the regional level. This should be directed first towards integration, then towards Arab economic fusion, in order to make possible external savings, economies of scale, and efficient use of resources at the Arab regional level. This co-operation would also facilitate the creation of institutions and activities that the individual countries are incapable of managing alone and would make for positive interaction between the national and regional development processes. Not only would this ensure harmony between them, but also it would eventually lead to the formulation of national plans that, alongside of national objectives, would take into account common regional goals, including security and development. The national economies would thus be restructured so as to be integrated one with the other, both vertically and horizontally.

The establishment of a regional development plan and budget. For this, of course, the common regional objectives must be clearly conceived, brought into harmony with the national goals, and made to contribute to the effort to achieve the national goals. It would also entail the creation of appropriate structures for mobilizing resources at the regional level to cover the regional budget.

The Priorities of the Strategy

The purpose of establishing a scale of priorities is to order the different sectors and activities in the economy that the strategy aims to activate in the early stage of the development process. This scale must focus on the more basic aspects of the economy. By stimulating and activating them, their effects can be made to extend in all directions to the remaining sectors and activities of the economy. The pattern of phasing and the distribution of emphasis in the scale of priorities should be the one that maximizes the attainment of the aims of the development process.

The scale of priorities takes its form, then, from the sequence of importance of the different sectors and activities and from the role that each of them can play in ensuring the success of society's efforts to attain its development and security objectives at the national, regional, and international levels within a state of harmony and fruitful interaction among these levels. The following sequence of priorities is thus proposed:

Manpower and the labour force. This is the first and foremost instrument of development as well as the ultimate beneficiary of development. Manpower should, therefore, receive as much consideration as possible in the form of effort and investment funds in a serious endeavour to provide opportunities, programmes, and appropriate scientific, experimental, educational, training, and research facilities. These would function as part of a suitable and effective manpower-training philosophy and a system of incentives characterized by a large measure of social justice within a framework of political participation, stability, security, and the rule of law. Under such conditions as these, it is highly likely that the labour force would become active and productive in harmony with development aims and perspectives.

Suitable technology. The development of such technology is directly related to manpower training because the identification, development, and adaptation of the proper technology provides the labour force with the skills, means, and equipment most effective in the productive effort, given the cultural, human, and material conditions of the society. If this takes place under favourable conditions of receptivity to technological change and as part of wide-scale and effective utilization of technology in the economy, and if the presence of the other dynamic factors of the strategy (as discussed above under "The Dynamic Factors in the Strategy") is ensured, the labour force will then be qualified to assume the many and complex burdens involved in the progress of the strategy towards attaining the many development objectives.

Rural and agricultural expansion. This also occupies a front-line position in the scale of priorities of the proposed strategy. Despite the existence of some Arab countries in which rural society and agriculture play a relatively small role, the Arab world as a whole is nevertheless characterized by a large rural society and by an agricultural sector that contributes a significant share to the domestic product. Therefore, the development, indeed the revolutionary transformation, of the countryside is necessary and should include the implementation of wide-scale rural reform in the fields of agriculture and production. Such a reform would entail institutional policies and programmes and the channelling of skills and investments in such a way that the reform would directly activate the economy as a whole, especially in the light of the strong links between rural society (through its agricultural sector) and urban society (through its industrial, construction, and service sectors). There must be intensive mutual support between the two societies in order to render domestic life richer and more productive at the economic level and to provide for greater harmony and participation at the social and political levels.

Basic industrialization. This is the counterpart of enhanced rural-agricultural growth. By "basic" industrialization is meant establishment of those basic industries that, if developed (through investment and suitable manpower training), would have a dynamic and beneficial impact on the different industrial branches based on them and benefiting from them. Here should be singled out the engineering industries. These must acquire the capacity to create and develop engineering designs and to manufacture capital goods. This capacity is necessary if industrialization in general is to be adapted and become a way of life, organization, and work. Only then can industrialization make a profound contribution to rapid agricultural growth and enhance indigenous Arab development capabilities. Likewise, there must be a strong focus on the regional dimension of the original and projected industrialization process (i.e., through the interaction of national efforts within a regional structure) if the process is to provide tangible benefits in terms of creating both sufficient income and a wide market for the products of industry.

Communications of all sorts. Communications should be developed both nationally and regionally as the primary element of infrastructure in order to facilitate the course of development and the circulation of the means of production, on the one hand, and of the products, on the other. Of course, providing the means of transportation and communications also serves to bring the pattern of distribution (of manpower, human resources, and products) closer to its ideal state at the regional level. (It should be pointed out here that the focus on communications does not mean that the other infrastructural elements are to be ignored. The purpose is simply to highlight the special role of communications in facilitating the activation of the development strategy as a whole.)

The institutions necessary for planning and follow-up. It should be recalled that these institutions, such as the banking system and research and manpower-training institutions, serve to facilitate the stimulation and

rationalization of the private and the mixed sectors as well as the public sector.

The hydrocarbon sector. This sector should be developed and its policies rationalized as a source of development financing, as part of the machinery of development, as its productive starting point, and also as one of the bridges to Arab economic integration.

The Movement of the Strategy

Having discussed the "dynamic factors" and "priorities" of the strategy, it is now necessary to attempt a conceptualization of the movement of the development strategy. While the pattern of this movement may already have been implied in a general way in this paper, it must now be brought out clearly in its conclusion.

In the author's view, the onset of development springs from two sources. The first is the will on the part of the political leadership to undertake development and the second is the popular will to do so, implying that both the government and the people are concerned by the state of underdevelopment and interested in profound, comprehensive development and that they possess a strong developmental orientation. It is against this background that the mechanism of the strategy functions, but it cannot go far on the road to national and regional development unless the following two contextual conditions are met: the ability of the citizens to ensure the continuation of development after the "first spark" is produced, and the will, on the part of both the general leadership and the citizenry, to undertake intensive Arab co-operation at the regional level directed towards integration and fusion. Since the incentive to co-operation is clearly present, it is necessary to focus on what will stimulate the mass of citizens.

In the author's view, if the Arab people are to accept the *mobilization and sacrifice* necessary for the overall development drive, and if they are to *commit* themselves to the objectives, efforts, sacrifices, and projects demanded by development, then they must be provided with the opportunity to *participate* in making economic and political decisions, and they must be offered suitable *incentives.* Where there is no participation, there is no commitment, and the leadership finds itself incapable of mobilizing the masses. For what is the point of development if it is not *for man in society, through* him and *with* him? In this way, Arab society will be liberated, through the development process, from poverty, ignorance, and oppression at the national level; from fragmentation and excessive reliance on the advanced industrialized world at the regional level; and from dependency, marginality, and exploitation at the international level.

Concluding Observations

There are three observations to be made in the conclusion of this paper. The first is that the strategy here proposed is, in its rough outlines, as

appropriate for national development as it is for regional development. This is the source of the ambiguity that occasionally comes up as to whether it is the separate national economies that are being discussed herein or the regional economy as a whole. The author is convinced that each of the operations involved in establishing the development objectives, determining the available and potential development means, and, finally, outlining the strategy itself contains aspects that can apply to both national and regional development. What is important is to specify the context and, consequently, the use made of the objectives or means in question. However, such a clarification is not to deny that this paper is primarily concerned with regional development, i.e., development on a scale that takes in the whole of the Arab region. For while national development is a matter of concern to all those in positions of responsibility in the Arab countries, regional development is almost like an orphan with no one to care for it.

The second observation is that, for the development process to take place, it is not enough to establish the major objectives, determine the available and potential resources, and devise the proper development strategy. A development plan must then be drawn up, policies designed, measures prepared, and the resources necessary for implementation provided. Therefore, effective implementation must be combined with an active and vigilant follow-up and a readiness to undertake the necessary modifications and adaptations in mid-course in the light of experience and new circumstances. This paper will nevertheless conclude with the strategy stage, as the subsequent stages are beyond its limited scope.

In conclusion, a third observation must be made. The picture of development that has been pieced together in this paper may appear overly optimistic or seem to represent an unrealistic dream. It must be acknowledged forthwith that the achievement of development, with its ambitious objectives, is not an easy task. However, while the path may be difficult, it is not impossible to follow. The difficulty of the path in itself constitutes a challenge that stimulates a society determined to succeed. The a priori claim that the Arabs lack the necessary determination, will, or ability is an anti-Arab, racist judgement. To accept this judgement as justified is to suggest that conditions in the Arab world are doomed to stagnate into the foreseeable future and that it is hopeless to expect any radical change to occur in Arab society. I hope and believe that many, indeed, most people will refuse to have this judgement attributed to them or to their society. To reject it consciously is to take up the challenge and to show a readiness for steadfast confrontation. After all, history's greatest achievements began as mere dreams in the minds of a few men and were then taken up by their societies and transformed into realities through effort, determination, and sacrifice.

No responsible person would argue that development can be launched on all its wide fronts with its strategy in full momentum so as to achieve all its objectives *simultaneously*. If that were what was being advocated in this paper, then it could rightfully be described as a dream with no chance of realization. The course of development, despite its many interconnected

facets and extensive fronts, is a long process and should be launched one step at a time with a view to proceeding to new steps as time progressively enriches experience. Thus it is in the taking of each step that the development objectives are achieved and the necessary conditions for development are created.

As long as the development steps are taken within the right strategy and with will, determination, and proper guidance, there is no reason to shrink before the magnitude of the task or the difficulty of achieving it. What may appear to be unachievable thus moves in one fell swoop into the realm of the possible, provided that the will of the society and its resources are mobilized to that end within the framework of a concept that is at once integrated and phased. Finally, acceptance of the challenge is the first step to achievement and victory.

CHAPTER 4. IS THE ARAB WORLD OVER-POPULATED? A LOOK AT THE FIVE POOREST ARAB STATES

*R. Paul Shaw**

Like most of the "over-" and "under-" dilemmas, the question of "over-population" has received its share of subjective, biased, and narrow treatment. Before the 1974 World Population Conference, one would have thought that almost all of the world was over-populated. However, many less developed country (LDC) government representatives attending the conference stated that they perceived their population growth to be largely satisfactory. Of course, such perceptions collided head-on with those of virtually every Western analysis on the economic disadvantages of rapid population growth in the LDCs. Yet a look at characteristics of these countries reveals that distributional factors, or concentrations of populations, are more often at the root of over-population worries than sound economic analysis of resource potential. Indeed, with the 1976 World Employment Conference, HABITAT (1976), and the World Agrarian Reform Conference (1979), notions of over-population have been increasingly pushed aside, or at least heavily qualified. The real culprit has been identified as inequities in the distribution of human resources (in terms of both the quantity and quality) in relation to actual and potential non-human resources.

Arab governments clearly perceive distributional problems as outranking population growth problems. According to the UN Second Population Inquiry, most governments were satisfied with their rates of population increase, but they identified problems in internal population distribution as their primary demographic problem. In fact, with the economic boom in the OPEC countries following the 1974 increase in oil prices, shortages of needed skills and rapidly rising demands for the importation of unskilled labour became central demographic issues in Saudi Arabia, Kuwait, the Libyan Arab Jamahiriya, Bahrain, Oman, Qatar, and the United Arab Emirates. If anything, these countries might qualify as "underpopulated" in terms of labour force.

Of course, countries of the Arab world are extremely diverse, and the populations and economic characteristics of at least 11 Arab countries suggest that they may be labour surplus countries. Seven of these[1] are suppliers of labour to OPEC and EEC countries (Shaw 1979b). Among their ranks, 5 qualify

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[1] Morocco, Tunisia, Algeria, Egypt, the Syrian Arab Republic, Jordan, Yemen.

as members of the world's 25 "hard-core LDCs": Yemen, Democratic Yemen, the Sudan, Somalia, and Mauritania. Are these countries over-populated? Or are their population problems, as generalized above, more likely to be a question of distribution?

The purpose of this paper is to evaluate this question by reviewing the population and employment characteristics of these countries and discussing their major constraints to development. Essentially, our point of view is that (1) the concept of over-population per se is of little immediate use to policy makers concerned with breaking the "vicious circle of underdevelopment" in these countries; (2) the concept of over-population is much too concentrated on matters pertaining to the numerator of "population pressure measures" instead of on distribution and potential of resources in the denominator; and (3) even if population growth could be drastically reduced, this would probably have very little effect on the *status quo* unless substantial social and economic change were to occur.

Population and Employment Profile

The five poorest Arab states exhibit all the usual vestiges of the "vicious circle of underdevelopment." As data are generally scarce on these countries, we shall summarize the bulk of existing empirical information. This will set the stage for more realistic discussion of population problems in the context of planning possibilities and resource constraints.

Population Characteristics

According to table 1, the total population of the five countries is on the order of 27 million. Approximately 82 per cent (22.1 million) reside in rural areas. About 42 per cent (9.3 million) of the total rural population are in low-income subsistence agriculture, and another 24 per cent (5.3 million) are nomadic, primarily subsistence pastoral herdsmen.

The population of the five countries is heavily weighted towards the younger ages. As table 2 shows, between 43 and 51 per cent of the total population is under 15 years of age. This means that the carrying capacity of the potential labour force (all persons aged, say, 15-64 years) is very high indeed.

As in most LDCs, the swollen ranks of those aged 0-15 years is due to high rates of natural increase (high fertility minus mortality) and low life expectancy (which reduces numbers on the older end of the age spectrum). Crude birth rates (CBR) are extremely high (45-50 per 1,000 population), and annual rates of natural increase range from 2.4 to 3.0 per cent.

Regardless of worries about over-population, rates of natural increase will almost certainly climb over the next 5 years. This will apply particularly to rural areas, because health improvements will reduce sub-fecundity among women. The high crude death rates can also be expected to fall substantially. Infant and childhood mortality rates will be the first to fall. These are on the

TABLE 1 ESTIMATES OF THE TARGET POPULATION IN THE FIVE LEAST DEVELOPED ARAB COUNTRIES

Country	Year	Total population (thousands)	Per cent rural	Approximate per cent of rural population that are:	
				Low-income subsistence farmers	Nomads
Sudan	1973	14,113	83.0	48.0	13.0
Somalia	1975	3,652	73.0	20.0*	80.0
Yemen	1975	6,000	92.0	36.0	18.0
Democratic Yemen	1977	1,797	63.0	72.0	8.0
Mauritania	1977	1,420	77.0	30.0	47.0
TOTAL		26,982	82.0	42.0	24.0

Source: Figures in this and following tables are taken from or calculated on the basis of country reports and national statistical yearbooks and censuses.

* Mainly engaged in livestock raising.

TABLE 2 POPULATION BY AGE STRUCTURE AND VITAL RATES IN THE FIVE LEAST DEVELOPED ARAB COUNTRIES

Age structure and vital rates	Sudan 1973	Somalia 1975	Yemen 1975		Democratic Yemen 1977	Mauritania 1977
			Resident[a]	Total		
Per cent of population						
0-14	45.8	50.8	47.5	45.0	43.0	44.3
15-59	49.5	55.4	46.9	48.6	–	49.7
60+	4.7	3.8	5.6	6.4	–	6.0
Vital rates						
Crude birth rate	47.8	47.2	–	49.6	49.6	44.8
Crude death rate	17.5	21.7	–	20.6	20.6	20.8
Rate of natural increase	30.3	25.5	–	29.0	29.0	24.0

[a] Smoothed distribution.

order of 132 per 1,000 in the Sudan and 160 per 1,000 in Yemen. These developments will swell the next generation of youngsters (aged 0-4 years) to levels at least 25 per cent larger than at present. Thus, between 1975 and 1985, the school age population (0-14 years) will increase by about 3.1 million in the Sudan; 1.1 million in Yemen; 0.5 million in Somalia; 200,000 in Democratic Yemen; and 130,000 in Mauritania. Given the short period of time involved, very dramatic changes in fertility and/or mortality would be necessary in order to forestall these increases.

While fertility as well as mortality rates can be expected to decline, the vast body of fertility literature clearly reveals that there will be a time lag between falling mortality and a decline in the birth rate. It will also depend heavily on improvements in economic conditions, which are related to declines in desired family size. Indeed, if the experience of Somalia is at all applicable to the other less developed Arab states, then increases in fertility might be expected over the short run (say 5 years). To illustrate, the ILO employment mission to Somalia reports urban birth rates of 67 per 1,000 compared with 56 and 37 per 1,000 for settled rural areas and nomads, respectively. Although the high urban birth rates may be partly attributable to in-migration of females concentrated in the child-bearing ages, favourable health and sanitary conditions are working to reduce sub-fecundity and infant mortality, which in all likelihood have kept families from attaining their desired family size, particularly in rural areas (cf. Tabbarah 1971; Shaw 1976).

Labour Force Characteristics

In general, low-income subsistence farmers and pastoral nomads would be the "target population" for ILO basic needs employment strategies in the five countries. Largest numbers of subsistence farmers are found in the Sudan, Yemen, Democratic Yemen, Somalia, and Mauritania, in that order. Largest numbers of nomads are found in Somalia, the Sudan, Yemen, Mauritania, and Democratic Yemen, in that order.

In toto, about 1.7 million more jobs will be required to accommodate rural labour force growth in the five countries by 1985 (according to ILO estimates). On the order of 681,000 new rural jobs will be required in the Sudan; 266,000 in Yemen; 219,000 in Somalia; 76,000 in Mauritania; and 33,000 in Democratic Yemen. The figure for Yemen can be halved if we assume that opportunities for employment abroad roughly follow similar proportions over the next decade. As for urban employment, these needs are estimated to be slightly larger in the urban than rural sectors in the Sudan and Somalia in view of the high rates of migration-fed urban growth (more on this later).

Although women represent half the available manpower in these countries, they play a small role in the labour force. This is due to extremely strict socialization practices that virtually confine women to the home. For instance, in 1975 female crude activity rates were on the order of 7 per cent in the Sudan, 3 per cent in Mauritania, and 5 per cent in the two Yemens.

However, this generalization applies more to the organized sector or urban labour force than to rural areas. In the rural-agricultural sector, females tend to play a larger role. The ILO country employment mission to the Sudan reported refined activity rates of females of 27 per cent in rural areas compared with 10 per cent in urban areas. In Somalia females were relatively active among rural nomads (e.g., crude activity rates of 22 per cent). In Yemen female activity rates were observed to be relatively high in some rural governorates (i.e., about 19-28 per cent in Al-Mahweet and Sa'ada), in contrast, say, to the two most urbanized governorates (i.e., about 4 per cent in Sana'a and Taiz). In Democratic Yemen female activity rates were about three times higher in agriculture (about 12 per cent) than in the urban sector. Clearly, the potential for female economic activity is an important consideration in improving the economic situation of families in these countries. It is particularly important in (1) regions where males migrate to distant labour markets (Yemen, the Sudan), leaving females to run the farm, and (2) areas that are strong in handicrafts such as weaving (Somalia, Yemen, Mauritania).

Unemployment

With the possible exception of Yemen, where close to 40 per cent of the labour force works abroad, the unemployment and under-employment situation appears to be rather dismal in the five countries.

In an analysis of the agricultural manpower supply and requirement situation in the Sudan, an ILO employment mission reported that the level of underutilization of labour is tremendous in almost all provinces and stupendous in Darfur and the three provinces of the south. Pointing to the significant role of seasonal and migrant labour, it was observed that even in the peak harvest month of November only about 53 per cent of the available supply of agricultural labour would have been utilized. The extent of underutilization ranges from about 47 per cent in November to as much as 93 per cent in May. Rates of open unemployment bear out these regional disparities in underemployment. At the same time, however, the ILO identified provinces and time periods where labour was in short supply; transportation of workers and improved information on seasonal needs were proposed as a means of correcting such distributional problems.

Though no unemployment survey has been conducted in Somalia, it is commonly believed (as reported by the ILO employment mission) that open unemployment (people with no job, or with virtually "zero income") is very high. In 1971 a Somalia manpower survey remarked that unemployment in non-agricultural activities alone was in the order of 30 per cent. However, this problem stems largely from excessive rural-urban labour migration as an after-effect of the great drought rather than excessive population per se.

Of the five countries, Mauritania would seem to have the worst problems of unemployment and underemployment. In 1973 it was estimated that 31.5 per cent of the active population were underemployed due to "structural deficiencies in the economy." The great drought is responsible for another hefty

20 per cent, and the entire employment situation in Mauritania hinges basically on problems of settling nomads and integrating them fully into non-pastoral types of work.

TABLE 3 NUMBER AND PER CENT OF LABOUR FORCE UNDEREMPLOYED IN MAURITANIA

Region	Causes of underemployment		Total underemployed as per cent of total labour force
	Structural inadequacies in economy	The great drought	
	Number	Number	
I	32,700	10,000	46.1
II	16,500	3,000	40.3
III	30,500	16,000	56.8
IV	9,500	9,000	42.0
V	28,500	25,000	53.2
VI	32,700	30,000	86.5
VII	8,500	2,000	25.3
VIII	4,000	1,000	35.5
Nouakchott (capital city)	17,000	8,000	53.2
TOTAL	179,000	104,000	51.3

As noted above, Yemen has an important safety valve, which relieves a great deal of pressure on its labour market to provide gainful employment. In 1975-1976 the Central Planning Organization estimated unemployment to be only 5 per cent and underemployment to be another 6 per cent. While data on the situation in Democratic Yemen are scarce, we can assume that the country is plagued by problems of rural underemployment and that present restrictions on emigration are depriving the economy of employment and remittance benefits from the labour-importing countries.

Migration and Wage and Income Disparities

Regional and intersectoral differences in wages and incomes are critical to the study of population and labour force because they reflect rates of

return to gainful employment and bear heavily on migratory behaviour. Acknowledging that farm incomes are likely to be biased downwards due to "income in kind" considerations, table 4 reveals that per capita cash incomes may be three to six times lower in rural agricultural than urban areas. In the Sudan rural agricultural incomes were about one-third those of urban households. In Khartoum the average yearly income of unskilled labour (251 Sudanese pounds according to the 1967-1968 household income survey) was larger than the average yearly income of more than 80 per cent of all rural families. In Yemen in 1975 average agricultural incomes were one-fourth those in the non-agricultural sector. The proportion in Mauritania in 1960-1970 was about one-tenth.

The distribution of incomes reveals an even bleaker picture. In the Sudan, the yearly income of rural households is 8.5 times more likely than that of urban households to be less than 101 Sudanese pounds. In Somalia the households of subsistence farmers (rural-settled) were 7.5 times more likely than urban households to have annual expenditures of less than 1,041 Somali shillings. The Somali nomadic households were slightly better off, being only 4.3 times more likely than urban households to fall in this lowest category of annual expenditures (see table 4).

The ILO employment mission to Somalia estimated that upwards of 70 per cent of nomadic and rural households in the Shebelli region were below the minimum income or poverty level in 1975. According to ILO, per capita incomes of rural and nomadic households must increase a whopping 10.5 and 23.5 per cent, respectively, over the 1975-1985 decade if the estimated "basic needs" level is to be attained.

The data for Mauritania provide a sad, though typical, example of a less developed country with poor performance in agriculture. Between 1960 and 1970, the average per capita income in agriculture actually decreased from U.S. $60 to U.S. $58, while the average non-agricultural income increased from U.S. $364 to U.S. $830. This resulted in a relative decline in agricultural incomes from 16 per cent to a meagre 7 per cent of non-agricultural income.

Such large disparities in incomes have fueled a rural-urban exodus. All indications are that the population in urban areas in the five countries will grow at much higher rates than that in rural areas and that rural-urban migration will be the major growth component. Projected growth rates for the 1975-1985 period are shown in table 5.

Such a rapid shift of population towards urban centres will place a great strain on existing urban infrastructure in the five countries. Although rates of urban unemployment may be high and few urban job opportunities may be available, recent developments in the economic theory of migration suggest that these factors will probably not deter rural-urban migration. That is, with the prospect of high underemployment in rural areas and the certainty of a low rural-agricultural wage (or average income), migrants appear to be willing to enter high-unemployment urban labour markets in the hope of eventually securing a relatively high-paying urban job. This theory has been developed by Harris and Todaro and evaluated successfully in a wide range of labour markets (see Todaro 1976).

TABLE 4 CRUDE ESTIMATES OF RURAL-URBAN INCOME DISPARITIES IN FOUR LEAST DEVELOPED ARAB COUNTRIES

Country	Selected measures of income							
	Average household income	Cumulative per cent of households by annual household income (Sudanese pounds)			Cumulative per cent of households by annual household expenditures (Somali shillings)			Per capita income (U.S.$)
		100	200	300	1,040	2,080	4,160	
Sudan 1967-1968								
Rural	148	34	82	93	–	–	–	–
Urban	411	4	28	53	–	–	–	–
Ratio rural: urban	.36	8.50	2.93	1.75	–	–	–	–
Somalia 1975								
Nomadic	–	–	–	–	26	49	73	–
Rural-settled	–	–	–	–	45	57	71	–
Urban	–	–	–	–	6	23	48	–
Ratio nomadic: urban	–	–	–	–	4.33	2.13	1.52	–
Ratio rural: urban	–	–	–	–	7.50	2.48	1.48	–
Yemen 1975								
Agricultural	–	–	–	–	–	–	–	99
Non-agricultural	–	–	–	–	–	–	–	419
Ratio agricultural: non-agricultural	–	–	–	–	–	–	–	.24
Mauritania 1960								
Agricultural	–	–	–	–	–	–	–	60
Non-agricultural	–	–	–	–	–	–	–	364
Ratio agricultural: non-agricultural	–	–	–	–	–	–	–	.16
Mauritania 1970								
Agricultural	–	–	–	–	–	–	–	58
Non-agricultural	–	–	–	–	–	–	–	830
Ratio agricultural: non-agricultural	–	–	–	–	–	–	–	.07

TABLE 5 PROJECTED 1975-1985 AVERAGE POPULATION GROWTH RATES (PER CENT) IN THE FIVE LEAST DEVELOPED ARAB COUNTRIES

Country	Rural	Urban	Total
Sudan	1.5	7.6	3.0
Somalia	2.3	4.0	2.6
Yemen	1.4	7.0	2.9
Democratic Yemen	1.1	5.4	2.9
Mauritania	1.2	10.0	2.0

An important and well-known negative ramification of such migrations is the depletion of rural areas of the youngest, most energetic, most highly educated and skilled members of the labour force. This poses great problems for rural educational investment, which, if not combined with expanding employment opportunities for school graduates, will merely be lost through rural out-migration. The same applies to problems associated with emigration to oil-rich countries. Such emigration usually depletes the ranks of skilled labour, as for example in Yemen, the Sudan, and Somalia.

Of course, each of the five countries also differ in significant ways with respect to migration. In the Sudan, upwards of 1 million people are on the move each year in search of seasonal agricultural employment. In Somalia nomadism accounts for the majority of the rural population, and in Mauritania about one-half of the rural population are nomads. While emigration of labour is a minor consideration in both countries, rural-urban migration is especially distinct to the capital cities of Mogadishu (Somalia) and Nouakchott (Mauritania). Of late, urban-bound migration has been reinforced by problems associated with the great drought, and both countries are involved with nomadic settlement schemes (particularly since the great drought) aiming to stabilize the rural population and increase the country's capacity in meeting subsistence food needs.

Yemen has experienced considerable rural-urban migration to Sana'a, Taiz, and Hodeidah. Comparison of the results of the 1975 census with a 1972 socio-demographic survey on Sana'a's population reveals a yearly 1972-1975 growth rate of almost 15 per cent. In contrast, internal migration among governorates in Democratic Yemen has been small (except to the capital in Governorate 1) and is generally discouraged among residents in the poor wadis.

Planning Possibilities and Resource Constraints

For many people, the population and employment profile above would be sufficient to sound all the standard population alarms. In other terms, massive population or fertility reduction would seem justified in order to (1) reduce dependency ratios, (2) increase female labour force participation, (3) increase rates of savings and investment among families, (4) reduce pressure on schools and the labour force to absorb new entrants, and (5) reduce urban congestion.

But would such programmes be of use to the policy maker? For example, actual family size is probably below desired family size in these countries. Such desires and, therefore, acceptance of family planning, are usually resistant to change unless the socio-economic situation of families changes first. Would reductions in population really help the consumption and investment situation of the poor? This is unlikely when incomes are below subsistence levels anyway and the real culprit appears to be inequality in the distribution of income and owned land. Would smaller family size help family living levels through increased women's labour force participation? This would not be practical as long as strict socialization processes virtually ruled it out. Nor could population policies curb rural-urban migration and urban congestion as long as migrants responded to severe income inequalities in the rural and urban political and economic contexts.

This list of questions could be easily extended. However, let us shift our emphasis to the real problems at hand so that the relevance of over-population and population and employment policy can be placed in clearer perspective in these countries.

Urban Bias in a Rural World

One of the greatest hindrances in tackling population and employment problems in the five countries under study is that investments, mechanized agriculture, light agro-industries, health and social services, etc., usually generate employment and improve welfare in one or two urban centres to the virtual exclusion of the rest of the country. It has often been said, and I believe rightly so, that this is because the elites reside in urban areas and usually bias the flow of national development funds to these areas through their influence on parliament (either indirectly or directly as members of parliament).

In the Sudan most modern industry and 90 per cent of the irrigated land and mechanized agriculture are centered in the Khartoum-Kassala-Blue Nile region. A few hundred mechanized farms of 600 hectares or more and 30,000 irrigated tenancies tightly regulated under state corporations produce nearly 70 per cent of the agricultural output. Also, co-operatives and their working capital are centered in these areas. The Red Sea and southern provinces, with about 23.7 per cent of the rural population (largely subsistence farmers),

have virtually no co-operative capital to draw on for farm employment expansion. Further, these provinces received only 3 per cent of total development expenditures on housing and other services during the last development plan.

In Somalia the government also faces a big challenge in its principal development goal of "equalizing distribution," as 76 per cent of all employment establishments are centered in Mogadishu and the Shebelli region. For an example of "urban bias in a rural world," we need only point to national development expenditures on housing between 1974 and 1977 that did not reach outside the capital. Up to 1975, pastoral nomads received less than 5 per cent of the available credit though they made up 50+ per cent of the population and contributed 60 per cent to exports. The most neglected areas of Somalia would appear to be in the north: Midag, Bari, Nugaal, and Sanaag. For the Sudan, Mauritania, and the two Yemens, we provide population distributions by geographical or administrative region. Those that are least well off (relatively) have been flagged as "poorest" (see table 6).

Inequalities in the distribution of "social" expenditures to rural areas have important ramifications on the quantity and quality of labour in all countries. For example, the rural labour force suffers from high rates of morbidity; during planting and harvesting seasons, debilitating diseases reduce labour productivity per worker (quality) as well as the systematic input of labour over time (quantity). Further, absence of agricultural training and extension services also serves to restrict the quality of human capital, adoption of new technologies, and, therefore, performance levels.

Clearly, such inequalities in the concentration of economic activity and distribution of development funds will contribute to the continuation of problematic rates of rural-urban migration. By preventing the development of income and employment opportunities in places where the majority of the population lives, such inequalities will also serve to maintain the *status quo*. This will apply regardless of what happens to rates of population growth.

Prospects for Resource Development

Questions of over-population in the five countries cannot be discussed without due attention to prospects for employment expansion in rural areas. In view of projected additions to the "subsistence farm labour force," plans to settle large numbers of nomads, and the largely rural nature of the five countries, to what extent will it be possible to increase labour-intensive employment?

First, the availability of potentially cultivable land does not represent a barrier to employment expansion (see table 7). However, there are at least three factors inhibiting this expansion. First, the land tenure-agrarian reform works against viable farm units for large numbers of farm families in Yemen and Mauritania. Again, this is a distributional problem. Second, problems of inadequate rainfall and natural water resources prohibit access to large tracts of potentially cultivable land in the Yemens,

TABLE 6 DISTRIBUTION OF POPULATION BY GEOGRAPHIC AREA

Country and geographic area	Per cent of total population	Per cent of urban population	Per cent of rural population	Per cent of nomadic population	Per cent of sedentary population
Sudan 1973 (provinces)					
Blue Nile		19.3	27.8		
Darfur		7.3	16.4[a]		
Khartoum		29.9	2.9		
Northern		5.9	6.4		
Kordofan		9.8	15.6[a]		
Kassala		9.0	7.2		
Red Sea		6.1	2.3[a]		
Southern		12.4	21.4[a]		
Yemen 1975 (governorates)					
Sana'a	17.9	38.6			
Dhmar	10.0	5.4			
Ibb	17.4	5.4			
Taiz	19.3	22.4			
Hodeidah	15.0	22.9			
Mahweet	3.9	.7[a]			
Hajjah	8.6	1.7[a]			
Sa'ada	3.4	1.2[a]			
Mareb	1.0	.1[a]			
Beida	3.5	1.7[a]			
Democratic Yemen 1977 (governorates)					
First	20.0	73.0			
Second	14.0	.0[a]			
Third	19.0	.0[a]			
Fourth	11.0	.0[a]			
Fifth	30.0	27.0[a]			
Sixth	6.0	.0[a]			
Mauritania 1977					
Nouakchott (capital)	10.0			–	14.9
1	11.6			19.0	7.8
2	9.2			14.3	6.6[a]
3	9.5			10.0	9.4
4	11.1			3.7	14.7
5	11.2			11.4	11.0
6	15.9			23.7	12.0
7	4.1			4.0	4.2[a]
8	1.8			–	2.6[a]
9	5.7			9.9	3.6[a]
10	6.2			2.0	8.2
11	1.7			.2	2.4[a]
12	1.3			1.8	1.1[a]
Tiris-el-Gharbia	1.0			.2	1.3

[a] "Poorest."

Note: Colum totals to all countries do not always add to 100 per cent because of rounding.

Mauritania, and Somalia—this is an irrigation problem. Third, inadequate rural investment and credit inhibit development of much-needed irrigation projects, land preparation, and settlement schemes in all countries. Again, this is a problem of distribution of development funds.

TABLE 7 ESTIMATES OF PRESENT AND POTENTIAL LAND/MAN RATIOS

Country	Estimated 1985 rural labour force (in thousands)	Present cultivable land (in thousand hectares)	Estimated potentially cultivable land (in thousand hectares)	Man: land ratios	
				Present 2:1	Potential 3:1
Sudan	5,221	8,000	80,000	1.53	15.3
Somalia	1,174	650	8,000	.55	6.8
Yemen					
Total	2,169	1,950	29,000	.90	13.3
Resident	1,085			1.79	26.6
Democratic Yemen	340	100	1,000	.34	2.9
Mauritania	574	290	2,217	.50	7.6

The Sudan actually has an extraordinary area of arable land with access to potential irrigation. Most of this land is owned by the government, meaning that the generation of employment can be guided by public-sector investment in agriculture. In Somalia, few would doubt the potential of agriculture to absorb the population increase for some time to come. In Yemen rapid increases in remittances (from U.S. $250 million to U.S. $1 billion between 1974 and 1978) have stimulated labour-intensive, non-farm work (particularly construction); emigration has reduced pressure on the land; women have been called upon to play a larger role in the operation of family farms (while husbands work abroad); and rural wage rates have at least doubled in view of "competition from abroad."

In Democratic Yemen the government has introduced an effective land reform programme, which has redressed inequalities in land distribution and eliminated absentee landlords and share-cropping. About 30,000 farm families

are members of 43 co-operatives. These co-operatives are making sweeping changes in all aspects of credit, marketing, etc. In Mauritania employment expansion in subsistence farming is awaiting irrigation programmes in the Senegal River valley and also in the adjacent valleys to the north (Gorgol), the Mauritanian Sahel, and the Oasis Zone.

Fishery potential has been virtually untapped in four of these countries. For example, the FAO estimates that fishery output could be increased 25-fold in Somalia. The two Yemens and Mauritania also have vast possibilities for expanding their fishing industry, possibly to the point of being second only to agriculture.

Also, depending on the rapidity of the shift from largely inadequate growth models to the more recent "basic needs strategies" and "integrated rural development programmes," prospects for employing farm labour in non-farm rural labour markets are quite vast. Off-farm rural labour markets are operating as an important source of income and employment for large proportions of farm families in many LDCs (Shaw 1979b). With the development of rural areas, employment in construction of feeder roads, schools, light agro-industries, etc., could reduce pressures on the land and alleviate the rural exodus in search of supplementary income in the process. The same applies to development and marketing of existing rural handicrafts potential. With vast developmental funds available among the OPEC countries and recent emphasis on regional integration and co-operation, financing of such employment is clearly in the realm of possibility.

Finally, a note on the socialization of the Arab women is in order here. Women are largely confined to their homes and their economically active life is consumed by childbearing and child-rearing. While some would argue that such conditions stem from the Islamic religion or doctrines in the Koran, this claim is hard to substantiate. One needs only to look at the experience of predominately Muslim Turkey for instance, to see how legalization of women's rights, etc., has resulted in widespread social and economic integration of women (cf. Abadan-Unat 1978). Rather, it is slow societal progress in the establishment of woman's rights, equal education for women, etc., that stands in the way of desired changes (as reflected in the 1971 Declaration of Arab States and the 1975 UN Plan of Action for the Integration of Women in Development). As an indication of the challenge ahead for Arab countries, we need only point to (1) female labour force participation rates, which are much smaller than the levels in other LDC regions (e.g., Latin America, Africa, East Asia) and (2) female illiteracy rates, which are the highest in the world.

Clearly, discussion about raising levels of population consciousness among reproductive couples in these countries, or the influence of women's education and labour force participation on fertility, will remain largely unproductive unless progress is made in the sociological realm.

Conclusion

Our contention that the concept of over-population is of limited usefulness to policy makers tackling problems in the five poorest Arab states has been advanced along the following lines.

The *quantity* of population in LDCs usually poses fewer problems than does the *distribution* of human in relation to non-human resources.

Reducing numbers or growth of population would have a very small impact on improving the lot of the poor unless corrections for inequalities in the distribution of income, land, and employment opportunities were also made.

Many of the population problems in these countries, such as rural-urban migration, are due to regional inequalities in investments or, more appropriately, "urban bias in a rural world." Reducing population in rural areas won't solve such problems, for most families are already subsistence farm families. Significant increases in savings and investment through smaller family size are largely out of the question in view of the restricted employment expansion.

Where population pressure on the land does exist, there are good prospects for expanding employment opportunities with available resources. This applies especially to agriculture in Somalia and the Sudan, to fisheries in the Yemens and Mauritania, and to rural handicrafts and the construction of irrigation, self-help housing, feeder roads, schools, etc., in all countries.

The concept of over-population is unlikely to be amenable to policy measures as long as high rates of sub-fecundity or infant and child mortality prevent families from attaining their desired family size. Clearly, economic development in the areas of health, nutrition, etc., will have to precede fertility reductions in rural areas. In fact, fertility per se might actually increase with improvements in health, etc., say, over the next 5 to 10 years.

In these countries, some of the population-related problems, such as unemployment or rapid rural-urban migration, are more attributable to cultural or epiphenomenal characteristics of the countries than to population per se. For example, each government seeks to settle its nomadic population. This often spurs rural or urban underemployment or problematic migration. The problem is a population issue insofar as nomads exist, but the primary need for policy action is in the area of generation of employment. Also, the great drought, as a freak of nature, cannot be separated from many of the population-related problems in Somalia and Mauritania.

The concepts of mass-oriented population education and family planning have only limited utility to policy makers as long as one-half of the population is basically untouched by modernization. The relatively low levels of involvement of women in education, the labour force, and society, and the strict socialization practices that promote this are the relevant policy areas here.

Depending on the speed with which the OPEC countries are able to realize the Arab goals of fuller economic integration and co-operation, there

is no reason why living levels of the populations in these five countries cannot be increased dramatically over the next decade.

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PART II. THE VITAL RATES

CHAPTER 5. FERTILITY TRANSITION WITH SPECIAL REFERENCE TO THE ECWA REGION

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High Fertility and Fertility Transition

Throughout most of human history high fertility has been the rule in almost all societies. Until recently, crude birth rates were typically over 40 per thousand, while in agrarian societies birth rates were even higher. Women averaged about 6 live births during their reproductive lifetimes; fertile women probably averaged a somewhat higher figure, as some unions are involuntarily sterile. Indeed, some societies may have had lower fertility because of an unusually high proportion of sterile unions. On the whole, however, birth rates were high. But, because mortality was also high, rapid population growth was rare.

Fertility began to decline during the past three centuries, beginning in isolated groups in the West. The French birth rate started to fall persistently during the late 18th century and the Irish birth rate around the middle of the 19th century. During the latter part of the 19th century fertility began to fall in Northwestern Europe and in English-speaking countries of overseas European settlement. But nowhere did population size itself actually fall, because these fertility declines were preceded and accompanied by declines in mortality that, at first, proceeded more rapidly.

During the present century, this change in fertility has spread throughout Europe and to temperate Latin America. By mid-century fertility was declining sharply in Japan. Lesser changes have since been recorded in parts of East and Southeast Asia, in various islands around the world, and in parts of tropical Latin America and South Asia. In the ECWA region, fertility has declined to moderate levels in both Lebanon and Egypt.

Although the decline in fertility has not been consistent and has been faster in some periods than in others, in many of these countries fertility levels are now very low. In much of the industrialized world women now average only about 2 births in a lifetime, and population growth appears to be coming to a halt.

This decline in fertility has been extensively classified, categorized and analyzed. In the late 1920s, W.S. Thompson (1929) described the combined

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mortality and fertility decline as a demographic transition and discerned three phases, later expanded into five by C.P. Blacker (1947). These classifications postulated that mortality fell first, resulting in rapid population growth, and that fertility decline subsequently began to overtake that of mortality, thus reducing the growth rate.

Demographic Transition Theory

In 1945 Notestein argued that pre-transitional society is characterized by such a high level of mortality that it is not easily matched by equally high fertility (Notestein 1945; cf. Notestein 1953). Indeed, such societies are prevented from disappearing only by social and religious ideologies giving great emphasis to the virtue of high fertility. When mortality declines, these ideologies do not at first decay. Consequently fertility remains irrationally high and population increases. Notestein and many of his followers appear to regard high fertility as economically disadvantageous to the family and something that would be unlikely to occur if people could exercise their reproductive decisions in an unfettered and rational manner. In this vein, Yaukey (1961, p. 83) wrote of Lebanon: "After all city classes have brought fertility under voluntary control, then fertility will reflect the choices of the partners at the time, just as it does at present in urban United States."

Much debate ensued as to the conditions in which such rational decisions are likely to be made, and much emphasis was placed on urbanization, industrialization and modernization. It was not clear whether modernization could be largely equated with the other two processes or whether it was partly a product of Westernization, employing mass schooling and the mass media as its major vehicles. Davis (1949, pp. 599-600; 1953; cf. Davis and Blake 1956) argued that individuals had little to gain by reducing their fertility in societies characterized by the traditional joint family, because such innovators were likely to retain little of the savings realized in this manner. Heer put forward the view that the problem was illusory in that fertility did in fact fall with mortality. Population growth occurred as mortality declined largely because couples had to take into account not only average mortality but also the possibility that their descendents would be decimated by capricious above-average mortality, a feature of all but low-mortality societies (Heer and Smith 1967). Coale and Hoover (1958) also seemed to suggest that high fertility was not rewarding for the individual, the family, or even larger population aggregates such as the nation-state.

Subsequently, attempts were made to explain the causes of different levels of fertility. In KAP surveys, demographers sought to find out exactly how fertility was constrained, and, with greater difficulty, attempted to investigate the decision-making process. In this effort they appeared to create difficulties for themselves by frequently assuming that such decisions were usually a matter only for the biological parents. Sociologists explored further, introducing to demography the concept of norms (Freedman 1961/1962) in dealing with family size. In an attempt to apply this concept, surveys

sought evidence with questions based on the rather crude and inexact concept of ideal family size, which nevertheless served to show that many societies actually approved of the high fertility they attained (Tabbarah 1964, J. Caldwell 1967).

Recently attempts have been made to quantify the degree of modernization and to identify the components necessary to induce declines in fertility (United Nations 1965; Kirk 1971; Oeschli and Kirk 1975) without, however, attempting to explain why fertility change should occur at some levels but not at others. Threshold theory has been unable to explain the different thresholds exhibited by different transitions or the lack of agreement in individual societies between the thresholds for different characteristics of the society. The thresholds calculated by the United Nations appear to have provided some support for the mortality level explanation of fertility transition, although its authors did not stress this point. The Princeton group (cf. Coale 1973) have illustrated their innovative theory of the diffusion of birth limitation largely with evidence from the European demographic transition, without appearing to be very sure whether they were describing the spread of birth control practice or of ideas about appropriate family size.

A renewed interest in decision making has arisen from the work of the so-called Chicago household economists, who have applied neo-classical economics to the family (apparently exclusively to the nuclear family), which they treat as a variant of the business firm. Their viewpoint is expressed by T.W. Schultz (1974, Preface): "During the past decade a small group of economists have been analyzing the fertility behavior of the family using the concepts of human capital and of the allocation of time. These studies led to the development of the household production function and to the representation of the family as an important decision-making entity in allocating the scarce resources at its disposal in household production for current consumption and investment in children." Elsewhere, Schultz writes (1973, p.S 3) that: "The analytical core of these studies rests on the economic postulate that the reproduction behavior of parents is in large part a response to the underlying preferences of parents for children. Given the state of birth control technology and the various classes of uncertainty associated with contraception, infant mortality, the health and fecundity of the parents, and the income and wage rates parents expect to realize over their life cycles, the preferences are constrained by the parents' resources and the associated alternative economic opportunities in using their resources. In turn, the resources imply sacrifice, measured in terms of opportunity costs that parents must be prepared to make in acquiring future satisfactions and productive services they expect to realize from children." Finally, given that fertility is largely a response to the underlying preferences of parents for children, it should, nevertheless, be noted that, "the cost of children increases with the rise in price of human time...fertility is affected by prices as well as by income and by the formation of human capital in children...the human capital embodied in adults, especially in women, affects fertility and the supply of labor" (T.W. Schultz 1973, pp. S2-S3).

In terms of our interests, the major problem of this theory is that it was developed in order to explain fertility trends in societies with low or declining fertility rather than to demonstrate the mechanisms of stable high fertility and to identify the factors initially causing fertility decline. The attempts to apply it to high fertility areas, notably in the ECWA region (T.P. Schultz 1972), and to Taiwan, a country of moderately high fertility (T.P. Schultz 1973), have not been particularly successful and have tended towards a kind of threshold analysis.

Because this school of thought examines not how the decisions are arrived at but the macroscopic impact on society of all the decisions taken, the real relation between economic factors and the household allocation of time can only be inferred. The viewpoint of this school has other problems. It tends to treat the family as a nuclear family and as a homogeneous production and consumption unit. Hence it cannot analyze change in terms of conflicting interests and changes in the balance of forces within the family. It appears to assume that the biological reproductive unit of husband and wife is also the exclusive fertility decision-making unit, a very simplistic approach when analyzing fertility in most of the Third World. Perhaps correctly, it identifies education as a fundamental force for change, but sees its operation largely in terms of investment in human capital and consequently in different values of time for human beings of different capital levels. In fact, adherents of this school of thought often employ female education levels in analysis as proxies for the value of female time. Thus they tend to regard education as primarily affecting the family's relationships with the outside world, and so miss entirely the all-important changes within the family brought about by schooling.

In the traditional agrarian family, the emphasis on the sacrifice of present opportunities to secure future satisfactions and productive service from children is not very meaningful, given that it is difficult to show that many opportunity costs are involved or that the pattern of life varies a great deal according to whether additional infants are born and raised or not. The theory is only partly oriented towards historical explanation and largely ignores the interaction of social change as contraception becomes more a way of life and as successive ideologies encourage different roles for women in the course of fertility decline (cf. Caldwell and Ruzicka 1978).

These theories of fertility transition raise a number of problems. Most of them imply that fertility behaviour is economically rational in the industrial world but not in pre-industrial societies. Even where economic rationality is conceded in the latter societies, little attempt is made to investigate the kind of economy that would result in rational high fertility. An associated problem is the failure to distinguish economic units within the society and indeed the economic and fertility decision-making mechanisms. Also, there is some tendency among the economic and Marxist anthropologists to claim that pre-industrial societies are characterized by social rather than economic priorities (cf. Sahlins 1974).

Many researchers on demographic transition also discuss social change, which is sometimes seen as merely a concomitant of economic development but is often regarded as having a force of its own. In the latter case a key question is frequently avoided: whether the new social influences represent actual social change or merely Westernization. If they do represent social change, a major ingredient may well be Western familial values such as the emotional nucleation of the family and more egalitarian relationships between spouses and between parents and children (relationships which have of course changed in Europe over the last few generations). Is the practice of contraception a specific behavioural pattern that can be exported on its own? Most social scientists do not think so, but family planning organizations often appear to subscribe to the view.

Wealth-Flows Theory

The senior author has attempted to re-examine some of these problems in a format that has become known as *wealth-flows theory* (J. Caldwell 1976). The fundamental axiom of this theory is that fertility behaviour is economically rational in all societies and that, in terms of the perceived economic ends of the society, fertility changes in a direction that will optimize economic advantage if those in control of fertility decision making are not already in an optimal situation. The authors' experiences and research suggest that this is true, but it may never be completely proved. It probably should be accepted as the only basis that makes theory viable and analysis possible, much as Keynesian economists have defined savings as equalling investment.

Wealth-flows theory also asserts that the real starting point for a satisfactory analysis of demographic transition is the condition of stable high fertility and that the central concern should be the conditions of destabilization. Much examination of demographic transition has been carried out on populations where fertility is already in the process of sustained decline. Many of these findings are interesting, but they do not appear to be of central importance, for two reasons. First, the historical evidence suggests that once sustained fertility decline gets underway, moderate or low levels of fertility are eventually achieved, and that instances of societies returning to stable high fertility are unknown. Second, the cross-sectional analysis of societies during fertility decline often appears to show significant fertility differences between various social groups, differences that subsequently become insignificant when one social group moves to the fertility level previously exhibited by another. Thus there are really only two types of fertility regime: stable high fertility where there is no economic disadvantage in unlimited fertility, and post-transitional society where zero fertility would probably be most economically advantageous. The fact that actual fertility is never infinite and usually not zero is explained by biological and psychological constraints.

In societies of stable high fertility, the economic advantage derived from high fertility is explained by a net flow of "wealth" over a lifetime from the younger generation to the older one. "Wealth" in this sense is used to mean productive labour, desired services of all kinds, gifts, remittances, help in old age, the creation of greater security through the existence of potential help (of much the same kind as is provided by an insurance policy or a pension scheme), physical protection, political support where such activity leads to economic advantage or greater security, and so on. The flows are difficult to measure because their subtlety makes some of them hard to detect and because periods of lifetimes are involved.

Wealth-flows theory also implies that economic advantage can be neither perceived nor measured until each society's economic units and fertility decision-making mechanisms are discerned. The question of the budgetary or production unit is important. In many societies a much wider group of relatives than the nuclear family shares a common budget or utilizes a common productive mechanism such as undivided land. Even where economic interests are not integrated to this extent, obligations to relatives beyond the nuclear family may well mean that the economics of the nuclear family is by no means a closed system. Western sociologists often appear to assume that the husband-wife partnership can exert a flexible control over its own fertility. The evidence from many societies appears to indicate that such control is improbable as long as the nuclear family remains a sub-unit of a larger economic unit, particularly when the members of the larger unit live in close proximity. Many relatives regard it as their right to exert effective pressure towards higher fertility or against fertility limitation. To date, demographers have not explored this area adequately.

The authors have recently begun to analyze pre-transitional fertility in terms of economic and reproductive relationships within the family and have attempted to identify relative advantage in terms of both production and reproduction within the family system. In pre-capitalist societies the productive system is the family, and unequal productive and reproductive relationships occur within it. Yet demographic transition theorists have failed to examine separate interests within the family.

The remainder of this paper will apply these theoretical frameworks to the ECWA region.

Fertility in the ECWA Region

The ECWA region is one of only two large areas of almost homogeneously high fertility left in the world. Only in Lebanon and Egypt are crude birth rates below 40 per thousand or total fertility rates as low as 5 (ECWA 1978a; ECWA 1978b). In about half of the ECWA countries the birth rate is around 50 per thousand and the total fertility rate around 7. Not only is fertility high, but in most countries it shows no signs of decline. Again, the exceptions are Lebanon, where moderate fertility levels have prevailed for a considerable period, and Egypt, where fertility fell by perhaps 15 per cent during the

1960s.There is somewhat debatable evidence of smaller declines, which can hardly as yet be described as sustained, in Iraq, Kuwait, the United Arab Emirates and Democratic Yemen. There is evidence from Lebanon of substantial fertility differentials between different communities (Chamie 1977), but the kind of urban-rural and socio-economic differentials that usually characterize fertility decline are not found even in Egypt. There has been little practice of fertility control in the past (Patai 1971, p. 96), and in recent decades only the first stirrings of interest in contraception have been recorded even in Lebanon (Williams 1968, pp. 21-22).

Nevertheless, massive economic change has been underway in the region. In Third World terms, many countries exhibit high levels of income and urbanization. Furthermore, levels of mortality have changed dramatically in some countries: by 1975, life expectation at birth had exceeded 60 years in Bahrain, Kuwait, Lebanon and the United Arab Emirates.

In these circumstances, it is of interest to apply to the region the United Nations thresholds for the beginning of fertility decline. This has been done in table 1, employing both the full range (i.e., the range in which any country has begun fertility decline) and the reduced range (i.e., the range within which 80 per cent have done so).

This table illustrates the problems of any threshold approach. In theory the examined phenomenon cannot occur unless the society under investigation reaches the minimum full threshold in terms of an almost indefinite range of characteristics; it is not merely its average performance that counts. Even in terms of the very limited number of thresholds listed here, only three countries–Jordan, Kuwait and Lebanon–exceed the full minima of all. Furthermore, none of them exceeds the reduced minimum level. The reason is the failure to pass the female literacy test. This may well be the crux of the matter, although female literacy may merely be an indicator of a series of measures of the status of females.

If female literacy is omitted, four countries exceed all the listed minimum reduced thresholds: Bahrain, Kuwait, Lebanon and the United Arab Emirates. All but four exceed all other minimum levels; only Egypt, both Yemens and Oman fail to do so. The analysis is confusing, because we have evidence of fertility decline in Egypt, which is ruled out by the income threshold, and none for Bahrain and Jordan, which do well on most tests. Part of the answer is the existence of sub-national populations which do exceed the minima: for example, Egypt's substantial urban middle class.

To what extent do the other theories apply in the ECWA region? Certainly there is in this region a cultural and religious emphasis on the family and the virtues of fertility. Given the emphasis on women working only in or around the house, it would be difficult to show that this leads to economic disadvantage. Certainly the region provides many examples that urban life, high per capita income, and mortality decline are not of themselves sufficient to reduce birth rates. Nor has innovation in birth control been spreading to the extent that diffusion theory would seem to predict, there are nuclei of relatively high contraceptive practice both in Beirut and

TABLE 1 AN ANALYSIS OF THE CHARACTERISTICS OF ECWA COUNTRIES IN 1975 IN TERMS OF SELECTED UNITED NATIONS THRESHOLDS FOR FERTILITY DECLINE

Characteristic	Above reduced lower threshold	Not above reduced lower threshold, but above full lower threshold	Below full lower threshold
Per capita income[a]	Bahrain Iraq Jordan Kuwait Lebanon Oman Qatar Saudi Arabia Syrian Arab Republic United Arab Emirates		Egypt Democratic Yemen Yemen
Urbanization	Bahrain Egypt Iraq Jordan Kuwait Lebanon Democratic Yemen Qatar Saudi Arabia Syrian Arab Republic United Arab Emirates		Oman Yemen

TABLE 1–Continued

Characteristic	Above reduced lower threshold	Not above reduced lower threshold, but above full lower threshold	Below full lower threshold
Non-agricultural economic activity	Bahrain Egypt Iraq Jordan Kuwait Lebanon Democratic Yemen Qatar Saudi Arabia Syrian Arab Republic United Arab Emirates		Oman Yemen
Mortality (as measured by expectation of life at birth)	Bahrain Kuwait Lebanon United Arab Emirates	Egypt Iraq Jordan Oman Qatar Saudi Arabia Syrian Arab Republic	Democratic Yemen Yemen

TABLE 1—Continued

Characteristic	Above reduced lower threshold	Not above reduced lower threshold, but above full lower threshold	Below full lower threshold
Female literacy		Jordan Kuwait Lebanon	Bahrain Egypt Iraq Oman Democratic Yemen Qatar Saudi Arabia Syrian Arab Republic United Arab Emirates Yemen

Sources: Threshold limits: United Nations 1965, p. 149; most data: ECWA 1978b.

[a] Adjusted to yield constant prices.

Cairo, but there has been little diffusion to other segments of the population. The application of the theories of the household economists is difficult and confusing: in the rural areas schooling appears frequently to make boys do less work and consequently to have lower productive value (Williams 1968, p. 73). The education of girls ultimately tends to disrupt the existing family and to change all kinds of relationships, the increased value of their time or their greater earning capacity seem trivial compared with these effects.

The ECWA Region and Wealth-Flows Theory

Although family residence is often nuclear, especially in the towns and in some crowded rural areas such as the Nile Valley, the most meaningful social and economic unit is usually larger. In rural areas the economic unit is usually some form of extended family, which may change its size and shape as economic opportunities change (Fuller 1961). Social pressures come from an even wider range of relatives. Families are marked by considerable internal role and status differentials by age and sex. Marriages have traditionally been arranged, with brides pubescent and bridegrooms up to a decade older. There is much emphasis on the sexual purity of women, on their remaining within the domestic sphere, and on child rearing being almost exclusively reserved for them. There is strong resistance to emotional relationships, which are largely confined to the conjugal family; traditionally, husbands and wives never walked together (Patai 1973, p. 131). The emphasis on sexual relations does not imply parity or necessarily closeness in conjugal relationships: "Men speak less openly of their affection for their wives. Of sexual relations, they stress their own prowess and capacity rather than the part played by their mates" (Fuller 1970, p. 533). Marriage and the family have been moulded by the religious law or *Shari'a,* as have modern legal codes–even those introducing Western elements, although these changes have somewhat reduced the insecure situation of wives, constantly faced with the possibility of divorce or with the conversion of a monogamous marriage to a polygynous one. Women have been described as looking for their own welfare back to their blood relatives, and for that of their children to the clan into which they have married (Fuller 1970, p. 528). There is an emphasis within the family on respect for age and on obedience. There is also a strong desire for children, especially sons, and a prolific wife can thereby strengthen her position in the family into which she has married.

Most of these statements must be modified with regard to urban and middle class populations. Nevertheless, it is a social context that makes high fertility neither socially nor economically disadvantageous. An analysis of extremely high fertility among the urbanized Kuwaitis, with their low levels of mortality, concluded that: "A desire for children, especially boys, lies at the heart of the various social institutions and customs (early and universal marriage, easy remarriage of widows and divorcees the subservient social position of women and a resistance to the education of women) which can be seen as facilitating the achievement of this social goal" (Hill 1975,

p. 546). It might be noted that this conclusion makes no attempt to evaluate whether such a social goal is economically advantageous or disadvantageous.

The economic value of children is primarily determined by the social structure of the family, which is instituted and maintained by a range of social controls. Culture and religion are largely at one in considering the old better than the new and in placing a heavy emphasis on the retention of the existing order (Patai 1973, p. 280). There are specific Koranic injunctions on the duties of children to parents and on the relationship between men and women that give men a commanding position. The family is held in great respect, a situation reinforced by the religious injunction that it should be so. Most family socialization is carried out by admonition and instruction, although this may be backed up by physical punishment. There is a lack of privacy in the rural household and village, and a control of behaviour by gossip, that are powerful instruments of social conformity. This is the framework within which the value of children's work and services must be calculated.

All authorities agree that Arab children have always been obedient and quiet in the house, and, at least in the past, have worked hard. Their work has been so important, and often so specialized by age, that ages have traditionally been described in terms of the kind of work expected from children of that specific age and sex (Granqvist 1947, pp. 127-139). Schooling and the restlessness induced by the lure of often distant towns seems to have reduced the labour input of rural boys still further below that of their sisters, for whom "there is no slack season. The coming of winter means that a girl in her teens can cut back from a sixteen- or eighteen- to a ten- or twelve-hour day" (Williams 1968, pp. 61-62). There is little doubt that girls work harder than boys. They fetch water (usually forbidden for nubile or married women), do the full range of domestic work, and often help to construct, repair and maintain the house. Schooling has had some impact, but it is mostly boys who go and even they tend to be withdrawn by May, not to return until autumn when the major farming demands have passed. Nevertheless, "Schooled young men, at other times spared participation in field work, were involved in the lighter, more prestigious but responsible tasks of guarding pumps and motors, driving tractors and supervising hired hands" (Williams 1968, p. 60). The other side of the coin is that the relatively humble and obedient position of children means that their needs are small.

Part of the work value of children lies in the future. The Koran admonishes young men to relieve their fathers of work, and the evidence is that middle-aged fathers spend an increasing amount of their time in coffee houses (Fuller 1961, p. 74) and that mothers-in-law are relieved by their daughters-in-law of the less rewarding aspects of domestic life in order to become increasingly involved in social activities (Ammar 1954, pp. 28-29). Wives in rural areas, except among the very rich, rarely reach the position of having little work to do (Gulick 1955, p. 61). Subsequently, children become even more essential to their parents' security in the latter's old age. Girls are valued much less than boys. The reason is not the work they do when

young, nor even a lack of value for parental old age security; indeed it is said that in Egypt a daughter is the one "who will usher her parents into the shade" (Ammar 1954, p. 95). Rather, girls are valued less than boys because of the emotional strain of ensuring that they do not bring shame upon their families and because they marry early into another family (even the *mahr* or bridewealth received as a result of their marriage is increasingly used to establish the new couple).

High fertility increases security in several ways. In much of the world in the past there has been a need for relatives to guarantee physical security, and even now a large family can reduce thefts from one's fields and an occupied house is usually adequate protection against burglary. Furthermore, "a man with more sons backing him up can always speak with more authority" (Ammar 1954, p. 94). For some time in Lebanon, and increasingly in many other countries of the region, children have provided a reservoir from which emigrants to other parts of the region and all over the world can be drawn—a flow which is usually counter-balanced by remittances that may provide not only security but comparative affluence. Finally, in old age, security can be enhanced by a variety of relatives, but predominantly by one's children, who are well aware that the abandonment of the old is a sin beyond redemption in both this world and the next.

The deployment of family labour and family earnings has traditionally occurred, as is still generally the case in rural areas, within the framework of a patriarchal joint family. Here the authority of the patriarch is great, although he may well consult his eldest son or heed his wife when she draws his attention to family needs or approved social behaviour. Hard economic decisions frequently have to be made: "The most pressing and ever-present problem of the peasants of Buarij is the making of two ends meet" (Fuller 1970, p. 532). It is this pyramidal control of budgeting that ensures that high fertility can be economically advantageous to those near the top of the pyramid.

Whether fertility behaviour is controlled in the same hierarchical way is an important issue. In rural households, contraception is still unlikely to be discussed, but that in itself is a form of decision making. Furthermore, it is the old—the father, the mother-in-law—whose presence and views are likely to make such discussion and behaviour impossible. Fertility decision making, beyond and above the biological couple, might prove to be more difficult in terms of setting trends towards lower fertility, but it is a very effective force in the maintenance of high fertility. There is also an indirect influence: a wife, or indeed a couple, may refrain from controlling fertility because of a fear that the wife will be judged negatively by the extended family if she seems to be sub-fertile. In these circumstances, "one cannot speak [in the region] of any effective traditional method of family planning" (Patai 1971, p. 76).

The real family is an economic entity and not a residential one. Close residence allows common use of labour, but even distance does not prevent common funds being employed. One writer described the Mediterranean and

Middle Eastern family, especially in its full-blown form among the rich and powerful, as mainly a question of the "control of wealth and people. Women are significant as the currency of alliances; men are the defenders of property and of honour. Women are mainly interested in their progeny and, in varying degrees...in their husbands; while they often remain strangers, sometimes almost hostile strangers, in their husband's extended household or in relation to their husband's parental family. Men are committed to the perpetuation of the group with which they are identified...their view of the family is a formal, and a political view. It is a tool in the struggle for power and of its corollary, prestige. The feminine view is a private view and is determined by the more immediate accessible ends" (Peristiany 1976, p. 2). One might add another corollary, *economic advantage,* but one might also note the potential of the female situation for inducing change.

Extended family budgeting is the way that the better-off deploy their resources and the very poor share, and so maximize, the few resources they have. In rural areas there appears to be good evidence that the larger budgeting and work units can undertake rewarding specialization and can successfully accomplish tasks that are difficult for one or two persons. In one village an investigator concluded that it "is the combination of extreme poverty and a family's isolation that can result in the most brutal work routines," and an example was cited of a man who had quarrelled with his brothers, setting up a work and budgeting unit consisting solely of his nuclear family, thus condemning them to a harder and poorer life than the families of the cooperating brothers (Williams 1968, pp. 68-69). Even among urban business families, successful commercial activities are often structured upon the extended family (Farsoun 1970, pp. 264-270).

It is within this framework that fertility decisions must be analyzed. The agrarian joint family, although it can function successfully within a market economy, is undoubtedly a pre-capitalist mode of production. This has been recognized by some Marxists (Meillassoux 1972; Meillassoux 1973; Godelier 1977), although they do not seem to have taken the next logical step of analyzing the relations of production within these families.

There is little doubt that the agrarian joint family has been characterized by high fertility because the chief decision makers within it are not merely socially advantaged but also economically advantaged by such fertility. The potential for change has already been indicated by our analysis of the family, but will now be spelled out.

The Forces of Change

The family as an economic unit is not dependent on common residence, the ownership of land or the practice of agriculture, but its continuity is enhanced by all these factors. Emigration from home areas strengthens the relationship between young husbands and wives and makes them more likely to be economic and fertility decision makers. Such migration has been encouraged by land shortages (P. Caldwell 1977, p. 605; Antoun 1972, p. 26)

and by the growth of towns. Conjugal families, the impact of schooling, town life and the consumption society all tend to weaken the past parent-child relationship in terms of unquestioned filial obedience, hard work and relative austerity among children. In Lebanon, even in rural areas, it is reported that men now worry about the costs of clothing, feeding and schooling children and women about harassment by young children (Prothro 1961, p. 55; Williams 1968, p. 21).

The necessary social control, and the beliefs upon which it is based, have also been under assault. The family law has been basic to Islamic society (Anderson 1970), but it has been under constant pressure from forces of Westernization and modernization imported by the media, education systems, and political ideologies of both the left and the right wing. The state's intrusion into this field began with the Ottoman edict of 1915 and law of 1917, and proceeded much more rapidly from the 1950s, following independence. The marked fertility differentials between religious communities in Lebanon (Chamie 1977) may well mean that the Christians offered a shorter and less vigorous resistance to the import of influences likely to fundamentally restructure the family.

The continuation of the traditional family, characterized by high fertility, is likely to depend most on whether or not the present very low levels of female education are maintained. Such low levels alone can probably maintain female subservience to husbands and to in-laws, the relatively high level of female work and low level of consumption, and the low degree of participation by young couples in budget and fertility decisions. Higher female education has been shown in Egypt to correlate markedly with use of contraception and lower fertility (Rizk 1963). Greater affluence in the region will increasingly tempt families to send even their daughters to school. One reason is that educated young men are increasingly demanding educated wives, and parents of daughters are loath to forego the possibility of acquiring such sons-in-law (Williams 1968, p. 105).

The reason that fertility has remained high in the region is that religion and culture have fused to support a social structure in which high fertility brings rewards to those in a position to control the family. No study in the rural Middle East has yet shown that large families are economically disadvantageous. The evidence appears to suggest the opposite.

The position appears to be changing, not where wealth is greatest, nor where most people live in towns, nor where death rates are lowest, but among those small populations where the extended budget and fertility decision-making family has been most eroded: that is, among the urban middle class in Egypt and Lebanon, particularly, but not only, in the Christian communities. The potential for change is enormous, the single most explosive factor being the possibility of a rapid increase in female education.

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CHAPTER 6. FERTILITY AND DEVELOPMENT*

*Richard A. Easterlin***

Until recently, most work on the economic theory of fertility derived from studies by Harvey Leibenstein (1975) and Gary S. Becker (1960), which applied the economic theory of consumer behaviour to childbearing decisions (see also Bumpass and Westoff 1970; Easterlin 1969; Robinson and Horlacher 1971). The conventional theory of consumer behaviour views the individual as trying to maximize satisfaction, given a range of goods, their prices, and his own tastes and income. In the application of the theory to fertility analysis, children are viewed as a special kind of good, and fertility is seen as a response to the consumer's demand for children relative to other goods. In the last decade, a special variant of this approach has emerged, deriving chiefly from a later article by Becker (1965) and distinguished by use of the concept of a "household production function" (see Schultz 1973, 1974).

The application to fertility problems of the economic theory of household choice has resulted in a number of valuable contributions. First, economics has indicated the appropriate concept of income for analysing fertility decisions, namely, "full," or "potential," income; it has shown, for example, that for a number of purposes total family income is a less appropriate measure than husband's income or variant measures of the household's earning potential. Second, economic analysis has reduced the conceptual confusion between cost of children and expenditures per child. As with many economic goods, rising income may lead to the acquisition of both greater quantity (more children) and higher quality (higher expenditures per child), and the rise in quality does not necessarily imply substitution against quantity. Third, economics has clarified causal interrelations. For example, few economists would speak of lower fertility "causing" higher female labour force participation, or vice versa—most would view both magnitudes as simultaneously interacting as well as being determined by other factors. Fourth—a contribution that is attributable especially to research stemming from Becker's 1965 article—economic theory has led to more explicit recognition of both the competition between children and economic goods for the time of father and mother and the value of that time to each parent. Finally,

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empirical studies of recent American fertility movements and differentials based on an economic framework have contributed to a new understanding of their causes (Easterlin 1968b).

But the economic theory of fertility also has its limitations, especially with regard to its applications to less developed countries (LDCs). This theory typically stresses the household's demand for children as the primary factor in determining observed fertility. However, among large segments of the population in many LDCs, family-size desires as revealed in household surveys are often ill formed. Questions on desired or ideal family size frequently elicit replies such as "up to God." Moreover, if reproductive behaviour were a matter of deliberate choice, one would expect to find evidence of the deliberate practice of fertility control. This is because babies are a product of sexual intercourse and tend to be produced whether or not they are wanted. Hence a decision to limit family size would typically require conscious action, such as abstinence, contraception, or induced abortion.

In fact, the available evidence for most of the population in many LDCs points to the general absence, rather than presence, of deliberate fertility control by individual households. This evidence is of three types: (1) survey data in which households report on their knowledge and use of fertility control; (2) inferences about the prevalence of deliberate control from census or other data on actual age-specific fertility rates using the Coale-Trussell technique (1974); and (3) absence of correlation between observed behaviour and statements of preference—as, for example, in the case of "son preference" (see Easterlin, Pollak, and Wachter 1980).

In the view of most non-economist demographers and sociologists, conditions in many LDCs are best characterized as comprising essentially a natural-fertility regime. This does not mean that fertility in these societies is totally uncontrolled and thus at its biological maximum. On the contrary, it is likely that various social controls such as an intercourse taboo or prolonged lactation reduce fertility below its maximum level. These practices have the effect of limiting fertility in the society, but they are not usually practised by couples with that effect in mind.

These problems with the traditional economic theory of fertility have led to a new vein of work by economists that involves adding to the usual theory what are sometimes called "supply," "output," or "fecundity" considerations. In a succession of papers, Riad Tabbarah has set forth a "model of demographic development" that relates the determinants of fertility to the development process (1964, 1971, 1976, 1978). This model sees fertility as evolving from a situation in which the typical couple cannot achieve its desired number of children to one in which potential excess fertility is the prevalent condition. Easterlin, building on his prior work (1970), Tabbarah's analysis, and a paper by Wachter (1972), attempted a synthesis of what he called the economics and sociology of fertility (1975, 1978). The most recent evolution of his work appears in a joint paper with Pollak and Wachter (1980). Among other recent economic studies that include supply or fecundity notions are Michael and Willis (1975), David and

Sanderson (1976), and Anderson and McCabe (1977). Unfortunately, because this work is new, much of it is still unpublished.

In what follows, a simple version of Easterlin's "synthesis framework" is first presented. This is followed by a model of the interrelations of fertility and development (or modernization, as it is called below) that elaborates the scheme first advanced by Tabbarah. Finally, a few empirical applications of the approach are presented.

Theory of Fertility Behaviour

This section briefly develops a formal framework for fertility analysis. The framework is a modification of the usual economic theory of fertility to take fuller account of the theoretical and empirical work of demographers and sociologists. The principal dependent variable is the total number of surviving children of a "representative" married couple, since surviving descendants, rather than births as such, is what parents are basically concerned about. Both spouses are assumed to live throughout the reproductive span of the wife. Questions relating to the formation of reproductive unions and to child spacing are left aside. The present exposition is highly condensed, but studies by Easterlin (1978) and Easterlin, Pollak, and Wachter (1980) contain a fuller statement.

The determinants of fertility are seen as working through one or more of the following: (1) the demand for children—the number of surviving children parents would want if fertility regulation were costless; (2) the potential output of children—the number of surviving children parents would have if they did not deliberately limit fertility; and (3) the costs of fertility regulation, including both subjective (psychic) costs and objective costs (the time and money required to learn about and use specific techniques).

Demand for Children

The immediate determinants of the demand for children are income, prices, and tastes (Becker 1960; Easterlin 1969; Leibenstein 1957). The demand for children is seen as depending on the household's balancing of its subjective tastes for goods and children against externally determined constraints of price and income in a way that maximizes its satisfaction.

Variations in the basic taste, price, and income determinants will cause differences in demand among households at a given time, or for a given household over time. Other things being constant, the number of children desired would be expected to vary directly with household income (assuming children are a "normal" good), directly with the price of goods relative to children, and inversely with the strength of tastes for goods relative to children. It is through tastes or subjective preferences that the attitudinal considerations stressed by sociologists operate, for instance, norms regarding family size and the "quality" of children (i.e., standards of child care and rearing).

As noted, the principal dependent variable here is surviving children, because parents are ultimately interested in grown offspring rather than number of births. Birth behaviour may be linked to the demand for children through the rate of infant and child survival. The lower the level of infant and child survival, the higher the number of births necessary in order for households to achieve a given number of surviving children. Even though tastes, prices, and income remained unchanged, birth behaviour might vary because of changes in the survival prospects of children. Other things being equal, the higher the survival prospects, the lower the birth rate.

So far it has been implicitly assumed that the family-size decision refers to children of a standard "quality," that is, children embodying a given set of inputs of time and goods. Allowance can be made for variations in child quality by viewing it as a commodity in addition to the number of children and goods consumed by the parents. An increase in income would then be expected to raise both the number of children and the standard of child quality, while a rise in the relative prices of inputs required for children would lead to substitution against both child numbers and child quality. Also, subjective preferences relating to child quality might change, leading, for example, to greater emphasis by parents on the quality of children at the expense of the number of children.

Potential Output of Children

On the production side of fertility determination, the key analytical concept is the potential output of children, the number of surviving children a household would have if fertility were not deliberately limited. This depends, in turn, on natural fertility and the probability of a baby surviving to adulthood. Given natural fertility, an increase in infant survival prospects would increase the potential output of descendant children. Similarly, given survival prospects, the potential output of children would vary directly with natural fertility.

The motivating force behind natural fertility is not the demand for children, but sexual desire, which influences fertility through frequency of intercourse. Coital frequency is also affected by involuntary abstinence due to factors such as impotence or illness. Moreover, in addition to frequency of intercourse, natural fertility depends on fecundity or infecundity as affected by involuntary causes and on foetal mortality from involuntary causes (Davis and Blake 1956).

Natural fertility depends partly on physiological or biological factors and partly on cultural practices. Included under the biological heading would be factors that influence natural fertility through mechanisms such as genetic influences on fecundity or the effect of disease and malnutrition on coital frequency and the ability to carry a foetus to full term. Under the cultural heading would be various social customs or events that inadvertently affect coital frequency, fecundity, or foetal mortality—such as the belief that sexual intercourse should be avoided while a mother is nursing (an intercourse

taboo) or physical separation of partners due to such events as civil strife or seasonal migration for employment purposes. Two societies identical in biological and physiological characteristics might differ in natural fertility because, for example, an intercourse taboo led to a higher prevalence of involuntary abstinence in one society than in the other. As has been mentioned, natural fertility in a given society is likely to be below the reproductive potential of the population both because of biological constraints and because of cultural conditions that inadvertently reduce family size.

Motivation for Fertility Regulation

The potential output of, and demand for, children jointly determine the motivation for fertility regulation. If the potential output falls short of demand, there is no desire to limit fertility. On the contrary, an "excess-demand" situation of this type would result in a demand for ways to enhance fertility and for the adoption of children (though these possibilities are usually quantitatively unimportant). Households might have knowledge of the means of regulating fertility, but there would be no incentive to use them. In this situation, parents would be expected to have as many children as possible. Thus the number of children parents actually have would correspond to their potential output. Variations in the number of children parents have would arise from variations in the determinants of potential output, namely, natural fertility and the probability of an infant surviving to adulthood.

On the other hand, if the potential output exceeded demand (an "excess-supply" situation), parents would be faced with the prospect of having unwanted children and would be motivated to regulate their fertility. In an excess-supply situation, therefore, there is a demand for ways of limiting fertility. Whether fertility control will actually be used, however, depends on how the costs of fertility regulation compare with the motivation to limit fertility.

The Costs of Fertility Regulation

While motivation is a necessary condition for fertility regulation, it is not a sufficient condition. Fertility regulation imposes costs of two types on the household. There are psychic costs (the displeasure associated with the idea or practice of fertility control) and market costs (the time and money necessary to learn about and use specific techniques). In turn, these costs depend upon the state of attitudes in society towards the general notion of fertility control and towards specific techniques as well as the degree of access to fertility control, in terms of both the availability of information and the range of specific techniques and their prices. Typically, a family planning programme lowers market costs by increasing information and providing services free or below cost. It also lowers subjective costs by lending legitimacy to the notion of practising birth control.

Whether fertility control will actually be used in a given excess-supply situation depends on how the costs of fertility regulation compare with the motivation to limit fertility. Given the strength of the motivation, the lower the costs of fertility regulation—that is, the more nearly conditions approach those of the "perfect contraceptive society," where psychic and market costs would be zero (Bumpass and Westoff 1970)—the greater would be the adoption of fertility regulation and the more nearly would the number of children parents have correspond to the number they desire. Conversely, the higher the costs of fertility control, the more nearly would actual conditions approach the potential output of children, the lower would be the deliberate control of fertility, and the greater would be the number of unwanted children.

Summary

In the present analysis, the determinants of fertility are seen as working through one or more of the following: the demand for children if fertility regulation were costless, the potential output of children if no conscious effort were made to control fertility, and the costs of fertility regulation. The immediate determinants of the demand for children are income, the price of children relative to goods, and subjective preferences for children compared with goods. The potential output of children depends on natural fertility and the survival prospects of a baby to adulthood. The costs of fertility regulation include subjective costs ("attitudes") as well as the time and money necessary to learn about and use specific techniques ("access").

The role of these factors in determining actual fertility differs depending on the comparative state of the potential output of, and the demand for, children. If the situation is one of excess demand, or even if it is one of excess supply but the motivation for fertility control falls short of the costs, then the number of children parents have corresponds to their potential output, and the determinants of potential output govern variations in actual output. If, on the other hand, the situation is an excess-supply one in which the motivation to regulate fertility exceeds the costs, then deliberate limitation of fertility occurs and the number of children parents have falls below potential output. However, as long as fertility regulation is not entirely costless, some parents still have unwanted children. The situation is thus one in which the actual number of children parents have falls short of potential output (the difference reflecting the extent of conscious fertility control) but the actual number exceeds the desired number (the excess consisting of the number of unwanted children).

Links between Development and the Determinants of Fertility Behaviour

Among the complex of changes embraced by modernization (cf. Easterlin 1968a), several seem especially important in bringing about the shift to modern conditions of childbearing. Historically, these have been (1) innova-

tions in public health and medical care, (2) innovations in formal schooling and mass media, (3) urbanization, (4) the introduction of new goods, and (5) per capita income growth. More recently, in a few countries another aspect of modernization–family planning programmes–has perhaps also played a noticeable role in influencing reproductive behaviour.

Chart 1 presents a summary view based on the framework just sketched of the channels through which reproductive behaviour is influenced by these various aspects of modernization. The aspects of modernization are listed on the left-hand side, and the principal factors immediately relevant to fertility determination at the top, as column headings. An entry in a cell indicates that the specified item on the left influences the fertility determinant at the top in the direction shown. For example, the negative sign in column 1 of row 4a indicates that, other things being equal, the introduction of new consumer goods during modernization tends to reduce the strength of preferences for children relative to goods and thus the desired number of children.

In drawing up chart 1, an attempt has been made to identify on the basis of the literature what seem to be the most important links between modernization and reproductive behaviour, rather than all hypothetically possible connexions. Thus, the absence of an entry in a cell does not necessarily mean that no relation whatever exists but that typically it is probably not very important. The reasoning underlying the specific cell entries follows.

Public Health and Medical Care

Improved public health and medical care in the course of modernization impinges on the reproductive situation of the family by tending to increase the potential output of children in two ways. First, it is likely to increase the natural fertility of women because, for example, healthier women are more likely to carry a foetus to full term (Bourgeois-Pichat 1967a). Second, even if natural fertility were unchanged, infants would be more likely to survive to adulthood and the potential output of children would be correspondingly increased. These relationships are indicated in chart 1 by the positive signs in columns 4 and 5 of row 1.

Also, better public health and medical care may raise per capita income because a healthier, more energetic population is likely to be more productive (Malenbaum 1970). Increased per capita income, in turn, influences a number of fertility determinants over and beyond the effects of better health just mentioned. However, to simplify the chart, only the effects *directly* attributable to public health and medical care improvements are shown. As indicated in footnote *a* to chart 1, a full accounting for the effects of improved public health and medical care would take account as well of the indirect consequences via per capita income growth shown in line 5. The same treatment has been followed in chart 1 with regard to the next two aspects of modernization, improved education and urbanization, each of which may raise per capita income as well as influence reproductive behaviour directly. The effects shown in the row for each of these factors exclude any indirect consequences

CHART 1 DIRECTION OF EFFECT OF VARIOUS ASPECTS OF MODERNIZATION ON INDICATED DETERMINANTS OF NUMBER OF SURVIVING CHILDREN PER MARRIED WOMAN

Aspects of modernization	Factors through which family size is influenced						
	Demand for children			Potential output		Costs of fertility regulation	
	Tastes	Income	Prices	Natural fertility	Survival prospects	Subjective	Market
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Better public health and medical care[a]				+	+		
2. Growth in formal education and mass media[a]	–		–	+	+	–	–
3. Urbanization[a]	–		–		–	–	–
4. New goods							
a. Consumer goods	–						
b. Fertility control						–	–
5. Per capita income growth	–	+		+	+		

[a] To the extent this item also increases per capita income, additional effects as shown in line 5 would occur.

they may have via increased per capita income. Correspondingly, in principle the full range of effects of each of these factors comprises not only that shown on its respective line, but also that shown on line 5 for per capita income growth.

Education and Mass Media

Even disregarding any effects via per capita income growth, the growth of formal education and associated expansion in mass media comprise one of the most pervasive factors influencing completed family size. As shown in chart 1, this factor operates on all three of the principal fertility determinants: demand, potential output, and the costs of fertility regulation. The impact on potential output may be touched on first, for the reasoning is much like that in regard to the effect of public health and medical care improvements. Formal education and expanded mass media improve health conditions by diffusing improved knowledge with regard to personal hygiene, food care, environmental dangers, and so on. They may also break down traditional beliefs and customs and thus undermine cultural practices, such as an intercourse taboo, that have had the latent function of limiting reproduction. In these ways they tend to enhance the potential output of children by raising natural fertility and/or increasing the survival prospects of babies; hence the positive signs in columns 4 and 5 of row 2.

Education and the mass media also tend to lower the costs of fertility regulation, as is shown by the negative signs in columns 6 and 7. They may provide information not formerly available on various means of fertility control, thus reducing the expense in time and money previously required. They may also alter cultural norms adverse to the use of fertility control and thus lower the subjective costs of fertility regulation by challenging traditional beliefs and encouraging a problem-solving approach to life.

Finally, formal education and the expansion of the mass media tend to reduce the demand for children by shifting tastes in a manner unfavourable to children and decreasing the price of goods relative to children (row 2, columns 1 and 3). With regard to the relative price of children, if better education improves the income-earning possibilities of women, the alternative cost of the mother's time required in child rearing is increased. While some offset to this may be available (for example, through the help of domestics or other family members), there is probably some net positive effect on the cost of children and thus a tendency towards reduction in desired family size. In addition, compulsory education may increase the relative cost of children by reducing the possible contribution of child labour to family income.

Tastes for children—more specifically, the intensity of the desires for children relative to goods—are affected negatively by education because children and the life-style associated with them are essentially an *old* good, while education and the mass media present images of *new* life-styles competitive with children. In a recent survey in Taiwan, Deborah S. Freedman

has found that "the more a couple has been exposed to modern influences, as indicated by their education and exposure to mass media, the more likely it is to want modern goods and services" (n.d.1, p. 17; cf. also 1970, n.d.2). Another possibility, receiving much emphasis today, is a "liberated" life-style for women, involving greater participation in the market-place and less family activity. Also, education and the mass media may lead to higher standards with regard to child care and rearing, creating greater emphasis on the "quality" of children at the expense of numbers. (Note that this is a taste, not a "cost," effect, since it works through a change in subjective attitudes and not through market phenomena.) In these ways, education and the mass media increase the subjective attractiveness of expenditures competitive with having more children and thus tend to lower desired family size.

These developments are part of a more general shift in attitudes that takes place during modernization. This shift is brought about not only by education and the mass media, but also by the population's increasing urbanization and participation in other modern institutions like the factory and the agricultural co-operative. A valuable summary description of this development is provided by Inkeles:

> We believe our evidence...shows unmistakably that there is a set of personal qualities which reliably cohere as a syndrome and which identify a type of man who may validly be described as fitting a reasonable theoretical conception of modern man. Central to this syndrome are: (1) openness to new experience, both with people and with new ways of doing things such as attempting to control births; (2) the assertion of increasing independence from the authority of traditional figures like parents and priests and a shift of allegiance to leaders of government, public affairs, trade unions, cooperatives, and the like; (3) belief in the efficacy of science and medicine, and a general abandonment of passivity and fatalism in the face of life's difficulties; and (4) ambition for oneself and one's children to achieve high occupational and educational goals. Men who manifest these characteristics (5) like people to be on time and show an interest in carefully planning their affairs in advance. It is also part of this syndrome to (6) show strong interest and take an active part in civic and community affairs and local politics; and (7) to strive energetically to keep up with the news, and within this effort to prefer news of national and international import to items dealing with sports, religion, or purely local affairs (1969, p. 210).

Among others, Ronald Freedman has emphasized the fertility implications of these attitudinal changes, citing involvement with "the ideas and institutions of a larger modern culture" as a basic factor in the transition to lower fertility (1963; cf. also R. Freedman 1961-1962, 1965; Ryder 1967).

Urbanization

The process of economic modernization requires a redistribution of population from rural to urban areas, and this is largely accomplished by a vast increase in rural-urban migration. Sociologists (Kirk 1946; Lorimer 1954) have traditionally stressed the implications for reproductive behaviour of this aspect of the modernization process, and in a recent paper Kuznets (1975) also has assigned an important role to this factor. Urbanization, like education, reduces the demand for children by reducing tastes for children and lowering the price of goods relative to them (row 3, columns 1 and 3). (We continue to set aside possible effects via per capita income change.) The effect via tastes has been touched on immediately above. With regard to costs, the available evidence indicates that the relative price of children of a given "quality" is usually higher in urban than in rural areas (Lindert 1978). A variety of factors are responsible for this. The price of food is higher in urban than in rural settings. Also, farm children take less time away from a mother's paid work and contribute more time toward family work than do urban children. In both cases this would raise the relative cost of children in urban areas compared with that of children in rural environments. Thus, increasingly, the effect of urbanization of the population is to place the population in an environment where goods become relatively less expensive than children and, other things being equal, correspondingly more attractive.

In regard to the potential output of children, urbanization is probably a negative influence, tending in itself to lower the survival prospects of children (row 3, column 5). The reasoning here is that concentration in densely populated areas increases exposure to disease and tends, other things being unchanged, to raise mortality, resulting in a lower number of surviving children from a given number of births. (This effect may be less applicable under the more modern public health and medical conditions in urban areas in many of today's less developed nations than it was in the historical experience of the developed countries.)

Finally, urbanization tends to reduce both the subjective and market costs of fertility regulation much as formal education and expanded mass media do (row 3, columns 6 and 7). In higher-density urban situations, access to fertility control knowledge is likely to be greater and market costs consequently reduced. Subjective costs also are likely to be less, because of the role of the urban environment in breaking down traditional attitudes, among them the reluctance to try new ways of doing things.

New Goods

Another facet of economic modernization is the continuing introduction of new goods (Rosovsky and Ohkawa 1961). The association between increased consumption of modern goods and reduced fertility has been noted in recent studies of Taiwan (D. Freedman n.d.2; R. Freedman and Takeshita 1969). In terms of the present framework, the introduction of new goods

tends to lower the demand for children by shifting tastes in an adverse manner, as shown by the negative sign in row 4a, column 1. The enjoyment of new goods tends to require life-styles other than those centering on children, for new goods are typically substitutes for, rather than complementary to, children. Thus, holding other factors constant, the relative strength of household desires for goods unrelated to children is increased and desired family size is decreased. At any given level of income, households would tend to shift expenditure towards new purposes and away from old goods, including having and raising children in "old goods."

Among the new goods associated with modernization are some specifically related to fertility control. Examples are the modern condom and improved methods of induced abortion and, more recently, the oral contraceptive pill and IUD. Such developments typically reduce the market costs of fertility regulation by providing cheaper methods. They may also lower the subjective costs of fertility regulation by providing less objectionable options to the household. For example, an advantage claimed for both the pill and IUD compared with most other methods is that they separate the contraceptive act from that of intercourse. Allowance for the effects of new methods of fertility control is made in chart 1 by the negative signs in columns 6 and 7 of row 4b.

Per Capita Income Growth

We come finally to the effects of per capita income growth, whether due to the aspects of modernization in lines 1-3 of chart 1, or other factors, such as the adoption of modern techniques of production. In economic analyses of fertility, the effect of per capita income change typically stressed is a positive effect. On the assumption that children are normal goods, one would expect, other things being equal, that higher income would encourage households to want more children just as higher income encourages greater consumption of goods generally. This influence is shown by the positive sign entered in row 5, column 2.

But there is another and counteracting effect of per capita income growth on the demand for children, operating via tastes, as shown by the negative sign in row 5, column 1 (J.S. Banks 1954; Easterlin 1969; Leibenstein 1957). As a result of the substantial upward trend in living levels during economic development, each generation typically comes from a more prosperous background than the preceding generation. Because of this, the expectations of each successive generation concerning the material requisites of the "good life" tend to be progressively higher. Goods that to one generation may have been luxuries become necessities to the next—the automobile is a case in point. This "inter-generation taste effect," as it might be called, tends to raise the minimum living standard that parents feel is necessary before they can "afford" to have children.

Thus, while per capita income growth increases the resources available to households, it also affects the consumption aspirations that individuals

acquire in their economic socialization. Moreover, since the escalation in consumption aspirations is itself a reflection of actual income growth, this means that the adverse taste effect of such growth tends to be strong enough, on the average, to wash out the positive income effect. However, over shorter periods the two effects of income growth may get out of phase, producing fluctuations in fertility (Easterlin 1968b). The taste effect of income growth operates within generations as well as between them. Some supporting evidence is provided by Deborah S. Freedman's analysis of Taiwan:

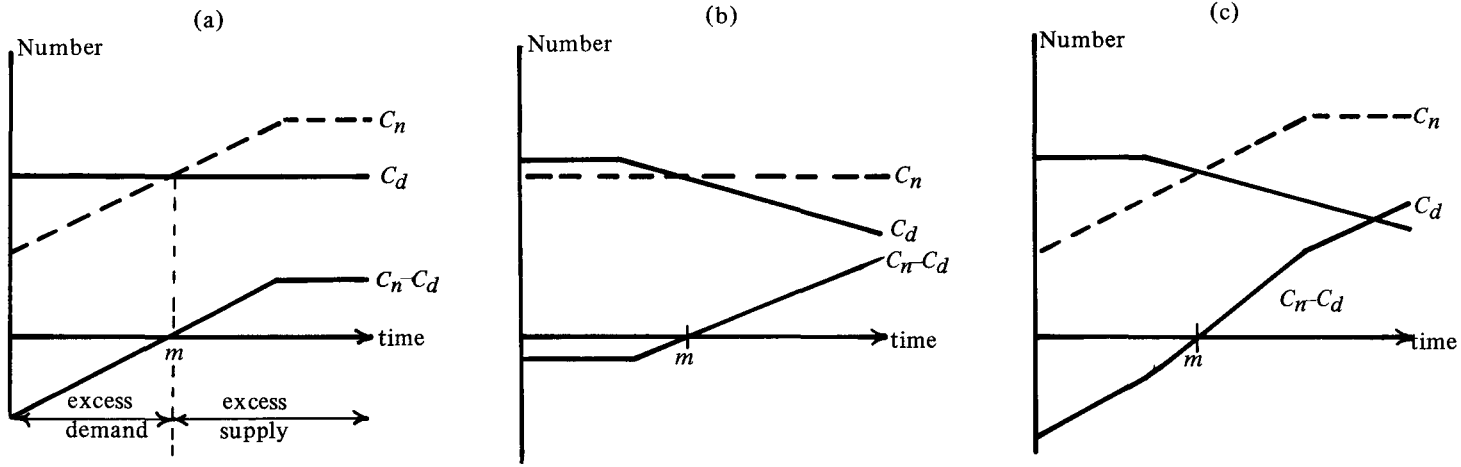
> (T)he findings of this study suggest that the convergence of non-traditional family goals--namely, the achievement of new modern consumption standards--which may conflict with supporting a large family, influences couples to desire fewer children and can have an appreciable influence on the use of contraception to achieve family size goals. The steadily increasing income levels in Taiwan have not encouraged couples to have more children. Instead, these higher incomes have served to develop new wants--particularly for the new kinds of goods and services development has made available and these new wants in turn, have encouraged couples to take positive steps to limit family size (n.d.2, pp. 39-40).

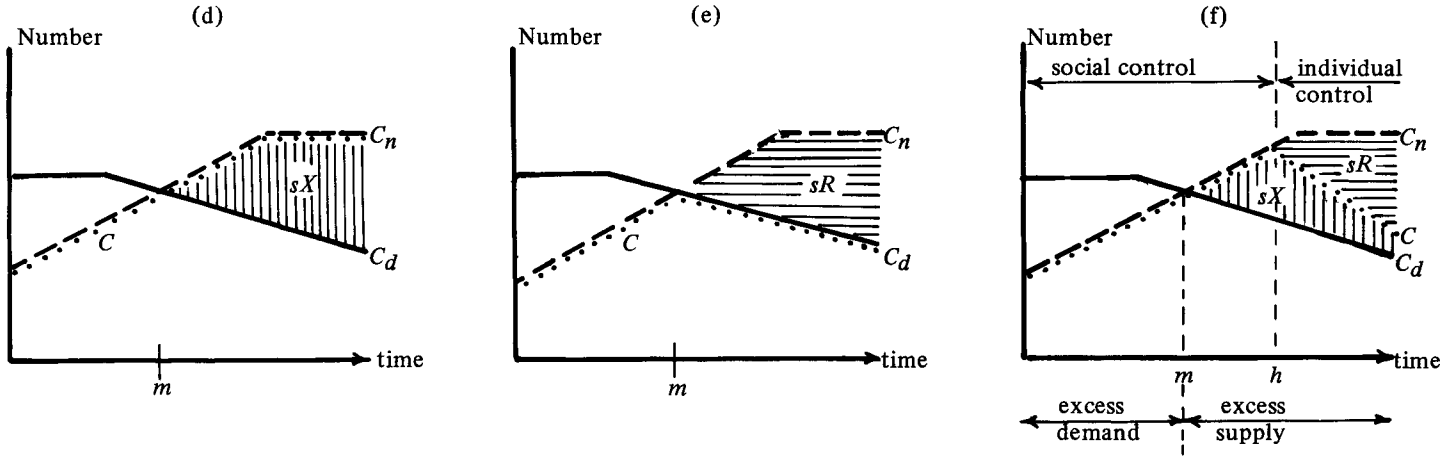
The foregoing effects of per capita income growth operate via the demand for children. As has been noted, per capita income growth may also affect potential output of children, especially in the early stages of modernization. In terms of the personal consumption experience of the population, per capita income growth typically comprises, among other things, substantial advances in food, clothing, and shelter. The consequent improvement in resistance to disease and reduction in exposure to disease is likely to raise the fecundity of women and increase prospects of infants surviving to adulthood. These influences are shown in chart 1 by the positive signs entered in columns 4 and 5 of row 5.

A Model of the Effects of Development on Fertility Behaviour

The preceding section suggests a number of specific ways that modernization affects the demand for children, potential output of children, and costs of fertility control. These influences are brought together in figure 1 to develop a schematic model of the impact of modernization on family reproductive behaviour. In the figure the solid-line C_d curve refers to the desired number of surviving children of the representative household and the broken-line C_n curve refers to the potential output. In all of the diagrams, the progress of modernization is assumed to be correlated with time, and it corresponds to a rightward movement along the x-axis. An illustrative measure of the degree of modernization is the "development index" devised in recent United Nations Research Institute for Social Development work (1970) for a time-series application (see A.S. Banks 1974).

FIGURE 1 HYPOTHETICAL TRENDS IN FERTILITY VARIABLES ASSOCIATED WITH ECONOMIC AND SOCIAL MODERNIZATION





Legend

The following definitions all refer to the total number of events per married woman over the reproductive career of the "representative" household:

— — — C_n is the number of surviving children parents would have in an unregulated fertility regime.

——— C_d is the desired number of surviving children in a perfect contraceptive society.

. . . . . C is the actual number of surviving children.

sX is unwanted children, the excess of the actual number of children over the desired number.

sR is the degree of voluntary fertility regulation, measured in terms of children averted.

Effects on the Motivation to Regulate Fertility

Diagrams 1a through 1c sketch alternative ways in which the motivation to deliberately limit fertility tends to grow as a result of modernization. In 1a the influences on the potential output of children summarized in columns 4 and 5 of chart 1 are shown by the upward movement of the C_n curve, which eventually levels off as modern health and living levels are established. It is assumed that the several factors in chart 1 operating to increase potential output outweigh in the long run the one tending to decrease potential output. Even with desired family size remaining constant (C_d horizontal), the net balance of potential output versus desired size shifts in an excess supply direction, as shown by the $C_n - C_d$ curve at the bottom of the diagram. To the right of point m, the typical household is in the situation of potentially producing more children than it wants. Hence, it has an incentive to limit fertility in order to avoid unwanted children. We have here an illustration of how public health programmes, which initially raise the population growth rate through their impact on survival prospects, tend eventually to create a motivation for lower fertility and thus for reduced population growth.

Diagram 1b illustrates how the demand influences in columns 1-3 of chart 1 tend to bring about excess supply conditions, even if potential output remains unchanged. The net balance of the demand influences in chart 1 is taken to be negative, despite the positive sign for the income effect since the latter tends to be balanced out, on the average, by the inter-generational taste effect. In the diagram the C_d curve is initially horizontal, a condition that would occur if the new demand influences began to make themselves felt only some time after the modernization process had begun.

Diagram 1c illustrates the most likely circumstance, that in which influences on both potential output and desired family size are acting in a mutually reinforcing way to bring about a motivation to regulate fertility as modernization progresses. Because of this the $C_n - C_d$ curve, which shows the net balance of potential output and demand influences, shows a more pronounced upward movement. In the subsequent diagrams in the figure, the demand and output conditions shown in diagram 1c are assumed to apply, and for the sake of simplicity the $C_n - C_d$ curve depicting the net balance between the two is omitted.

The pre-modern situation shown in all diagrams of figure 1 is one of excess demand, that is, of parents being unable to produce as many children as they would like. There is some evidence that such conditions may prevail in some less developed areas (Tabbarah 1971). However, the present analysis could readily be modified to take account of other pre-modern circumstances. Thus one might assume that the C_d and C_n curves are superimposed in the pre-modern section of the diagram, that is, that parents initially have just as many children as they would like. Or one might assume that C_n exceeds C_d by a small margin but that pronounced fluctuations in fertility create so much uncertainty among parents about realizing their family-size desires that they act as though they are in an excess-demand situation, even though the

actual situation over the long run is one of excess supply. Another variant would be a situation in which excess-supply conditions and deliberate fertility control exist among a small segment of the population, but the bulk of the population is in an excess-demand condition. In all cases, the only critical point is that modernization results in the substantially increased likelihood of unwanted children among the mass of the population.

Costs of Fertility Regulation

As previously noted, in an excess-supply situation, the number of children parents actually have depends on how the motivation to regulate fertility balances against the costs of fertility control. Therefore, in seeking to determine the likely course of the actual number of children during modernization, it is necessary to consider these costs. We shall first consider three alternative situations in which fertility control costs remain fixed at different assumed initial levels and then take up the effect of the changes in costs described in chart 1.

Diagrams 1d and 1e illustrate the two extremes with regard to costs of fertility regulation. Diagram 1d represents the situation in which fertility control costs are prohibitive—one might imagine a situation, for example, in which no one knows how to control fertility. Diagram 1e represents the situation in which there are no subjective or market costs of fertility control, the "perfect contraceptive society." As noted, in diagrams 1d through 1f, the trend in motivation to control fertility is assumed to be that shown by the $C_n - C_d$ curve in diagram 1c. In both diagrams 1d and 1e, to the left of point m, parents are not able to have as many children as they would like to have. As a result, in this range the actual number of children they have, shown by the dotted C line, is equal to the maximum amount they can produce, as indicated by the C_n curve, and rises as potential output increases. As one moves to the right of point m in both diagrams, a problem of unwanted children emerges, creating the motivation to regulate fertility. In diagram 1d, where the costs of fertility regulation are prohibitive, the curve for the actual number of children, C, continues to follow the potential output curve, C_n, and unwanted children increase. The number of unwanted children is shown by the vertical distance between C and C_d, marked sX. On the other hand, in diagram 1e, the situation of the "perfect contraceptive society," where subjective and market costs of fertility regulation are zero, parents immediately begin to regulate fertility as soon as the motivation to do so occurs. The actual number of children, C, falls short of the maximum possible, C_n, and follows the C_d curve, turning downward in the case shown. The extent of fertility regulation, measured in children averted, is shown by the vertical sR distance between C_n and C (s is the survival rate from infancy to adulthood and is used here to convert the excess-fertility and births-averted magnitudes into numbers of children).

In any real-world situation, fertility control costs would be neither zero nor prohibitive. The likely course of the actual number of children for a given

level of fertility costs intermediate between those represented in diagrams 1d and 1e is shown in diagram 1f. Initially, as the potential output curve, C_n, edges above the desired number of children, C_d, to the right of point m, the motivation to regulate fertility is not great enough to offset the costs, and the actual number of children continues to be governed by the C_n curve, with unwanted children increasing as shown by sX. As the rightward movement continues, however, a point is reached at which the loss in welfare due to unwanted children begins to exceed that associated with the costs of fertility regulation. In effect, a "threshold" of deliberate fertility control, marked h in the diagram, is reached (Kirk 1971; United Nations, Department of Economic and Social Affairs 1965). Fertility regulation is introduced and the C curve turns downward in the direction of the C_d curve, with fertility regulation practised to the extent shown by the vertical distance sR. As long as costs of fertility regulation are positive, however, there will continue to be some unwanted children, indicated by sX. This is the price some parents pay for their reluctance to bear the psychic and market costs of fertility regulation.

A reduction in fertility control costs during modernization due to the factors shown in chart 1, columns 6 and 7, would, other things being equal, shift the threshold point h to the left, increasing fertility regulation and reducing the number of unwanted children at any given time. A steady downtrend in fertility control costs would cause the fertility decline to occur earlier and be steeper in magnitude than would otherwise be the case. In a perfect contraceptive society with zero fertility control costs, the threshold point h would be identical with point m; that is, prevention of births would occur immediately on the emergence of excess supply conditions, and the C curve beyond point m would be identical with the C_d curve, as shown in figure 1e.

Note that the threshold point, h, depends not on any given values of C_n and C_d, but on the difference between the two. As is clear from diagrams 1a through 1c, quite different combinations of C_n and C_d can yield the same degree of motivation. The threshold point will also vary with the costs of fertility control. Thus there is no a priori reason to expect the threshold of fertility control always to occur at the same stage of modernization, for quite different threshold points may arise from different combinations of C_n, C_d, and the costs of fertility control.

The General Pattern

Chart 1 and figure 1 attempt to clarify the channels through which modernization operates to produce declines in observed and desired fertility and an increase in conscious fertility control by the individual household. A summary statement of the process is perhaps appropriate at this point.

We start with a pre-modern situation in which the representative household feels no motivation to limit fertility since the parents are uncertain about being able to have as many children as they would like to have. (As

noted, this "typical" situation is consistent with the deliberate regulation of fertility among a limited segment of the population.) Until the threshold of fertility regulation is reached, the number of children parents have is governed by the factors determining C_n, specifically, natural fertility and child survival prospects. Indeed, since modernization typically exerts a positive impact on each of these factors, there may be a tendency for actual family size to increase during the early phase of modernization. Some evidence of such increases has been found (Collver 1965; Hurault 1965; Mandle 1974; Olusanya 1971; Roberts 1957, 1971; Romaniuk 1968). In this early stage of modernization, while desired family size and the costs of fertility regulation may be changing in a negative direction, these factors are unlikely to influence actual family size because the typical household has not yet felt a motivation for fertility control sufficient to overcome the costs. Here is an example of a situation in which the establishment of a family planning programme would meet with little or no response because there is insufficient motivation among the public to regulate fertility (Tabbarah 1964, 1971). Nevertheless, decreases in desired family size and the costs of fertility control would move the threshold of fertility regulation closer.

Eventually, as modernization progresses, the typical family moves across the threshold of fertility regulation, and fertility turns downward as deliberate control of fertility expands. As just noted, this may be due partly to a gradual reduction in desired family size and in the costs of fertility regulation. It is partially caused by the increase in potential output itself, which increases motivation for fertility control by raising progressively the family's prospective number of unwanted children. In this sense, developments raising the potential output of children are partly self-correcting. If continued long enough, they tend eventually to induce the adoption of fertility regulation and thereby a reduction in family size. Moreover, with regard to the effect of an increase in child survival prospects, a downward influence on fertility is exerted over and above that working through completed family size. For households to achieve a given number of surviving children, the necessary number of births would be lower if the prospect of infant and child survival were greater. Because of this, one would expect the downward movement in fertility due to increased child survival prospects to be greater than that in completed family size once fertility regulation is adopted.

The present scheme helps bring out the way in which different economic and social programmes influence fertility. Although in the short run health programmes may raise natality through their effect on natural fertility, eventually they induce a decline in family size as households become aware of an excess-fertility problem and the motivation to regulate fertility emerges. As Tabbarah (1964) has pointed out, without such motivation family planning programmes are fruitless. However, once such motivation exists, family planning services can hasten the decline in fertility through their impact on the costs of fertility regulation. Neither health nor family planning programmes, however, would ordinarily change C_d, desired family size. The latter, as Kingsley Davis has emphasized, calls for changes in the economic

and social environment (1967). Examples would be policies in the areas of economic development and education that lead to the emergence of new living-level aspirations and new role models among the public and thereby reduce family-size desires by raising the value of life-styles competitive with having children (D. Freedman n.d.2). The question of the appropriate policies for reducing fertility, therefore, is not an either/or matter, but one of the optimal policy mix.

Finally, it should be noted that figure 1f helps distinguish between the two modes of fertility regulation described by Bourgeois-Pichat (1967b). The threshold point *h* in figure 1f may be thought of as the dividing line. To the left of point *h*, fertility is "regulated" by a variety of social and biological mechanisms working through natural fertility. Fertility is not yet viewed by the household as involving a potential problem of unwanted children and is, in effect, outside the standard household decision-making calculus. The modernization process, which shifts the typical household to a position to the right of point *h*, creates a fundamental change in the circumstances of family reproduction, moving the household from a situation where childbearing is a matter "taken for granted" to one posing difficult problems of individual choice regarding the limitation of family size. To the left of point *h*, although there is a demand for children, the usual demand mechanisms emphasized in the economic theory of fertility do not influence fertility, though fertility may be affected by economic variables raising or lowering potential output. The explanation of fertility in such a situation calls for inquiry along the lines followed by sociologists and other students of natural fertility. To the right of point *h*, the household decision-making approach of economics comes into its own. Even here, of course, sociology still has an important part to play, particularly in the investigation of taste formation. To dramatize this contrast, the sections to the left and right of point *h* in figure 1f have been labeled respectively "social control" and "individual control," following Bourgeois-Pichat's terminology. Such sweeping distinctions are never fully satisfactory. Social sanctions are operative in both pre-modern and modern circumstances, and the idea that there is no individual choice whatsoever in a pre-modern society is exaggerated. Moreover, no society shifts *en masse* at a single point of time from the "social" to "individual" control situations. The real-world process would inevitably be characterized by timing differences between various groups in the population.

The proposition that there is a change in the basic nature of fertility regulation should not be confused with the view expressed by some writers that rational attitudes towards human reproduction emerge only with modernization. In the present analysis, pre-modern reproductive behaviour is rational in the sense that the means are appropriate to the end. Given a conception of the problem as one of having enough surviving children, maximization of output within the existing set of biological constraints and established social practices makes sense. The process of modernization alters not the rationality of the individual but the nature of the problem, from one

of having too few children to one of having too many. Perception by individual households of this change in the nature of the problem and the devising of means to cope with it would hardly be expected to be instantaneous—hence the persistence of high fertility under circumstances where it is no longer needed. But this lag in the adjustment of fertility is a temporary one and is understandable given the turn-around that has taken place in the nature of the problem—it is not evidence of irrationality.

It is possible that the emergence of pressure for fertility limitation is one of the first forms in which modernization comes to impinge directly on the mass of the population. The appearance of a problem that had not previously existed—that of limiting family size—and thereby of a need for decision making of an entirely new sort, creates a pressure for attitudinal changes in a fundamental and immensely personal area of human experience. From this viewpoint, the "population problem" may have positive consequences by contributing to modernized attitudes that may more generally favour economic and social development. The presence of appropriate family planning services may facilitate this shift and ease the psychological pressures on individuals by increasing the likelihood of resort to "modern" techniques of fertility regulation rather than cruder traditional methods.

The Variability of Experience

The foregoing sketch attempts to bring together the variety of factors operating to induce changes in family reproductive behaviour during modernization. There is, of course, no necessity for these factors to operate simultaneously or with equal force in all real-world situations. Although the basic economic and social changes listed in chart 1 have invariably occurred in all countries that have modernized, their relative timing has by no means been uniform. Moreover, the economic changes are usually more protracted, whereas social changes in public health and compulsory elementary education may be more concentrated in time. Therefore, one would expect considerable variability in the patterns of change in reproductive behaviour actually observed.

By making different assumptions regarding changes in the basic fertility determinants, it is possible to generate with the present framework a variety of patterns of change, as may be illustrated with reference to the shift from high to low fertility. The typical demographic transition pattern—a shift from high to low mortality preceding a corresponding movement in fertility (Notestein 1945)—may be most simply generated if, with other fertility determinants given, one assumes mortality to be sharply reduced in a situation of initially high mortality and fertility. The accompanying increase in child survival prospects, and perhaps also in natural fertility of mothers due to better health, would raise C_n, shifting the typical household into an excess-supply situation of the type shown to the right of point m in figure 1a. As the prospect of unwanted children continued to grow, the typical household would in time reach and cross the fertility control threshold

h, and fertility rates would start to move downward, thus following with a lag the decline in mortality.

Coale has remarked on situations in which the fertility decline accompanied or preceded the mortality decline (1969). Such a pattern could arise from changes in the economic and social structure that give rise to unwanted children by shifting C_d below a given C_n in the manner shown to the right of point m in figure 1b. In this case a fertility decline might be induced in the absence of, or contemporaneously with, a mortality decline.

As these examples show, there is no necessity for any one aspect of modernization, such as mortality decline, to exhibit an invariant timing pattern in relation to actual fertility. Many scholars have emphasized that the fertility movements actually observed as different countries modernize are highly variable (Coale 1969; Durand 1969). And attempts to establish typologies of the demographic transition are common (Cowgill 1956; Mackensen 1969; Pavlik 1969). The present model points to a number of reasons for this variability. The initial pre-modern conditions—such as levels of desired family size, potential output of children, and fertility control costs—may differ among countries. So, too, may the historical trend in a particular aspect of modernization, such as the rapidity with which the movement towards universal elementary education takes place, vary. Again, the various factors may come together in different combinations. For example, in one case economic development may substantially lead social modernization, and in another the opposite may be true.

One may ask whether the same framework can encompass both the historical experience of the developed nations and the current experience of less developed nations. Is it likely that today's LDCs will experience the same pressures for fertility reduction that emerged in the now developed nations? The answer to this is yes, because the same aspects of modernization listed in chart 1 that created these pressures in now developed nations are occurring in today's less developed nations. However, there are obvious differences. In a number of today's less developed nations, advances in public health and education are occurring at an earlier time in relation to economic modernization than was true of the now developed nations. Moreover, new influences are at work that were previously absent—for example, government family planning programmes, mass media in the form of television, and new modes of fertility regulation such as the IUD (Tabah 1967; Van de Walle and Knodel 1969).

Substantial differences in historical patterns of fertility change may arise, not only from variations in the secular factors at work, but also from differential fluctuations. In pre-modern conditions, substantial variations in fertility occur in connexion with movements in natural fertility due to epidemics, famines, and similar events. Also, as has been noted, the establishment of modern health conditions and living levels may give rise to a temporary surge in actual fertility as fecundity rises. In modernizing societies, pronounced fluctuations have been observed in conjunction with migration movements and economic conditions. While the taste and income effects of

income growth may cancel out over the long term, they do not necessarily do so over shorter periods, and disparities between the two may be responsible for the post-World War II baby booms observed in the United States and elsewhere (Easterlin 1968b).

One must recognize too that at any given time various groups in a society are in different circumstances, and different factors may be responsible for changes in their fertility. For example, whereas the effect of an increase in the survival prospects of children might be especially felt by those in the older reproductive ages, a change in the factors underlying desired size might have a greater effect on those in the younger ages.

Instead of the demographic transition model, there is a need for an analytical framework sufficiently flexible to accommodate explanation of the wide variety of historical and ongoing trends, fluctuations, and differentials in the shift from pre-modern to modern fertility levels. The present framework is an attempt to answer this need.

Empirical Applications

A key issue highlighted by the present framework is the relative importance of changes in the demand for children, supply factors, and costs of fertility regulation in pushing a society across the threshold of fertility regulation. Conceivably, supply-side developments such as increased fecundity or reduced infant and child mortality may shift households into an unwanted fertility situation, giving rise to the motivation for, and adoption of, conscious fertility control. Alternatively, a reduced demand for children may lead to excess fertility and deliberate regulation. Demand influences would be those stressed by adherents of the traditional economic theory of fertility. Yet another possibility, advanced especially by advocates of family planning policies, involves reduced costs of fertility control resulting from programmes increasing information about, and access to, fertility control techniques. Perhaps some combination of these three sets of factors may be operative.

Clearly, the best way to address this issue is by time-series analysis of changes in C_d, C_n, and the costs of fertility regulation. In the absence of time-series data, an alternative, although not wholly trustworthy, approach is to try to draw time-series inferences from the analysis of cross-section data. Two such cross-section approaches are noted below.

Cross-Section Analysis of Socio-Economic Groups

In figure 1 the progress of economic and social modernization is assumed to be correlated with time and corresponds to a rightward movement along the x-axis. Since in most societies there are at any given time both more and less highly modernized groups in the population, cross-section comparison of these groups may throw light on the factors that give rise to the emergence of fertility control over time.

An illustration of this approach is given in a recent paper by Tabbarah

(1978), where the population of Jordan is divided into three socio-economic groups on the basis of educational level. Table 1 summarizes Tabbarah's findings in terms of the concepts used here. Although for some magnitudes it was necessary for Tabbarah to use assumed values, the results are useful for illustration.

TABLE 1 VALUES OF FERTILITY VARIABLES FOR DIFFERENT EDUCATIONAL GROUPS, JORDAN, 1972

Educational level	Per cent controlling fertility	Cumulative fertility	B_n	Survival rate to age 20	C_n (3)x(4)	C_d
	(1)	(2)[a]	(3)[b]	(4)	(5)[c]	(6)[d]
Illiterate	21.1	6.0	8.0	0.72[f]	5.7	6.3
Primary and preparatory	44.3	4.0	9.0[e]	0.76	6.9	5.5
Secondary and over	70.8	2.6	10.0[e]	0.81[f]	8.1	4.3

Source: Tabbarah (1978), except column 2—El-Asad and Khalifa (1977).

[a] Average number of live births per ever-married woman aged 15-49.

[b] Average number of live births per ever-married woman if fertility were unregulated.

[c] Children surviving to age 20 per ever-married woman if fertility were unregulated.

[d] For males. The values for females are 6.2, 4.7, and 3.4.

[e] Assumed on basis of values for illiterates.

[f] Assumed on basis that average expectation of life for the three groups is 52.5 years.

Column 1 shows that the prevalence of fertility control rises markedly from the lowest to the highest socio-economic group. In the lowest group, fertility control is the minority condition; in the highest, it constitutes the majority situation. Actual fertility varies inversely with the prevalence of fertility control (column 2).

What factors are responsible for these differences in fertility control and observed fertility? Columns 3 and 4 show that both fecundity and infant and child mortality are more favourable among the more educated population. These supply-side differences mean that in the absence of fertility control the most highly educated group would have an average of 8.1 children surviving to adulthood. Column 6 shows that the more educated group wants fewer children than the least educated.[1] Taken together, the supply and demand factors for the most educated group imply that, on the average, this group is likely to produce more children than wanted if fertility is uncontrolled. Thus, both demand- and supply-side differences combine to motivate the typical household in this group to regulate fertility. In contrast, for the group with the least education, desired fertility exceeds potential output. For most households in this group, there is no motivation to control fertility, although for a few, for whom the averages in columns 5 and 6 are unrepresentative, there is some pressure to regulate fertility. In Tabbarah's analysis no data are presented on differences among the groups in perceived costs of fertility control. Hence, as far as the analysis goes, both demand and supply factors emerge as important in the adoption of fertility control. Applied to historical experience, this implies that in the past advances in education led, on the one hand, to a reduction in family-size desires and, on the other, to a rise in the potential output of surviving children. The unwanted children that resulted caused more-educated households to resort to deliberate fertility control. Whether this was further fostered by a decline in perceived costs of fertility control cannot be answered from the data given.

Cross-Section Analysis Using Fertility Control and Excess Fertility Status

The time-series scheme presented in figure 1f can be used in another way to classify populations at a point in time. Point h of the figure divides the population into those deliberately controlling fertility (those to the right of h) and those in a natural-fertility condition (those to the left). Within the natural-fertility group, one can distinguish between those in a deficit-fertility situation, with no motivation to control fertility (those to the left of m), and those (between m and h) in an excess fertility situation who, though motivated to control their fertility, are unable to do so because perceived costs of regulation outweigh the motivation. Further, among those regulating their fertility, one might distinguish between "imperfect regulators" (those with unwanted children), on the one hand, and "perfect regulators" (with no excess fertility), for whom fertility control costs are perceived as essentially negligible, on the other. Graphically, this last distinction could be shown in figure 1f if the C curve were extended downward to meet C_d on the right-hand side with the point of connexion labelled p. Those between h and p

[1] The values are lower in column 2 than in column 6 because the latter refers to completed family size, whereas column 2 reports the observed fertility of women aged 15-49, most of whom have not completed their childbearing.

would then be "imperfect controllers" and those at p, "perfect controllers."

This classification, suggested by the temporal analysis, can be applied cross-sectionally because typically a population at any given time is likely to embrace households in all of these groups. Cross-section comparison of these groups like that in table 1 would help to identify factors shifting the population into a fertility control situation.

This approach was used in a recent paper by Jejeebhoy (1978) with data from a 1965 fertility survey in Taiwan, a country that was at that time perhaps midway in the transition from high to low fertility. The analysis relates to continuously married women aged 35-44 (that is, women who had almost completed their childbearing) who were only married once. The distribution of these women according to the practice of deliberate fertility control is shown by the two subtotals in table 2, column 2. This is, in effect, a classification into those to the left and to the right of point h in figure 1f. Sixty per cent fall into the natural-fertility group; the remainder fall into the regulating group. Subdivision of the natural-fertility group according to fertility status shows that somewhat less than half of those who had never used deliberate fertility control were in an excess-fertility (3) situation. The rest—comprising somewhat over a half of the natural-fertility group and about a third of the total sample population—had either fewer children than they wanted (1) or just the right number (2) and thus did not need to control fertility.

Among those practising deliberate regulation, over one-half already had more children than they wanted (6). Most of the remainder had actual fertility equalling that desired (5). A small fraction was in the seemingly anomalous situation of having practised fertility control but having fewer children than desired (4). Most of these women, however, were no longer regulating their fertility. Column 3 of table 2 shows that within the "natural-fertility" and the "regulator" categories, the excess-fertility women have lower educational levels than the other women. Also note that the regulators have more schooling than the natural-fertility women. This is true within each fertility status category as well as in the aggregate.

What are the circumstances that induce some households to control their fertility? Figure 2 and table 3 present the relevant evidence. The C_n curve of figure 2 shows that natural fertility is higher for the regulating groups. This reflects both greater fecundity and better mortality experience (table 3, columns 2 and 3). Note that the curve rises and levels off in much the way postulated in figure 1f. Desired family size, however, as shown by the C_d curve in figure 2, varies rather little across groups. Costs of fertility control (table 3, column 6) are markedly lower for the regulating group. Observed fertility, the C curve, is the same as C_n for the natural-fertility group, falls between C_n and C_d for group 6, and equals desired fertility for group 5.

The implication of the data is that those who regulate their fertility do so because of differential supply-side pressures both higher fecundity and lower infant and child mortality—and lower perceived costs of fertility control.

TABLE 2 PRACTICE OF DELIBERATE FERTILITY CONTROL[a] AND FERTILITY STATUS CATEGORIES AND MEAN EDUCATION OF CONTINUOUSLY MARRIED WOMEN AGED 35-44, TAIWAN, 1965

Fertility control and fertility status categories	Number of cases	Per cent distribution	Wife's mean years of schooling
	(1)	(2)	(3)
Natural fertility			
1. Deficit	138	10.6	2.0
2. Actual= desired	289	22.2	2.1
3. Excess	352	27.1	1.6
Subtotal	779	59.9	1.8
Regulators			
4. Deficit	53	4.1	4.5
5. Actual= desired	188	14.4	4.1
6. Excess	281	21.6	3.7
Subtotal	522	40.1	3.9
TOTAL	1,301	100.1	2.7

Source: Jejeebhoy 1978, table 1.

[a] The variable used in distinguishing between the regulators and the non-regulators was a question on ever-use of deliberate regulation: if a respondent claimed to have ever used abortion, sterilization of husband or wife, abstinence or rhythm, the IUD, oral contraceptives, condoms, or other conventional methods, she was considered to be a regulator. Although for the regulators $C_n > C$ in the aggregate, in individual cases it may not be true.

Fertility Status Legend

1. $C_n = C < C_d$: deficit fertility
2. $C_n = C = C_d$: actual= desired fertility
3. $C_n = C > C_d$: excess fertility
4. $C_n > C < C_d$: deficit fertility
5. $C_n > C = C_d$: actual= desired fertility
6. $C_n > C > C_d$: excess fertility

TABLE 3 VALUES OF FERTILITY VARIABLES FOR WOMEN GROUPED BY PRACTICE OF DELIBERATE FERTILITY CONTROL AND EXCESS FERTILITY STATUS, TAIWAN, 1965

Group	C, mean number of surviving children	Mean second birth interval, months	Mean infant and child mortality (per cent of children ever born)	C_n, mean potential output of surviving children	C_d, mean desired family size	Index of costs associated with fertility regulation
	(1)[a]	(2)[b]	(3)	(4)[a,c]	(5)[a,d]	(6)[c]
Natural fertility						
1	2.4	39	16	2.4	4.4	3.4
2	4.6	35	10	4.6	4.6	3.3
3	6.4	29	10	6.4	4.2	3.1
Subtotal	5.1	33	11	5.1	4.4	3.2
Regulators						
5	4.6	27	8	6.6	4.6	1.9
6	6.0	28	7	6.9	3.9	1.8
Subtotal	5.2	28	8	6.7	4.2	1.9
TOTAL	5.1	31	10	5.8	4.3	2.7

Source: Jejeebhoy 1978, tables 2,3.

Note: For definitions of groups, see table 2. Group 4 was excluded because of the small number of cases.

[a] Standardized for duration of marriage.

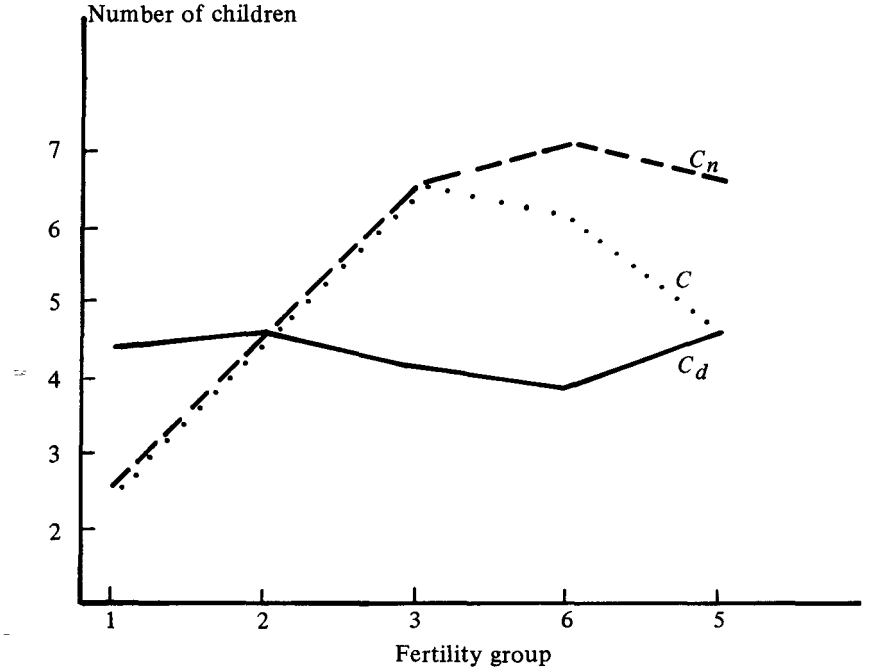
[b] For regulators, excludes a small number of women who used contraception prior to second birth.

[c] For natural fertility groups, column 4 equals column 1, on the assumption that all women have completed their childbearing. For regulated groups, the following procedure was used. For women in the natural fertility group 2, children ever born was regressed on second birth interval. This equation was then assumed to hold for women in the regulating group, and children ever born if no regulation were used was estimated for these women by substituting in the regression equation their actual figures on second birth interval. Potential output was obtained by applying their observed infant and child mortality experiences to the regression estimate of children ever born.

[d] "If you could start again, how many children altogether would you like to have?"

[e] The index ranges from minimum cost value of 0 to maximum cost of 5. A respondent who "greatly" approves of fertility regulation and knows nine methods of fertility regulation is assigned a value of 0; one who "greatly" disapproves and knows no methods, a value of 5.

FIGURE 2 VALUES OF FERTILITY VARIABLES ESTIMATED FROM CROSS-SECTION DATA, TAIWAN, 1965



Source: table 3.

(This conclusion is further supported in the original paper by use of the statistical technique of discriminant analysis.) As regards temporal changes, the results suggest that over time increased fecundity and reduced infant and child mortality have pushed a number of households in Taiwan into a potential excess-fertility situation, thereby creating a motivation to control fertility, and that reductions in fertility control costs have further fostered the adoption of contraceptive methods. These conclusions, like those suggested by Tabbarah's analysis, however, need to be supplemented by study of changes over time before one can place full confidence in them.[2] The purpose of this presentation is to illustrate how, in the absence of adequate time-series data, cross-sectional analysis may be used to implement the framework described here.

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[2] Particularly as regards the Jejeebhoy scheme, there is likely to be a systematic bias in the distribution of population. For example, other things being equal, wives who are genetically more fecund and therefore more prone to excess fertility have a higher probability of falling into groups 5 and 6 than into 1,2, and 3, thereby making for a higher observed $\dot{C}_n$ in 5 and 6 than in 1, 2, and 3. If this were the sole source of the difference in C_n between the groups, it would be a mistake to assume this genetically determined difference to be relevant to time-series changes. However, whether or not this classification scheme provides a valid basis for time-series inference, it is still useful for explaining observed fertility behaviour. This is because it separates those in the population for whom a natural fertility model is relevant (groups 1, 2, and 3) from those for whom a decision-making model is appropriate (groups 5 and 6). (See Easterlin, Pollak, and Wachter 1980).

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CHAPTER 7. MORTALITY DIFFERENTIALS IN THE COUNTRIES OF THE ECWA REGION*

Population Division of ECWA

Introduction

Objectives and Methods

The purpose of this paper is two-fold: to study the characteristics of mortality in the ECWA region, with the primary focus on the differentials that affect or accompany mortality; and to direct the reader's attention to the need for further research and in-depth examination in this field as well as the need to transcend its purely demographic framework and link it directly or indirectly to the development plans and activities of the developing countries. The study of demographic variables, and particularly of mortality trends and differentials, can provide policy-makers and planners with an abundance of facts about the societies whose living standards they seek to improve. The findings of this study represent but a small part of the effort required for a comprehensive investigation of mortality.

This study examines three aspects of mortality: (1) general differentials between the various countries of the region and between different sections of the same country; (2) a number of specific differentials, such as differentials by sex and by age and some pattern differentials; and (3) socio-economic differentials.

It has been necessary to limit the study to these three aspects of the subject, primarily because of the quality and degree of comprehensiveness of the available data. These factors are discussed below.

The Data

Civil or vital registration records would be an ideal source of data on mortality if they were comprehensive and accurate. Unfortunately, however, these qualities are often lacking (UNESOB 1972). One of the many causes of this problem is the weakness of the organizations responsible for vital registration, which suffer from a shortage of human and material resources, deficiencies in the rules and regulations governing registration, and the poor statistical awarness of much of the citizenry. In fact, vital registration systems

* This paper was translated into English from Arabic by ECWA.

are non-existent in a number of ECWA countries, especially among the Gulf states.[1] This has made it extremely difficult to study properly the facts of mortality and to examine its effects.

For this reason the present study, whose data are extracted from vital registration records, is limited to the expression of general mortality differentials. It is not possible to obtain other differentials using these data sources for the simple reason that they lack the necessary classifications and details. The weakness of this data base and the high cost of establishing sophisticated vital registration systems have contributed to the use of indirect methods for deriving the facts, patterns and differentials of mortality in the developing countries. Because of recent improvements in these methods, they now not only provide a substitute for vital registration records in developing countries, but also serve to check the accuracy of these countries' vital registration data.

Indirect methods were used in this study at two stages. In the first stage, they were used to derive a number of indicators that refer to the position of mortality levels with regard to the model life tables compiled for that purpose. This was done with the help of data obtained from population censuses and surveys, particularly data on children ever born and children still alive. In the second stage, indirect methods using a number of mathematical tools were employed to obtain mortality indicators most consistent with the data of the model life tables referred to above (Brass 1978).

The present study has also relied to a great extent on local, regional and international periodicals and other publications specialized in this field.

Indices

This study employs three basic indices to express mortality levels and variables: (1) crude death rate (CDR); (2) expectation of life at birth (e_0^0); and (3) infant mortality rate (IMR).

The crude death rate, which is the simplest and least complicated measure of mortality, represents the annual number of deaths per thousand in the population at mid-year. As this rate is affected by other demographic variables —in particular age structure—it may not be a useful tool for the comparison of mortality levels across communities with different demographic structures. Moreover, when it is derived from unreliable data, as is the case in the developing countries, it is usually biased downwards and is not, therefore, a true expression of reality. Nevertheless, the CDR is an acceptable tool for describing mortality trends over definite periods of time within a single country and for describing the differentials between various parts of the same country (United Nations, Department of Economic and Social Affairs 1962, p. 13).

[1] Now that the authorities responsible are becoming more aware of the importance of vital registration systems and the significance of the reliable data that may be extracted from them, many countries in the region have begun to develop or create comprehensive vital registration systems. Evidence of this trend is provided by the increase in requests for assistance in this area addressed to the UN and its specialized agencies.

Expectation of life at birth is a highly accurate measure of mortality because it is not directly affected by age structure. It represents the average number of years that a group of babies born during a specific time period are expected to survive under specified probabilities of death at specific ages. These probabilities are often derived from age-specific death rates. Figures for expectation of life at birth require not only detailed and comprehensive data on mortality, but also reliable data on the age distribution of the population. Specific mortality rates must be extracted before expectation of life at birth can be derived. Accordingly, most of the data on expectation of life at birth in this study have been obtained by indirect methods.

The infant mortality rate (IMR) is defined as the average number of deaths per thousand for infants one year old and under who were born alive during a specific time period (generally, one year). This mortality rate is especially significant in view of its sensitivity to the social and economic conditions prevailing in the community. In addition to its demographic significance, it reflects many aspects of the community's standard of living. In most cases, however, the data needed to determine IMR cannot be obtained directly in the countries of the region, and indirect methods must be used.

Geographic Differentials

General Differentials

As noted earlier, official data generated by direct measurement techniques are of limited value. For instance, the 1976 *Demographic Yearbook* of the United Nations lists crude death rates and infant mortality rates for a number of ECWA countries, yet only the figures for Egypt receive the label "C," which indicates reliable coverage. Figures for the other countries are either labeled "U" (limited reliability) or derived by indirect methods. In preparing this study, the Population Division of ECWA has consulted a number of official sources to compile data based on direct measurements for the ECWA countries. These data are presented in table 1.

Partly for purposes of comparison, we have prepared estimates of mortality levels in ECWA countries using the indirect methods developed by Brass (1978) and described above. The results are shown in table 2. Comparison of these estimates with the data presented in table 1 reveals some large differences. For instance, compared with the directly measured data, the estimates for Iraq in table 3 show a death rate that is 1.65 times higher, as well as a higher infant mortality rate. Yet the indirect methods also produce a higher expectation of life at birth. Other discrepancies can be found. According to direct measurement techniques, the CDR in Democratic Yemen in 1973 was 23.1. Our estimates put it at 10.0. According to table 1 the CDR in Kuwait in 1975 was only 6.1, whereas our estimates place it at 23.1.

TABLE 1 CRUDE DEATH RATE, INFANT MORTALITY RATE, AND LIFE EXPECTANCY AT BIRTH IN THE ECWA COUNTRIES

Country	Year	CDR (per thousand)	IMR (per thousand)	e_0^0 (year)[a]
Bahrain	1975	7.0	63.0	65.3
Democratic Yemen	1973	23.1	190.7	41.5
Egypt	1976	12.4	100.4	53.7
Iraq	1975	10.1	85.8	53.9
Jordan	1976	15.0	89.0	54.0
Kuwait[b]	1975	6.1	43.4	70.0
Lebanon	1975	8.0	65.0[c]	64.2
Oman	1975	19.0	138.0[c]	46.0
Palestine[d]	–	–	–	–
Qatar	1975	20.0	–	50.0
Saudi Arabia	1972	20.2	–	45.3
Syrian Arab Republic	1975	15.1	112.5	56.8
United Arab Emirates	1973	19.0	138.0	47.0
Yemen	1975	25.0	210.0	38.3

Source: United Nations, ECWA Population Division 1978

[a] For both sexes.

[b] Kuwaiti citizens only.

[c] The data for Lebanon are for 1970; those for Oman are for 1971.

[d] No direct data available.

The purpose of this exercise has been to illustrate that it is difficult to determine precisely the level of mortality in any ECWA country. In view of this constraint, comparisons between countries or even comparisons over time for the same country must be interpreted with considerable caution.

Table 3 contains one such analysis, depicting the correlation between the expectation of life at birth for females and per capita gross national product, doctors per 100,000 population, and the per cent urban. Of course, these variables themselves are subject to definitional differences between countries, but we hope the analysis will show the extent to which differences in mortality level fluctuate according to social, economic, and cultural conditions. It may be seen in table 3 that mortality levels correlate most highly with the average number of doctors per 100,000 population, followed by per capita GNP and per cent urban, in that order.

TABLE 2 MORTALITY LEVELS IN THE ECWA COUNTRIES[a] BASED ON INDIRECT METHODS

Country	Year	CDR	IMR[b]			e_0^b		
			Males		Females	Males		Females
Bahrain[c]	1971	18.1	–	96.9	–	–	60.7	–
Democratic Yemen	1973	10.0	201.5	–	179.4	40.6	–	42.5
Iraq	1974-75	16.7	109.9	–	103.9	57.2	–	59.3
Jordan[d]	1976	19.6	–	80.5	–	–	64.6	–
Kuwait[e]	1975	23.1	49.6	–	38.4	70.7	–	76.1
Lebanon	1970	–	68.6	–	61.4	62.7	–	66.0
Oman	1975	13.4	–	147.8	–	–	49.5	–
Palestine[f]	1966	–	113.9	–	120.9	56.3	–	55.0
Syrian Arab Republic	1976	19.4	–	82.4	–	–	64.1	–
United Arab Emirates	1975	20.4	–	71.6	–	–	66.6	–
Yemen	1975	–	–	–	–	37.6	–	39.0

Source: Estimates made using the South family of model life tables. Figures for Lebanon and Yemen are from Courbage and Fargues (1974).

[a] Data were not available at the time of the study for Egypt, Qatar, and Saudi Arabia.

[b] Data for Bahrain, Jordan, Oman, the Syrian Arab Republic and the U.A.E. are for both sexes.

[c] Bahraini nationals only.

[d] East Bank only.

[e] Kuwaiti nationals only.

[f] Palestinians living in the occupied territories before 1967.

TABLE 3 SELECTED SOCIAL AND ECONOMIC INDICATORS AND DEGREE OF CORRELATION WITH FEMALE EXPECTATION OF LIFE AT BIRTH FOR SELECTED ECWA COUNTRIES, 1974-1975

Country	Female e_0^0 (year)	Per capita GNP ($)	Doctors per 100,000 population	Per cent of population urban
Democratic Yemen	48.6	119	9	35.31
Iraq	56.9	1,222	22	63.70
Jordan	57.4	414	27	55.28
Kuwait	70.8	11,716	109	88.44
Lebanon	67.2	1,013	84	64.98
Saudi Arabia	49.1	4,281	27	49.43
Syrian Arab Republic	58.3	743	33	46.19
Yemen	48.6	172	6	8.90
Correlations[a]		+ 0.57	+ 0.93	+ 0.83

Sources: United Nations, Population Division 1975 ; United Nations 1976 ; United Nations, ECWA 1978.

[a] Linear correlations.

TABLE 4 TRENDS IN THE CDR INDEX IN SELECTED ECWA COUNTRIES, 1950-1975 (1950 = 100.0)

Country	1950	1955	1960	1965	1970	1975
Democratic Yemen	100.0	92.5	80.9	70.2	74.6	58.0
Egypt	100.0	92.1	83.3	73.6	64.8	57.4
Iraq	100.0	95.5	85.5	76.8	66.4	59.1
Jordan	100.0	100.0	90.5	79.5	70.0	61.0
Kuwait	100.0	93.8	80.4	66.1	47.3	40.2
Lebanon	100.0	81.3	71.1	63.1	52.9	47.1
Saudi Arabia	100.0	92.5	81.8	71.1	63.3	57.1
Syrian Arab Republic	100.0	87.9	77.6	73.4	72.0	62.1
Yemen	100.0	92.5	80.9	70.2	64.6	58.0

Source: United Nations, Population Division 1975 .

Tables 4 and 5 depict mortality trends since 1950 for selected countries in the ECWA region. Again, care must be taken in interpreting these data, some of which are of limited reliability. However, the overall pattern is one of large decreases–between 40 and 60 per cent–in crude death rates, and increases in life expectancy of at least 20 per cent.

TABLE 5 TRENDS OF THE EXPECTATION OF LIFE AT BIRTH, INDEX IN SELECTED ECWA COUNTRIES, 1950-1975 (1950 = 100.0)

Country	1950	1955	1960	1965	1970	1975
Democratic Yemen	100.0	107.2	114.4	121.9	129.1	136.6
Egypt	100.0	105.8	112.5	117.7	123.6	129.5
Iraq	100.0	105.9	111.7	117.6	123.4	129.3
Jordan	100.0	105.8	111.6	117.4	123.1	128.9
Kuwait	100.0	104.5	109.0	115.4	120.4	123.3
Lebanon	100.0	104.6	108.7	112.8	117.0	120.7
Saudi Arabia	100.0	107.2	114.4	121.9	130.5	137.8
Syrian Arab Republic	100.0	105.7	111.4	117.1	123.3	129.0
Yemen	100.0	107.2	114.4	121.9	129.1	136.6

Source: United Nations, Population Division 1975 .

Urban-Rural Differences

In addition to the problems posed by data that are to varying degrees deficient, the study of urban-rural mortality differentials is compounded by the absence of a clear, definitive classification of the region's population according to rural or urban residence. Determining the difference between the two is highly problematic even in more developed countries because of the variety of demographic, social, and economic criteria in use. Most of the ECWA countries have settled on two basic criteria: the size of the population and the administrative status of the agglomeration. Some countries, such as the Syrian Arab Republic, use a combination of the two. However, there has been considerable variation in the application of these criteria in some ECWA countries. This has made comparisons more difficult, even within a single country. The agglomeration that is classified as rural due to the size of its population or its administrative status becomes urban once its population passes a given threshold or when its administrative status is redefined.

At various regional and national meetings, including almost every meeting held by ECWA, the countries of the region have emphasized the need to establish precise, standardized definitions to distinguish between urban and rural agglomerations. The advantages of standardization are obvious. It may be advisable to standardize definitions at the national level before proceeding to the regional level, for in the ECWA countries the definitions that prevail—despite their lack of congruence with reality—are applied in most cases only by statistics departments.

The most obvious expectation regarding urban-rural differentials is that rural mortality should be higher than urban mortality, given the difference in living standards between the two types of communities, especially in the developing countries, where social and health services tend to be concentrated in the towns. However, this impression has not yet been established conclusively; in fact in some instances urban mortality levels are found to be higher than their rural counterparts (Churchill 1972).

In the ECWA region, direct and indirect data generally indicate that rural mortality levels are markedly higher than their urban counterparts. For example, in Iraq, the CDR in the rural areas, as recorded in table 6, exceeds the CDR in the urban areas by about 41 per cent, and the rural IMR exceeds the urban IMR by about 37 per cent. Moreover, the findings in table 7 indicate that urban-rural mortality levels show differentials of 31 per cent for IMR and about 8 per cent for e_0^0. These data were derived indirectly from figures for children ever born and children still alive taken from the 1976 sample census of the Syrian population.

TABLE 6 CRUDE DEATH RATE, INFANT MORTALITY RATES AND STANDARD ERROR IN THE URBAN AND RURAL REGIONS OF IRAQ (mean for the years 1973-1974 and 1974-1975)

Rate (per thousand)	Mean		Standard error	
	Urban	Rural	Urban	Rural
CDR	9.1	12.8	0.27	0.37
IMR	76.3	104.5	4.10	4.81

Source: Iraq 1975 .

TABLE 7 INFANT MORTALITY RATE AND EXPECTATION OF LIFE AT BIRTH IN THE URBAN AND RURAL REGIONS OF THE SYRIAN ARAB REPUBLIC, 1976

Rate	Urban	Rural
IMR (per thousand)	72.6	95.0
e_0^0 (year)	66.4	61.2

Source: Syrian Arab Republic 1977.

Demographic and Socio-Economic Differentials

In addition to varying between countries, mortality levels may vary greatly within a given population, according to a person's demographic, social, and economic characteristics. In this section, we examine the available data in an effort to determine the magnitude of some of the major mortality differentials that exist within the region's countries. The first differentials we examine are those by age and sex.

Differentials by Age and by Sex

The pattern of mortality by age is uniform in those countries for which data are available, taking the shape of the letter "U." That is, there are high mortality rates during the first years of life, followed by very low but gradually increasing rates from ages 5 through 30 or 40 years, and then sharply increased rates in old age. This pattern may be seen in table 8, which also shows the considerable variation in mortality levels between various countries. However, comparisons between Egypt and the other countries are not very meaningful, as the Egyptian data are derived from death registration figures, while the data for Lebanon, Bahrain, and Yemen are estimates based on model life tables and stable population analysis.

Table 8 also illustrates the considerable mortality differential by sex in the region. Except for ages under 5 in Egypt and ages 1 through 19 in Yemen, males have considerably higher mortality than females. This differential is lowest in Yemen and slightly higher in Lebanon than in Bahrain. In all three countries, these differentials reach their peak somewhere between ages 45 and 59, then decline steadily. This pattern is absent in Egypt, but again, because of the differences in data sources the Egyptian data are not really comparable.

Socio-Economic Differentials

The study of mortality differentials by social and economic variables is hampered by the widespread absence of data. Even when adequate mortality data are available, these generally cannot be cross-tabulated against the person's social and economic characteristics. There are, of course, exceptions to this statement, such as the vital characteristics survey of Iraq and the survey of child and infant mortality in Damascus, and these provide us with some very suggestive findings. Unfortunately, it has not been possible to control for differences in age composition that may exist between the various categories. Nor has it been possible to control for a number of other variables that may be closely related to the mortality variables under consideration. This greatly limits the value of the comparisons we have made, and caution should be exercised in interpreting the results.

The data in table 9, concerning children ever born and number of surviving children, have been used to calculate survival rates by the educational

TABLE 8 AGE-SEX-SPECIFIC MORTALITY RATES FOR EGYPT, LEBANON, BAHRAIN, AND YEMEN AT SELECTED DATES

Age	Egypt 1960		Egypt 1965		Lebanon 1970		Bahrain 1971		Yemen 1975	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Under 1 year	140.8	140.9	136.9	140.3	80.64	71.64	103.57	91.87	201.48	179.39
1-4	34.3	37.1	24.6	30.4	6.07	5.90	10.91	10.04	40.99	41.30
5-9	2.9	2.1	2.1	1.7	1.05	0.87	1.79	1.51	6.63	7.00
10-14	2.2	1.7	1.8	1.4	0.82	0.61	1.23	1.02	3.41	3.94
15-19	2.4	1.6	1.9	1.4	1.19	0.89	1.83	1.54	5.19	5.60
20-24	3.0	2.0	2.4	1.7	1.70	1.24	2.77	2.06	7.92	7.05
25-29	4.0	2.6	3.3	2.3	1.82	1.46	2.80	2.39	7.89	7.71
30-34	5.3	3.5	4.6	3.1	2.29	1.71	3.40	2.62	8.25	8.03
35-39	7.0	4.7	6.1	4.3	2.73	2.04	3.95	3.04	9.17	8.65
40-44	9.3	6.5	8.4	6.9	3.91	2.71	5.36	3.78	11.27	9.21
45-49	12.6	8.7	11.6	9.5	5.64	3.57	7.30	4.74	13.79	10.21
50-54	17.1	12.6	16.0	13.0	8.70	5.36	10.71	6.86	18.31	13.63
55-59	23.8	17.9	23.2	18.0	13.15	7.77	15.70	9.84	25.17	19.01
60-64	32.9	25.9	32.4	25.1	20.17	12.91	23.91	16.26	37.65	31.15
65-69	45.6	33.0	44.3	30.9	31.47	22.32	36.90	27.48	56.33	49.52
70-74	66.6	46.7	64.5	43.8	53.52	41.55	61.59	49.59	89.40	82.20
75-79	106.5	71.4	103.6	67.0	93.74	76.61	104.62	88.10	141.08	132.00
80 and over	216.1	135.3	185.7	117.7	185.58	166.48	199.50	180.91	238.82	231.22

Source: Figures for Egypt are taken from Valaoras (1972), table 13; the data for Lebanon, Bahrain, and Yemen were derived indirectly using model life tables and stable population figures (South family).

status of the mother. In general, the greater the woman's education the lower her fertility and the higher the survival rates of her children. However, there is no control for length of exposure to the risk of death. Thus the findings may have been produced by differences in age at childbearing or the age composition of the mothers themselves. Estimates of mortality in Iraq, based on model life tables and data collected in a sample survey, show infant mortality rates among the illiterate to be almost twice as high as among the literate and life expectancy at birth to be about 10 years shorter. These data are shown in table 10.

TABLE 9 MEAN CHILDREN EVER BORN, MEAN CHILDREN STILL ALIVE AND SURVIVAL RATES BY EDUCATIONAL LEVEL OF MOTHER IN DAMASCUS, 1973

Educational level	Children ever born	Children still alive	Survival rates (per cent)
Illiterate	5.60	4.99	89.11
Barely literate	4.25	3.68	86.59
Preparatory	4.05	3.76	92.84
Intermediate	3.09	2.93	94.82
Secondary	2.49	2.33	93.57
University	2.49	2.44	97.99
TOTAL	4.58	4.10	89.52

Source: Syrian Arab Republic 1976, tables 17 and 18.

TABLE 10 INFANT MORTALITY RATE AND EXPECTATION OF LIFE AT BIRTH FOR LITERATE AND ILLITERATE FEMALES IN IRAQ FOR THE YEAR 1974-1975

Status	IMR (per thousand)	e_0^o (year)
Literate	59.3	68.9
Illiterate	117.8	58.1

Source: Extracted from Iraq (1975), using model life tables.

Relying primarily on educational level, Shorter (1978) used survey data collected in Damascus to derive indicators of mortality by social class (table 11). Regardless of the indicator used, there is a negative association between social class and mortality.

TABLE 11 MORTALITY INDICATORS BY SOCIAL CLASS FOR DAMASCUS, 1976

Class	e_0^0 (year)	IMR (in thousands)	CDR (in thousands)
Lower	62.6	83.7	10.7
Middle	65.4	72.8	6.7
Upper	69.8	55.5	4.7
Elite	75.5	34.4	2.7
Damascus	65.9	70.7	6.6

Source: Shorter 1978 .

Another indicator of socio-economic status is the father's occupation. The data in table 12 indicate that the survival rate is highest for children whose father is in administrative work and lowest for those whose father is employed as a service worker or in agriculture or hunting. Again, the absence of a control for duration of exposure to the risk of dying makes interpretation difficult.

TABLE 12 MEAN CHILDREN EVER BORN, MEAN CHILDREN STILL ALIVE AND SURVIVAL RATES BY OCCUPATION OF FATHER FOR DAMASCUS, 1973

Occupation	Children ever born	Children still alive	Survival rates (per cent)
Technical and professional	3.46	3.28	94.80
Managerial	3.92	3.84	97.96
Clerical	4.04	3.73	92.33
Commercial	4.88	4.47	91.60
Service workers	5.01	4.45	88.82
Agriculture and hunting	4.97	4.42	88.93
Craftsmen	4.89	4.44	90.80
Unemployed	5.92	5.38	90.88

Source: Syrian Arab Republic 1976, tables 17 and 18.

Conclusions

It is evident that the shortage and inaccuracy of available data on mortality have been the principal reasons for the inability to study mortality differentials properly. It is therefore essential to increase the number of surveys devoted to mortality and related statistics while at the same time improving and establishing vital registration systems. Moreover, it may be necessary to resort to indirect methods in order to fill the gaps caused by the lack of reliable data and to provide checks on the data that are available.

The mortality differentials among the ECWA countries or among different parts of the same country appear to be related to differences in social and economic levels. For this reason, it is essential to place the analysis of mortality and the formulation of objectives that would lower the mortality level within a comprehensive social and economic framework for each population.

Obviously, a great deal of research remains to be done. This paper has been only a first step, identifying some of the factors that appear to be related to mortality levels. It is now necessary to investigate these associations more comprehensively and to identify the causal agents involved. Multi-variate analysis is essential for this purpose. However, a number of technical and political problems must also be solved in order to achieve these ends completely.

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CHAPTER 8. MORTALITY, MORBIDITY, AND DEVELOPMENT

*Samuel H. Preston**

Mortality decline has been an integral component of the process of socio-economic development and modernization. In part, its role in modernization is definitional and results from its pre-eminent position as a social indicator; no country would qualify as modern in the standard sense of the term if it had pre-modern death rates. But there are also direct and powerful causal links between mortality and other elements of the modernization process that place mortality at a prominent node in the complex web of social and economic interrelations.

Some of the important connecting lines run from mortality levels to other variables. A decline in death rates contributes to the return to many forms of investment that are necessary to achieve high levels of economic production. Most obvious among these are investments in one's personal economic future such as schooling, training, migration, and changing jobs; the longer the period over which one expects the benefits to accrue, the higher the expected value of such investments. Investments in improvements in other factors of production such as irrigation or land clearance are, in general, similarly encouraged. Quite apart from mortality rates, levels of morbidity have a direct and obvious relationship with labour productivity (Weisbrod et al. 1973).

Perhaps more important than any of these direct links is the effect of mortality and morbidity levels on general attitudes towards the future and towards one's ability to influence it. A sense of personal control over the environment is one of the strongest components of "modern" attitudes (Sack 1974), and a reduction in the frequency of death and disease, particularly if it is obviously achieved by human effort, cannot help but promote such an attitude (Mushkin 1964; Malenbaum 1970).

From the purely macro-economic point of view, it seems clear that the major consequence of mortality change is in its effects on population growth rates. There is now abundant evidence that mortality decline should not be expected to precipitate an equally large reduction in fertility for at least several generations (Preston 1978), so population growth accelerates for an extended period following the decline. The effects of such a growth acceleration on economic processes will vary with a huge number of initial

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conditions. In densely populated agrarian areas with few opportunities for intensified land use, the balance of advantages and disadvantages is likely to be less favourable than in sparsely populated industrialized countries where scale economies are not exhausted. Because of less adverse age-distributional effects and the investment incentives noted above, mortality decline is likely to have more favourable economic effects than would an equivalent growth acceleration the source of which was fertility change.[1] Analysts often discuss the economic effects of changes in population growth rates but fail to distinguish the source of the change. Historically, of course, the great 20th century acceleration of growth rates has resulted from change in mortality, not fertility.

The subject of economic effects of demographic change is enormously complex (for a thorough state-of-the-art report, see Cassen 1976). In this paper the focus instead will be on mortality as a variable dependent on other components of modernization. The aim is to summarize what is known about determinants of mortality levels, and particularly to sort out the effects of general socio-economic development from those of specific health interventions.

Is Development the Best Pill?

The controversy that boiled over at Bucharest regarding the relative efficacy of general development versus programme intervention as aids to fertility decline has been simmering in the case of mortality. However, in this instance both sides can buttress their arguments by citing a record of widespread achievement in mortality reduction, whereas the fertility arguments rest more precariously on guesses about the future, which allow more scope for ideology and preconception. Nevertheless, the record of mortality decline cannot be interpreted unambigously, and the factors involved in the past are not necessarily the ones that should be promoted for the future.

A good deal of the confusion that exists concerning determinants of population's mortality level is produced by a failure to come to grips with its multivariate nature. As we will attempt to document, there is little question that both specific health interventions and general development levels are extremely important determinants of mortality levels. Let us suppose for simplicity's sake that a population's mortality level, M_i, is a simple linear function of a basket of health inputs, I, and of per capita income levels, Y:

$$M_i = a + b_1 . I_i + b_2 . Y_i$$

If the parameters b_1 and b_2 are stable through time and space, it is obviously a straightforward matter to attribute variation in mortality to

[1] Compare, for example, the results of Coale and Hoover's (1958) simulation of the economic effects of fertility change with Barlow's (1968) application of essentially the same model to mortality decline in Sri Lanka.

variation in the determining factors. If income levels have changed by ΔY and health inputs by ΔI, the amount of change in mortality levels that is attributable to changes in income is $b_2 \cdot \Delta Y$, and the amount atttributable to health inputs is $b_1 \cdot \Delta I$. However, the relative importance of the two factors may be very different from one country to another or in different eras. Furthermore, the major factor inducing mortality declines may be a very minor factor in explaining differentials in mortality among nations, regions, or groups at a moment in time. No exercise that attributes mortality variation to the two factors should be used to conclude that one "dominates" the other. Which one dominates in a particular comparison will depend simply on the variation in Y relative to the variation in I, and the relative variation can be quite different from one comparison to the next. For policy purposes the critical issue is how cheaply a certain reduction in mortality can be made when produced by one source as opposed to the other.

The Role of Development Levels versus Health Programmes and Technology in Mortality Trends

Disentangling the relative importance of these two sets of factors in mortality trends is conceptually difficult. Typically, countries or groups with higher living standards create for themselves better health conditions: superior access to medical personnel, better sanitary and housing standards, better nutrition, and so on. For purposes of this review, we shall treat the factors that follow more or less automatically from higher income as endogenous to income and not as a separate factor of health input. Health input factors will be identified as those exogenous to income levels, introduced specifically for purposes of health improvement, and capable of modifying mortality levels at a particular standard of living.

There is fairly convincing evidence that the role of the two sets of factors in mortality decline has been quite different in different eras. McKeown (1976) has shown that specific health inputs were a relatively minor factor in mortality decline in England and Wales during the nineteenth century. So little was known medically about the "causes of death" responsible for most of the mortality decline that health "interventions" could not have been a factor. One exception is improvements in water supply and sewage disposal, which were often undertaken for esthetic or health reasons and probably had an important impact on diarrheal diseases (Preston and van de Walle 1978). However, the impact of these measures would have been felt primarily among the minority who lived in urban areas. In effect, McKeown argues that the b_1 term, the coefficient of health inputs, was so low in the eighteenth and nineteenth centuries that the level of health inputs was basically immaterial in respect to mortality levels. The few examples of effective preventive or curative measures were not widely enough deployed to make a difference. Whatever mortality decline occurred must have been attributable to changes in living standards, primarily, he argues, to nutritional intake. McKeown's interpretation receives support from Arriaca and Davis (1969),

who show that through the nineteenth century and up to the 1930s, the rate of improvement in national mortality levels in Latin America was closely linked to a nation's level of economic development.

By the 1940s, however, the situation had changed markedly. Within the half century after the ascendancy of the germ theory of disease, a wide variety of technical improvements had vastly enhanced the effectiveness of health measures. These included the development of antibiotics and sulfa drugs, vaccines to prevent the contraction of certain diseases, sterilization and isolation procedures to prevent the spread of infection, and, probably most important on a world-wide basis, insecticides to attack the main vectors spreading parasitic diseases in tropical areas. The period from the 1940s through the 1960s witnessed an extraordinarily widespread deployment of these relatively new techniques, and one would expect the health factors to take considerably more responsibility for the mortality decline that occurred during this period.

Preston (1975, 1979) provides some empirical support for this position. Basically, he uses cross-national data to estimate the value of b_2, the effect of standard of living on mortality, and then shows that the observed gains in living standards were too small to account for more than half of the actual gains in mortality that occurred between (around) 1940 and (around) 1970. Adult literacy, calorie availability, and national income per capita were the standard-of-living variables explicitly introduced. The most important health-technology factors suggested to account for the rapid gain in life expectancy during the period were anti-malarial campaigns; immunization against tuberculosis, smallpox, and certain other diseases; and antibiotics used in treating infectious and respiratory diseases. The fact that decadal mortality improvements in developing countries were much more rapid during this period than in earlier ones is consistent with the interpretation that new health input factors were supplementing in an important way the gains that regularly accompanied socio-economic development.

During the last decade, there have been indications that developmental factors may be again assuming a dominant role in mortality trends. The evidence for this assertion is quite weak and consists mainly of some instances of apparent deceleration in the rate of mortality gain; these have been interpreted as demonstrating that economic factors are offering increased "resistance" to further declines in mortality (Gwatkin 1978; Hansluwka 1975). The notion is that health interventions to reduce mortality have reached a stage of diminishing returns: in Bourgeois-Pichat's colourful terminology, the "soft rock" in mortality has been removed and the "hard rock" remains (United Nations 1963).[2] This hard rock consists of the factors associated with underdevelopment: poor nutrition and housing, unsanitary living conditions, lack of access to medical care, and so on. Cause-of-death patterns in developing countries, which show an increased relative prevalence

[2] Note that this supposition entails a non-linear relation between M and I, contrary to the simplistic model presented above but quite realistic.

of disease associated with poverty (especially diarrheal diseases) and a diminution of the contribution of certain diseases relatively easily attacked through specific health measures (notably respiratory tuberculosis) offer some support for this position (Preston and Nelson 1974). Finally, there is some indication of a weakened commitment by the United States, the largest sponsor of international health programmes, to international aid for health purposes (Weller 1974).

An adequate test of this proposition must await the availability of two data points for mortality estimates, one in the late 1970s and one for the 1960s, in a fair and broad sample of developing countries. One problem with the argument is that standard-of-living gains also show markedly diminishing returns in their mortality effects, as is evident from the decidedly non-linear cross-sectional relation between life expectancy and income levels (Vallin 1968; Preston 1979). In fact, it is the Latin American countries where the mortality deceleration is most apparent. As the most developed group among developing countries, it is here that we might expect increments to national income to have the least effect on life expectancy. The deceleration here may represent incipient exhaustion of the possibilities for income gains to reduce mortality as much as exhaustion of the potential of health programmes. In sub-Saharan Africa, on the other hand, where concern has been expressed about the pace of mortality decline, one could hardly argue that the soft rock that can be readily reduced through health programmes has been effectively removed. In short, a change in the pace of mortality decline does not by itself provide information on the role of either type of factor in mortality change. Only when those factors (and mortality levels themselves) can be adequately quantified can an informed judgement be made.

Standards of Living and Mortality: Evidence from Cross-Section

While factors exogenous to living standards appear to have dominated in mortality declines since the 1930s, mortality levels have remained very closely linked to living standards at a moment in time. As noted above, these two statements are not in the least inconsistent. The importance of standards of living is easily demonstrated with cross-national data. Preston (1979) has estimated equations relating life expectancy at birth to three socioeconomic factors for nations around 1970 and again around 1940. The results of this exercise are the following (standard errors of coefficients are in parentheses):

$$1970: e_0^0 = \underset{(7.4090)}{17.1464} + \underset{(.6524)}{4.2488} \cdot \ln Y + \underset{(.0212)}{.2086} \cdot \mathrm{LIT} + \underset{(1.3492)}{.3170} \cdot \ln \mathrm{CAL}$$

$$N = 120. \quad R^2 = .860$$
$$R^2 = .858$$

$$1940: \quad e_0^0 = \underset{(18.5102)}{-13.1035} + \underset{(2.3860)}{5.4352} \cdot \ln Y + \underset{(.0626)}{.1654} \cdot \text{LIT} + \underset{(3.7176)}{2.9470} \cdot \ln \text{CAL}$$

$$N = 36. \quad R^2 = .856$$

$$\bar{R}^2 = .845$$

where e_0^0 = life expectancy at birth, average male and female

Y = national income per capita, 1970 U.S. dollars

LIT = percentage literate of the adult population

CAL = excess of daily calorie consumption per capita over 1.500.

Coefficients of all three variables in both equations are properly signed; higher values on modernization variables are associated with higher life expectancy. The explanatory power of the regression equations is very high and virtually identical for the two years. Income and literacy terms are highly significant in both periods and retain approximately the same magnitude. This stability was unexpected because of the high degree of collinearity among regressors. The coefficients indicate that an increase of 10 percentage points in the proportion literate is associated at both points with a gain in life expectancy of approximately two years, and that a 10 per cent gain in national income by itself increases life expectancy by approximately one-half year. Coefficients of the calories term decrease over time but are insignificant in both periods.[3] The very large increase between 1940 and 1970 in the constant term of course reflects the fact that during this period important changes in mortality occurred that were not attributable to these developmental factors.

Mortality differences within nations also illustrate the important role of socio-economic factors. Recent methodological developments have permitted class mortality differentials to be much more accurately described than heretofore, particularly in developing countries. Good advantage of these opportunities has been taken in a series of studies conducted by CELADE (1976-1977). For nine countries in Latin America, censuses from the 1970 round or large surveys were used to establish social differentials in child mortality via the Brass technique. The Brass child mortality technique is an extremely valuable tool for estimating differentials, since it avoids the often insurmountable problems of record linkage and of establishing comparability quotients for social classifications that are used on death certificates and in censuses. Although its applications are limited to children, child deaths are close to half of the annual total in many LDCs.

[3] It is very unlikely that the availability of calories for daily consumption has no influence on mortality. The calorie variable is probably subject to greater measurement error than the other two, and the influence of calorie availability is probably being reflected through them.

The value of the CELADE project was greatly enhanced by the decision to produce comparable tabulations for each country included. The result is that tendencies identified in one country do not take on unwarranted importance simply because there are no other countries providing equivalent information. In general, however, the results of the CELADE inquiries tend to be very similar and hence mutually reinforcing. Some of the most interesting generalizations that can be drawn from the studies are the following (note that these are the present author's and not CELADE's):

Both urban residence and higher educational attainment contribute independently to reduce child mortality. However, when the joint effects of these variables are considered, the influence of education is far more important than that of urban residence (see table 1 for examples). This is one of the most surprising results of the studies, but it is apparently confirmed in Indonesia (except in West Java) as well (Jones 1978, table 3 [citing Supraptilah and Al Hadar]).

TABLE 1 PROBABILITIES OF DEATH BEFORE AGE 2 (q[2]) IN TWO COUNTRIES CLASSIFIED BY LEVEL OF MOTHER'S SCHOOLING AND URBAN-RURAL RESIDENCE, q(2)x1000

Years of education	Ecuador, 1974 census			Chile, 1970 census		
	Urban	Rural	Total	Urban	Rural	Total
None	173	176	176	125	136	131
1-3	125	138	134	104	113	108
4-6	89	113	101	89	105	92
7-9	58	75	61	65	79	66
10+	44	61	46	47	*	46
TOTAL	98	145	127	84	112	91

Source: CELADE 1977.

* Inadequate number of cases.

The result is surprising for several reasons. First, one would expect recall of infant death to be more closely associated with schooling than with residence, biasing educational differentials downwards more than residential

differentials. More importantly, pervasive rural-urban differences in LDCs have been widely cited as prima facie evidence of the critical role of health programmes in developing countries. The assumption is that, because of their density, urban areas are naturally more unhealthy than rural areas (Davis 1973).

Certainly, housing and sanitation inadequacies are more expensive to correct in urban areas. The fact that urban areas have lower mortality has been interpreted as implying that health programmes and health care distribution must be biased towards urban areas. At the same time this fact affirms the importance of these health systems. There is no doubt that hospitals and medical personnel are grossly overrepresented in urban, compared with rural, areas in most LDCs (World Bank 1975). But the above reasoning tends to ignore the fact that urban residents in general enjoy higher social standing. The CELADE results suggest that most of the urban advantage in child mortality disappears when maternal education is controlled. Nevertheless, some small urban advantage is typically retained, and this should be measured against what may be the usually greater difficulties of maintaining sanitary conditions in urban areas.[4]

Important national differences in mortality remain when education (and rural/urban residence) are controlled. These are quite apparent in table 2. The order of countries by death rates *within* a particular educational group is very close to the order of countries for the total (non-controlled) death rate. In part, this could reflect misreporting problems common to the various groups within a country, which seems particularly likely in Paraguay. But Costa Rica and Bolivia do not seem to have had serious reporting problems and are by themselves adequate to establish this tendency. In general, the better developed the country, the lower mortality is *within each* educational group. This tendency could reflect direct externalities (e.g., a larger group of poorly educated in poorer countries raising the mortality of the well educated), but it is more likely that the relation is indirect, working through health programmes. Richer countries typically have better-developed health services, which should reduce mortality rates for all groups.

Interestingly enough, the slope of the mortality-education relation is clearly a function of mortality and development level. Chile and Costa Rica have considerably lower slopes (gains to education) than Ecuador, El Salvador, and Bolivia. Another way to say this is that mortality of the well-educated classes is more similar across countries than is the mortality of the uneducated. There is some evidence for this proposition over time in Western countries as well. The implication is that social disparities in mortality (when both are measured in absolute terms) are reduced as development proceeds. This conclusion is necessarily tentative because of the nature of

[4] In Ecuador, Chile, and Costa Rica, the largest cities and capitals have the lowest child mortality rates, when mother's education is controlled. This again points to the role of health programmes in the national picture, since these areas typically enjoy disproportionate political power. In Bolivia, on the other hand, the capital fares more poorly than other urban areas.

TABLE 2 DIFFERENTIALS IN CHILD MORTALITY BY EDUCATIONAL ATTAINMENT OF MOTHER IN LATIN AMERICA, q(2) x 1000

Country	Years of schooling					Total
	None	1-3	4-6	7-9	10+	
Paraguay, 1972	104	80	61	45	27	75
Costa Rica, 1973	125	98	70	51	33	81
Colombia, 1973	126	95	63[a]	42[b]	32[c]	88
Chile, 1970	131	108	92	66	46	91
Dominican Republic, 1975	172	130	106	81	54	123
Ecuador, 1974	176	134	101	61	46	127
El Salvador, 1971	158	142	111	58	30	145
Bolivia, 1975	245	209	176	110		202

Source: Behm, H., et al. 1976-1977.

[a] 4-5.

[b] 6-8.

[c] 9+.

available data, but it suggests that development influences in a favourable way both the level of mortality and social disparities in it.

A richer set of explanatory variables was used in a similar analysis of Kenyan child mortality by Anker and Knowles (1977). Unfortunately, the volume of child mortality as reported in the survey they used was clearly too low. Nevertheless, the estimated effects of various family-level and ecological variables on mortality were plausible. Both household income and mother's literacy made strong and significant positive contributions to survivorship from birth to age 3 in all forms of the regression equation, whether or not variables more immediately reflective of health conditions were introduced. Use of a pit toilet, consultation with spiritualist or medicine man, and living in a malarious district also had significant effects on survivorship in the expected directions (+,-,-) (Anker and Knowles 1977, table 6). Interestingly enough, they also performed a district-level analysis of life expectancy and derived a coefficient of per cent literate of between .15 and .28, so that the coefficient on this term derived by Preston (1979) using cross-national data falls in the middle of this range. In fact, the CELADE results, if child mortality is converted into life expectancy estimates, are also roughly consistent with this coefficient for literacy.[5]

Caldwell's ambitious study of child mortality in Ibadan, Nigeria, confirms the major importance of maternal education. He finds this factor to be far more influential than any other socio-economic variable in explaining variation in child mortality. Father's occupation and education, grandfather's occupation, area of residence, and type of marriage are much less closely associated with child mortality (Caldwell 1978, tables 4-7). The implied levels of life expectancy at birth are 49 years for families of mothers with no schooling, 57 for those with only primary schooling, and 65 for those with some secondary schooling (Caldwell 1978, table 3). The influence of maternal education is scarcely attenuated when the other variables are individually controlled. The suggested effect of education on mortality is thus consistent with the other studies cited above. Caldwell's explanation of the effect of maternal education emphasizes changes produced in the traditional balance of familial relationships, the emergence of child-centeredness, and, especially, the breaking with traditions of child rearing supported by grandparents. Several other mechanisms through which education may operate are suggested below.

[5] We will use the example of the Dominican Republic, which is intermediate in mortality level among the populations in table 1. Women with 0-3 years of education may be assumed to be illiterate, women with 7+ years of education to be literate. The weighted-mean value of q(2) for the former group is .151 and for the latter .069. The corresponding life expectancies (average, male and female) in the Coale-Demeny (1966) set of South model life tables are 53.7 and 68.5 years. The implied difference of 15 years in life expectancy is again close to the value implied by the coefficients derived in the two cross-sectional studies. However, since no other factors are controlled in the Dominican Republic data, the mortality gains to literacy are probably overstated. On the other hand, the calculation omits the "externalities," the effects of higher general levels of education on the mortality of all groups that are reflected in one form or another in table 2 and that would be picked up in cross-national or cross-regional coefficients.

The relative stability of coefficients on literacy and income per capita permits some crude but informative calculations about the cost-effectiveness of alternative ways of reducing mortality. We have already seen that cross-national data are consistent with a gain of .05 years in life expectancy for every 1 per cent increase in income.[6] This would be the expected gain in life expectancy if all of the incremental 1 per cent were allocated to expenditure in "normal" ways. What if all of this 1 per cent gain of income were spent on primary and secondary education? Arthur Lewis (1968) calculates that the cost of providing 8 years of schooling for all children is 0.8 per cent of national income per capita in the U.S., 1.7 per cent in Jamaica, 2.8 per cent in Ghana, and 4 per cent in Nigeria. For 1 per cent of national income, then, it should be possible to provide 8 years of schooling for approximately 25-50 per cent of children in a developing country. If the effect of achieving literacy on life expectancy is as high as the 15-year gain implied by the studies cited above, then devoting the entire 1 per cent to expenditure on the first 8 years of schooling should result in a gain of 4-8 years in life expectancy at birth. The disparity in estimated cost-effectiveness is so large that the effect of literacy on mortality could be reduced by a factor of 10 and literacy expenditures would still have decisively superior cost-effectiveness. Of course, the literacy expenditures operate with a greater lag since it is presumably (and explicitly in the sources cited) adult literacy that is influential in mortality.

The estimated cost-effectiveness of literacy gains in reducing mortality is so great that it may well exceed that of expenditures specifically directed at health problems. Where mortality is still very high and certain preventive measures have yet to be implemented, the relative advantages are not clear-cut. The cost of anti-malaria programmes producing virtually complete eradication has been estimated at \$0.1-\$0.3 per capita per year.[7] An expert committee assembled by WHO estimated that 80 per cent of the 70 million children reaching age one in LDCs each year could be immunized against measles, polio, tuberculosis, tetanus, diptheria, and smallpox at a cost, exclusive of personnel, of \$0.67-\$1.07 per child (WHO 1975, p. 2). Since it is reasonable to expect such measures to produce a gain of several years in life expectancy (obviously in the former case in malarious areas only; see Newman 1977), the very high cost-effectiveness of the measures is apparent. But where this "soft rock" has been eliminated, more expensive measures are required. For example, the cost of providing a new connexion to an urban sewage disposal system is estimated at \$29 per capita in LDCs, although the cost of providing adequate facilities in rural areas is estimated at only \$4 per head (WHO 1973, pp. 732-733, 738-743). The \$29 is roughly 10 per cent of national income in a typical developing country. Even if the sewage improvement increased life expectancy by only one year, which seems

[6] This same general level of effect is found when 30-year *trends* in life expectancy are compared to *trends* in income in 36 countries between 1940 and 1970 (Preston 1979). However, the estimated influence of literacy declines in the trend analysis, though not so much as to alfer the conclusions reached below.

[7] Pampana and Russell (1955, table 1) provide an exhaustive but dated cost compilation.

a minimum estimate of its effectiveness, its cost-effectiveness would exceed that of income growth *per se*.

These simple calculations are sufficient to indicate that "unstructured" economic development is generally quite inefficient for reducing mortality levels relative to "structured" development that would channel increments in income (or redistribute pre-existing income) towards educational expenditure or preventive health measures. It is reasonable to expect that the same conclusion would pertain to programmes seeking a direct impact on nutritional levels. Untutored development is almost certainly not the best pill if the goal is mortality reduction. This conclusion is strongly supported by an examination of mortality levels in developing countries or regions that have made major efforts to structure development towards meeting basic needs.

Structural Development and Mortality: Experience of Sri Lanka, Kerala, and Cuba

Populations in each of these three political entities have achieved higher life expectancies than is typical of nations at their respective levels of per capita income. Sri Lanka and Kerala exceed the life expectancy for all-India by 10 years or so, despite the fact that per capita incomes are no higher (Gwatkin 1978a). Sri Lanka's life expectancy exceeds that predicted on the basis of its income alone, in conjunction with the cross-sectional relation between income and mortality, by some 22 years (Isenman 1978, p. 16). Kerala has the lowest infant mortality rate of any state in India, although it ranks only seventh (out of 15 states) in per capita product and last in per capita calorie consumption.[8] Its mortality advantage is maintained in both urban and rural areas but is exceptionally large in rural areas. Despite an apparent slowdown in the rate of economic growth between 1953 and 1970, Cuba's mortality decline during the period outpaced the average for three Latin American countries (Costa Rica, Jamaica, and Trinidad and Tobago) that began at approximately the same mortality level (Diaz-Briquets 1978, p. 13).

Detailed studies of the three areas are not able to pinpoint precisely the reasons for their superior performance. However, all three areas have in common governmental programmes that aim explicitly at upgrading the social and health conditions among the poorest sectors; each has achieved exceptionally high levels of literacy; and each has public health programmes that achieve a relatively egalitarian distribution of health services. Cuba and Sri Lanka also have large government-operated food distribution services that subsidize the purchase of food for large population segments.

The experience in Kerala is reviewed by the United Nations (1975, Chapter 10), which concludes that "the most important single factor to which the better levels of health in Kerala could be attributed might well be the

[8] Data are from United Nations (1975, tables 1 and 58). Mortality rates refer to 1971, production and consumption to 1961/62; however, the disparity in dates should not seriously affect the comparison since the mortality advantage is evidently long standing.

spread and accessibility of medical care in the state" (p. 133). Per capita expenditures on health are about average for India, and the number of hospital beds per capita is not exceptionally high. But Kerala achieves by far the highest utilization rate for its facilities, nearly double that of the next highest state. The combined number of visits to hospitals, primary health centres, and dispensaries averaged slightly more than one per person in 1970 (p. 138). This high utilization rate is achieved by a very dispersed pattern of medical facilities that minimizes patient travel time. The unusually high level of education in the state is probably also a factor. Although government food subsidies are not insignificant in Kerala, neither the level nor the distribution of nutritional inputs seems to account for the state's mortality advantage (United Nations 1975; Gwatkin 1978a). Ratcliffe (1978) also cites the importance of a dispersed pattern of health services for the low mortality in Kerala. But he notes that mortality decline in much of the state occurred prior to the extension of such facilities and in a fashion that was geographically correlated with literacy levels. Education, he argues, minimized the extent to which measures such as smallpox vaccination were impeded by traditional religious beliefs. Furthermore, he cites interesting data showing that, at any income level above the very lowest, families with literate housewives were less likely to have calorie deficiencies than those with illiterate ones. The suggestion is that literacy promotes better utilization of limited resources for meeting basic personal needs.

A description of the health system in Sri Lanka sounds very similar to that in Kerala (Isenman 1978). Wide population coverage is achieved through primary health care facilities staffed by paramedics and by a strong "referral" system of clinics and hospitals manned by both physicians and paramedics. More than two-thirds of births now take place in hospitals, and maternal mortality has declined from 16/1,000 in 1946 to 1.2/1,000 in 1970.

The achievements of Sri Lanka in preventive medicine, particularly as reflected in the 1946 anti-malarial campaign, are of course widely heralded. However, an important additional feature in Sri Lanka is an extensive food rationing system, which has accounted for roughly 20 per cent of government expenditure in the past 15 years (Isenman 1978, p. 9). The per capita amount of rice or wheat made available under the system has varied typically between two and four pounds per week, of which one to two pounds are free and the remainder sold at subsidized prices. The ratio provides about 20 per cent of total caloric intake for families with household incomes under Rs.400 per month, and the subsidies constitute about 14 per cent of income for these families. In a typical year, some 30-35 per cent of the country's calories and 25-30 per cent of its protein pass through the government's distribution system (Gwatkin 1978a, p. 9). The influence of this distribution system on mortality is probably best demonstrated by the events of 1974, when deteriorating exchange rates reduced food imports and decreased per capita food distribution by 15 per cent (Isenman 1978, p. 12). Crude death rates in Sri Lanka rose from 7.7 to 8.9 per 1,000. In the Tea Estates area, which is among the poorest and one of those most dependent on the food distribution

programme, the increase was from 11.2 to 20.6 per 1,000 (Sri Lanka 1978, pp. 13-14).

Sri Lanka's adult literacy level of 85 per cent (vs. 47 per cent for Asia as a whole) probably also influences its mortality level. Isenman suggests that literacy produces a general attentiveness to situations where medical help should be sought as well as to personal preventative measures. For example, although the quality and quantity of drinking water is inadequate by WHO standards for 80 per cent of the population, Sri Lankans tend to be aware of the dangers and to treat or boil their water, particularly water for young children (Isenman 1978, p. 19). Gwatkin (1978a) argues that high literacy, combined with a democratic political tradition, has forced the government to attend to the basic needs of the masses. Thus, literacy may be an important underpinning of progressive government policies in health and nutrition.

The mortality situation in Cuba has been reviewed in a recent doctoral dissertation, summarized by its author, Diaz-Briquets (1978). Between 1958 and 1973, a modest expansion of 13 per cent in hospital beds per capita was achieved, but more important was deconcentration: the percentage of beds in the Province of Havana declined from 63 to 44 per cent of the total (p. 6). Rural facilities were upgraded, particularly through an expansion of clinics and a hierarchical referral system. The percentage of the urban population obtaining its water supply from aqueducts increased from 55 to 90 between 1953 and the early 1970s, while the proportion of aqueduct water that is chemically treated grew from 21 to 98 per cent between 1959 and the present (p. 7). In the early 1960s, a food rationing system was introduced which, according to official sources, now provides a minimum of 2,650 calories per day to each inhabitant (p. 8). Illiteracy has been virtually eliminated, and educational campaigns have been widely utilized to support vaccination programmes and personal hygiene improvements. Life expectancy is estimated to have increased from 58.8 in 1953 to 70.2 in 1970. Whereas Havana Municipality exceeded all-Cuba by 3.9 years in life expectancy in 1953, Havana Province enjoyed an advantage of only 0.4 years in 1970 (Diaz-Briquets 1978, table 2). The inter-provincial range in 1970 was only 3 years. Although it is difficult to say how much mortality advance should have been expected in the absence of these efforts, it is clear that the modest change in per capita income should not be expected to have produced much change by itself.

Rapid Income Growth and Mortality: the Case of Western Asia

An interesting contrast to the cases just cited is posed by certain states in the Middle East that have sustained extremely rapid economic growth in the 1970s. In these countries, income growth has been so rapid that gains could not be translated into social and health programmes with an immediate influence. Thus, they come perhaps as close as possible to a situation where

"pure" income effects on mortality can be observed.

Unfortunately, the experience in these countries is badly obscured by data deficiencies affecting both income and mortality figures. Rapid price and exchange rate fluctuations, large export sectors, and migration have introduced marked irregularities in per capita economic indicators, so much so that different sources give widely differing estimates of economic growth performance.[9] And vital registration is too deficient in much of the region to permit direct estimates of mortality levels, let alone of mortality trends. The indirect techniques that are used to fill in the gaps may produce important distortions, particularly in mortality trends over short periods. For purposes of this exercise, we put ourselves in the hands of the World Bank for economic growth rate estimates and of ECWA for mortality.

The four fastest growing economies in Western Asia in the period 1970-1975 (on a per capita basis and weighting sectoral production by constant prices and exchange rates) were Bahrain, Iraq, Saudi Arabia, and Yemen. In fact, these are the only countries in which growth rates in real GNP per capita exceeded 2 per cent. Values of growth rates and indicators of mortality trends are displayed in table 3. Although the data are at best illustrative and not definitive, it is clearly suggested that the pace of mortality decline in these countries has been quite modest. In no country was the rate of gain in life expectancy as much as 1 year per calendar year (in contrast, for example, to the gain of 11.2 years in Sri Lanka between 1946 and 1948 [UNESCAP 1976, p. 148]). However, as shown in the right-hand column of table 3, the gain in life expectancy is quite consistent with the cross-sectional results cited above. These showed, on average, a .05-year increment in life expectancy to accompany each gain of 1 per cent in per capita GNP. Thus, while the mortality picture has probably not changed radically in these countries, it is changing about as fast as could be expected. Only after the income gains have been translated into social and health programmes, the direct effect of which on mortality is evidently much greater per dollar than is that of income growth *per se*, should a marked acceleration of the mortality decline be expected.

Conclusion

Many factors influence a population's level of mortality. Prior to the era when the knowledge of cheap and effective public health interventions was developed, there is evidence to suggest that improvements in general living standards were the dominant source of mortality decline. Since that time many new factors have come to the fore. Although economic factors remain

[9] For example, the World Bank *Atlas* (1977) gives negative GNP per capita growth rates between 1970 and 1975 for Kuwait, Oman, and Qatar, whereas ECWA (1978), citing World Bank sources, shows at least a tripling of per capita incomes in these countries between 1970 and 1975. See table 3 for sources. The difference presumably reflects the fact that exchange rates and prices are fixed at their 1974-1976 average in the first World Bank source cited.

TABLE 3 GNP LIFE EXPECTANCY GAINS AMONG COUNTRIES IN WESTERN ASIA WITH THE FASTEST RECENT ECONOMIC GROWTH

Country	Annual percentage growth rate, real GNP per capita, 1970-1975[a]	Estimated life expectancy at birth[b]		Annual change in life expectancy divided by annual growth rate of GNP
		Earlier	Later	
Bahrain	20.3	63.2 (1971)	65.3 (1975)	.03
Iraq	6.7	52.7 (1973)	53.9 (1975)	.09
Saudi Arabia	4.1	43.8 (1970)	45.3 (1974)	.09
Yemen	5.8	37.0 (1970)	38.3 (1975)	.04

Sources: [a] World Bank 1977.

[b] United Nations, ECWA 1978.

very important in differentiating among nations' mortality levels, unstructured economic change now appears to be an inefficient method of reducing mortality. Diverting a dollar of income towards literacy gains would appear to offer a far greater mortality return than allowing that dollar to enter the consumption and investment stream in normal ways. Nations that have structured development in such a way as to increase levels of literacy and to spread public health and nutritional programmes widely among the population have achieved remarkable advances in lengthening life. Obviously, not every nation is in a position to impose the structure on development that has been achieved in Sri Lanka, Kerala, and Cuba. But the very different cultural and political conditions apparent among these populations (and among other success stories such as Costa Rica and China) suggest that the means are within the reach of many.

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PART III. INTERNATIONAL MIGRATION

CHAPTER 9. ISSUES IN THE ECONOMICS OF INTERNATIONAL MIGRATION AND DEVELOPMENT*

*Georges Tapinos***

The Importance of International Migration

Of all the factors contributing to a country's economic development and demographic growth, international migration would seem to be one of the most neglected. There is no need to go into the reasons for the relative disregard of the migration phenomenon here, for the purpose of this paper is rather to demonstrate the decisive role that international migration plays in development in the medium term.[1]

There are three reasons that international migration should be taken into account in any analysis of development strategies. The first reason is empirical: although variations in fertility constitute the determining factor for growth rates and demographic structure, there are many countries in which the migration component is a major factor of change. This is true for countries as different as Tunisia, Greece, France, Mexico, Colombia, the Ivory Coast and Kuwait, and for whole regions such as Western Europe, the Mediterranean Basin, the Middle East and North America, to take only a few examples.[2]

The second reason concerns the future: the problem is likely to take on importance in certain regions of the world where one can reasonably expect international migration to develop over the next decade (see Wander 1979) as well as in regions that, after experiencing considerable migration in the recent past, have recently put an end to these exchanges. In the latter case, the fact is that stopping the flow does not eliminate the problem of migration, partly because this halt–decided upon unilaterally in most cases–has a considerable impact on the economies of the societies contributing the labour, and partly because the former host countries are subsequently faced with problems even

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1 For an overview of the literature on this question, see Thomas (1973) and Tapinos (1974a).

2 The most recent work providing a panorama of migration is ***Trends and Characteristics of International Migration since 1950*** (United Nations 1979).

more complex than those related to the entry of migrants, whether these involve the return of the immigrants or their integration into the host society. The situation in the industrialized countries of Western Europe and the countries of the Mediterranean Basin provides an illustration in this regard (see Böhning 1979; Tapinos n.d.).

Finally, over the medium term—the time span of interest to planners—international migration may come to constitute a major component of development strategies. This is not only because it is capable of having a swift impact, but also because here, more than elsewhere, development policies can be applied to particular advantage.

The problem, therefore, is what role to assign to migration in development strategy. Three series of questions will aid us in facing this crucial challenge: (1) What is known about international migration? (2) What are the issues involved? (3) What are the policy implications (see Tapinos 1974a, 1974b; Piore 1979)?

Here it will be possible to stress only the main points. In the area of international migration, one should not allow the specifics of any national situation to lead to the rejection of generalizations to the point of confining the analysis to one type of mobility—the case in point being the economically motivated migrations of labour—and excluding population movements whose determinants are mainly of a political nature.

The Experience to Date

A few basic conclusions can be drawn from the experience of migration over the last 20 years:

First, the pull factors (country of arrival) tend to outweigh the push factors (country of departure). In other words, while migration must necessarily find its explanation in the conjunction of factors emanating from two distinct economic spheres, one of these exerts on the other a systematic effect whose consequences are essential to an understanding of the phenomenon.

Second, the decision to emigrate is based on expectations concerning the duration of expatriation. The nature of the determinants of migration—particularly the relative weight of the economic factors—will therefore differ according to the expectations of the migrant.

Third, the fact that the receiving countries have turned to importing labour can be explained by the emergence of new forms of organization in their employment systems involving changes in their systems of production. Analysis of the introduction of foreigners into the labour market, of which the most elaborate form is the dual-market hypothesis, suggests that one should go beyond the global approach in order to determine the sector and category imbalances created.

Fourth, the immigration of workers generally leads to the immigration of their families. In the end, the immigration of their families involves the arrival of the migrant workers' children onto the labour market. Although current

circumstances and policies in many of the receiving countries would appear to rule out, for the moment, any development of family immigration, experience has shown that the pressures in favour of family reunification are difficult to contain.

Fifth, immigration makes possible a certain type of growth by tending to make the productive system more flexible and the workers more mobile. It does not necessarily lead to a type of growth which is either uncapitalistic in nature or characterized by a low level of technical progress.

One can deduce from these observations two fundamental characteristics of migration: (1) Migration is not an isolated phenomenon involving the life cycles of individuals, but a *process* made up of a succession of phases which must be understood in their entirety. (2) *Migration is an all-encompassing social fact.* This means that its *determinants* are complex and transcend simple economic rationality and that its *effects* cover the entire economic and social field. In support of the former point, three observations can be made.

First, *the decision to emigrate is not merely a decision to leave.* A migrant has a plan that determines his attitude with regard to the choices he will subsequently face: professional training, social mobility, returning home, etc. At each stage of the process, the decisions that the migrant must make are narrowly circumscribed by his initial plan.

Second, by its own internal logic, *a migratory flow may perpetuate itself even when the regional factors that produced it have disappeared.* Thus, for example, in places where demographic pressure or high unemployment may have constituted one of the causes of emigration and prompted the young unemployed to leave the country, once this phenomenon is set in motion, it is not unusual to see it continue even though the manpower surpluses have been absorbed. Having reached this stage, migration affects even the working population and has the paradoxical effect of creating manpower shortages in regions of departure that were originally oversupplied.

Third, the end result of this cumulative mechanism is that *the country of emigration may find it extremely difficult to carry out an optimum policy.* While the departure of the unskilled unemployed may be seen as desirable for economic take-off, the leak sprung in the pool of the employed, especially if they are skilled, may become a handicap to development.

With regard to the point that migration is an all-encompassing social fact, economic factors are usually decisive in the decision to emigrate. They should not, however, obscure other factors whose consideration is especially important in that the issue is not only manpower, but also the geographical origin and destination of the flow. Given comparable developmental levels and economic indicators, different regions of the same country may experience contrasting migratory processes (see Tapinos 1966).

By the same token, the impact of migration beyond its direct and immediately perceptible impact must be taken into account. Let us take two examples where the traditional approach, by confining itself either to direct effects or to "economic" effects, suggests an erroneous conclusion: the effect of migration on the balance of payments and the relationship between migration and technical progress.

Most treatments of the effect of migration on the balance of payments emphasize the "remittances," whose effects are negative on the balance of payments of the host country and positive on that of the country of origin. Analysis of this phenomenon is sometimes extended to include the effect produced by these remittances on the import capacity of the beneficiary country and on the export capacity of the host country. There is some doubt as to whether this is the proper way to pose the question. For the host country, the effect of immigration on the balance of payments depends first of all on the impact it has on the country's competitive position abroad. The question, therefore, is how and to what extent immigration affects salaries, prices and productivity in the host country, and this can only be determined by use of a macroeconomic model. The difficulties inherent in such an analysis should not be allowed to limit discussion to the remittances item in the balance of payments, thus producing incomplete conclusions.

Economic theory suggests that the possibility of employing relatively cheap labour impedes the process of modernization, thus resulting in a negative effect on productivity. The Marxist approach counters this "neo-classical" view with the argument that by accelerating capital accumulation, immigration *may* have the effect of enhancing technical progress. Each of these views has its own logic and each contains a grain of truth. In reality, however, if one goes beyond the mechanical effects suggested by the theory to analyze the actual conditions under which technical progress occurs, one sees that the use of foreign labour can be at the source of the modernization of certain sectors of production in that it makes possible a modification of working conditions, in particular the introduction of teamwork, as demanded by the full use of productive capacity.

Three Debates on the Role of Migration

The Relationship between International Migration and Economic Development

From the point of view of the receiving countries, does migration make growth possible or is it a necessary condition for such growth? In relation to a given growth objective, what is the alternative to international migration? No definitive response to these questions can be provided here. Only by analysing the operation of the labour market is it possible to appreciate the role played by immigration in regulating the supply and demand of labour—at the overall, sector and category levels—making use of technical progress, and modifying the rate of capital accumulation. Migration is just as likely to have a multiplier effect on employment, to favour technical progress, and to accelerate the rate of capital accumulation as it is to have the opposite effect.

In market economies, repeated recourse to immigration is in itself a response to the question of whether or not immigration tends to favour growth. This fact is confirmed by research. Nevertheless, important questions remain. To what extent has reliance on foreign immigration modified the

special features of the receiving country in relation to the international economy by modifying the factors involved, the relative cost of labour and capital and, more generally, the conditions of production? How has immigration affected the country's social structures? Clearly, although the contribution of immigration to the *per capita* growth of product is undeniable, immigration lends a specific character to growth, and its long-term effects require thorough analysis.

From the point of view of the sending countries, the significance accorded the migration-development relationship has passed through different phases. Conceived at the outset as a substitute for an unattainable development, and seen sometimes as an element of transmission between nations intrinsic to development, international migration increasingly appears to be a phenomenon whose consequences are contradictory and whose final outcome over the long term will depend on the way in which it is linked to national development strategies.

In the short term, the positive implications of migration generally outweigh the negative ones and constitute an incentive to further increase the number of departures. These positive aspects include the reduction of pressure on the labour market, the growth of real income for the families remaining in the country, the improvement of the balance of payments, etc. Over the long term, however, migration introduces imbalances that threaten to compromise economic take-off. The transfer of experience that migration is supposed to effect remains very limited and barely counterbalances the negative consequences: increased disparity of incomes, inflation, greater dependency, etc. Recent analyses suggest that the problem lies with the relatively unproductive character of the activity chosen by migrants when they return home. While such suggestions have the effect of alleviating the worries mentioned above, they do nothing to obviate the rather negative long-term prospects.

This guarded diagnosis is behind the proposal that the receiving countries should pay compensation to the contributing countries. This is not necessarily the solution, though the sending countries have plenty of arguments in their favour. The real problem is to try to ascertain whether or not migration *in itself* (i.e., independent of any economic strategy) is likely to induce an indigenous process of development if, once the process is set in motion, the contributing country is able to control it (i.e., to implement a policy of optimal emigration). Experience would suggest that the answers to both these questions are generally negative.

The Relative Weight of Institutional Factors and Market Forces

Both the rate and the direction of the migration flow are the result of demographic and economic imbalances and of the policies pursued by the states. Migration policy sets the general framework for exchanges. It is rarely capable of determining the volume of migration by itself. Highly restrictive policies whether at arrival or departure points have never prevented—and have sometimes favoured—the emergence of clandestine migration. It is also more

difficult to control such migration when the objective that is set is *limited* emigration-immigration, i.e., somewhere between the two extremes of complete closure of the borders and totally free circulation (see Tapinos 1975).

When it brings together two capitalist-dominated economies, migration is largely influenced by the laws of the market, with pull forces predominating. Most contemporary migration currents, being of an economic nature, confirm this fact. It would be wrong to assume, however, that migration policies lose all effectiveness, as is shown by situations in which restrictive migration policies thwart the plans of entrepreneurs wishing to make use of immigrant labour.

The International Balance

It has been suggested that international manpower movements contribute to create a balance among the world's nations. Three arguments are generally put forward: the transfer of knowledge effected by returning migrants, particularly those who are highly skilled; the effect of remittances on the international distribution of income; and, finally, the circumvention of tariff and other obstacles affecting the movement of goods.

In reality none of these elements is decisive, and their relevance is questionable. Moreover, these so-called balancing factors are counteracted by other, destabilizing, migration-related phenomena. International migration increases both the dependence of the labour-exporting countries and the interdependence of the countries involved and at the same time adds to the likelihood that economic cycles will be transmitted from country to country. Finally, by broadening the terms of reference, it suggests income comparisons that tend to highlight the gaps rather than the levels.

With the crisis of 1973-1974, new thinking emerged concerning the operating rules of the international system.[3] In what is commonly referred to as the new international division of labour, the role of migration is changing. In some parts of the world, manpower movements are being replaced by commercial specialization, while in other regions new forms of migration seem likely to develop.

Policy Implications

There remains the question of the implications that international migration may have for policy. Conflicts that may arise between individual aspirations and collective interest, on the one hand, and between short-term and long-term objectives, on the other, represent two of the major issues on which the state must take a stand when specifying its migration policy.

[3] On this point, see the recent research undertaken at the instigation of the International Labour Office concerning the halt in migration and the new international division of labour.

Individual Aspirations and the Public Interest

Whom does migration benefit? The migrant himself? Certain groups within the society? Society as a whole?

From the point of view of the labour-contributing country, there would seem to exist a conflict of interests between the migrant, who is seeking to increase his and his family's welfare, and the state, which is striving to get a development programme under way. Should the state be reproached for preventing the would-be migrant from fulfilling his aspirations? Should the migrant be reproached for being the cause of cumulative unbalancing effects which could hamper development?

From the point of view of the labour-importing country, similar questions can be asked. While it is fair to hypothesize that in a market economy the use of imported labour corresponds to the interests of the entrepreneurs, there is no justification for deducing that it corresponds to the public interest, or even to that of the majority of the country's inhabitants. It is quite possible that private and public interest will diverge, not only because the social costs of migration will be externalized—which has yet to be demonstrated—but also because the state may give priority to non-economic objectives and wish to limit immigration even while the demand for foreign labour remains high.

The first fine line to be drawn, therefore, is between the degree of liberty and the degree of constraint compatible with both the aspirations of the migrants and the interests of the state.

Short-Term and Long-Term Objectives

A second source of conflict stems from the time-frame involved. The debate over the uses of the emigrants' remittances provides an illustration in this regard. Some would have the migrants use their savings in *productive* activities rather than for consumer goods or housing accommodations. It has already been noted that certain uses assumed to be *unproductive* are sometimes more productive than they appear to be, but there is more to it than this. The question is whether it is better for the migrant to increase his consumption today or to invest in order to further improve his economic condition at the price of additional sacrifice today. Not enough stress has been placed on the paradoxical character of the desire to assign to the migrant the burden of accumulating capital, especially since the uncertainty of the economic development of his country may cause him to doubt his chances of seeing his standard of living improve tomorrow as a result of his investments today. Moreover, such delayed gratification poses the problem in terms of future inter-generation solidarity, which can only increase the migrant's preference for the present.

It is thus a question of the extent to which we are willing to sacrifice our potential income today in order to see it grow—but with a not insignificant coefficient of uncertainty—tomorrow. Investigations into the uses made of migrants' savings have already answered this question.

It should be added in conclusion that the problems of migration must be approached by way of bilateral or regional agreements in order to best guarantee a proper balance between the interests of the state and individual aspirations, and between the viewpoint of the country of arrival and that of the country of departure. Such a recommendation should not be regarded simply as extension of the principles governing the international community, but rather as a rule justified by experience. The dominant character of the pull forces exerts asymmetric effects on the country of origin, which may be deceptive to the extent that they suggest that the country of immigration is able to set the rules of the game unilaterally. Examples invalidating such a view abound.[4]

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[4] The examples of the United States and Mexico, or of Algeria and France, are particularly significant in this regard.

CHAPTER 10. LABOUR MIGRATION IN THE MIDDLE EAST AND NORTH AFRICA AND ITS ECONOMIC IMPLICATIONS

*Zafer Ecevit**

International labour movements in the Middle East and North Africa have reached dramatic proportions in the last 5 years, resulting in drastic changes and imbalances in the demographic, manpower, and employment structures of both labour-exporting and labour-importing countries. These developments have wide-ranging socio-economic implications.

In 1975 the major labour-importing countries of the region[1] were host to more than 2 million immigrant workers, comprising 2.6 per cent of their total population and 11.0 per cent of the indigenous labour force. Since then both the magnitude of the flows and immigrant labour's relative share in total population and employment have increased substantially, creating further dependence on foreign labour for development.

In the major labour-exporting countries of the region (Egypt, Jordan, the Syrian Arab Republic, and Yemen), the inflow of remittances through official channels increased from 485 million dollars in 1974 to approximately 2.9 billion dollars in 1977, affecting aggregate demand, investment, inflation, balance of payments, wage levels—in fact, the whole range of macro-economic interrelationships. A large proportion of the previously unemployed and underemployed population has found productive employment elsewhere, thus alleviating the pressures of unemployment at least temporarily. On the other hand, the departure of large numbers of skilled manpower from Jordan, Egypt, and the Syrian Arab Republic and of unskilled labour from Yemen has created shortages in the sending countries, thus affecting the implementation of their own development programmes.

In fact, it has now become very difficult to assess the prospects for economic development and social change in the region without a good understanding of the labour migration phenomenon and its socio-economic implications. Yet, relatively little is known about the emerging migration trends and their socio-economic impact.

This paper has two major objectives. First, it attempts to assemble a synopsis of the available data on the magnitude, origin, destination, and

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[1] Algeria, Bahrain, Iran, Iraq, Kuwait, the Libyan Arab Jamahiriya, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

characteristics of recent labour flows in the region to provide a framework for further research. Second, it discusses the impact of recent labour flows on the economic growth prospects of the sending countries, in order to shed some light on the likely costs and benefits of a labour export programme.

Migrant Labour Stocks

An exact estimate of the migrant labour stocks in the Middle East and North Africa is not easily made. The growing interest and concern over the policy implications of massive labour migration has, however, recently produced a considerable volume of data on the migrant labour stocks especially from the labour-importing countries.

By the end of 1975, total migrant labour stock in the region was close to 2 million. Of these, 768,000 were in Saudi Arabia; 295,000 in the Libyan Arab Jamahiriya; 245,000 in the United Arab Emirates; 211,000 in Kuwait; 182,000 in Iran; 67,000 in Oman; 61,000 in Qatar; 41,000 in Algeria; and nearly 10,000 in Iraq. In several of these countries, foreign labourers outnumbered the natives by large margins. Thus, in 1975, the share of immigrant labour in total employment was 89 per cent in the United Arab Emirates, 22 per cent in Qatar, 71 per cent in Kuwait, 64 per cent in Oman, 39 per cent in Saudi Arabia, 38 per cent in Bahrain, and 33 per cent in the Libyan Arab Jamahiriya. In Algeria, Iraq, and Iran, the shares of immigrant labour were considerably smaller: around 2 per cent in Algeria and Iran and less than 1 per cent in Iraq. These data are presented in table 1 along with the source of the immigrants.

About 57 per cent of the total immigrant labour was supplied by seven major labour-exporting Arab countries, namely, Egypt, Jordan, the Syrian Arab Republic, Yemen, Democratic Yemen, Morocco, and Tunisia. The Indian subcontinent was the second-largest source. India and Pakistan together supplied about 19 per cent of total immigrant labour, with heavy concentrations in the Gulf states. Europe and North America's share was close to 7 per cent. The remaining 17 per cent came from Afghanistan (about 150,000 in Iran and the United Arab Emirates), Bangladesh, Sudan, Somalia, Turkey, Korea, the Philippines, and other countries in Africa and East Asia. There was considerable labour movement among the oil-exporting countries as well. In Kuwait, for example, there were 18,000 workers from Iraq; 2,644 from Saudi Arabia; and 28,953 from Iran.

Characteristics of Immigrant Labour

Migrant labour in the region is predominantly male, between 18 and 35 years old, and unskilled or semi-skilled. There are, of course, differences among immigrants to different countries. For example, in 1975, immigrant female workers in Saudi Arabia and the United Arab Emirates comprised less than 2 per cent of the total, while in Kuwait they made up nearly 13 per cent. Available data (1975) on the skill breakdown of immigrant labour

in the region covers 1.3 million workers in five labour-importing countries (table 2). Production workers and farmers (including technicians) constitute 66.6 per cent of this total. About 19.2 per cent are employed in clerical, sales, and service occupations and the remaining 14.2 per cent in professional, technical, and managerial occupations.

Except for the Libyan Arab Jamahiriya, where immigrant labour is heavily concentrated in the production workers and farmers group (90 per cent), the occupational breakdown of immigrant labour shows uniform patterns for the remaining countries. The majority are production workers, ranging from 44.5 per cent in Kuwait to 67.5 per cent in Saudi Arabia. Clerical, sales, and service workers make up the second-largest group. Their relative proportion in Kuwait, Bahrain, and the United Arab Emirates is around 35 per cent, but is considerably lower in Saudi Arabia (16.1 per cent). Except for Saudi Arabia–where the proportion of clerical, sales, and service workers is slightly higher–professional, technical, and managerial workers constitute the smallest occupational group.

Data on the skill composition of production workers and farmers is not complete. Available information for the Libyan Arab Jamahiriya and Saudi Arabia indicates a higher ratio of unskilled labour in Saudi Arabia and a relatively smaller ratio for the Libyan Arab Jamahiriya.

Out of about 1.4 million immigrant labourers for whom sectoral distribution data are available, the largest proportion (36.1 per cent) are employed in construction, followed by services (21.3 per cent), commerce (14.8 per cent), and agriculture (10.3 per cent). Relatively smaller proportions are employed in mining (2.1 per cent)–predominantly hydrocarbons–manufacturing (6.7 per cent), utilities (1.4 per cent), and transportation and communications (7.1 per cent).

Sectoral distribution patterns among the individual countries, however, indicate considerable differences. In the Libyan Arab Jamahiriya and Saudi Arabia, where the area of land and volume of agricultural activity are relatively large, higher proportions of immigrant labour are employed in agricultural sectors. In Kuwait and Bahrain, on the other hand, relatively higher proportions are employed in the manufacturing sector, reflecting the industrial diversification policies of the two countries. Proportions of immigrant labour in the utilities sectors are generally low for all countries and range from less than 1 per cent in Saudi Arabia to 2.9 per cent in Kuwait. Although proportions of immigrant labour in construction sectors are high for all countries for which data are available, in Kuwait and Bahrain the proportions are considerably lower. Except for Oman, the proportions of immigrant labour in the service sector (primarily employed in non-government services) are high for all countries and range from 17.5 per cent in Saudi Arabia to 33.7 per cent in Kuwait.

TABLE 1 MIGRANT LABOUR IN THE MIDDLE EAST AND NORTH AFRICA BY SOURCE AND DESTINATION, 1975 (in thousands)

Source	Destination								
	Bahrain	Iran	Iraq	Kuwait	Libyan Arab Jamahiriya	Oman	Qatar	Saudi Arabia	United Arab Emirates
Egypt	1.2	–	2.3	37.6	175.0	5.3	2.7	...	(12.7)
Europe and North America	4.4[a]	(35.0)[b]	0.7	2.0	28.0[c]	3.6	9.2	...	(9.1)[d]
India	9.0	(4.4)	0.3	21.5	2.0	24.8	19.8	...	(73.0)
Jordan[e]	0.8	–	3.1	47.7	7.0	2.6	1.7	...	(6.4)
Morocco	–	–	–	–	1.8	–	–	...	–
Pakistan	6.7	(2.4)	0.9	11.0	5.0	20.2	14.5	...	(94.0)
Syrian Arab Republic	0.1	–	0.2	16.5	15.0	1.5	0.4	...	(3.4)
Tunisia	–	–	–	–	29.0	–	–	...	–
Turkey	–	(1.2)	–	–	8.0	–	–	...	–
Yemen and Democratic Yemen	–	–	–	11.4	–	1.0	2.6	...	(3.5)
Other Asia	1.0	(5.0)	–	1.1	–	–	0.5	...	(0.4)
Other	5.0[f]	(134.0)[g]	0.9	62.7[h]	24.2	8.2	10.5	...	(43.3)[i]
TOTAL	29.4	(182.0)	8.4	211.4	295.0	67.2	61.8	770.0	(245.8)
Per cent of total employment	38	2	1	71	33	64	77	39	89

TABLE 1–Continued

Source: World Bank data.

Notes: Figures in parentheses are rough estimates; – = Data nil or insignificant; ... = Not available.

[a] Includes the United Kingdom 3,497; the United States 843; and others 43.

[b] Includes about 25,000 Americans.

[c] Includes Bulgaria 2,000; France 2,000; Poland 6,000; Romania 3,000; the United Kingdom 4,000; the United States 2,000; and Yugoslavia 9,000.

[d] Includes France 1,572; the United Kingdom 3,167; and the United States 1,318.

[e] Jordanians and Palestinians.

[f] Includes Africa 58; Iran 1,980 ;Iraq 126; Kuwait 65; Lebanon 128; Oman 1,385; Saudi Arabia 226; United Arab Emirates 411; and others 656.

[g] Includes about 120,000 Afghan workers and others from the Gulf states.

[h] Includes Iran 28,953; Iraq 17,999; Lebanon 7,232; Saudi Arabia 2,644; Sudan 873; and others 4,954.

[i] Includes Bangladesh 2,450; Iran 25,444; Iraq 620; Lebanon 4,068; Somalia 1,620; Sudan 1,776; and others 7,035.

TABLE 2 OCCUPATIONAL STRUCTURE OF IMMIGRANT LABOUR IN SELECTED LABOUR-IMPORTING COUNTRIES, 1975 (Percentage)

	Bahrain[a]	Kuwait	Libyan Arab Jamahiriya	Saudi Arabia	United Arab Emirates
Professional, technical, administrative, managerial	10.85	16.04	7.20	16.40	9.70
Clerical, sales, services	35.12	39.48	2.76	16.14	31.09
Production workers, farmers	54.03	44.48	90.04	67.46	59.21
Skilled	–	–	9.18	13.93[b]	–
Semi-skilled	–	–	42.70		–
Unskilled	–	–	38.16	53.53	–
TOTAL	100.00	100.00	100.00	100.00	100.00

Sources: Bahrain: Estimates based on 1971 Census and 1976 arrival/departure statistics.
Kuwait: 1975 Census.
Libyan Arab Jamahiriya: Plan of Economic and Social Transportation 1976-1980.
Oman: Five-Year Development Plan 1976-1980 and World Bank Reports.
Saudi Arabia: Development Plan 1975-1980, and mission estimates.
United Arab Emirates: Mission estimates.

[a] 1976.

[b] Included in skilled labour.

TABLE 3 SECTORAL STRUCTURE OF IMMIGRANT LABOUR IN SELECTED LABOUR-IMPORTING COUNTRIES, 1975 (Percentage)

	Bahrain	Kuwait	Libyan Arab Jamahiriya	Oman[a]	Saudi Arabia	United Arab Emirates
Agriculture	4.45	1.87	10.36	–	14.58	2.90
Mining	0.02	3.16	2.87	2.66	1.47	2.41
Manufacturing	12.75	14.97	7.74	2.04	4.55	6.65
Utilities	1.00	2.94	1.36	–	0.95	1.89
Construction	21.33	22.92	49.45	84.21	32.26	36.96
Commerce and finance	14.31	14.81	4.22	3.42	19.21	15.83
Transport and communications	11.97	5.63	1.60	1.18	9.41	7.85
Services	33.36	33.70	20.40	6.49	17.57	25.35
Other	0.81	–	2.00	–	–	0.16
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00

Sources: Same as table 2.

[a] Excluding agricultural employment.

Economic Implications of Labour Emigration[2]

The effects of exporting labour on the countries of emigration are more complicated than has generally been assumed. They are bound to vary among the individual sending countries, depending on, among other factors, the (1) magnitude of the outflow; (2) employment and occupational status of the migrants before departure; (3) how much the migrant labour saves and remits from abroad; (4) the proportion of remittances invested in producers' goods, consumed or saved; (5) changes that expenditures from remittances bring in the price level; (6) extent of increase in the skill levels of the return migrants; (7) stability of the labour export market; (8) proportion that settle permanently abroad; and (9) effectiveness of government economic policy in organizing and controlling labour and remittance flows. There is also an array of less tangible socio-political factors to be considered in a comprehensive analysis. One should differentiate, too, between social and private costs and benefits. The migrants and their families personally gain, or at least expect to. Otherwise migration would not occur. But those left behind may be adversely affected if, for example, remittances sent home fuel inflation or if manpower bottlenecks caused by the drain of skilled labour cause a drop in output and employment.

Given the complex socio-economic factors involved and the lack of empirical research, especially of research pertaining to the Middle East experience, we intend to take a narrower approach here, discussing the impact of temporary labour migration on the key macro-economic variables in the countries of emigration and seeing under what circumstances export of labour might promote or hinder economic growth.

The most widely recognized immediate benefit of a labour export programme is the flow of remittances. For the developing countries in the region, remittances not only bolster the volume of scarce foreign exchange earnings but also provide a potential source for additional savings and capital formation. Excluding remittances in kind and those sent through unofficial channels—which may amount to large sums in some countries—the flow of remittances to Egypt, Jordan, the Syrian Arab Republic, Yemen, and Democratic Yemen was about 3.8 billion dollars in 1977, a dramatic increase from the 1974 figure of 951 million dollars.[3]

The overall impact of remittances on the balance of payments has, of course, been very favourable. The additional flow of hard currency has generally alleviated the traditional foreign exchange bottlenecks in the labour-exporting countries and cushioned the adverse effects of the 1973 oil price increase. Figures in table 4 indicate the growing importance of remittances in the balance-of-payments accounts of the major labour-exporting

[2] The analysis in this part relies largely on Ecevit and Zachariah (1978).

[3] See table 4 for remittance flows to other labour-exporting countries in the Middle East and North Africa.

TABLE 4 FLOW OF WORKERS' REMITTANCES AND THEIR SHARE IN TOTAL IMPORTS AND EXPORTS OF GOODS IN SELECTED LABOUR-EXPORTING COUNTRIES

Country	1974			1975			1976			1977		
		As per cent of			As per cent of			As per cent of			As per cent of	
	Remittances[a]	Exports	Imports	Remittances	Exports	Imports	Remittances	Exports	Imports	Remittances	Exports	Imports
Algeria	390	9	9	466	11	7	245	5	4	246	4	3
Bangladesh[c]	36	13	2	35	9	1	36	10	1	83	18	9
Egypt	189	11	5	367	23	7	754	47	18	1,425	66	27
India[c]	276	8	5	490	12	8	750[b]	17	12	–	–	–
Jordan	75	48	12	167	109	18	396	198	34	425	186	38
Morocco	356	21	17	533	35	18	548	43	16	577	44	18
Pakistan[c]	151	15	6	230	22	8	353	31	12	1,118	88	40
Syrian Arab Republic	62	8	4	55	6	3	51[b]	5	2	–	–	–
Tunisia	118	13	9	146	17	8	135	17	8	142	16	8
Turkey	1,425	93	33	1,312	94	25	982	50	17	982	56	17
Yemen[c]	159	1,325	69	221	1,556	72	525	4,269	137	1,013	5,449	139
Democratic Yemen	41	410	23	56	373	32	115	261	40	179[d]	352	49

Sources: IMF consolidated balance of payments and World Bank reports.

Note: – = Data not available.

[a] In current prices, million dollars, gross figures.

[b] Estimates.

[c] Fiscal year ending June of the indicated year.

[d] Preliminary.

countries. In 1977 the total flow of remittances to Egypt, Jordan, Morocco, Tunisia, Yemen, and Democratic Yemen, for example, met close to 30 per cent of their total imports and equalled 80 per cent of the total value of foreign exchange earned through the export of merchandise. The impact of remittances on the balance of payments has, of course, varied among the individual countries. At the extreme, Yemen's balance of payments–in fact, its total economy–has been dominated by remittances since 1973. In 1977, the ratios of total remittances to total export of goods and to total imports were 5,449 and 139 per cent respectively. In the same year, remittances met 27 per cent of total imports in Egypt, 38 per cent in Jordan, 18 per cent in Morocco, 8 per cent in Tunisia, and 49 per cent in Democratic Yemen.

In assessing the contribution of remittances to the economy as a whole, there is a tendency to treat them in the same way as other transfers from abroad–that is, in the same manner as foreign aid and direct foreign investment. Although the impact of these flows on the balance of payments is essentially the same, their respective contributions to capital outlays and economic growth are not identical. Foreign aid and foreign investment are generally earmarked for specific investment projects or are readily available for direct investment by governments. Remittances, on the other hand, are essentially transfers of personal income used partly for consumption by the immediate family of the worker at home, or by the worker himself upon his return, and partly for savings and investment. At least a portion of the transfers, therefore, has no direct impact on investment, and the remaining funds are not necessarily channelled into productive investment in line with the country's investment priorities.

No empirical work has yet been done in the labour-exporting countries of the Middle East on the use of remittances and their overall impact on economic growth. The relatively few studies carried out in this general area (primarily reflecting the experiences of the major labour exporters to Europe) and expert opinion indicate that only a small portion of the remittances actually get channelled into productive investment, while most of the funds are spent on consumer goods (usually with high import content) and housing. On the basis of a survey in the Bogazliyan district of Turkey, for example, Abadan-Unat (1975) reaches the following conclusion about the use and impact of remittances in the district: "Capital forwarded into the district as a consequence of workers' savings has been dissipated primarily in consumer purchases. Many houses have been built...Stepping back to contemplate the district as a whole, we must conclude that the appreciable flow of migrant remittances home over the last fifteen years has neither brought about any substantial increase in production in the district nor created many jobs." In the absence of other comprehensive studies in this field, it is difficult to generalize from the Bogazliyan study. Perhaps experience in other countries and, for that matter, other districts in Turkey vary widely from Abadan-Unat's conclusions. However, until new empirical evidence points to the contrary, we should not be overly optimistic about the role of workers' remittances in promoting productive investment.

The impact of additional demand for durable and non-durable consumer goods on the economy will depend primarily on the size of the additional demand and the capability of the existing production capacity in the country to meet this additional demand. If local production is unable to meet the new demand, the resulting supply bottlenecks may fuel inflation and increase import demand. These, in turn, may cause the exchange rate to depreciate and may further contribute to poor export performance.

However, if remittances are successfully channelled into productive investment, and if the increased demand for consumer goods is met through existing production capacity—with no supply bottlenecks and thus no inflationary consequences—the overall impact of remittances on economic growth will be positive. The additional investment will increase output and employment and, in the absence of inflationary pressures, will keep exports competitive. If the additional demand for consumer goods by returning migrants or their dependents is met internally and does not spill over into imports, this additional demand may lead to a better utilization of the idle capacity in certain industries and may even make it possible to achieve economics of scale in production.

Effect on Employment in the Sending Country

The migration of the unskilled and the unemployed from the developing countries can decrease domestic unemployment and underemployment and may even increase employment through feedback effects. The social overhead expenditure of the government—on health, education, and other welfare items—may decrease, and the resulting saving can be channelled towards productive investment and thus more jobs. Similarly, the foregone consumption of the unemployed may increase the savings of those previously supporting them and may lead to further investment. It is possible that in the agricultural sector the departure of the surplus labour will raise the capital labour ratio and improve productivity, thus in turn increasing investment and employment.

If, on the other hand, the emigrants are skilled employed workers who cannot be readily replaced, their departure will adversely affect employment, decrease output, and create manpower bottlenecks in related industries. The resulting skilled labour shortages will raise wage rates and perhaps erode the comparative advantage of the export industries. A shift to capital-intensive techniques would not only reduce employment opportunities, but also increase import demand, which would in turn put pressure on remittances received. Moreover, the prospects for the dispersion of skilled labour through emigration, coupled with increasing wages, would discourage training of additional labour and favour more capital-intensive production techniques.

In general, then, emigration of labour can be beneficial only up to the point where it begins to draw upon the pool of productively employed whose positions cannot be filled promptly by other equally qualified unemployed in the labour market.

With few exceptions, the labour-exporting developing countries of the Middle East and North Africa experience widespread open and disguised unemployment, primarily among unskilled labour. Therefore, the emigration of both urban and rural unskilled labour has generally been effective in reducing unemployment without creating serious bottlenecks and loss of output.[4] However, labour migration in the Middle East and North Africa has included large numbers of skilled workers badly needed by the sending countries themselves. In the Libyan Arab Jamahiriya and Saudi Arabia, for example, the share of unskilled labour in total labour imports was only 38 and 54 per cent, respectively, in 1975. Egypt, Jordan, and the Syrian Arab Republic—countries that have provided large amounts of skilled manpower to these countries—are now experiencing manpower shortages in several categories of skilled labour. The drain from Jordan, for example, reached such a level between 1976 and 1977 that the government was forced to import labour to avoid further bottlenecks in its own development programme. What is perhaps more disturbing is that the structure of the future demand for labour in the region is likely to shift more heavily towards skilled and highly skilled manpower as investment programmes in infrastructure become saturated and give way to "diversification programmes" in service and manufacturing sectors.

No doubt a well-planned and well-executed migration policy could minimize some of the potentially adverse effects of a labour export programme. Administrative and fiscal measures designed to discourage the drain of skilled labour and expanded educational programmes in critical skills could alleviate undesirable effects on domestic labour markets. If remittances were successfully channelled to productive investment, and increased demand for consumer goods was met through existing production capacity rather than spilling over into imports, the overall impact of labour exports on economic growth could be positive. The effective use of monetary and fiscal tools and other relevant economic policy measures could dampen the inflationary effects of remittances and minimize the potential adverse effects on the balance of payments. However, if temporary labour migration reaches high levels and if an economy's dependence on remittances and related benefits increases, policy-makers may be inclined to postpone implementing the structural changes necessary to eliminate the unemployment and balance-of-payment problems that made a labour export programme a necessity in the first place. Thus it is important to design the overall migration policy around a flexible, long-term development strategy that takes into account the potentially unstable nature of labour and remittance flows. Given the lack of detailed information, the dearth of empirical work in the field, and the difficulties inherent in assessing the magnitude and structure of future labour demand, the policy-makers in the labour-exporting countries of the Middle East have a challenging task before them.

[4] In Yemen, where a relatively large proportion of the male population has migrated abroad, there is serious concern about decline in agricultural output. In other countries, seasonal or regional shortages of unskilled labour may be observed but they are not so great that they could not be balanced through internal migration.

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CHAPTER 11. ASPECTS OF IMMIGRANT LABOUR FORCE STABILITY IN THE STATE OF KUWAIT*

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The study of labour force stability is of major concern to planners in most countries, particularly those dependent upon immigrant labour. Knowledge of labour force stability is necessary to make forecasts regarding the size of the labour force, which must be taken into account when formulating development plans. Moreover, knowledge of this sort is necessary to meet the needs of the labour force as regards social, health, and educational services and public utilities.

The relationship between population increase and manpower size is well known and provides planners with a set of equations for studying size and growth of the labour force. In essence, these equations are based on the rate of reproductive change in the population and its sex/age composition, which form the population pyramid to which various age-sex-specific labour force participation rates are applied. From this exercise, estimates of the size of the labour force, the overall rate of employment in the society, and the occupational distribution of the working group can be derived.

However, the situation is more complex in societies in which immigrants constitute a substantial share of the labour force and, in some cases, may even outnumber the indigenous population. In cases such as these, social variables other than those related to reproductive change must also be considered.

Kuwait is one such society. In 1975, only 47 per cent of the total population, 31 per cent of the male labour force and 21 per cent of the female labour force were Kuwaitis (ECWA 1978). Obviously, in situations like this the stability of the immigrant labour force assumes a special significance.

The analytical framework for the study of labour force stability is based on a series of assumptions that can be summed up as follows: (1) Kuwait's economic, social and political conditions are the basic factor influencing labour force migrations to and from Kuwait; (2) the Gulf states constitute the strongest and most immediate competitor in the labour market; (3) economic activity, and especially the right of ownership and investment and the freedom to engage in liberal professions, is the starting point in the transformation of a mobile labour force into a stable one; (4) general social conditions,

* This paper was translated into English from Arabic by ECWA.

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including various recreational facilities, are an important factor in attracting migrant workers as well as in retaining indigenous inhabitants, especially in the present day when the use of leisure time has come to assume such great importance; (5) the increased number of immigrants joining clubs, social welfare associations and co-operative societies is helping to break down the barriers of social isolation and insularity separating Kuwaitis from non-Kuwaitis; (6) the strict regulations governing the provision of health and educational services adversely affect the stability of the labour force and its integration into Kuwaiti society; (7) the social disparity between different sections of the society leads to a lack of cohesion and growing hostility among its various sectors. It would be no exaggeration to say that the beginning of social conflict is rooted in the feeling of certain social groups that they are disprivileged and exploited by other groups; and (8) among the most significant factors that attract immigrant labour is the possibility of accumulating large amounts of cash savings. If the value of these savings declines, the labour force exhibits a tendency to move in a direction that will maximize these savings.

Aspects of Labour Force Stability

The four aspects of labour force stability examined in this study are duration of residence, family size (or number of accompanying dependents), the sex ratio among the immigrant population and the extent to which mixed marriages between Kuwaitis and non-Kuwaitis take place.

It must be borne in mind that the relationship between these aspects and labour force stability itself is not always linear, and that it may even be dependent upon the presence or absence of some other variable. For instance, social obstacles originally related to duration of residence and its consequences may place constraints on the desire for residence. Or the original purpose for coming to Kuwait (e.g., attainment of a certain level of affluence) may be achieved. In cases like this, duration of residence may be a very poor predictor of labour force stability.

Consider the hypothetical case of an immigrant to Kuwait who arrived in 1960 accompanied by two children aged four and five years. In 1974, he would find himself obliged to provide for his children's university education, and would be faced with two alternatives: (1) leaving Kuwait for some other country where his children could obtain a higher education; or (2) meeting their expenses while he continued to work in Kuwait.

Unless he is able to send his children to Kuwait University, the second alternative is problematic, and normally it is the first alternative that wins out. In this case, duration of residence becomes a negative factor in labour force stability. However, if the immigrant is able to send his children to Kuwait University, then the second alternative becomes more likely, and duration of residence, along with his children's attending the University, becomes a positive factor in labour force stability. Similar examples of nonlinearity and conditional relationships could be given for family size and labour force stability.

Thus, the following hypotheses have been formulated: (1) other things being equal, the longer the duration of residence the greater will be the tendency towards stability; (2) other things being equal, an increase in the number of accompanying dependents is indicative of a desire to stay, and the availability of health, educational and housing services is a key factor in this relationship; (3) an increase in the proportion of females in the immigrant community indicates the start of a "population movement" and a tendency towards stability; and (4) mixed marriages, especially those between non-Kuwaiti males and Kuwaiti females, are a significant social indicator of the desire to settle and be assimilated into the indigenous community.

Again, it should be emphasized that these variables are not necessarily interlinked in a positive manner. For example, in the Sudanese labour force the number of accompanying dependents is not positively related to duration of residence. On the contrary, those residing for a shorter period have a larger number of accompanying dependents than do those with longer durations of residence.

Because of the nature of the available data, it is necessary to study each of these variables separately. A multivariable analysis, although desirable, is impossible given the existing data sources.

Duration of Residence

As has been mentioned, duration of residence provides one indicator of labour force stability. We will attempt to examine this indicator in all of its dimensions and to determine the size of population categories and of the labour force according to duration of residence.

In table 1, it can be seen that in 1970 there were 118,146 non-Kuwaitis who had lived in Kuwait for less than 5 years. This is about 45 per cent of the total immigrant population counted in the 1970 census. Slightly more than 31 per cent of the non-Kuwaiti population had lived in Kuwait for 5-10 years, and the remaining 23.4 per cent (or 61,286 persons) had spent over 10 years in Kuwait. The distribution of the economically inactive population is virtually identical to that of the active population. As only about 420,000 non-Kuwaitis over 15 years of age were counted in the 1970 census, the 61,286 non-Kuwaitis with a duration of residence of 10 years or more clearly represent an important segment of the population.

Table 2 presents a more detailed tabulation of the duration of residence of the non-Kuwaiti population. The rather large increase in numbers between duration of residence of 4 years and the shorter durations is primarily due to the extensive influx of immigrants into Kuwait following the 1967 Arab-Israeli war.

Table 2 also presents a breakdown by duration of residence and activity status. Differences, though minimal, do exist. Note the large number of immigrants with a duration of residence of 15 years and over. About three-fourths of these immigrants were economically active in 1970. This is a

significant portion of the total population that deserves careful attention, because it undoubtedly has begun to constitute a population segment within Kuwaiti society and thus represents an important aspect of labour force stability.

TABLE 1 ACTIVE AND INACTIVE NON-KUWAITI POPULATION AGED 12 YEARS AND OVER BY DURATION OF RESIDENCE, 1970

Duration of residence (years)	Active	Per cent	Inactive	Per cent	Total population	Per cent
Less than 5	80,326	45.6	37,820	44.5	118,146	45.3
5-10	53,981	30.7	27,586	32.5	81,567	31.3
10 and over	41,766	23.7	19,520	23.0	61,286	23.4
TOTAL	176,073	100.0	84,926	100.0	260,999	100.0

Source: Kuwait 1972b, table 55.

In table 3 it can be seen that the average duration of residence is relatively high. It is higher for the economically inactive than for the active population and for males than for females. This long duration of residence provides a good indicator with which to assess the aspects of labour force stability. In countries that attract immigrant labour force (such as the United States), five years of residence are regarded as sufficient for the absorption of cultural and social values. In short, this period is regarded as adequate for adaptation to the new environment and for the formation of a social character capable of being influenced by the indigenous society.

An examination of the average duration of residence by nationality may give a clearer picture of the distribution of the non-Kuwaiti population. In table 4, we see that the average duration of residence in Kuwait by nationals of the Gulf states is 7.9 years. This is the highest average, and implies that this group is more eager to live in Kuwait and, consequently, more inclined towards stability than the other groups. The average duration of residence for nationals of Arab countries is 5.8 years, slightly higher than the average for immigrants from non-Arab countries (5.3 years). Thus Arab nationals manifest a greater tendency to remain, settle down and become

TABLE 2 ACTIVE AND INACTIVE NON-KUWAITI POPULATION AGED 12 YEARS AND OVER BY SEX AND DURATION OF RESIDENCE, 1970

Duration of residence (years)	Total active				Total inactive				Total population			
	Male	Female	Total	Per cent	Male	Female	Total	Per cent	Male	Female	Total	Per cent
Less than 1	14,357	1,829	16,186	9.2	1,612	6,053	7,665	9.1	15,969	7,882	23,851	9.1
1	15,611	1,772	17,383	9.9	660	4,642	5,302	6.3	16,271	6,414	22,685	8.7
2	17,887	1,884	19,771	11.2	1,053	6,954	8,007	9.4	18,940	8,838	27,778	10.6
3	14,120	1,459	15,579	8.8	1,636	9,292	10,928	12.9	15,756	10,751	26,507	10.2
4	10,355	1,052	11,407	6.5	790	5,128	5,918	7.0	11,145	6,180	17,325	6.1
5	10,010	945	10,955	6.2	950	5,335	6,285	7.4	10,960	6,280	17,240	6.6
6	7,084	690	7,774	4.4	669	3,838	4,507	5.3	7,753	4,528	12,281	4.7
7	7,613	676	8,289	4.7	917	3,838	4,755	5.6	8,530	4,514	13,044	5.0
8	7,939	644	8,584	4.9	855	3,529	4,384	5.2	8,794	4,173	12,967	5.0
9	5,661	446	6,107	3.5	565	2,532	3,097	3.6	6,226	2,978	9,204	3.5
10	11,594	679	12,273	7.0	810	3,698	4,558	5.4	12,454	4,377	16,831	6.4
11	5,531	338	5,869	3.3	564	1,939	2,503	2.9	6,095	2,277	8,372	3.2
12	6,838	428	7,266	4.1	1,548	3,150	4,698	5.5	8,386	3,578	11,964	4.6
13	4,423	336	4,759	2.7	1,023	2,204	3,237	3.8	5,456	2,540	7,996	3.1
14	3,861	273	4,134	2.3	741	1,672	2,413	2.8	4,602	1,945	6,547	2.5
15 and over[a]	18,700	1,038	19,738	11.3	1,566	5,103	6,669	7.8	20,266	6,141	26,407	10.1
TOTAL	161,584	14,489	176,073	100.0	16,019	68,907	84,926	100.0	177,603	83,396	260,999	100.0

Source: Kuwait 1972b, table 55.

[a] Includes 805 persons, or about 0.3 per cent of the total, of unspecified duration of residence.

TABLE 3 PER CENT OF ACTIVE AND INACTIVE NON-KUWAITI POPULATION AGED 12 YEARS AND OVER BY SEX AND DURATION OF RESIDENCE, 1970

Duration of residence	Active				Inactive			
(years)	Male	Per cent	Female	Per cent	Male	Per cent	Female	Per cent
Less than 1	14,357	8.9	1,829	12.6	1,612	10.1	6,053	8.8
1-4	57,973	35.9	6,167	42.6	4,139	25.8	26,016	37.8
5-10	49,901	30.9	4,080	28.1	4,816	30.1	22,770	33.0
10 and over	39,353	24.3	2,413	16.7	5,452	34.0	14,068	20.4
TOTAL	161,584	100.0	14,489	100.0	16,019	100.0	68,907	100.0
Average duration of residence (years)	6.1	–	5.1	–	7.0	–	5.8	–

Source: Kuwait 1972b, table 55.

assimilated into Kuwaiti society than do population groups from non-Arab countries. It is our belief that the sequential order of the average duration of residence will change in the near future, especially with regard to the position occupied by Egyptians. Arab solidarity and the increasing numbers of expatriate Egyptians will compensate for previous periods when only a limited number resided, and for a limited time. The fact that Lebanon occupies third place, ahead of Iraq, in the sequence of Arab countries, is probably attributable to the long-standing Lebanese tendency to emigrate.

TABLE 4 AVERAGE DURATION OF RESIDENCE BY NATIONALITY, IN SEQUENTIAL ORDER, 1970

Rank	Country	Average duration of residence (years)
1	Gulf states	7.9
2	Saudi Arabia	7.4
3	Lebanon	6.9
4	Iraq	6.6
5	Pakistan	6.5
6	Oman	6.3
7	Yemen	5.7
8	Jordan and Palestine	5.7
9	India	5.4
10	Great Britain	5.2
11	Syrian Arab Republic	5.0
12	Iran	4.8
13	Democratic Yemen	4.7
14	Egypt	3.6
15	Western Europe	2.6
	Total Arab countries	5.8
	Total non-Arab countries	5.3
	Total non-Kuwaiti	5.7

Source: Calculated by the author from Kuwait (1972b), table 44.

TABLE 5 NON-KUWAITI FAMILIES BY FAMILY SIZE AND ECONOMIC ACTIVITY, 1970

Family size (Number of persons)	Economically active		Economically inactive		Total	
	Number	Per cent	Number	Per cent	Number	Per cent
1	6,513	–	40	–	6,553	9.7
2	8,694	–	68	–	8,762	13.0
3	8,740	–	71	–	8,811	13.1
4	9,589	–	74	–	9,663	14.3
-5	33,536	50.2	253	44.2	33,789	50.1
5	8,827	–	66	–	8,893	13.2
6	7,608	–	66	–	7,674	11.4
7	5,918	–	49	–	5,967	8.8
8	4,268	–	36	–	4,304	6.4
9	2,735	–	23	–	2,758	4.1
5-9	29,356	43.9	240	42.0	29,596	43.9
10	1,745	–	21	–	1,766	2.6
11	929	–	17	–	946	1.4
12	539	–	15	–	554	0.8
13	294	–	6	–	300	0.4
14	183	–	5	–	188	0.3
10-14	3,690	5.5	64	11.2	3,754	5.5
15 and over	334	0.4	14	2.6	348	0.5
TOTAL	66,916	100.0	571	100.0	67,487	100.0

Source: Kuwait 1972b, table 59.

These results suggest a socio-economic and political fact, namely that the Gulf states are tending towards the formation of a joint labour market in which regional skills interact with Arab skills from other countries. The similarity of economic, political, social and climatic conditions induces population groups to circulate among the countries of the Gulf region and to settle wherever they find living conditions most attractive.

Family Size (Number of Accompanying Dependents)

Family size is an important indicator with which to gauge aspects of labour force stability because it shows whether the labour force has begun to form a population segment with characteristics peculiar to the local community. A worker who comes to Kuwait and leaves his family and relatives behind in his native country will inevitably think constantly of returning to them. However, if he is accompanied by his wife and children or sends for them after residing in Kuwait for a time, this indicates a desire to stay for a longer period. He may even be inclined to settle permanently if he forms a family similar in composition to families in his native country. Thus the transformation of the mobile labour force into a population segment can most clearly be seen from a study of family size in comparison with family sizes in the home countries of the immigrants.

Table 5 presents family size among immigrants classified according to their activity status. About one-half of the families contain fewer than 5 persons, about 44 per cent contain 5-9 persons, and the remaining 6 per cent contain 10 or more persons.

TABLE 6 ESTIMATED FAMILY SIZE BY NATIONALITY, 1970

Rank	Nationality	Number of persons[a]
1	Saudi Arabia	3.7
2	Jordan and Palestine	3.5
3	Lebanon	3.0
4	Pakistan	2.2
5	Iraq	2.2
6	Syrian Arab Republic	2.1
7	Egypt	1.7
8	India	1.6
9	Oman	1.4
10	Yemen	1.3
11	Democratic Yemen	1.2
12	Iran	1.2
	Total Arab countries	2.5
	Total non-Arab countries	1.4
	Total non-Kuwaiti	2.2

Source: Calculated by the author from Kuwait (1972b), table 46.

[a] Basis for estimation: $\frac{\text{Total population from country}}{\text{Total population less accompanying dependents from same country.}}$

Family size by nationality is presented in table 6, which shows that the Saudi population group has an average family size of 3.7 persons—the largest among non-Kuwaitis. The immigrants from Arab countries have a larger family size than those from the non-Arab countries. If we compare the family size of non-Kuwaitis in Kuwait with the family size in their home countries, we find a ratio of about 1:2. For example, among Lebanese residing in Kuwait, average family size is 3.0, while the average family size in Lebanon is 5.8. The same is true of Jordan and Palestine, where the average family size in the home country is 6.6, compared with only 3.5 among the immigrants. Unfortunately, the absence of controls for age or duration of marriage makes these differences difficult to interpret.

Sex Ratio

The sex ratio constitutes the third indicator of the aspects of labour force stability because it shows whether the labour force has started to reproduce. A study of table 7 shows that the sex ratio in age groups below working age (i.e., under 14 years) is within the limits of a natural population distribution, but the picture changes considerably after those ages. It increases to 3.69 in the 45-49 age group, then declines. However, it does not drop under 1.0 until after age 64. Overall, the sex ratio for non-Kuwaitis is 1.66.

TABLE 7 SEX RATIO FOR NON-KUWAITI RESIDENTS BY AGE GROUP, 1970

Age group	Sex ratio
Less than 5	1.05
5-9	1.05
10-14	1.12
15-19	1.53
20-24	1.68
25-29	2.07
30-34	2.65
35-39	3.04
40-44	3.48
45-49	3.69
50-54	2.75
55-59	2.38
60-64	1.30
65-69	0.97
70-74	0.72
75-79	0.80
80-84	0.73
85 and over	0.93
Unspecified	4.61
TOTAL	1.66

Source: Kuwait 1973, table 14.

When we examine the sex ratio by nationality, we see that it is lower among the immigrants from Arab states than among those from non-Arab countries. The lowest sex ratio among the Arab nationalities is 1.11, for Bahrain; the highest figure is 10.25, for Democratic Yemen. There is also considerable variation among the immigrants from non-Arab countries, the low being .77, for Turkey, and the high being 9.91, for Iran. These data are shown in table 8. The sex ratio by duration of residence for persons age 15 and older is shown in table 9. The sex ratio is lowest in the durations from 3 through 8 years and highest in the category 15 and above.

TABLE 8 SEX RATIO BY NATIONALITY, 1970

Rank	Country	Sex ratio
	Kuwait	1.02
	Arab countries	1.20
1	Bahrain	1.11
2	Jordan and Palestine	1.18
3	Saudi Arabia	1.24
4	Lebanon	1.26
5	Egypt	1.32
6	Iraq	1.52
7	Syrian Arab Republic	1.71
8	United Arab Emirates	1.79
9	Tunisia	2.08
10	Qatar	2.08
11	Sudan	2.66
12	Algeria	3.92
13	Oman	5.55
14	Yemen	6.01
15	Democratic Yemen	10.25
	Non-Arab countries	3.18
	Turkey	0.77
	Great Britain	1.05
	Western Europe	1.21
	India	1.54
	Pakistan	1.79
	Iran	9.91

Source: Kuwait 1973, table 11.

TABLE 9 SEX RATIO FOR NON-KUWAITI RESIDENTS AGED 15 YEARS AND OVER BY DURATION OF RESIDENCE, 1970

Duration of residence (years)	Sex ratio
Less than 1	2.03
1	2.54
2	2.14
3	1.47
4	1.80
5	1.75
6	1.71
7	1.89
8	2.00
9	2.09
10	2.84
11	2.68
12	2.34
13	2.15
14	2.37
15 and over	3.30
TOTAL	2.13
Less than 5	1.95
5-10	1.88
10 and over	2.75
TOTAL	2.13

Source: Calculated by the author from Kuwait (1972b), table 55.

Mixed Marriages

Cases of exogamous marriage constitute a social yardstick with which the extent of intercommunal influences can be gauged. In other words, intermarriage between different nationalities represents a pivot of social interaction. However, in Kuwait social circumstances still hamper the marriage of a Kuwaiti man to a non-Kuwaiti woman, and the problem is even more acute if a Kuwaiti woman wants to marry a non-Kuwaiti. This may be seen by comparing tables 10 and 11. In 1971 and 1972, about 11 per cent of marriages of Kuwaiti men were to non-Kuwaiti women, most of whom were Iraqi. By contrast, in these same years less than 4 per cent of marriages of Kuwaiti women were to non-Kuwaiti men.

TABLE 10 NUMBER OF MARRIAGES OF KUWAITI MEN BY NATIONALITY OF WIFE, 1971 AND 1972

Wife's country of nationality	1972[a]		1971[b]	
Kuwait	2,539		1,943	
Iraq	166		138	
Saudi Arabia	21		12	
Jordan and Palestine	15		12	
Syrian Arab Republic	27		22	
Lebanon	5		4	
Egypt	51		27	
Bahrain	3		2	
Qatar	1		–	
Oman	8		6	
Other Gulf coast	5		1	
Other Arab countries	2		–	
Iran	13		6	
India	3		2	
Other countries	6		4	
Unspecified	5		16	
		Per cent		Per cent
TOTAL	2,870	100.0	2,192	100.0
Kuwaiti	2,539	88.5	1,943	88.6
Non-Kuwaiti	331	11.5	249	11.4

Source: [a] Kuwait 1972a, table 30.

[b] Kuwait 1973, table 32.

There is little doubt that intermarriage between Kuwaiti men and non-Kuwaiti women makes the latter more eager than other groups to settle permanently in Kuwait, for the husband's homeland generally becomes the wife's. She acquires his nationality and may consider urging her family and relatives to settle in Kuwait as well. Perhaps non-Kuwaiti men who marry Kuwaiti women also show a greater tendency towards stability than other groups that have not been assimilated into Kuwaiti society through marriage. Following his marriage, a man may become eager to settle down and increase the size of his family, and may even consider obtaining permanent residence, which is an easy matter when he is married to a Kuwaiti.

In view of the limited amount of intermarriage between Kuwaitis and non-Kuwaitis, we can conclude that the influence of intermarriage on overall

labour force stability is minimal. There are social constraints that largely impede intermarriages. However, the formation of a population segment from the immigrant labour force cannot be achieved through the improvement of working conditions alone. Social interaction is also needed to break down the barriers of isolation and create a new society in which population groups can be merged to build Kuwait's modern society.

TABLE 11 NUMBER OF MARRIAGES OF KUWAITI WOMEN BY NATIONALITY OF HUSBAND, 1971 AND 1972

Husband's country of nationality	1972[a]		1971[b]	
Kuwait	2,539		1,943	
Iraq	20		9	
Saudi Arabia	16		10	
Jordan and Palestine	9		5	
Syrian Arab Republic	7		2	
Lebanon	1		1	
Egypt	4		9	
Bahrain	2		1	
Qatar	1		–	
Oman	8		9	
Other Gulf coast	8		5	
Other Arab countries	4		3	
Iran	11		–	
Pakistan	2		–	
India	1		–	
Other Asian countries	1		–	
Unspecified	5		1	
		Per cent		Per cent
Kuwaiti	2,539	96.2	1,943	97.2
Non-Kuwaiti	100	3.8	55	2.8
TOTAL	2,639	100.0	1,998	100.0

Source: [a] Kuwait 1972a, table 30.

[b] Kuwait 1973, table 32.

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CHAPTER 12. THE ARAB BRAIN DRAIN

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"International migration of high-level manpower," "brain drain," and "reserve transfer of technology" are three widely used terms for a phenomenon as old as history.[1] During the past two decades this phenomenon has become a topic of considerable interest and importance to advanced countries. Eventually the concern spread to UN agencies and from there to less developed countries (LDCs).

The type and quality of interest in the brain drain vary enormously from country to country. The U.S. government and researchers in the U.S. have generated the most complete available records as well as the most extensive and steady flow of studies and literature on the subject. A number of UN agencies–UNITAR, WHO, and UNCTAD, to name a few–have prepared studies on this subject. In the Arab world, as we shall discuss in detail, little locally generated statistical information has been published; furthermore, very few studies have been undertaken.

In this paper we shall concern ourselves only with Arab migration of high-level manpower (HLM). Our concern will be directed to the post-World War II period, which is when the outflow of HLM became appreciable. We shall describe the available data and discuss its limitations. Because the most complete information is generated in the U.S., it is safest to dwell on the inflows of HLM to the U.S. and to try to relate these flows to one or more parameters of the U.S. and Third World manpower markets. The push and pull forces–in other words, the forces driving HLM from their native countries and the forces attracting them to advanced countries–are also discussed and analysed. Excellent studies along these lines exist. What will be attempted here is the construction of an Arab world picture of manpower flows.

By necessity, the picture that will emerge is based on interpretation, extrapolation, and order-of-magnitude analysis. It is well to bear in mind the experimental nature of the approach as well as the limitations and uncertainties of the data in order to avoid reaching unwarranted conclusions. Despite its obvious shortcomings, this approach has a number of merits: (1) it places

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[1] See Dedijer (1961) for discussion of the historical dimension.

the topic in a realistic perspective; (2) the types of data we are in urgent need of become more apparent; and (3) the complexities of the international movement of HLM become more explicit.

Discussion of the movement of manpower loses much of its significance if this movement is viewed in isolation from the HLM resources of a community, the conditions and problems of these resources, and the capacity to educate additional HLM, as well as a relatively detailed analysis of what professional groups are involved in these processes. It is only after we have examined HLM resources that a discussion of the Arab brain drain can become meaningful–fortunately, the production of Arab HLM in Arab universities is better documented than the brain drain.

Once all of the above factors have been analysed, it will be possible to speculate on whether the present flows call for concern and what the alternatives for action are. Naturally we shall find that the various uncertainties in our data base and our limited understanding of the deeper developmental processes produce a number of plausible explanations and conclusions. In this world of imperfect knowledge, analysis of brain drain is a sensitive probe for cultural, social, and economic processes both in advanced and developing societies. It can be utilized to shed light on both groups of societies as well as on the behaviour of individuals.

Data and Information

Annual detailed records of HLM migrants by discipline, level of education, age, and occupation, as well as records of causes and conditions associated with movement, are all essential to a detailed study of the problem. U.S. government agencies have made an enormous contribution to providing the information prerequisite to contemplating the problem on a factual basis. Such data are derived essentially from the Immigration and Naturalization Service in the U.S. Department of Justice. This agency annually publishes statistical information on both immigrant and non-immigrant workers in the U.S. The data base of this agency was assessed in order to prepare detailed studies for the U.S. Congress and was expanded in the 1970s by the National Science Foundation in its survey of U.S. scientific manpower; the latter collected explicit data on scientists, engineers, and physicians from abroad. In contrast, very little primary information concerning movement of HLM has been published by Arab governments and institutions.

What is a Brain?

HLM is assumed here to refer to university graduates. There are B.S., M.S., and Ph.D. levels of such graduates. When statistics refer to scientists, the figures refer to all three levels. Of course, not every degree holder possesses useful knowledge. Furthermore, not all knowledge is useful to an LDC. Thus, not all "brains" that emigrate are necessarily useful to the home or even the host country. Obviously, the fact that a brain was not put to good use at

home does not necessarily imply that the person is generally useless. It must also be noted that the fact that a graduate has worked in an advanced society need not imply that he has become more or less qualified as far as his home country is concerned. Very little work has been done so far on these important qualitative aspects of the brain drain problem.

What is a Drain?

What constitutes a "drain" is a matter that poses difficult problems of definition and data collection. Is an HLM living in a foreign country for any length of time considered part of a drain? Is a person living in his own country but totally devoted to working for projects in foreign countries part of a drain? Is a person on an exchange visitor visa in the U.S. part of a drain, or do only those with immigration visas comprise the drain?

Much of the analysis and discussion in the international literature is concerned with immigrants. However, the percentage of Arab HLM residing in Western countries on either exchange visitor visas or permanent resident visas is greater than the percentage on immigration visas. I estimate that only one-third of Arab HLM in the U.S. are in the immigrant category, but without fairly extensive field-work it is impossible to accurately assess the flows per category. A simple illustration of this fact will suffice here. The U.S. Immigration and Naturalization data inform us that 9,200 Egyptian non-immigrants were admitted to the U.S. in 1976. Of these, 270 were exchange visitors (exclusive of wives and dependents) and 1,460 were "returning resident aliens." During the same year, 1,824 Egyptian immigrants were admitted. Of these, 536 were "professional, technical, and kindred workers" (PTK) and 75 were "managers and administrators." In the fiscal year 1975, the U.S. admitted 157 "scientists, engineers, physicians, and surgeons" as immigrants from Egypt, the country of their birth. Yet no information is available concerning the number of Egyptians residing in the U.S. as exchange visitors.

The changes in these numbers from year to year make it difficult to assess trends or come up with rough order-of-magnitude figures. For example, in 1977 the number of Lebanese returning resident aliens was 3,641; this figure was 698 in 1976. The Lebanese civil conflict may account for this spurt. The Egyptian figures for the same category were 2,697 in 1977 and 1,460 in 1976.

Since the United States, and to a lesser extent Canada and the United Kingdom, have generated the most complete statistics, the emphasis in brain drain studies has necessarily been on these countries. Unfortunately, we still do not have even a rough figure for the flows to other countries or even for those to UN agencies. From 1961 to 1977, we are told, 90,191 "scientists, engineers, physicians, surgeons, and dentists" from the entire developing world were admitted as immigrants to the U.S. as compared with 153,418 admitted from all countries. Canada (1963-1972) admitted 56,598 from LDCs and 216,139 from all countries; and the U.K. (1964-1972) admitted 84,040 from LDCs and 380,751 from all countries (UNCTAD 1975, table A-2).

Briefly, then, LDCs account for 30 per cent of all professional manpower admitted to these three countries; the rest are from other advanced countries.

Direction of Flows

For the purposes of our discussion, it will be necessary to view manpower flows within a broad framework. Some of these flows are neither immigrations across international frontiers nor even physical movements.

Internal flows. There can be three distinct HLM flows within the home community: (1) from rural to urban areas, (2) from the acquired profession to other occupations, or (3) from one level to another in the quality of acquired skills.

If not already urban, university graduates in virtually all LDCs gravitate to urban centres. Some countries have made considerable effort to alter the direction of this movement. In the Arab world there has been some public concern for rural areas, but the main thrust has been towards the development of urban agglomerates, except where a particular region possesses very special natural resources.

Occupational migration occurs when a person trained to be, say, an agricultural engineer becomes a trader in insecticides or tractors, or when a physics graduate becomes a clerk in charge of stocks. There is little accurate information on this type of movement, but it is suspected that it is taking place in the Arab world on a substantial scale.

The third type of change is in the quality of skills, for better or worse; this is another type of flow that has received very little attention in LDCs. We suspect that there exists a strong relationship between these internal processes and the external outflow.

Regional flows. The flow of Arab HLM to oil-producing countries since World War II has paralleled the growth of oil revenues. The Gulf states, Saudi Arabia, the Libyan Arab Jamahiriya, and Algeria have all attracted schoolteachers, engineers, university professors, bureaucrats, and medical personnel. We estimate that these flows total some 100,000 Arab HLM, probably more than half of whom are schoolteachers. Iraq has also attracted a small contingent of Arab HLM, and a substantial number have migrated to Lebanon. But Iraq and Lebanon do not account for more than 3,000 to 5,000 immigrant HLM each.

International flows. For the purposes of this paper, international outflows will be assumed to refer to all movements from an Arab state to other LDCs or to advanced countries (ACs). Much of the international literature on the brain drain is concerned with only one subcategory: the movement from LDCs to advanced countries.

The movement of HLM is strongly dependent on professional training and specialization as well as on the country of destination. For example, the OAPEC countries attract teachers, lawyers, engineers, and medical doctors. The engineers are employed in civil works—the construction of (mostly) buildings, roads, and some public works; very few are involved

in research. There may be some 2,000 Arab Ph.D's staffing the universities of Kuwait, Qatar, Abu Dhabi, Saudi Arabia, both Yemens, and Algeria. The U.S., on the other hand, attracts more medical doctors and researchers. Nevertheless, research scientists and engineers still account for a small fraction of all emigrating Ph.D's and M.D.'s. Those migrating to other Arab states might not know any foreign language. But, with the exception of medical doctors, most of those who migrate to Western countries have received all or part of their education abroad. Some of the immigrant doctors have first gone abroad in pursuit of specialization and found their stay there agreeable.

Facts and Figures

In this section we shall endeavour to provide a survey of existing information, discuss its limitations, and relate it to some key factors that influence the migration processes.

The United States

The flow of HLM to the U.S. can take many routes. The most obvious is the "immigrant" status channel. However, two sample studies, one by Shakrani of Iraqi HLM residents of the U.S., and another by the National Science Foundation survey of Egyptian scientists and engineers in the U.S., reveal that the "immigration route" is not the one most used by Arabs. We shall present sufficient information to indicate that the actual number of Arab HLM employed in the U.S. is probably three or more times greater than the immigration figures indicate.

From 1962 to 1967, Iraq, Jordan, Palestine, Lebanon, the Syrian Arab Republic, and Egypt contributed 80-90 per cent of Arab immigrants to the U.S. Of the 23,091 admitted as immigrants during this time, 3,587 belonged to the PTK category; this category includes HLM and others capable of performing technical and administrative tasks. In the PTK category, there were 1,132 engineers, natural scientists, social scientists, and physicians (Whelan 1974, table 5, p. 49).

In 1965 as a result of Public Law No. 414, the 82nd Congress, 2nd Session, amended the national quota system, replacing it with a system of preferences. This amendment became effective in October 1965 and led to a doubling of the immigration rate over a period of two years.[2] The immigration regulations were again revised (under the 1965 Act) in 1971. These revisions, generated by the high level of unemployment in the U.S., allow immigrants to enter the U.S. only if they have a specific job offer or if their entry will not adversely affect indigenous professionals.

The 1971 revision led to a decline in the overall number of scientists and engineers migrating to the U.S. Table 1 provides an illustration of the Arab

[2] See U.S. Congress (1967), source for 1956 and 1962-1966 data. The 1967 data are from U.S. Congress (1968).

TABLE 1 U.S. IMMIGRANTS ADMITTED BY COUNTRY OF LAST PERMANENT RESIDENCE, FISCAL YEAR 1976

Country	Total	PTK	2	3	4	5	6	7	8	9	10	11	12	13
Bahrain	91	20	1	–	2	–	–	–	1	–	–	–	–	–
Democratic Yemen	34	–	–	–	–	–	–	–	–	–	–	–	–	–
Iraq	1,256	61	1	1	10	3	–	–	11	1	1	1	3	14
Jordan and Palestine	2,416	135	–	2	17	1	1	–	2	2	3	–	3	25
Kuwait	270	56	1	1	6	–	–	–	14	–	1	–	1	6
Lebanon	4,997	455	4	4	46	4	5	1	152	10	6	5	15	44
Oman	9	2	–	–	1	–	–	–	–	–	–	–	–	–
Qatar	18	6	–	–	–	–	–	–	3	–	–	–	–	1
Saudi Arabia	246	52	–	–	9	–	–	–	14	–	–	–	–	5
Syrian Arab Republic	681	130	1	–	12	–	1	–	80	3	–	3	1	11
United Arab Emirates	19	3	–	–	1	–	–	–	1	–	–	–	1	–
Yemen	423	1	–	–	–	–	–	–	–	–	–	1	–	–
Algeria	37	12	1	1	–	–	–	–	5	–	1	–	1	2
Egypt	1,379	408	7	3	83	5	2	–	104	11	20	5	15	32
Libyan Arab Jamahiriya	79	29	1	1	5	–	–	–	14	–	2	–	1	–
Mauritania	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Morocco	160	33	2	–	3	1	–	–	3	–	1	–	2	4
Somalia	20	2	–	–	–	–	–	–	1	1	–	–	–	–
Sudan	22	4	–	–	2	–	–	–	–	–	–	–	1	–
Tunisia	24	6	–	–	1	–	–	–	1	–	–	1	–	2
TOTAL	12,181	1,415	19	13	198	14	9	1	426	28	35	16	44	146

Key: Total = total number of immigrants
PTK = total professional, technical, and kindred workers
2 = total architects
3 = total computer specialists
4 = total engineers
5 = total lawyers and judges
6 = total mathematical specialists
7 = total operations and systems researchers and analysts
8 = total physicians, dentists, and related practitioners
9 = total research workers not specified
10 = total scientists, life and physical
11 = total scientists, social
12 = total teachers, college and university
13 = total teachers, except college and university

record for 1976. From 1972 to 1976 there was a dip in the figures only for PTKs, but the number of medical professionals decreased by 12 per cent in 1974 and 9 per cent in 1975, rising by 25 per cent in 1976—all with respect to 1972. Compare an *annual* figure of medical immigrants averaging above 300 M.D.'s with 275, the *five-year* total for the 1962-1967 period. However, the number of Arab engineering immigrants, though fairly high, decreased after 1972 and remained, until 1976 (the last year for which we have figures), below the 1972 level. The 1977 overall increase in Arab immigration from 12,181 in 1976 to 16,761 in 1977, an increase of 38 per cent in one year, suggests a corresponding increase in the number of professional manpower. Since 1974 the U.S. Department of Immigration and Naturalization has published a detailed breakdown of the PTK figures. It is now possible to study migration to the U.S. in very specialized subcategories.

Table 2 shows the number of immigrants to the U.S. by country of birth and by country of last residence as well as the number of admitted exchange visitors and returning resident aliens. It is clear that the Arab states exhibiting a high level of emigration to the U.S. also exhibit a high number of "returning resident aliens." Many professionals maintain their original citizenship and remain in the U.S. under one of a variety of visa categories. These individuals are not counted among the "immigrants" although for all practical purposes they are brain drainees. In his study of a sample of Iraqi students in the U.S. in 1961, Ali Shakrani found that after 10 years only 4 per cent had returned to Iraq and 90 per cent were fully employed in the U.S. Yet only 34 per cent were naturalized U.S. citizens. The remaining two-thirds of those in the U.S. had maintained their Iraqi citizenship (Shakrani 1971). A second source of information on this critical point is the National Science Foundation study of characteristics and attitudes of immigrant scientists and engineers in the U.S. (1973). The sample chosen was of professionals still ineligible for naturalization. A random sample of 7,986 was selected out of the 56,300 who entered the U.S. between 1966 and 1970. Of the 7,986 there were 111 Egyptians. There were probably other Arabs in the sample but these were entered under "Other Near and Middle East" (total 173) or "Other Africa" (total 94) categories. Since both of these categories include a number of non-Arabs, we shall direct our attention to the findings of the Egyptian sample.

Fifty-four Egyptians provided the following information on their status at entry into the U.S.: exchange student (6), exchange visitor (6), non-exchange student (18), temporary worker (8), tourist or visitor for pleasure (12), and other temporary visas (4) (National Science Foundation 1973, table B-3).

The 111 did not come to the U.S. directly from Egypt—in fact, only half (55) did so. The rest came via Germany (4), Greece (2), Italy (2), the U.K. (4), other Western European countries (2), Canada (12), North and Central America (2), Colombia (2), other Near and Middle Eastern countries (2),

TABLE 2 IMMIGRANTS AND NON-IMMIGRANTS ADMITTED TO THE UNITED STATES BY NATIONALITY

Country	Immigrants fiscal year 1977		Non-immigrants year ended 30.9.1977		
	Birth	Last residence	Number admitted	Exchange visitors	Returning resident aliens
Bahrain	8	49	–	–	–
Democratic Yemen	48	26	–	–	–
Iraq	2,811	634	7,789	81	783
Jordan	2,494	2,909	10,091	156	2,581
Palestine	381	29	–	–	–
Kuwait	160	547	5,831	208	12
Lebanon	5,685	5,498	24,403	84	3,641
Oman	9	11	–	–	–
Qatar	13	37	–	–	–
Saudi Arabia	55	219	20,397	367	161
Syrian Arab Republic	1,676	1,170	7,803	138	843
United Arab Emirates	13	81	–	–	–
Yemen	376	351	–	–	–
Algeria	89	57	8,868	658	67
Egypt	2,328	3,280	20,934	588	2,697
Libyan Arab Jamahiriya	65	110	5,827	633	82
Mauritania	2	5	–	–	–
Morocco	401	160	8,058	121	403
Somalia	21	16	–	–	–
Sudan	48	39	1,410	108	52
Tunisia	78	26	3,291	154	96
TOTAL	16,761	15,254	124,702	3,296	11,418

and Australia (2); 2 were in the "Other" category and 21 were in "Stateless" or "Non-Response" (National Science Foundation 1973, table B-2). Some statistical data from the National Science Foundation indicate that roughly 90 per cent of Arab immigrants to the U.S. in the specialist categories of engineers, scientists, and physicians move to the U.S. from their country of birth (1973, table D-2). However, table 2 exhibits clearly the wide variety of situations that arise in the Arab world. For example, 2,811 immigrants admitted to the U.S. in 1977 were born in Iraq, but only 634 had Iraq as their last place of residence. The two figures for Syria (1,676 and 1,170) show a smaller gap. In the case of the oil-producing countries, the number of immigrants born there is far smaller than the number who named one of these countries as the last place of residence.

The above information demonstrates the complexity of the statistics and the need for much more detailed data to estimate different types of brain drain categories. At this point it appears safe to assume that the total number of Arab brain drainees in the U.S. alone is three times the number of "immigrants."

Other HLM-Receiving Countries

In 1976, there were 8,860 Arabs, 81 per cent of whom were Lebanese, who emigrated to Canada. Of these, 107 were medical workers; 72 were Lebanese. Watanabe found that during the 1962-1966 period 829 engineers, natural scientists, and physicians from Iraq, Jordan and Palestine, Lebanon, the Syrian Arab Republic, and Egypt moved to the U.S.; 396 moved to Canada; and 286 moved to France (Watanabe 1969, p. 401). Another source gives the number of Egyptian "scientists, engineers, physicians, surgeons, dentists, and others" who migrated to Canada over the period 1963-1972 as 2,251 (UNCTAD 1975, table A-2).

Canada serves as a staging ground for further immigration to the U.S. so it is not easy to determine how many immigrants are counted twice: once when they enter Canada and once again when they enter the U.S. Canada appears to attract mostly Lebanese and, to a much lesser degree, others from French-speaking Arab states.

For the purpose of discussion it appears reasonable to assume that the brain drain to Canada accounts for one-third of the drain to the United States. France poses a difficult problem because it provides extensive educational opportunities for the Maghreb, Egypt, Lebanon, and the Syrian Arab Republic[3] and also serves as a host country for a fairly large Arab labour force.[4] At the height of the Lebanese civil war, the French government gave rather extraordinary work

[3] During 1975/76 there were 24,000 university students from the Maghreb and Lebanon in France. See France, Ministère de l'Education (1977).

[4] The number of Algerians, Moroccans, and Tunisians in France increased from 40,000 (1946) to 227,000 (1954); 410,000 (1962); 619,000 (1968); 1,110,000 (1975). See France, Ministère du Travail (1977).

facilities to Lebanese nationals. Bouvier and Desbruyeres estimated that in 1962 the per cent of Algerian, Moroccan, and Tunisian immigrants in France who were university graduates were about 0.5, 1.5, and 3.2, respectively (1970). Owing to the much greater educational opportunities available to the Maghreb population since then, these figures have probably increased. The number of Arab HLM in France is probably in the range of 25,000 to 35,000 out of a total of more than 1.2 million migrants in 1979.

As a general rule, all substantial and steady HLM migration is preceded and/or accompanied by migrations of categories of manpower equipped with less academic training. In absolute terms, the total Arab migration to the U.S. is roughly the same size as that to France. The Arab student population in both countries is similar and it should be interesting to compare the two situations in detail once statistical information on the Arab communities in France becomes available.

The U.K., Germany, and Scandinavia have all attracted Arab labourers and professionals.

In table 3, I have presented an order-of-magnitude computation based partly on facts and partly on a subjective evaluation of incomplete data. The number of Arabs admitted as immigrants to the U.S. in a particular period is taken as the reference unit of one. All other flows entered in the table are multiples of this unit.

In other words, it is assumed that roughly 40 per cent (3 out of 7.5) of all brain drain terminates in the United States. Canada and the U.K. probably account for an equal number of Arab HLM. The figures quoted in table 3 may be set higher or lower. The figure of 7.5 is a rough estimate to help us to acquire a realistic idea of the numbers under consideration.

TABLE 3 ARAB INTERNATIONAL MIGRATION

Destination	Units
U.S.–immigrants	1 (reference unit)
U.S.–all other non-immigrant visas	2
Canada	1
France	2
U.K.	1
Other European countries	0.5
TOTAL	7.5

Yardsticks and Measures

Whether one should be excited over or indifferent to an outflow of 1,000 or 15,000 engineers is of course dependent on a number of factors. The two most elementary yardsticks are (1) What is the size of the pool of professionals from which the outflow emanates? and (2) What is the annual rate of production of this type of professional?

In figure 1 the cumulative number of graduates from Arab universities in 10 Arab states, assuming that the first graduating class was in 1950/51, is plotted on a semi-log scale.[5] (This is why the curve deviates from an exponential growth in the 1950-1958 period.) The total population of graduates doubles every 5.3 years. Thus, for example, in 1975 there were about 760,000 graduates. In 1980 there will be 1.5 million, and so on.

We of course do not know where these graduates are. A small fraction have passed away, and roughly 1-2 per cent continue their studies abroad—to obtain a second B.S. or M.S. or a Ph.D. These data also exclude some 75,000 HLM who have pursued all their higher education abroad. During 1976, around 100,000 HLM expatriates were working in the Gulf, Saudi Arabia, the Libyan Arab Jamahiriya, and Algeria. The data (1962-1976) available from the U.S. Department of Immigration and Naturalization, added up and slightly interpolated for the early period, are summarized in table 4. If we accept a ratio of actual brain drainees to immigrants to the Western world as being equal to 7.5, we come out with 17,000 engineers, 7,500 natural scientists, and 24,000 medical doctors who have left the Arab world and now reside in Western countries.

In order to give meaning to these figures, I collected all the information I could gather on the graduates of Arab universities. Since the data I had on Morocco and Algeria were fairly incomplete, they are not entered in tables 5 and 6. Then I extrapolated all figures to 1975. Hence the figures shown give us a reasonably accurate idea for the graduates from 10 Arab states. The total of 585,000 graduates (table 5) is some 80,000 below the sum one would obtain from figure 1 for 1974/75 because a few disciplines (e.g. fine arts, religion, and others) are not included in table 5.

Thus the total number of medical doctors exported to the West by 1975 constituted 50 per cent of the cumulative national production of the Arab world and 500 per cent of the 1974/75 output. According to table 4, the number of Lebanese doctors who *emigrated* to the U.S. over the years 1962-1976 was 59 per cent of the cumulative output.[6] In a detailed study I had made of the migration patterns of American University of Beirut medical graduates, I found that 33 per cent migrated to the U.S. prior to 1970. For the period 1962-1976, the Syrian Arab Republic lost 200 per cent, and Egypt 25 per cent, of their 1975 production of medical doctors.

[5] Egypt, the Syrian Arab Republic, Iraq, Lebanon, Jordan, Sudan, Saudi Arabia, Tunisia, the Libyan Arab Jamahiriya, and Kuwait. Detailed information on the other 11 Arab states was not available.

[6] According to a report prepared by l'Universite Saint Joseph (Beirut), 62 per cent of all medical doctors who joined the Lebanese Medical Association between 1971 and 1977 were educated abroad *(L'Orient-Le Jour 1978)*.

FIGURE 1 CUMULATIVE NUMBER OF GRADUATES FROM ARAB UNIVERSITIES x 100,000

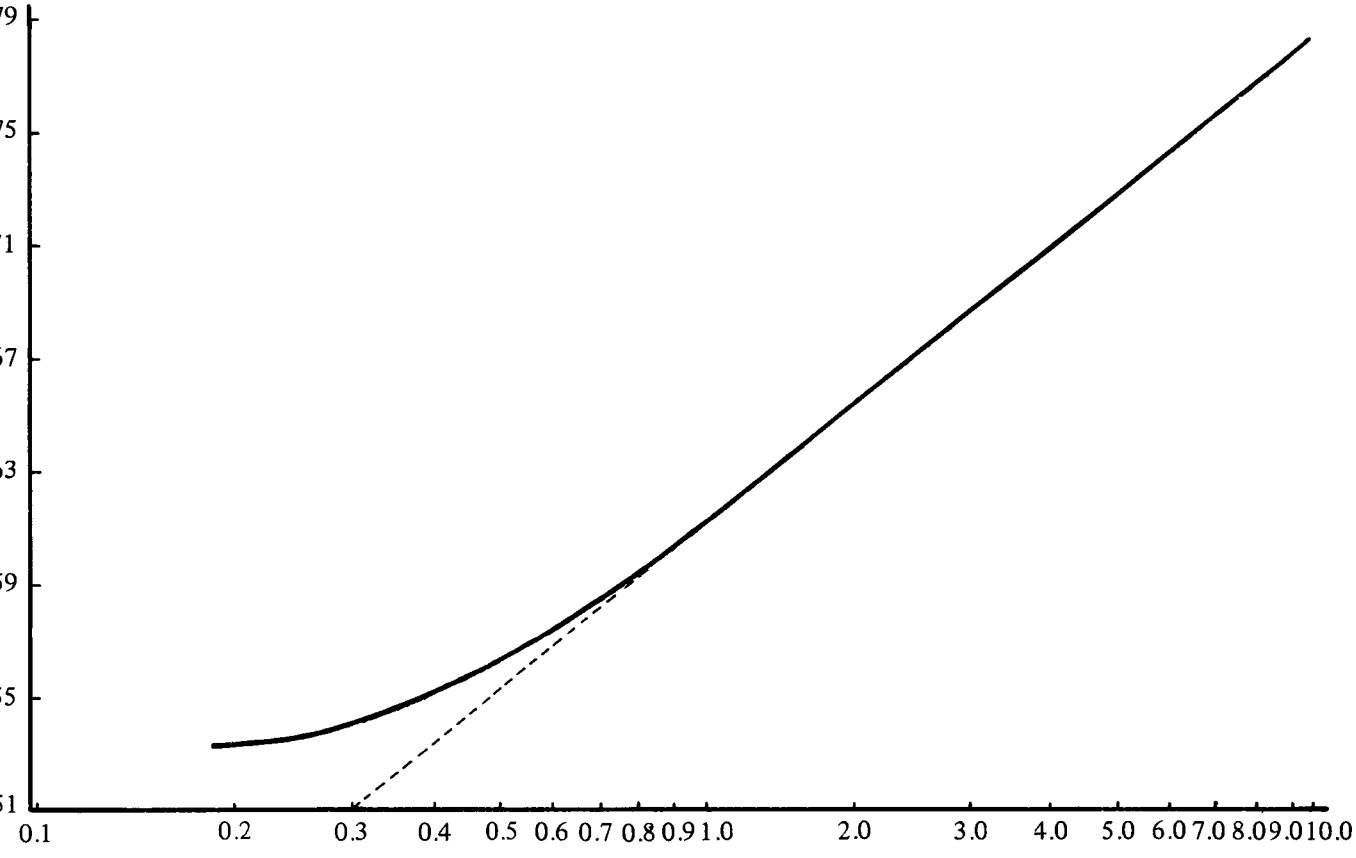


TABLE 4 a. TOTAL NUMBER OF IMMIGRANTS ADMITTED TO U.S. OVER THE 1962-1976 PERIOD[a]

	PTK	Engineers	Natural sciences	Medicine
Iraq	1,450	200	80	170
Jordan/Palestine	2,100	260	90	260
Kuwait[b]	300	80	5	70
Lebanon	3,700	600	500	840
Syrian Arab Republic	1,400	200	10	530
Egypt	5,200	750	340	970
Libyan Arab Jamahiriya[b]	200	30	10	80
Morocco	400	30	10	30
All others[c]	1,700	160	40	300
TOTAL	16,450	2,310	1,085	3,250

b. ESTIMATE OF TOTAL OUTFLOW AND PERCENTAGES OF TOTAL PROFESSIONAL POPULATION AND OF ANNUAL OUTPUT[c]

7.5 x total	124,000	17,000	7,500	24,000
Per cent of total population	21	23	15	50
Per cent of 1975 output	200	230	180	500

[a] The figures are based on the data of the U.S. Department of Justice, Immigration and Naturalization Service. The figures for 1967-1971 are interpolated.

[b] The figures are for the period 1972-1976 only. Immigrants from Kuwait, the Libyan Arab Jamahiriya, Saudi Arabia, and Qatar are mostly (some 80 per cent) from Arab states.

[c] The percentages are based on data in tables 5 and 6.

It is clear that the outflows from Egypt, Lebanon, and the Syrian Arab Republic constitute a large fraction of current production. In fact, Jordanian M.D.'s emigrate even though Jordan University did not until recently graduate any physicians; and if we stick to the 7.5 multiplier, more Lebanese and Syrian doctors are emigrating than the medical schools of either country produce. This outflow emphasizes the importance of foreign medical schools in the production

TABLE 5 ESTIMATE OF THE NUMBER OF ARAB UNIVERSITY GRADUATES, 1950-1975

Field	Egypt	Syrian Arab Republic	Iraq	Lebanon	Jordan	Sudan	Saudi Arabia	Tunisia	Libyan Arab Jamahiriya	Kuwait	Total
Medicine	37,265	2,617	4,950	1,427	–	810	–	–	–	–	47,069
Pharmacy	11,633	1,623	2,292	663	–	–	175	–	–	–	16,386
Engineering	59,789	3,392	6,960	2,704	–	826	315	–	587	–	74,573
Agriculture	49,360	1,398	3,556	1,021	–	591	155	720	269	–	57,076
Humanities	51,640	15,036	19,340	27,071	2,006	3,105	1,346	5,442	2,885	1,179	129,050
Sciences	23,235	3,921	10,910	3,753	684	558	638	2,110	626	369	46,804
Law	37,709	15,167	11,570	4,594	–	525	–	2,368	434	189	72,556
Commerce	69,440	7,267	10,130	9,444	1,590	–	1,107	–	996	784	100,758
Education	13,676	3,810	17,370	–	273	527	648	4,871	--	–	41,175
TOTAL	353,747	54,231	87,078	50,677	4,553	6,942	4,384	15,511	5,797	2,521	585,447

Sources: Data on Arab university graduates were gathered from each government's publications, statistical yearbooks and education statistics for the years 1950-1970.

Al-Said 1960.

Cairo University Prospectus 1970.

Ain Shams University 1967.

Al-Malih and Al-Ikabi n.d.

UNESCO 1971.

Waardenburg 1966.

Data on university graduates for the years 1970-1975, if not available, were estimated on the basis of the 1965-1970 record.

TABLE 6 ESTIMATE OF ANNUAL NUMBER OF GRADUATES IN ARAB COUNTRIES ACCORDING TO FIELDS, 1975[a]

Field	Egypt	Syrian Arab Republic	Iraq	Lebanon	Jordan	Sudan	Saudi Arabia	Tunisia	Libyan Arab Jamahiriya	Kuwait	Total
Medicine	3,900	226	475	110	–	78	–	–	–	–	4,789
Pharmacy	1,430	220	380	42	–	–	34	–	–	–	2,106
Engineering	5,775	440	920	295	–	83	55	–	113	–	7,681
Agriculture	5,000	160	450	90	–	63	31	81	63	–	5,938
Humanities	2,632	1,920	3,100	5,346	280	352	198	880	525	235	15,468
Sciences	1,378	400	1,620	401	158	35	127	410	54	86	4,469
Law	1,782	1,560	1,020	520	–	51	–	385	74	52	5,444
Commerce	3,867	1,020	1,110	2,379	246	–	150	–	119	260	9,151
Education	640	380	2,075	–	52	106	130	810	–	–	4,193
TOTAL	26,404	6,326	11,150	9,183	736	768	725	2,566	948	633	59,439

[a] See footnotes to table 5. These estimates are based on projecting the trends of the available data for the previous decade.

of Lebanese, Syrian, and Jordanian doctors. In the case of Lebanon, Jordan, and the Syrian Arab Republic, medical students, once abroad, appear to remain there in substantial numbers. The 7.5 figure for the multiplier may also be too high for some professions and some individual countries. The findings of Oldham and Gish for the outflow to the U.K. during 1965-1967 support a high value for this multiplier. They estimate that 557 Arab doctors were "temporarily registered in the United Kingdom for the first time" in the brief period 1965-1967 (Oldham and Gish 1970). These came from the Sudan (33), Egypt (316), Iraq (149), Lebanon (19), and the Syrian Arab Republic (40). They also estimated that 1,000 doctors employed in the United Kingdom in 1967 came from such countries as Burma, Egypt, Iraq, and the Sudan. Naturally, the intention of many of the doctors from LDCs working in hospitals in advanced countries is to secure additional training and to return home. Some, of course, do return. This return may be temporary or permanent. Data from a number of Arab states indicate that the rate of return of students who study abroad on government funds is high. However, this return is sometimes temporary and nothing is known about the permanency of the return once legal obligations are fulfilled.

Discussion

We have seen that the available data are fragmentary but that with the help of two multipliers we were able to construct a model that enabled us to estimate the HLM flows from the Arab world to advanced countries. The two multipliers can be progressively refined as more accurate information becomes available.

The data on immigration to the U.S. show a number of interesting features. When immigration laws were relaxed in 1965, there was a prompt increase in the number of Arab immigrants. The 1971 amendment of the immigration act did not contribute significantly to the reduction of the outflow —the change in the composition of the professionals was more the consequence of changes in the U.S. manpower market. The ratio, engineers: natural scientists: physicians, among the immigrants admitted to the U.S. changed as follows from 1962 to 1976:

Year	Ratio engineers: natural scientists: physicians
1962-1967	2.2 : 1 : 1.1
1967	2.5 : 1 : 1.5
1972	2.3 : 1 : 2.8
1976	5.6 : 1 : 12

The changes in the composition of migrating professionals is a direct consequence of U.S. policies in science and technology. The Nixon Administration in 1968 curtailed space programmes and froze the level of expenditure on research and development. This led to a high level of unemployment

among engineers and natural scientists. In the long run, the effects of these policy changes affected the natural sciences to a greater extent than the engineering profession. The demand for physicians was not affected by the 1971 amendment–in fact, it continued to increase in response to growing affluence and the continued limited output of U.S. medical schools. The annual outflow of Arab physicians increased 10-fold in 10 years.

It is noteworthy that the comparative attractiveness of the oil-producing countries for Arab professionals is not very high. The sudden increase in income after 1973 did not lead to reduction of the Arab outflow to the U.S.; furthermore, the legal and personal status of Arab professionals is far more satisfactory in Western countries than it is in Arab countries. The excellent professional conditions combined with their acceptance as bona fide citizens make it difficult for them to accept the restrictions regarding, say, the possession of property, or the frequent arbitrary actions associated with employment in the Arab world.

It is useful to examine briefly some of the popular views propounded in the literature on the brain drain. The most obvious cleavage plane is between those who view this outflow as an international phenomenon and those who consider the movement of HLM an important indication of social and political processes in a national community. The internationalist viewpoints vary enormously, ranging from those who brand this outflow a deliberate "theft" of LDC resources by advanced countries, to those who consider it to reflect a surplus of HLM in LDCs that is relieved–to the advantage of LDCs–by the emigration to advanced countries.

The "indicator" approach was adopted in this paper: the outflow reflects the functioning of the political, social, and economic systems in LDCs and is thus of immense use to development planners. Here the emphasis is not on loss/gain analysis but on those cultural, professional, and institutional factors that contribute to this outflow.

I have very briefly reviewed these approaches elsewhere under three headings: the LDC Nationalistic View, the Humanistic View, and the Advanced Country View (Zahlan 1977).

Recently, UNCTAD has been advocating the concept that the brain drain is a reverse technology transfer. Considerable effort has been expended to compute the monetary value of this "aid programme of LDCs to advanced countries." UNCTAD organized a governmental experts' meeting on the subject of reverse transfer of technology in Geneva from 27 February to 7 March 1978. Seven studies were presented at this meeting. The major contributions of the exercise were the studies designed to develop suitable accounting measures for the conversion of the HLM outflow from LDCs into compensation to be paid by advanced countries to LDCs.[7] Various methods for collecting (taxation), paying, and administering this compensation were also presented (UNCTAD 1978). As one might have expected, most of these notions were rejected by the delegates of advanced countries on various

[7] To obtain the minutes of the conference and the list of documents, see UNCTAD (1978).

technical and non-technical grounds. It is very doubtful whether the fate of the approach adopted by UNCTAD strategists will be more profitable than that of the North-South Dialogue or that of the Code of Conduct.

The most damaging effect of the UNCTAD approach, however, is the transposition of the brain drain problem from the LDCs, where it belongs, to the domain of international relations. The commercialization of HLM is one of the regrettable consequences of much of the literature on the subject. It is all too easy to quantify costs of education and differentials in income and to lose sight of the fundamental causes of the process.

Some Arab Views

In the Arab world, there have been governmental and non-governmental reactions on the subject of the brain drain. The governmental reactions have been in the nature of partial studies and actions to enhance repatriation from Western countries. We shall review some of these reactions briefly.

In Lebanon, one of the leading HLM-exporting countries, the outflow is considered part of "Lebanese cultural radiance." The frequent social, economic, and political crises that rock the country sustain the outflow. Lebanon has a Ministry of Foreign Affairs and Emigrants. But this ministry appears to constitute the extent of Lebanon's interest in the subject. The press publishes short articles on the brain drain whenever a new report appears elsewhere on the subject. For example, *Al-Sayyad,* a weekly, published an article based on a U.S. congressional study under the title: "America Steals Your Scientists" (1967). Later, *L'Orient* published a report of the Université Saint Joseph on the crisis in higher education in Lebanon in which some attention was given to the brain drain (1971). In 1974 a brief article, originating in Damascus and referring to the brain drain during 1962-1966, was published *(L'Orient-Le Jour).* Interest in the drain never went beyond a mere expression of concern.[8]

The interest exhibited by the Egyptian government and press has been ambivalent; it underwent considerable variation in the 1966-1978 period in response to internal social and economic change. The 1966 report by Anwar Kuraitem and Midhat Hamdi, already cited, essentially minimizes the importance and simplifies the circumstances of the Egyptian brain drain by considering only the 148 Egyptians that failed to return, thus violating the conditions of their fellowships. In 1969, Hamdi Rashad published a handbook in Cairo to assist Egyptians who wished to emigrate. That year, Egypt appeared to be pursuing two contradictory policies: the Central Organization for Government Administration was recommending new regulations destined to encourage the emigration of university graduates (Sami 1969); at the same time, Dr. Mustapha Tolba, Under-secretary of State for Higher Education, was announcing that Egypt would call on UNESCO "to issue an international

[8] Since the beginning of the 1975 Lebanese conflict, a considerable number of articles in the Lebanese press have called attention to the exodus of manpower of all categories. So far, there has been no official documentation.

pledge by which member states would not allow foreign students to remain abroad once they had completed their mission" *(Daily Star* 1969). Abdel Wahab Mutawa' reported that there were 50,000 Egyptians abroad and that their deposits of foreign currency in Egyptian banks in 1969 were expected to reach the equivalent of 5 million Egyptian pounds and that these deposits would increase in proportion to the encouragement of the exodus (1969). The same author stated that the numbers of Egyptians who went abroad were 2,000 in 1965; 7,000 in 1966; 6,000 in 1967; and 33,000 in 1968.

Soon thereafter, Fahmi Howeidi reported that the Ministries of Irrigation and Industry had been losing engineering staff that they needed—that of the 28,000 who applied for permission to emigrate in 1969 during the first six months, 15,000 were university graduates or technicians. Despite these trends, the prevailing opinion among a number of ministers was that the pull exerted on Egyptian HLM could not be resisted and that at best Egypt could reduce the push factors. It was felt that the way to employment abroad should remain open and that, rather than treat Egyptians who have settled permanently abroad as criminals, the government should improve and increase communication with them (Howeidi 1969). The open door policy was maintained and the outflow of Egyptians between 1968 and 1978 increased at a very rapid rate. The 50,000 Egyptians estimated in early 1969 to be working abroad may have increased to more than 1 million by 1978.

The idea of improving communication with Egyptian scientists living abroad developed slowly. In 1971 Salah Galal wrote an article about Egyptian scientists in the U.S. with some reference to Europe. By this time the emigrant scientist could travel to Egypt and secure permission to leave without difficulty. By 1971 the preparatory meetings of what became the Society of Friends of Egyptian Scholars Abroad had taken place and in the U.S. the Association of Egyptian-American Scholars was being created. In 1974 these two societies organized a conference in Cairo on "Egypt between Now and the Year 2000" under the auspices of President Anwar Sadat.

However, the euphoria reflected in the above-mentioned trend was not universally welcomed in Egypt. For example, in 1972 Dr. Rushdi Said wrote about the Egyptian brain drain and the illusions it had created. He started his analysis by recalling Sultan Selim's withdrawal of technical manpower from Egypt in 1517. He asserted that the loss of this technical manpower then led to large-scale economic decline in Egypt. He estimated that the number of those who had left Egypt so far exceeded 150,000. He then observed that as a consequence of this outflow a definite decline in all technical work had set in. He criticized the policy in force and argued that the financial remittances could not make up for the enormous losses (1972). In 1973 the periodical *Al-Tali'a* devoted 47 pages to the brain drain. The published articles concentrated on the push factors, a critique of current Egyptian policies, and the economic consequences of the manpower outflow. The papers discussed the contradictions in public policy: a presidential decree to establish a committee to popularize emigration had been counter-

acted by a recommendation from a ministerial committee to stop the campaign calling for emigration (p. 37). A number of commentators in this public dialogue in Egypt have drawn attention to the scarcity of accurate information and analysis. The dichotomy in Egyptian thought persists today although the open door policy is still being pursued.

The public and private sectors of the oil-producing countries have generally faced few problems in securing the services of HLM. Thus, for example, Kuwait, lacking the educational and historical advantages of Lebanon, has been able to build up a population of HLM that is comparable on a per capita basis with that of Lebanon. The Gulf states, Saudi Arabia, and the Libyan Arab Jamahiriya offer better salaries than the home countries of the Arab expatriates.

The government of Iraq has pursued a different strategy. In 1970 it issued Law 189 to encourage the repatriation of Iraqi HLM. The response to this law was fairly poor. Then in 1974 this law was superseded by Law 154: Iraqis who had repatriated prior to the issuance of the law (154) and those who responded to this call received some common benefits (e.g., the right to import a car free of customs duty). Some 705 persons returned home in response to this new law. The majority of the returnees were graduates of 1974; few persons who had graduated before 1970 returned (Abdel-Jaber 1978).

Causes of the Brain Drain

A number of excellent studies on the causes of the brain drain exist today[9] and there is no need to review here basic concepts and principles. Thus we shall examine the outflow with respect to a number of factors that have not received adequate exposure.

The hydrodynamic model of the brain drain is widely accepted and accounts for the "flow" in terms of push by the LDCs and pull by the developed countries. The HLM behaves like an incompressible fluid, ending up in the place to which it is pushed or pulled. In this deterministic model, there is very little one can do except wonder why so many have not yet emigrated and how one might commercialize this manpower commodity. Thus, the UNCTAD approach to the problem of the brain drain under the title "reverse technology" accepts the model and endeavours to rationalize the economics of the process. The issue the UNCTAD type of analysis raises

[9] E.g., Mejia (1975). See also Kidd (1970). The following chapters are relevant to the Arab brain drain: George B. Baldwin, "The General Picture in the Middle East," pp. 261-268. A.B. Zahlan, "Migration Patterns of the Graduates of the American University of Beirut," pp. 269-297. Charles V. Kidd, "Migration into Britain and Western Europe: An Overview," pp. 505-507. Michel Bouvier and Marie-France Desbruyeres, "France: Immigration of Scientific and Medical Personnel," pp. 533-562. Geoffrey Oldham and Oscar Gish, "Migration of Professionally Qualified Manpower from the Developing Countries to Britain," pp. 563-633. The Committee on the International Migration of Talent, "Modernization and the Migration of Talent: Overall Conclusions and Recommendations," pp. 667-724. See also Glaser (1978); Tapinos (1974); Zein(1972);Rabi' (1972); and Zahlan (1972).

is:How can the HLM-exporting countries receive their fair share of the profits derived from the consumption of their manpower in advanced countries? Despite the popularity of the hydrodynamic model in LDCs and despite the interest displayed by the Third World in securing some payments for their manpower exports, I shall pursue a different approach. The approach adopted here is consistent with the overall orientation of this paper: that the brain drain is merely an indicator of events and processes occurring in LDCs; to understand the process better we must examine the situation of the LDCs and the drainees.

Optimization of Personal Choice

The HLM member in LDCs, being a rational human being, tries to choose a course of action that optimizes his own life. He attempts to minimize his risk taking and to maximize his income and the long-term security of his family. This form of behaviour is, of course, opposed to the basic premises of development thinking where, at least theoretically, the strategy is to optimize the collective factors governing a society rather than the individual and short-term benefits. I have discussed some of these attitudes and strategies elsewhere (Zahlan 1973).

Briefly, in any society there are two strategies that may be pursued both by the individual and by the state: these policies have been labelled by Harry Harding (1970) as the efficiency-seeking and the truth-seeking. The efficiency seekers attempt to invest their lives and their capital in those projects and places where they can optimize the investment in the short run. Such a policy leads to the migration of professionals from the village to the city and in the city from the poor area to the rich area. Hence one finds a large concentration of doctors in Ras Beirut and few in Dora, the Bekaa, or southern Lebanon (78 per cent of all Lebanese doctors are in Beirut). Furthermore, substantial numbers of doctors migrate from Iraq, Egypt, and Lebanon to France, the United Kingdom, the United States, and Canada. The truth seekers attempt to invest their lives and capital in projects and areas dictated by social needs and justice: the aim is to reduce social inequities.

Since in developing societies there is a large gap between the rich and the poor, the haves and the have-nots, efficiency seekers contribute to the widening and ossification of this gap. This is why truth seekers regard the strategy of building on one's existing strength as inherently socially irresponsible and unjust. It is only by adopting a policy whereby development is spread across the entire community that one can in the long run create a society built on strong and firm foundations. In the view of the truth seeker, the efficient short-term solutions end in further social injustice and class war (e.g., Iran). Thus the truth seeker will decide to work in Upper Egypt or Southern Yemen not because the job will bring great financial rewards but because the people there are in the greatest need for his services. Harding interprets the Cultural Revolution in China in this light, namely, as an attempt to secure development and modernization with social justice.

One can safely say that to date there are no truth seekers to speak of in the Arab world. Nabeel A. Shaath (1965, p. 201) reported that in the early 1960s in Egypt, 60 per cent of the agricultural engineers, 78.5 per cent of the medical school graduates, and 74 per cent of the commerce graduates, worked in Cairo, Giza, and Alexandria; the combined population of these cities was 18 per cent of the whole of Egypt. University graduates are no different in other Arab states. Relatively few agricultural engineers live and work with the people who need them most.

There is no question that Arab efficiency seekers have excellent arguments for migrating to the cities and to the United States. The educational system in LDCs extols truth-seeking virtues; when the youth are confronted by the violent contradictions between the instilled ideals and the efficiency-seeking realities of public and private policies, they are rudely shaken and become progressively alienated from their societies. Recent unpublished studies on the propensity to emigrate have indicated that the alienation of youths from their society begins at a fairly early age in secondary school and increases during the years of university education. William Glaser's enquiry into aspects of this problem is presented in table 7. It is clear from Glaser's study that the foreign student, even before he faces the problems of return, is already indisposed to go home.

The Brain Drain and Development Thinking

Development thinking in the Arab world is virtually dominated by Western thought, which in turn is based on efficiency thinking. Arab development plans are a collection of projects, each of which is believed to be "cost effective." Arab funds utilize World Bank and Western modes of "project evaluation" and decision procedures for the selection of project consultants and contractors. The nearly complete dependence on the technology-free turnkey approach to project planning and execution is a particularly exclusive creation of Arab efficiency seekers optimizing short-term rewards. Many Western and Soviet studies critical of this style of thinking exist. However, development planning in the Arab world does not reflect any aspect of Arab experience or of advanced research on this topic.

Briefly, development thinking in the Arab world aspires to create "modern enclaves" within which the beneficiaries of economic development can pursue their modern life-styles. This, of course, is not a proclaimed national goal but the visible consequence of public policies (see Amin 1974). The distinguishing feature of the public efficiency seeker as opposed to the private efficiency seeker is that he attempts to attain his optimal solutions within national borders and the confines of the modern enclave. The development of Egyptian thought on the subject of the brain drain between 1966 and 1974 exhibits the progressive acceptance of efficiency-seeking behaviour at the level of the individual long after its practice at the level of the state. What is surprising is that some reporters wonder why 70 per cent of the "open door" projects are in Cairo and the rest are in Alexandria and Giza.

TABLE 7 LONG-RUN PLANS OF PRINCIPAL GROUPS OF STUDENTS

Home country	Definitely return home and stay	Probably return home and remain	Uncertain	Probably go abroad and stay	Definitely go abroad and stay	Total number of students in survey
Middle East and North Africa	34 per cent	18	10	13	25	664
Tunisia	61 per cent	21	7	6	5	124
Egypt	15 per cent	15	9	21	40	192
Iran	42 per cent	21	18	7	12	125
Lebanon	39 per cent	15	13	15	18	135
Turkey	27 per cent	27	24	0	22	35

Source: Glaser 1978, p. 27.

Modern enclaves are within the major urban centres and are the main objectives of efficiency-seeking development planning (Gaith 1978).

The absorptive capacity of the modern enclave is a key factor in the outflow of HLM. Hospitals requiring the services of specialized medical personnel serve restricted strata of LDC society. LDC governments do not possess the resources to provide every citizen with this type of service. Yet medical education in most Arab states is modelled upon that of the West and thus is hospital based, cure rather than prevention oriented. So the "surplus doctors" –i.e., the doctors who cannot find adequate hospital jobs and middle-class patients–must emigrate. Engineers and scientists are not required to plan or execute technology-free turnkey projects. Here again, efficiency seekers cannot waste effort in building national capabilities and national institutions. It is much more effective, safer, and faster to send the favourite son to Oxford or M.I.T. and have the serious projects carried out by foreign firms of proven international competence.

On the basis of this approach, the brain drain problem is reversed; what one has to study and explain is why so many HLM remain behind.

The Brain Drain, Centre and Periphery

Latin American scholars have evolved the dependency school of thought according to which Third World countries are governed by a minority of the population, constituting the modern sector. This sector is integrated into the world capitalistic system. Movement of HLM into and out of this modern enclave to and from the advanced countries has little to do with development. In fact, it is a competition between the various elites at the centre and periphery. The only relationship of the modern enclave to the bottom 70 to 90 per cent of the population is through the trickle effect. The entire traditional economy lies outside prevalent development planning and social and economic thinking.

According to the dependency approach, a reduction in the HLM outflow can only be achieved via changes in income distribution and in the relationship between the traditional and modern sectors. In fact, this school of thought is totally pessimistic about the possibility of finding solutions to the economic problems of LDCs within the present system of economic thought.[10]

The Brain Drain and Higher Education

The Arab system of higher education educates youth for urban living and to cater to the needs of the modern enclave. The educational process makes little reference to the traditional sector of the economy or even to the immense projects that were, or are, being executed. The books, ideas, and education of the professors are largely foreign. It is little wonder that the

[10] See, for example, Herrera et al. (1976) and Herrera (1978).

educational process is accompanied by considerable alienation. The internal brain drain and the dissonance between society with all its problems and realities and the HLM are indicators of the same cultural malaise.

Regional HLM Migration

We have already noted that possibly 12-15 per cent of all Arab HLM have emigrated to the Gulf states, Saudi Arabia, and the Libyan Arab Jamahiriya. This outflow is interpreted by some as reflecting Arab solidarity and inter-Arab cooperation. HLM-exporting countries compliment themselves for assisting sister Arab states while the attitudes of host countries vary from suspicion to satisfaction. It is certainly high time that detailed field studies be undertaken to describe the realities accurately. This area of research should attract considerable attention in both the HLM-importing and HLM-exporting countries.

Conclusion

In this discussion of the brain drain we have attempted to emphasize those aspects that are most relevant to a developing society. The brain drain means different things to different people. It seems to me that the basic issues are lost in complicated transactions between the North and the South and in the commercialization of manpower. LDCs could waste valuable time by pursuing the problem *à la* UNCTAD or *à la* Code of Conduct. Many LDCs have already tried a wide variety of measures to encourage repatriation: islands of excellence, floating fellowships, financial incentives, withdrawal of passports, and so on. All of these have had, at best, very limited success.

In this paper we have wondered not so much why so many leave but why so many stay. After all, some 80 per cent of all Arab HLM are in their home countries and some 30-70 per cent of Arab Ph.D's in engineering and science have returned home of their own choice. We feel that the starting point of any effective manpower programme should be to learn how to increase the productivity of the presently available manpower; how to integrate it culturally, socially, and economically; and how to develop Arab institutions. Many HLM leave out of despair. The conditions that have led to this should be redressed whether those who left will repatriate or not. After all, between 1979 and 2000 it is expected that some 12 million Arabs will have graduated from university. Study of the brain drain should assist us to reform Arab higher education, institutions, and manpower policies in time to make better use of these human resources of such immense potential.

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CHAPTER 13. CONTEMPORY INTERNATIONAL MIGRATION AND HUMAN RESOURCES DEVELOPMENT IN THE ARAB REGION: BACKGROUND AND POLICY ISSUES

*J.S. Birks and C.A. Sinclair**

This paper contains a brief summary of the nature and extent of international migration in the Arab region and enumerates problems this migration has caused in the field of human resources development. The paper argues that these problems and the development of the region's human resources are best tackled from a regional perspective.

Empirical components of this paper are drawn from the work of the International Migration Project, which was commissioned by the International Labour Office in April 1977. The project, which lasted 2 years, was a study of contemporary patterns and processes of labour movement in the Arab region.[1] Readers interested in a fuller treatment of results should consult the published sources (Birks and Sinclair 1978a, 1978b, 1978c, 1979f, forthcoming 2). The qualitative analysis of problems of human resources development presented later on summarizes work undertaken by the Education and Labour Market Policies Branch of the International Labour Office on the derivation of a regional manpower programme for the Arab region (ILO 1979).

The Background to International Migration

The Arab Middle East can be divided into capital-rich and capital-poor states (Mabro 1975; Birks and Sinclair forthcoming 2). The former have a gross national product per capita in excess of $1,000 (figure for 1977), while the latter have much lower levels of income per capita. International migration takes place essentially between these two groups. In the capital-rich group are found Saudi Arabia, the Libyan Arab Jamahiriya, Kuwait, Bahrain, Qatar, the United Arab Emirates, Oman, and, to some extent, Iraq. In the capital-poor group we include Egypt, the Sudan, Morocco, Tunisia, Lebanon, Jordan, the Syrian Arab Republic, and Yemen. The prevalence of unemploy-

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[1] The study referred to here was undertaken in the Research Programme on International Migration and Employment of the World Employment Programme, ILO. Views expressed in this paper are not necessarily those of the ILO or any other organization with which the authors are or have been associated.

ment and underemployment among the relatively large work-forces of the capital-poor states and the small indigenous work-forces and ambitious development plans of capital-rich states were the pre-conditions of the active labour migration system that has characterized the Arab world since oil was found. Since the 1950s there has been a steady transfer of labour from the capital-poor to the capital-rich states within the Arab world.

The demand for labour in the oil-exporting states reached a new pitch after 1973, when more rapid economic development ensued. After this time, the demand for labour was both qualitatively and quantitatively extensive, seeking the work-forces essential to such rapid development programmes. The scale of migration was transformed as a consequence. So small are the indigenous work-forces of oil-rich states that today the migrant workers represent almost the entire work-force in some cases. In some sectors of the economy requiring specialized skills, immigrants do comprise the entire work-force. On the other hand, the scale of transfer of labour is such that substantial proportions of the labour forces of some of the capital-poor states have been exported.

Table 1 illustrates the extent to which non-national labour contributed to the labour forces of the capital-rich states in 1975. Even in the largest economy and labour market, that of Saudi Arabia, expatriate workers account for more than 40 per cent of the economically active. The countries with smaller economies, such as Kuwait and the United Arab Emirates, rely extensively on migrant labour: respectively 69 per cent and 85 per cent of their labour forces are non-national. Qatar, the smallest economy, depends upon a labour force in which more than 4 out of every 5 workers are expatriates.

The large majority of migrant workers in 1975 were Arabs. Table 2 shows that in the principal countries of employment Arabs accounted for 75 per cent of all migrants, Asians 17.6 per cent, Europeans 2.1 per cent, and "others" about 5 per cent.

Closer inspection of the characteristics of Arab migrants reveals that in 1975 Egypt, Jordan, and Yemen together accounted for 73.5 per cent of the total migrant work-force. Most Egyptian migrants in 1975 were working in the Libyan Arab Jamahiriya, though an estimated 95,000, or 24 per cent, were in Saudi Arabia. Egypt's proximity to the Libyan Arab Jamahiriya is the chief explanation for the substantial presence of Egyptian workers there (Birks and Sinclair 1979b).

Almost all Yemeni migrants work in Saudi Arabia—not only does Yemen border with Saudi Arabia, but also in 1975 wages were exceptionally high in the latter country.

Jordanian and Palestinian migrants in 1975 were working mainly in Saudi Arabia, but also in Kuwait, the Libyan Arab Jamahiriya, and the United Arab Emirates. Migrants from this group are generally well educated and consequently highly mobile. They often occupy senior positions in government and business.

By 1975 some Asian labour was being used in the Arab world, but on a small scale. Only in the United Arab Emirates and Oman did Asian labour

TABLE 1 EMPLOYMENT BY NATIONALITY IN CAPITAL-RICH STATES, 1975

State	Nationals' employment	Per cent of total	Non-nationals' employment	Per cent of total	Total employment
Saudi Arabia	1,026,500	57.0	773,400	43.0	1,799,900
Libyan Arab Jamahiriya	449,200	57.5	332.400	42.5	781,600
Kuwait	91,800	30.6	208,000	69.4	299,800
United Arab Emirates	45,000	15.2	251,500	84.8	296,500
Bahrain	45,800	60.4	30,000	39.6	75,800
Qatar	12,500	18.9	53,800	81.1	66,300
TOTAL	1,670,800	50.3	1,649,100	49.7	3,319,900

Source: Birks and Sinclair forthcoming 2, table 8.

TABLE 2 MIGRANT WORKERS BY ETHNIC ORIGIN AND COUNTRY OF EMPLOYMENT, 1975

Country	Ethnic origin										Per cent of grand total
	Arab		Asian		European		Other[a]		Total		
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	
Bahrain	6,200	20.7	16,600	55.3	4,400	14.7	2,800	9.3	30,000	100.0	1.8
Kuwait	143,300	68.9	33,600	16.1	2,000	1.0	29,100	14.0	208,000	100.0	12.6
Libyan Arab Jamahiriya	310,400	93.4	5,500	1.7	7,000	2.1	9,500	2.9	332,400	100.0	20.2
Qatar	15,000	27.9	34,000	63.2	800	1.5	4,000	7.4	53,800	100.0	3.3
Saudi Arabia	699,900	90.5	38,000	4.9	15,000	1.9	20,500	2.6	773,400	100.0	46.9
United Arab Emirates	62,000	24.6	163,500	65.0	5,000	2.0	21,000	8.4	251,500	100.0	15.2
TOTAL	1,236,800	75.0	291,200	17.6	34,200	2.1	86,900	5.3	1,649,100	100.0	100.0

Source: Birks and Sinclair forthcoming 1, table 9.

[a] Includes migrant workers from Iran and Turkey as well as Africa and other.

make a substantial contribution to the labour force in 1975. In 1975 the majority, 57 per cent, of Asian workers in the Arab world worked in the United Arab Emirates (table 2).

Indians and Pakistanis have long been involved in economic development in the Middle East. As traders and entrepreneurs they existed, in small numbers, under the traditional economic order in the Arabian Peninsula. In the Second World War, they were introduced in substantial numbers as part of the British war effort in the region. Subsequently, Indians and Pakistanis continued to make a contribution to the labour market, becoming associated with certain tasks and established in particular countries, such as Kuwait, Saudi Arabia, and Bahrain. Until 1970, though, numbers of workers in the Arab world from the Asian subcontinent were small, and their participation was informal and spontaneous.

The Heightened Demand for Labour

In 1975 Arabs provided the majority of migrant workers within the Middle East, some 1.3 million out of a total of about 1,700,000 migrants.

However, at that time several aspects of the labour market were changing, particularly in response to the transformation of the economics of the Arabian Peninsula. The volume of demand for labour was increasing dramatically as spectacular development plans of the capital-rich states were put into operation with enhanced oil revenues and as industrialization got under way.

By 1975 the development plans, redrawn in a new scale after the 1973 price increase, were being implemented. Targets embodied in them were being exceeded. The increased labour demand engendered by this rapid development of the capital-rich states occurred just at the time when Iranian and Iraqi migrant workers were returning home. Iran and Iraq, which had previously supplied a significant amount of labour to Saudi Arabia and the Gulf states, began to develop their own economies; consequently, large numbers of Iranians and Iraqis were attracted home by the prospect of opportunities in their own countries.

These changes—the expansion in labour demand and the contemporaneous withdrawal of part of the supply—markedly increased the pressure upon the capital-poor Arab states to supply yet more manpower. This was experienced in the capital-poor states as direct recruiting of labour in Cairo, Amman, and Khartoum by concerns operating in the capital-rich states, which offered rapidly rising real wages. However, by 1975 a relatively high proportion of all potential migrants in the Arab labour-exporting countries were already working abroad.

Indeed, the proportion of workers abroad from Jordan (East Bank), Oman, and Yemen was close to one-third in 1975. In the Syrian Arab Republic, Egypt, and the Sudan, the number of migrants abroad, though forming a small proportion of their work-force, was also close to the potential number of workers who were prepared or able to migrate.

Nevertheless, during 1975 and 1976, when the opportunities for migrant workers in oil-rich states became even more attractive, increased numbers of workers departed, and soon thereafter the actual number of migrants from these states coincided with the potential supply (Birks and Sinclair 1979b).

The rather limited extra numbers of workers drawn from the Arab-supplying states in 1975-1976 fell well short of the requirements of the burgeoning demands of the oil-rich states. As a result, the rapidly industrializing wealthy states had to turn elsewhere for additional supplies of labour.

The Changing Perception of Capital-Rich States

The shortage of Arab labour in the region meant that the oil exporters had to broaden their areas of recruitment of labour. The source of labour to which the capital-rich states turned in their search for more manpower was Asia, in particular the Indian subcontinent and the countries beyond.

Since 1973 the migration of Indians and Pakistanis to the Middle East has become more organized through "agencies" in response to the new scale of opportunities represented by the increased demands of the capital-rich states. The consequent growth in the importance of the Asians in the labour forces is documented in Birks and Sinclair (1979b).

Within the four Gulf states of Kuwait, Bahrain, Qatar, and the United Arab Emirates, a marked shift in the composition of the labour market was in train by 1975. Between 1970 and 1975, the proportion of jobs occupied by expatriate Arabs fell by 16.5 per cent. The Asians' share of the workforce rose from a quarter to one-half of the total as their numbers rose from 83,900 to 247,700.

These Asians were mainly Indians and Pakistanis. Factors behind their increased participation in the Middle Eastern labour market are of major significance for economic development in capital-rich and capital-poor states. The demand for labour in the Arab world was changing.

Labour Agents in Asia

The most obvious expansion of the role of Indians and Pakistanis in the economic development of the capital-rich states is the one demonstrated in the United Arab Emirates. This increase in the participation of Asians was both a cause and a consequence of the formalization of Indian and Pakistani labour supplies through a series of recruitment and manpower-supplying agencies.

The *raison d'être* of these "agents," who are private sector entrepreneurs from Asia, is to profit from the opportunities to gain from expanded migration. Representatives of agents, living in the countries of employment, identify employers' labour requirements and specify skill levels, trades, and numbers needed. They supply these requirements quickly by virtue of having counterparts in India, Pakistan, and Sri Lanka with lists of would-be migrants according to qualifications and availability. These applicants are trade tested before being dispatched to the country of employment.

Therefore, just at the time when Arab labour was becoming difficult to acquire, expensive, and of less predictable quality at all skill levels (as the potential level of Arab exports was approached), Indian and Pakistani labour of known skills and capabilities became *quickly* and *easily* available. This regularization of the Asian-Arabian labour flow by agents, who could above all supply labour speedily, encouraged the rapid increase in utilization of Indian and Pakistani labour in the capital-rich states during their period of most frenetic development.

The governments of the Indian subcontinent tacitly encouraged these labour recruitment agencies in the early period of their establishment—the advantages to their nations of supplying migrant labour appeared marked. The deleterious aspects of their role did not appear likely to become significant in countries with such large populations and complex economies.

In 1977 and 1978, however, both the Indian and the Pakistani governments intervened in this system of labour recruitment. This intervention came about mainly in response to human rights abuses suffered by employees recruited through labour agencies. It is also of note that some concern has been expressed in Pakistan about shortages of certain types of labour ostensibly brought about by the scale of labour exporting.

The constraints upon the supply of Indian and Pakistani labour resulting from government intervention encouraged Arab governments to look yet further afield for labour to the Far East. Companies from Korea, Taiwan, Indonesia, and the Philippines began to win large-scale contracts in which they designed, built, and manned industrial enterprises. As a result, the number of workers from the Far East has recently increased dramatically, thus introducing yet another change in the blend of migrant labour in the Arab region.

Conclusion

The sudden surge of demand for labour in the capital-rich states attracted many Arab migrants from neighbouring states. As a result, these capital-poor states also began to experience shortages of skilled manpower and high rates of inflation. In many ways, workers remittances caused this inflation: the money supply rose quickly in economies with limited productive capacities now compromised by the out-migration of skilled labour.

There are some indications that the demand for Arab labour may decline in future years as Far Easterners invade the Middle Eastern labour market. Thus Arab labour-sending countries can expect a sharp decline in remittances and a return of their erstwhile migrants.

While the capital-rich states have developed quickly with the assistance of migrant workers, heavy dependence on their services has hindered the development of human resources in ways we shall now examine more fully.

Problems of Human Resources Development

Human resources development is a key issue for both capital-rich and capital-poor states. In the capital-rich countries, relatively unconstrained as they are with respect to financial capital, it is their human capital that presents the constraint to development. In capital-poor states, providing a source of income for the growing number of labour market entrants is proving harder as time passes. Creating productive employment and managing their labour markets is therefore a key issue.

Because of the physical proximity of capital-rich and capital-poor countries, the pervasiveness of international migration, and the cultural linkages between countries of the region, the economic decisions of any one country affect others in the region significantly. Also, the region divides fairly precisely into the capital rich and the capital poor. Within each group, countries face similar problems of human resources development. There is therefore a strong case to be made for approaching human resources development from a regional perspective, for two reasons in particular: (1) groups of countries, e.g., the capital rich, all have similar problems with their human resources development. Some of these problems are severe, and there would be considerable benefit from looking at, for example, the problem of motivation as it has occurred in every capital-rich state. Similarly, all capital-poor states have experienced, and continue to experience, out-migration of labour. Coping with international migration is a problem for them all, and therefore it would be advantageous to look at the problem from a regional perspective. (2) Some problems are regional in character.

The sudden demand for labour in capital-rich states created manpower bottle-necks to development both in capital-rich and in capital-poor countries. A regional study of the demand for and supply of labour would permit both labour senders and labour receivers to have a clearer idea of the shortages and/or surpluses of labour likely to occur in the region.

We now enumerate some key issues facing countries of the region in the field of human resources development, first in capital-rich states, then in capital-poor states.

Capital-Rich States

Here we identify six key problems recurring in capital-rich states and suggest, in broad terms, ways in which countries in this subgroup could profit from a regional approach to human resources development.

Manpower bottle-necks. All capital-rich states in the region have experienced either a delaying of their development or additional financial costs as a result of manpower bottle-necks. As the economies of the capital-rich have moved into phase with each other, competition for a limited pool of skilled manpower has become more intense. By viewing the demand and supply of labour regionally, it would be possible to predict manpower bottle-necks (or surpluses) in advance. Wasteful competition could be avoided,

and practical alternatives could be sought to the practice of bidding up the market price, which distorts the labour markets of capital-poor states and is unnecessarily expensive.

Immigration policy. In the capital-rich states, migrants have come to comprise a large proportion of the work-force and community. Their continued co-operation is essential for further economic development. However, immigration has occurred typically on an *ad hoc* basis, largely in response to market forces. Little attention has been given to national immigration policies and, as a result, the swelling ranks of migrant workers are viewed with great concern by many nationals. In some cases, a growing proportion of immigrants share neither language nor religion with the host country. The resulting situation is unstable, since there is a growing conflict between economic forces, which require more migrant labour, and political concern over the potential loss of national culture and identity. While dependence on migrant labour is inevitable, a clear policy on immigration would give economic planners a more certain environment in which to plan and would allay fears within the community. Determining an appropriate and feasible migration policy would be easier and more realistic if a regional approach were made to the problem. There would be the benefit of learning from the experience of others as well as the advantage of avoiding policies that were competitive.

Education of nationals. All capital-rich states are engaged in rapid development of their indigenous human resources. Despite the large sums invested in education and training, drop-out rates in schools are high and motivation of students is a serious problem. Moreover, certain types of education and/or training are ignored by nationals, e.g., technical education, teacher training, and vocational training. Consideration of this problem in a number of capital-rich states would assist analysis of the problem and design of remedies.

Motivation of national work-forces. There are signs of decay in the indigenous work-forces of the capital-rich states with extremely serious consequences for long-term development (Birks and Sinclair 1979f). The causes of a loss of motivation among nationals to participate in the modern sector are not well known, although there are clear signs that level of wealth and government employment policies are highly relevant. A study of national employment policies in capital-rich states and an assessment of the value of alternative policies would help the government planners concerned to arrest this decay.

The participation of women in the economy. Not every capital-rich state views the increased participation of women in the economy as desirable, but certain aspects of the potential female work-force suggest that this issue cannot be ignored. Women represent a presently untapped source of labour in economies desperately short of indigenous manpower. Very few women work, but those who do are generally well educated. The educational attainment of women is improving all the time, for their access to education is often equal to that of men. Given the social traditions and customs of the region, it would still be possible to suggest ways of increasing female participation,

for example, altering the working environment. Some capital-rich states have already undertaken some tentative steps in this direction. For example, Bahrain uses female teachers for the first few years of boys' primary school education. The scope for enterprise and initiative here is enormous, and the economic rewards resulting from increased employment of women are very high (Birks and Sinclair 1979e).

Dualism in the labour market. Two types of dualism are found in the labour markets of the capital-rich states. The first is within the modern sector of the economy, where two labour markets exist side by side, one for nationals and one for non-nationals. Secondly, Saudi Arabia and the Libyan Arab Jamahiriya have large agricultural sectors where about one-half and one-quarter of the population, respectively, work and live (Birks and Sinclair 1979d).

The apparent permanence of so large a traditional sector in countries of considerable wealth is remarkable, and the processes involved are of considerable significance. These have been discussed elsewhere, but in short it appears that modern sector urban development has been so rapid that indigenous citizens in rural areas have been largely untouched by it. As a result of a number of factors, it seems likely that both Saudi Arabia and the Libyan Arab Jamahiriya will continue to have a large and mainly traditional agricultural sector for some time to come. A comparable situation exists in the United Arab Emirates and Oman, but there the topic has been explored little.

The focus of a regional approach to these problems should be to determine the long-term future of employment in the traditional agricultural sector, the constraints on developing the manpower of this sector, and the links between the manpower in this sector and others in the economy.

Capital-Poor States

Two issues dominate our analysis of human resources development in capital-poor states. The first is the pervasiveness and significance of international labour migration; the second is the poverty of the capital-poor states. We shall discuss international migration first.

International migration. Migration for employment within the region has become a pervasive phenomenon. Every capital-poor state in the region has been affected by the growing demands for labour in the capital-rich states. In some countries, a very high proportion of the work-force is abroad (Birks and Sinclair 1979a). Many areas of economic life are affected, not least the labour market, where critical shortages of skilled manpower are now common. More familiar is the "brain drain" problem faced by countries with more highly educated work-forces. In response to the high wage rates that have resulted from labour shortages, a second round of migration has occurred, drawing in replacement migrants from areas outside the region, notably Asia. Managing the labour market under these circumstances is difficult, particularly because capital-poor states do not know whether the present demand for the services of their nationals will continue. Some commentators think that the demand

for Arab migrant labour may decline quite rapidly in the future (Birks and Sinclair 1979c).

A regional assessment of the demand for, and supply of, migrant labour would be a significant contribution to those concerned with problems in the capital-poor states. In the longer term, the establishment of agreed levels of labour migration by capital-rich and capital-poor countries would permit the latter to undertake planning in a more certain and more predictable world.

Development planning is seriously compromised by labour migration. There are two extreme views currently held about the future economic prospects of capital-poor states. One is that labour shortages will persist in skilled occupations concurrently with a relative abundance of foreign exchange. The second is that a large number of migrant workers will shortly return home, thus creating labour surpluses and a sudden decline in remittances.

Development of human resources is also made problematic when the possibility of labour out-migration is high. If pupils in education and training institutions go abroad after their training, what return does the country enjoy on the educational expenditure committed to the individual?

International labour migration has a pervasive impact on capital-poor states, and we have mentioned three areas where this is particularly obvious: the labour market, development planning, and human resources development. A regional manpower programme would, as a priority, contribute towards coping with the effect of international migration on the labour-sending countries.

Employment creation and management of the labour market. Most capital-poor states are experiencing low rates of economic growth and quite high rates of population increase. The expansion of non-governmental modern sector employment has been very limited, while the number of labour market entrants aspiring to work in the modern sector is growing. Many of these have high levels of education. This situation, combined with the rapid growth of urban centres, has led to a sudden expansion of informal sector activities (Birks and Sinclair forthcoming 3; Mustafa in press). Despite general recognition of the importance of the informal sector as a provider of livelihoods, little is known or written about it in the Arab region. The significance of the informal sector is likely to increase considerably in future years in all capital-poor states; it therefore warrants consideration in a regional manpower programme.

As the informal sector grows, so will unemployment and underemployment. Economic development has not been, and does not yet appear to be, able to proceed quickly enough to utilize all job seekers. Characteristic of the unenviable position of the capital-poor countries is the growing likelihood of educated unemployed coming into being at the end of a decade of substantial educational investment. Sustaining economic development and preserving an equitable distribution of income and welfare is going to become very difficult for the capital-poor states, particularly Egypt and Morocco.

A Regional Manpower Programme

At this point in papers, authors often conclude that more academic research is warranted on the subjects discussed. This style of conclusion we reject; on the contrary, we propose to describe one approach to tackling many of the problems mentioned here. The suggestion is that a regional manpower programme be adopted by relevant agencies, institutions, and governments, with the specific objective of approaching the task of human resources development from a regional perspective.

A number of problems occurring in the Arab region in the field of human resources development have been described. It is argued that these are best tackled from a regional perspective. To do this we need a regional manpower programme that logically and systematically sets out an approach to the various problems mentioned. While it is essential to begin with a clear picture of what is ideal, creating the regional programme is likely to be a painstaking process comprising a considerable number of practical steps over a period of time. The speed with which the programme might develop would depend on the extent to which countries of the region appreciated its virtues and uses. As time passed, the arguments set out here in favour of the programme would strengthen. While the programme initially might enjoy support only from selected countries or institutions, in the long run an ever-wider audience would wish to participate.

The following is a suggested approach to developing the regional manpower programme. In practice, it may prove worthwhile to use alternative methods.

First, this present paper should be discussed as widely as possible by (1) international agencies; (2) regional agencies; (3) individual governments of the region, in particular, ministries of labour and planning; and (4) individuals concerned in the development of human resources and labour market problems, including academics, experts, and policy makers.

Second, a series of seminars or workshops comprised of groups of countries with similar labour market problems should be held with the purpose of sharing experiences of labour market management and considering the concept of a regional manpower programme.

Third, international or regional agencies engaged in executing technical assistance projects, such as ILO, ECWA, and ALO, should continue to provide technical assistance to countries of the region in response to requests for assistance with manpower planning and human resources development. However, much greater attention should be given in design of project documents and in the specified work of experts to the regional approach to labour market problems. Project documents and, in particular, budgets should have built into them allowance for periodic regional seminars for discussion of labour market problems. In this way, the attention of donor agencies (such as UNDP, UNFPA, IBRD, EDF, DANIDA, Kuwait Fund, Arab Fund, etc.) and individual governments would have their attention drawn to the regional element of individual country problems.

Fourth, in addition to paying closer attention in project documents and technical assistance to the regional component of human resources development, some agency should undertake two activities on an ongoing basis. These are (1) an annual evaluation of the demand for and supply of labour in the region, and (2) an annual study of labour market problems in the Arab region.

The need for these two activities is shown in the analysis of problems of human resources development mentioned earlier. Both capital-rich and capital-poor countries face sudden changes in their labour markets, and prediction of these changes before they occur would facilitate coping with the ensuing problems. Moreover, the solution of certain labour market problems calls for an analysis of the processes involved. Even if it were possible to predict an imbalance in a labour market or to identify some distortion, correcting these problems might call for an understanding of the general functioning of the economy and labour market.

In the long run, the objective of the regional manpower programme is the establishment of a common policy and approach to human resources development in the Arab region that enhances the economic development of rich and poor alike.

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PART IV. INTERNAL MIGRATION, URBANIZATION AND POPULATION DISTRIBUTION

CHAPTER 14. URBANIZATION IN THE MIDDLE EAST IN WORLD PERSPECTIVE*

*Fathi Abu-Aianah***

The Development of World Urbanization

The origins of civilization are to be sought in past ages when man first settled in the alluvial plains of the Middle East. Population growth and expansion in urban areas, on the other hand, are the principal features of population distribution in modern times. The urbanization process is taking place rapidly, especially in countries that have recently begun to develop. This has given rise to many problems in urban life and has also led to other phenomena, such as the unprecedented increase in the size of cities, and urban primacy hegemony exercised by cities in most parts of the world over the various aspects of human activity.

The purpose of this paper is to make a general review of urban growth and development in various ages, to analyze the pattern of regional disparities in levels of urbanization, and, subsequently, to study the development of *million-cities* in various parts of the world.

Early Growth

Cities grew up as an ancient developmental phenomenon in the Middle East, and more specifically in Egypt, Iraq and present day Pakistan. Their appearance was connected with the considerable progress made in human knowledge and technology, particularly the use of metals, the invention of the sail, the use of the wheel for transportation, the local manufacture of pottery, the invention of the plough and the use of animals for draught purposes, all of which brought a large increase in production and transportation. This increase was accompanied by the appearance of cities as an aspect of advanced development in human history.

The first phase of the urban revolution began with agricultural communities in the alluvial plains of the lower Nile valley, the lower reaches of the Tigris and Euphrates, and the plains of the Indus River. In these regions man adopted a sedentary life based on a regular pattern of river inundation

* This paper was translated into English from Arabic by ECWA.

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and the use of the plough, which enabled him to produce an abundant supply of food. The surplus produced made it possible, for the first time, to supply food to large numbers of the population who did not themselves contribute to food production. These sections of the population gathered in settlements, which were linked by a special system for the provision of numerous services. Hence the growth of ancient military, cultural and administrative centres in the form of small cities (towns)—such as Harappa and Mohenjo-Daro in the Indus valley; Aphroditopolis, Thebes and Butu in Egypt; and Susa, Ur and Kish (near Babylon) in Iraq.

Other cities, such as Anyang, which made their appearance later in the Huang Ho Basin in China, were based on agriculture. Through the use of irrigation on the fertile lands of this region, these cities helped ensure production of an ample supply of food. Archeological evidence in the New World has shown that the early cities there also grew up on an agricultural base.

If Professor Sauer's (1952) theories on the origin and dissemination of agriculture are correct, then these agricultural urban societies first appeared 4,000-5,000 years ago in the Middle East and China.

Evidence from the sites of ancient cities in the Middle East has shown that they had a fairly large population. The population of the Sumerian cities ranged from 7,000 to 20,000, while that of Harappa and Mohenjo-Daro was slightly larger. The city of Thebes—the largest of the ancient Egyptian capitals—covered an extensive area originally centred on present-day Luxor and Karnak, and the population figure of 80,000 quoted by a Babylonian writer is the highest recorded for any ancient city.

Ancient Commercial Cities

Cities based on agriculture were followed by cities with specialized functions, mainly commercial cities, which grew rich by supplying services to the inhabitants of neighbouring regions. These cities relied on their geographic location, which they exploited in order to strengthen their commercial links with other regions.

The most notable examples of these ancient commercial cities, which came into existence around 2000 B.C. (before the Bronze Age), were Phylakopi on the island of Milos in the Aegan Sea, which became a centre for the glass trade, and Byblos, which flourished on the Syrian coast and became famous for timber from the hinterland, which it exported to Egypt and other Mediterranean countries. The cities of Crete also became famous in the first half of the second millenium B.C. for their maritime trade, particularly with Egypt. In this they were succeeded, in the sixteenth century B.C., by a number of Greek cities and also by Phoenician cities such as Tyre and Sidon on the Syrian coast, which developed as important trade centres in the Phoenician world.

These Mediterranean cities were small in size and may have included a considerable proportion of farmers among their population, although the main occupation of most of their inhabitants was trade. It was in these cities

that the arts and crafts developed that were subsequently carried across the Mediterranean to neighbouring regions.

Besides these coastal cities engaged in trade, others, known as caravan cities, were established in the interior. Few in number, they were situated on the fringes of the desert, where they served as connecting links between the Phoenician coastal cities and the Middle Eastern countries. These caravan cities, such as Aleppo, Damascus and Palmyra (Wahiba 1973) derived their wealth from trade in the same way as the coastal cities. The caravan cities were situated in rich agricultural areas, on which they depended for supplies of foodstuffs and raw materials (Damascus, for example, in the fertile Ghuta plain, and Palmyra in a rich oasis).

Greek Cities

Cities began to increase in number around the beginning of the first millenium B.C. During the eighth and seventh centuries B.C., the Greek city-state was an important phenomenon in its urban political aspect. As these city-states developed and expanded, the shortage of surrounding agricultural land induced them to move out of their local environment and colonize other regions. Syracuse, Cumae and other colonies were established in Italy and Sicily in the early Greek period between 750 and 700 B.C. The Greek city-states were thus able to extend their influence throughout the Mediterranean, so that by 500 B.C. urban life was a prevalent phenomenon from the Atlantic coast of Spain in the west to the plains of the Ganges in India in the east.

During the stage of urban expansion, important aspects of civilization made their appearance: the new arts and crafts practised by city dwellers such as the manufacture and use of iron tools and weapons, the use of the alphabet in writing, the design of sailing ships, and the first use of coin currency in trade. Such advances were significant for urban expansion, and specialization in production became a distinguishing feature of cities that were dependent on the exchange of locally produced tools and manufactured goods with other cities to obtain grain. The most outstanding example of this is the dependence of the Greek cities on wheat imports from the coasts of Macedonia and the Black Sea.

The effect of this on urban growth was manifested in the expansion of urban population. The clearest example is Athens in the fifth century B.C. Although it is difficult to estimate the population of ancient cities, the population of Athens has been assessed at 100,000-150,000 persons, making it one of the largest cities of its time.

The progress made in communications and weaponry helped to extend the Hellenic Empire, which in turn contributed to the spread of urbanization either by increasing the size of existing cities or by establishing new ones. Around 300 B.C., Alexander the Great built many new roads in his empire and also unified the prevailing currency, thus giving a considerable stimulus to trade, which also had an effect on urban development. The responsibilities

of government and administration required the growth of major cities to undertake this role, such as Alexandria in Egypt, which became an important centre in the Greek and, subsequently, in the Roman period.

Despite the break-up of the Hellenic Empire following the death of Alexander in 321 B.C., the powerful impetus that had been given to urban development continued under the Roman Empire, with the result that Alexandria covered an area of 200 feddans (800 dunums) in 100 B.C. Regional specialization in agricultural production also continued, leading in turn to the growth of trade and cities in regions where water transport was available. In the third century B.C., all the Greek cities were importing wheat and exporting oil and wine to Mesopotamia, northern Syria, the area north of the Black Sea and the lower Danube, and their wine even reached Carthage, Italy and Sicily in the west.

Roman Cities

Under the Roman Empire, urban life began to spread even more extensively after the Romans defeated the Greeks in Italy and Sicily and took possession of regions that had been under Greek control as well as other regions in north-western Europe. For the first time, cities appeared north of the Alps, where urban settlements were established in the Rhine Valley and in England. The defensive and administrative functions of these cities were more important than their commercial functions, although some of their products circulated throughout the empire thanks to the famous Roman road system in Europe and its extension into Asia and Africa.

These aspects of the progress of civilization resulted in the rapid growth of certain cities as ports or administrative and commercial centres. Reasonable estimates give a figure of 200,000 for the population of Rome in the second century B.C. and 192,000 for that of Byzantium before the fall of the Roman Empire. Most cities were similar in size to those established by the Greeks, and the area of the larger cities, such as Londinium, amounted to 300 feddans, with an estimated population of around 30,000 persons.

The Romans are to be credited with the establishment of many of the cities located within their empire. Some of these cities were camps for military veterans who emigrated from Italy in order to reduce the demographic pressure on the sources of subsistence, while others were centres for merchants and artisans and grew up beside castles and fortresses on the frontiers of the Empire: York in Britain, Cologne in Germany and Belgrade in Yugoslavia, for example.

In addition to these new cities, there were others pre-dating the rise of the Roman Empire, and their importance increased as a result of commercial specialization. This was the case with the Egyptian cities on the Red Sea, primarily Arsinoë (present-day Suez) and Berenice which were gateways for trade with the Far East. The importance of the caravan cities on the edge of the Syrian desert, such as Palmyra in Syria and Petra in Jordan, also increased by virtue of their location astride contemporary trade routes.

. Alexandria was the chief commercial city in the Roman Empire (in addition to being the capital of Egypt at that time) and an entrepôt for the cereals needed by Rome, which were shipped to Alexandria via the Nile and thence carried by a merchant fleet to Rome. Alexandria's function was not confined to trade and administration; it was also a cultural and manufacturing centre.

The fall of the Roman Empire in the fifth century B.C. led to a waning of urban life in the absence of the stability created by the Romans. Trade declined, cities shrank in size and importance, and many towns in north-western Europe were abandoned by their inhabitants. Urban life continued in the Mediterranean basin, though in an extremely limited fashion, especially in the eastern Mediterranean, where stability prevailed under the Byzantine Empire with the same urbanization features as had been exhibited before. Outstanding examples of this are the cities of Alexandria and Byzantium, although they lost their former prosperity. Byzantium in particular took the place of Rome in the days of its glory and resembled it in size, wealth and sea power.

Islamic Cities

A few centuries after the rise of Byzantium, Islam made its appearance, and the Muslims carved an extensive empire out of the Byzantine Empire. Under Islamic rule, urban development flourished, and cities appeared that played an important role in the dissemination of culture and the promotion of trade. This prosperity was due to a variety of religious, political, military, social and commercial factors. Fez and Rabat in Morocco and Najaf and Karbala in Iraq were among the urban religious centres established by the Muslims, and Mecca and Medina came to occupy a special place in the hearts of all Muslims. Garrison cities such as Basra, Kufa, Fustat and Qairawan were built; first Al Askar, then Al Qata'i sprang up; and subsequently Cairo appeared as the capital of Egypt.

When the Arabs reached Spain they greatly enlarged the existing Roman cities there and established many new ones. The city of Cordoba in the days of the Umayyads (756-1002 A.D.) bore witness to the extent of the role played by Arab civilization in the flowering of urban life. This city had a population of half a million persons; today it has a mere 100,000.

Medieval Cities

As we have noted, the resurgence of urban life in many parts of Europe was slow after the fall of the Roman Empire. The spread of Christianity from the Middle East and its schism into the western and eastern churches divided the Roman world into two parts. The economic and political activity of the western, Latin part centred on the city of Rome, while that of the eastern, Byzantine part centred on Constantinople.

The Byzantine Empire collapsed with the spread of Islam and Muslim control of the eastern and southern Mediterranean in the seventh century A.D. The Arabs contributed to the spread of urban development. At the time Europe was living in the Dark Ages; trade revived there only in the eleventh century, when the reconstruction of many Roman cities began at their former locations. In this way modern cities were established and some large villages began to exercise certain urban functions. In the twelfth century, more cities were built at new locations, especially by the Germans, who were expanding in central and eastern Europe. These locations were associated with the establishment of castles to control strategic points.

The first medieval cities were built on easily accessible sites. With the development of local and external trade, civilization spread in Europe; by the fifteenth century it had reached most of western and central Europe. These cities were centres for handicrafts and trade, as well as for local government and defence. However, in medieval Europe the increase in the number of cities was greater than the increase in their size, and these cities continued to be governed by the former equation for urban growth, namely the correlation between population and local resources. Examples of this are Nuremburg, with an estimated population of around 20,000 in the year 1450, and London, with a population of 40,000 in the year 1350, which may have been the same as its population in Roman times.

In some parts of Europe urban life flourished as before. Florence had 90,000 inhabitants in the fourteenth century; Venice had 190,000 in 1422. It appears that the population of other cities could be counted in hundreds rather than thousands, and the largest of them contained no more than 50,000 persons. After the sixteenth century, however, cities began to increase beyond this size as a result of economic, social and political development.

In regions where trade was active and the feudal system less burdensome, cities located at commercial crossroads began to expand appreciably. In these regions the major cities began to appear as political capitals of larger units, and as soon as national unity had been achieved the capital became a powerful centre of attraction for the rest of the population as the seat of law courts and administrative offices. This power of attraction was increased by the appearance of manual trades and crafts for the production of luxury goods and labour-saving equipment, and also by the establishment of a suitable road network linking the capital to other parts of the country.

The appearance of national states also promoted the extension of urban life to new lands. During the sixteenth century, explorers helped to broaden the extent of the known world. Some countries—such as Spain, Portugal, France and England—established colonies in the New World and introduced European civilization, including the tendency to establish new cities. The first cities in the colonies were simply centres for the collection of local resources or strongholds for the protection of the colonists, but in the seventeenth century, as more colonists settled in these regions and began to develop them, the functions of these cities began to expand. An example is

Williamsburg, Virginia, in the United States, which resembles an English provincial city; it was established in 1633 and by the end of the seventeenth century had become the capital of the new colony of Virginia.

Cities in the Modern Age

Although the establishment of capital cities in ancient times and during the European Renaissance gave rise to large cities, the technological and economic changes accompanying the Industrial Revolution also changed the size of cities, the proportion of urban population and the rate of urban growth, both in individual countries and in the world as a whole.

Factors of Growth

The massive urban growth of the present era can be attributed to a variety of factors. The most significant of these are indisputably the agricultural and industrial revolutions.

The agricultural revolution and food supply. The agricultural revolution that took place in the modern era played a major role in the development and expansion of contemporary cities. In Western Europe this revolution preceded the industrial-commercial revolution. The agricultural revolution consisted of the utilization of fertilizers, crop rotation, the introduction of new types of crops, the use of selected seeds, the improvement of livestock through the breeding of improved strains and the use of modern machinery.

Due to these major developments in agriculture, the yield of the land increased with no concomitant increase in the employment of manpower. At the same time, the population continued to grow. This led people to seek non-agricultural employment, for agricultural production was sufficient to feed everyone and no food shortages were in evidence. A large proportion of the population abandoned work on the land to become city-dwellers.

In Western Europe progress in agriculture was accompanied by the global expansion of available agricultural land resulting from the massive exodus of Europeans to the lands of the New World, Australia, New Zealand and South Africa.

All of this led to an abundant agricultural surplus, which in turn provided an important basis for trade and exchange. Trade and exchange, in turn, were heavily dependent upon advances in land and sea transport and in methods of food preservation (refrigeration), which enabled ships to convey agricultural produce and animal products to Western Europe and elsewhere.

This enormous expansion in food production and in the possibility of transporting surpluses to distant locations led to an increase in the European population in the nineteenth century and consequently to a large increase in the size of cities. The use of machinery in agriculture sent large numbers of agricultural labourers to the cities in search of employment.

The Industrial Revolution. The agricultural revolution was not solely responsible for the growth in urban population. The Industrial Revolution and the appearance of the steam engine also led to the concentration of the population in the cities. This was encouraged by the emplacement of industry in the cities, which, because of the relatively high wages and employment opportunities they offered, became powerful centres of attraction for the rural population. Consequently, the urban population grew at the expense of the rural areas. This phenomenon became a prominent characteristic of the age, not only in the more advanced countries but in the less developed countries as well. This rural-urban shift was facilitated by the development of rural-urban transport systems, especially railroads. The railroads promoted the expansion and development of industry, which, in turn, led to an improvement in economic conditions and the growth of the population in both rural and urban areas—although the latter experienced the higher rates of growth.

The cities became not only industrial centres but also economic and social centres, performing a variety of services for their own populations and for neighbouring rural areas. These services tended to be located in specific parts of the city, and included commerce in the products of industry and agriculture, transportation, accounting, insurance and health and educational services.

These factors led to massive urban growth all over the world. The cities of the Western world grew in the last quarter of the nineteenth century at a faster pace than at any other time in history. This growth was especially remarkable in the United States. There, a railroad network was constructed in the eastern part of the country during the 1840s. From then on urban settlements blossomed at a faster rate all over the northern United States, especially along the sea-coast, the navigable rivers and the shores of the Great Lakes, but also in the interior.

Examples of this dramatic urban growth abound in the different countries of the world. In England and Wales, the urban population doubled between 1871 and 1911, rising from 14 to 28 million people. During the same period, the urban population of France increased from 11 to 17.5 million. Paris, for example, had 518,000 inhabitants at the time of Napoleon I, but passed the million mark only 50 years later (in 1960). In 1950 it had reached 6.7 million, and by 1960 it had grown to 7.8 million.

The figures in table 1 provide some examples of the dramatic growth of a number of cities in Europe, the United States and Japan.

Accordingly, it can be said that the nineteenth and the twentieth centuries witnessed a massive expansion of urban settlements and that the roots of this massive expansion lay in a number of factors, the most prominent of which was the absorption of the high numbers of migrants pushed out of the rural areas.

TABLE 1 THE GROWTH OF SELECTED CITIES, 1800-1960

City	Population around 1800	Population around 1960
London	850,000	11,547,000
Paris	547,000	7,810,000
Rhine-Ruhr	280,000	10,419,000
Moscow	360,000	7,884,000
New York	60,000	14,759,000
Tokyo-Yokohama	1,400,000	13,628,000

Source: Hall 1972, p. 23.

The Urban Explosion in the Modern Era and Its Manifestations

As was noted earlier, the growth and congestion of urban areas is one of the demographic characteristics of modern times. In the past 175 years, cities have grown appreciably faster than in any other period of human history. This growth has been assisted by the industrial and agricultural revolutions and the major advances in international transportation and trade that have accompanied it. These developments have facilitated communication between cities and the hinterland and have permitted cities to procure their requirements from more and more distant places. It could even be said that today the hinterland of cities covers the entire world.

The growth of the urban population can be traced by noting the changing proportions of city-dwellers in the world in the modern era. The world's urban population is increasing at an appreciably faster rate than the world's population as a whole. The size of the urban population at the beginning of the nineteenth century was estimated at around 22 million people, or around 3 per cent of the world's population at the time. By the middle of the twentieth century, that number had grown to 700 million people, or 28 per cent of the world's population. In other words—accepting the local definitions of "city-dweller" in the different countries of the world—one quarter of the world's population lives in urban settlements.

In the 20-year period between 1950 and 1970, the urban population almost doubled, jumping from 700 million people in 1950 to 1,350 million in 1970. Accordingly, almost two-fifths of the world's population came to live in cities. It is a well-known fact that this proportion is continuously increasing: it is estimated that the urban population will make up one-half of the population of the world by the year 2000 (table 2).

TABLE 2 EVOLUTION OF THE SIZE AND PROPORTION OF THE WORLD'S URBAN POPULATION

Area and year	Size of urban population (in millions)	Per cent of total population
Developed areas		
1950	439	51.2
1970	717	65.7
2000	1,174	80.7
Developing areas		
1950	265	16.3
1970	635	25.0
2000	2,155	42.6
Whole world		
1950	704	28.3
1970	1,352	37.2
2000	3,329	51.1

Source: United Nations 1970.

These figures reveal a great disparity between the developed and the developing areas. In 1970 about two-thirds of the population of the developed countries lived in cities, as against one-quarter of the population of the developing countries.

United Nations estimates indicate that the size of the urban population in the developed countries will be around 1,750 million people in the year 2000, tripling in the space of 50 years (1950-2000). This development, however, is small in comparison with the explosion that has characterized urban growth in the developing countries. City-dwellers there increased from around 300 million people in 1950 to 600 million in 1970. Estimates indicate that this figure will rise to 2,200 million in the year 2000, a seven-fold increase in the space of 50 years.

The level of urbanization differs in the various continents and regions of the world. In 1950 over half the population of North America, Oceania and Europe lived in cities, while the proportion of city-dwellers in the Soviet Union and Latin America was around 40 per cent. In contrast, in the remaining regions of the world, in East and South Asia and Africa, the urban population in 1950 represented between 14 and 16 per cent of the total

population. According to United Nations estimates, urban growth rates through the year 2000 will be the lowest in South Asia and Africa—by that year, one-third of the population of South Asia and 40 per cent of the population of Africa are expected to be urban (table 3).

Furthermore, urban population projections indicate that the continent of Asia, excluding the Soviet Union, will contain over half of the world's urban population by the year 2000. Undoubtedly, such massive numbers will place heavy burdens on the countries of that continent.

Growth in the Number and Size of Million-Cities

The growing concentration of the population in the large cities is one of the most prominent features of urban growth. Most of these large cities—especially in the developing countries—exercise primacy over the urban socio-economic and political life of their respective countries. Since most of this growth is a result of rural-urban migration, its consequence is a growing deficiency in services of all sorts in these cities.

In 1950 there were 75 *million-cities* (i.e., cities of 1 million people or more). Two-thirds of these were in the developed countries (table 4). By 1970, this figure jumped to 162 cities, distributed rather evenly between the developed and the developing countries. The United Nations estimates that the number of million-cities in the world will increase to around 273 by 1985. Most of them will be located in the developing world. As a consequence of this change in the distribution of large cities, the urban populations of the cities of the developing world will double from 27 to 58 per cent of the population between 1950 and 1985 (Goldstein 1973, p. 181).

The urban primacy of the world's million-cities is represented by the ratio of their total population to the total urban population of the world. This primacy rate increased from around 25 per cent in 1950 to around 31 per cent in 1970 and is expected to increase to 37 per cent in 1985. Also, the disparity in the distribution of million-cities between the developed and the developing countries that appeared in 1950 will disappear completely by 1985, when the population of the million-cities will make up the same proportion of total urban population in each of the two regions (Clarke 1978, p. 291).

Million-cities are increasing in number at different rates in different regions of the world. In 1950, Europe had 28 such cities, placing it at the top of the list of regions. The Soviet Union and Africa each had but two such cities, South Asia had eight and Latin America six. By 1970 the situation had changed completely. Europe had only 36 million-cities, the Soviet Union 10, Africa 8, South Asia 27 and Latin America 16. The United Nations expects the number of such cities to continue to increase: by 1985 South and East Asia should each have over 50 million-cities as against 45 in Europe, 70 in the Americas and 19 in Africa.

The increase in the number of million-cities will be reflected in changes in the proportion of their population to the total urban population of the

TABLE 3 GROWTH OF THE URBAN POPULATION IN THE REGIONS OF THE WORLD, 1950-2000

Region and year	Urban population (in millions)	Per cent of total population
Europe		
1950	207	52.9
1970	292	63.2
2000	438	77.0
North America		
1950	106	63.7
1970	169	74.2
2000	284	85.1
Soviet Union		
1950	71	39.5
1970	139	57.1
2000	252	76.5
Oceania		
1950	8	61.7
1970	13	67.9
2000	25	71.7
East Asia		
1950	105	15.9
1970	266	28.6
2000	722	50.7
South Asia		
1950	111	15.9
1970	238	21.2
2000	793	33.7
Latin America		
1950	66	40.5
1970	158	55.9
2000	495	75.9
Africa		
1950	30	14.0
1970	77	22.2
2000	320	39.2
Whole world		
1950	704	28.3
1970	1,352	37.2
2000	3,329	51.1

Source: United Nations 1970.

different continents and countries. Some of these million-cities have developed and extended themselves over wide areas to constitute what are called "megalopolises." In 1970 there were 3 such megalopolises of 10 million inhabitants or more (suburban populations included)—New York, Tokyo and London. It is estimated that around 12 other megalopolises will reach this size by 1985: Mexico City, Sao Paolo, Los Angeles, Bombay, Calcutta, Osaka, Buenos Aires, Rio de Janeiro, the Rhine-Ruhr region of Germany, Cairo, Paris and Seoul (Ashish 1977).

TABLE 4 CHANGES IN THE NUMBER AND PROPORTION OF MILLION-CITIES, 1950-1985

Region	Number of cities			Per cent of total urban population		
	1950	1970	1985	1950	1970	1985
Europe	28	36	45	29	30	31
North America	14	27	39	36	42	47
Soviet Union	2	10	28	10	15	24
Oceania	2	2	4	38	39	53
East Asia	13	36	54	31	37	39
South Asia	8	27	53	13	26	36
Latin America	6	16	31	23	33	42
Africa	2	8	19	11	20	29
Whole world	75	162	273	25	31	37
Developed regions	51	83	126	29	32	37
Developing regions	24	79	147	19	29	37

Source: United Nations 1972.

Conclusion

Urbanization has become one of the most prominent characteristics of population distribution in the twentieth century, and the problems and complexities of urban growth are counted among the most urgent problems in most countries of the world, involving housing, food, cultural and other service needs.

Cities were first established in several areas of the Middle East during the Neolithic Age. Cities were built in Mesopotamia and Egypt as early as the middle of the fourth millenium B.C. Thereafter cities grew up in the Indus valley and China. The first city to be established in the New World was present-day Mexico City, which was built by its original Indian inhabitants almost 2,000 years ago.

From the end of the Middle Ages, urban settlement activity was confined to Europe, North Africa, South Asia and Central America. The European intrusion into the New World and Siberia after Columbus led to the establishment of new cities in the territories colonized by the Europeans, but the urban proportion of the population remained very low in comparison with the rural areas.

However, the urbanization process began gradually to increase in the wake of the Industrial Revolution. It started in England towards the end of the eighteenth century. England's urban population had reached four-fifths of the total population by 1900, and has remained so to this day. Many of the industrial states of Western Europe and North America underwent a similar evolution. For example, the urban population of the United States, which was under 10 per cent of the total population in 1800, had risen to 70 per cent by 1960.

The urbanization process spread beyond Europe and North America in the modern era, and the ratio of the urban to the total population steadily increased, especially in the developing countries. This urban growth process was related to the natural increase of the population itself as well as to migration to the continents of the New World, the subsequent exploitation of these continents, and the redirection of the population towards production and commerce in foodstuffs instead of dependence on crafts for their livelihood.

If growing urbanization is the characteristic feature of the distribution of the population in the modern era, the growing concentration of the population in the larger cities is the most prominent feature of urbanization the world over. The million-city has become the model of urban growth. Most probably, the million-city did not exist before the year 1800. It can be considered an innovation in the history of civilization. At the beginning of the nineteenth century there was but 1 million-city in the world; by 1900 there were 11, and by 1950 there were 75. In 1970, the figure had jumped to 162 million-cities. Considering the prevailing urban growth rates in both the developed and the developing world, it is estimated that by the year 2000 the number of million-cities will have reached 273.

In 1970 there were three megalopolises in the world—giant urban agglomerations of over 10,000,000 people. It is estimated that by 1985 the number of such megalopolises will have increased to 12.

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CHAPTER 15. PRIMATE CITIES IN THE ARAB WORLD*

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The importance of a city is determined by several variables, including the size of its population, its functions, its role in the hinterland and the extent of its links with other cities in the region. The size of a city is closely related to conditions in the surrounding environment, the distribution of centres of development and their spacing over the region as a whole. In this context size refers to the population of the city rather than to the extent of its built-up area. The size of a city's population is extremely significant since it gives a direct indication of the city's importance within the region as an urban cultural centre. Size is closely connected with urban functions since the latter increase in proportion to the size of a city, although this generalization cannot be expressed in exact numerical terms and is thus, to a certain extent, an exaggerated postulate.

Urban primacy is an entirely relative concept since it merely gives an indication of the hegemony exercised by one or two large cities within a particular country or region and cannot be circumscribed within a numerical context. In the final analysis, it is linked to the manner in which cities are distributed throughout the region and also to their variation in size from dwarf-sized to small, medium, large and metropolis-sized cities. The proportion of the population living in cities in two different regions may be similar despite a considerable difference in their hierarchical composition. Hence, when comparing two regions, the demographer should not draw too many conclusions from the proportion of urban dwellers since it is more important to determine the various minimum urban size groups in accordance with the so-called hierarchical system.

Measures of Primacy

It is not an easy matter to draw strict demarcation lines between urban size groups since there is wide diversity among definitions of the minimum size of a city. The minimum size for a city normally diminishes in proportion to the rising level of living standards in the country. In certain European

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countries, there are cities with an individual population of no more than 500 persons, and these are cities in the true sense of the term. At present, it is generally accepted practice to regard the figure of 100,000 persons as the minimum for large cities; when this figure reaches 1 million the city becomes a *million-city*. Such cities always play a metropolitan role in the region as a whole and thereby display urban primacy over other, smaller cities in the same region.

Certain demographers have asserted that there is a regular correlation between the primate city and other cities within the same country in accordance with the so-called rank-size rule. This rule postulates that if the cities in a particular region are classified according to the size of their population we shall find a consistent relationship in regard to size and importance between each of these cities and the primate city. Hence, the city classified as the second largest will be half the size of the primate city, the fourth-largest city will be one-fourth the size of the primate city, and the eighth-largest city will be one-eighth the size of the primate city, and so on. However, this classification would appear to be extremely theoretical and may be more applicable to the developed countries than to the developing countries—including the Arab states in view of their differing geographic environments, which are not all equally conducive to the growth and expansion of cities. Account must also be taken of other factors related to the lower level of development in certain regions of the Arab world, especially the rural areas, which consequently often witness an exodus of their population, principally towards the major cities.

Table 1 is an attempt to apply this rule to the five principal cities in certain Arab countries and shows the magnitude of the discrepancy between the theoretical and actual sequential order of these cities. In view of the vast differentials in certain countries such as Egypt, Iraq, the Libyan Arab Jamahiriya and Saudi Arabia, we are inclined to regard the rank-size rule as being without logical foundation since it portrays the urban hierarchy in each country in the same unalterable form, which is totally inconsistent with the geographic, environmental, human and historical circumstances that have conditioned urban size and growth.

TABLE 1 THE RANK-SIZE RULE IN CERTAIN ARAB COUNTRIES, CIRCA 1970

Country	Primate city	Second	Third	Fourth	Fifth
Morocco	1	0.348	0.223	0.215	0.165
Algeria	1	0.331	0.253	0.156	0.139
Libyan Arab Jamahiriya	1	0.512	0.187	0.131	0.122
Egypt	1	0.398	0.060	0.046	0.043
Syrian Arab Republic	1	0.760	0.308	0.224	0.198
Iraq	1	0.245	0.167	0.115	0.090
Saudi Arabia	1	0.841	0.550	0.307	0.297
Rank-size rule	1	0.500	0.333	0.250	0.200

The most striking impression gained from the distribution of major cities in the Arab world is the wide disparity, not only between each city and its hierarchical counterpart, but also between the two largest cities in the same country: in other words, between the capital, being the largest city in the country, and the next-largest city. This gives a clear illustration of the Law of the Primate City postulated by Mark Jefferson in the late thirties (1939; see also Hamdan 1959, p. 384). He asserted that within a single spatial area one city towers above all others in a manner inconsistent with the otherwise gradual, hierarchical progression. He noted that the primate city is usually the capital of the country and plays a greater role than any other city in expressing national identity and contributing towards national unity, bearing in mind the fact that newly established federal capitals represent exceptions to this rule.

Table 2 shows the proportional size of the second-largest city in relation to the primate city in certain Arab countries, using the figure 100 as an index for the primate city.

TABLE 2 PROPORTIONAL SIZE OF THE SECOND-LARGEST CITY IN RELATION TO THE PRIMATE CITY IN CERTAIN ARAB COUNTRIES,CIRCA 1970 (Index of Primacy= 100)

Country	Primate city	Population	Second-largest city	Population	
				Number	Per cent
Lebanon	Beirut	950,000	Tripoli	157,000	17
Iraq	Baghdad	2,201,000	Basra	538,000	24
Jordan	Amman	500,000	Al-Zarqa	136,000	27
Algeria	Algiers	1,200,000	Oran	400,000	33
Egypt	Cairo	5,700,000	Alexandria	2,032,000	36
Morocco	Casablanca	1,465,000	Rabat	550,000	37
Libyan Arab Jamahiriya	Tripoli	551,000	Benghazi	282,000	51
Yemen	Sana'a	148,000	Hodeida	88,000	60
Syrian Arab Republic	Damascus	836,000	Aleppo	610,000	73
Saudi Arabia	Riyadh	667,000	Jeddah	561,000	84

Sources: Ibrahim 1974, p. 84.
Data on Saudi cities taken from Saudi Arabia (1977, p. 3).
Data on Libyan cities taken from Libyan Arab Republic (n.d.).
Data on Yemeni cities taken from Yemen (1977).

It can be seen that the primacy of the principal city is more pronounced in Lebanon, Iraq, and Jordan, where the second-largest cities have a much smaller population than the primate cities, while the primacy of the principal city in the Syrian Arab Republic and Saudi Arabia is less marked. No general rule can be applied to primate cities in the Arab world, despite the fact that the ugly escalation of primacy is a characteristic feature of societies that have not attained full urban maturity and gives a disproportionate impression of size that can best be likened to that of a dwarf with a gigantic head. Hence ratios of primacy and hegemony are a special expression of the geographic character and developmental evolution of regions.

In the Arab world as a whole, there are 33 cities in which the population exceeds 200,000 persons. These cities are listed in table 3, from which it can be seen that there are only five million-cities in this vast area, which covers 13 million square kilometres and contains a population of around 150 million persons. (The number of Arab million-cities probably increased to seven in the mid-seventies with the inclusion of Beirut and Damascus.) The phenomenon of urban primacy in general is illustrated by these capitals since the nine largest Arab cities are national capitals (with the exception of Alexandria and Casablanca). Capital cities in the Arabian Peninsula are far smaller in size for a variety of reasons but mainly because they are newly established or because the factors of geographic momentum did not contribute towards expansion in the period prior to the oil era.

In short, it can be said that urban development in the Arab world is characterized by the phenomenon of primate cities whereby a large proportion of the population are concentrated in one or two large cities in each country, one or both of which dominate the human hinterland with its smaller urban centres. It has already been stated that the pattern opposite to urban primacy, namely urban balance, which is gauged in accordance with the rank-size rule, is not at all prevalent in the Arab countries since in most cases the primate city stands in a class of its own and far surpasses the second-largest city.

Even if we use another common yardstick to measure urban distribution, namely, the index of primacy, in which the size of the primate city is related to that of the next three largest cities, the results would confirm the previous findings; in other words, Arab urbanization is dominated by the phenomenon of a high degree of primacy. The prevailing trend is towards the consolidation of this phenomenon and, consequently, an increase in urban disproportion, not only between the primate and the second-largest city, but also between other cities within the same country (Ibrahim 1974, p. 85).

The above-mentioned index of primacy is the simplest method of gauging the relative size of the primate city in relation to the three next-largest cities within the same country. This index divides the population of the largest city in the country by the total population of the three next-largest cities, and if the quotient should be one this means that the population of the primate city is equal to the total population of the three next-largest cities. The figures shown in table 4 illustrate the application of this index to certain Arab and non-Arab countries for purposes of comparison.

TABLE 3 POPULATION AND ANNUAL GROWTH RATES OF THE MAJOR CITIES (POPULATION 200,000 AND ABOVE) IN THE ARAB WORLD IN 1970

Order of magnitude	City	Population	Annual growth rate (per cent)
1	Cairo	5,700,000	4.5
2	Baghdad	2,201,000	5.0
3	Alexandria	2,070,000	3.1
4	Casablanca	1,395,000	4.2
5	Algiers	1,226,000	5.7
6	Beirut	950,000	3.7
7	Damascus	839,000	4.5
8	Tunis	755,000	4.0
9	Khartoum-Omdurman	700,000	6.0
10	Aleppo	638,000	3.9
11	Kuwait	570,000	18.0
12	Rabat	504,000	3.8
13	Amman	500,000	5.5
14	Basra	490,000	6.6
15	Oran	406,000	5.0
16	Riyadh	366,000	10.0
17	Mosul	335,000	4.6
18	Marrakesh	323,000	2.8
19	Suez	315,000	4.3
20	Fez	312,000	3.6
21	Constantine	310,000	5.6
22	Jeddah	308,000	10.5
23	Mecca	294,000	6.1
24	Tripoli (Libyan Arab Jamahiriya)	277,000	4.8
25	Aden	270,000	4.5
26	Homs	259,000	5.8
27	Al-Mahallah al-Kubra	244,000	3.4
28	Meknes	240,000	3.1
29	Kirkuk	230,000	4.6
30	Tanta	225,000	2.1
31	Shubra al-Khaima	207,000	7.3
32	Al-Mansoura	201,000	3.1
33	Benghazi	200,000	7.4

Sources: Cairo Demographic Centre 1973, pp. 512-513.
Ibrahim 1974, p. 80.
Abu-Lughod 1970-1972, pp. 44-45.

Note: The growth rate for Saudi cities is calculated on the basis of the 1394 A.H. (1974) census data (Saudi Arabia 1977).

TABLE 4 PROPORTIONAL POPULATION OF THE PRIMATE CITY IN RELATION TO THE TOTAL POPULATION OF THE THREE NEXT-LARGEST CITIES IN CERTAIN ARAB AND NON-ARAB COUNTRIES, 1970

Arab countries		Non-Arab countries	
Kuwait	4.60	Japan	1.53
Tunisia	2.60	Soviet Union	0.98
Iraq	2.41	Belgium	0.77
Lebanon	2.28	United States	0.77
Bahrain	1.71	Italy	0.69
Egypt	1.59	Canada	0.63
Morocco	1.41	Yugoslavia	0.63
Algeria	1.26	China	0.51
Jordan	1.22		
Libyan Arab Jamahiriya	1.21		
Syrian Arab Republic	0.80		
Saudi Arabia	0.52		

Sources: Clarke and Fisher 1972.
Ibrahim 1974, p. 85.

From these figures it can be seen that with the exception of Kuwait, which ranks as a city-state, urban primacy is highly pronounced in the Arab countries, especially Tunisia, Iraq, and Lebanon, where the size of the largest cities—the capitals—is double that of the three next-largest cities in the urban hierarchy. In the other countries, with the exception of the Syrian Arab Republic and Saudi Arabia, the size of the largest city also exceeds the combined size of the three next-largest cities, although not to the extent of being double the size of the latter.

When comparing the Arab countries with the developed foreign countries, we note a considerable difference since the major cities in the latter countries do not completely overshadow the other cities in the same country. In general, the index shows a figure of less than 1.00 and even in the case of Japan, whose capital is noted for its huge size and congested living conditions, this index does not exceed 1.53.

Furthermore, it can be seen that in the Arab countries this index is constantly rising. In the period 1960-1970, it rose from 1.75 to 2.31 in Iraq; from 1.84 to 2.28 in Lebanon; from 1.91 to 2.08 in Egypt; and from 1.13 to 1.28 in Algeria (Ibrahim 1974, p. 85).

The Increasing Size of Major Cities

As was already mentioned, the theoretical distribution of cities is determined by the urban hierarchy, the base of which consists of small cities and the apex of which is the largest city in the region. In theory the hierarchical structure should be symmetrical in shape, but the uneven population distribution caused by various factors such as the distribution of wealth and services in the country results in wide gaps in the sides of the pyramid.

It can be seen that the apex of the urban hierarchical pyramids in the Arab countries shows a tendency to swell at a faster rate than the base, which means that the major cities are rapidly expanding and absorbing an increasing proportion not only of the population of the country as a whole, but also of its urban population; consequently, the urban hierarchy is out of balance. In Egypt, for example, the largest city is three times the size of the second-largest city, while in Iraq the largest city is four times the size of the second largest (see table 5). In Lebanon, the population of Beirut is possibly around five times that of Tripoli, which is the second-largest city in the country.

TABLE 5 PROPORTIONAL POPULATION OF PRIMATE CITIES IN THE ARAB WORLD IN RELATION TO NATIONAL AND URBAN POPULATION IN 1970

Country	Primate city	Size	Per cent of national population	Per cent of urban population
Egypt	Cairo	5,700,000	17.0	38.0
Iraq	Baghdad	2,201,000	22.6	49.0
Morocco	Casablanca	1,395,000	9.1	26.0
Algeria	Algiers	1,226,000	8.2	32.5
Lebanon	Beirut	950,000	27.9	50.7
Syrian Arab Republic	Damascus	839,000	13.6	31.6
Tunisia	Tunis	755,000	14.7	35.0
Sudan	Khartoum	700,000	2.5	24.9
Kuwait	Kuwait	570,000	77.2	95.0
Jordan	Amman	500,000	21.0	46.7
Saudi Arabia	Riyadh	366,000	5.2	26.0
Libyan Arab Jamahiriya	Tripoli	277,000	13.8	45.4
Democratic Yemen	Aden	270,000	18.4	83.6
Yemen	Sana'a	100,000	1.7	50.3
Bahrain	Manama	96,000	42.0	100.0
Qatar	Doha	72,000	72.0	100.0

Sources: Davis 1969.
UNESOB 1972.
Ibrahim 1974, p. 80.

The Arab world contains one super-primate city, namely, Greater Cairo, the population of which amounted to 8.3 million persons in 1978. This is followed in the urban hierarchy by Baghdad and Alexandria, each with populations of 2 million persons, while the third place in order of size is occupied by Casablanca, Algiers, Beirut, and Damascus, which contain around 1 million persons in their metropolitan zone. These are followed by Tunis, Khartoum, Aleppo, Kuwait, and Rabat, with individual populations of half a million or more, and then by smaller cities of 200,000 to 500,000 persons.

The latter group comprises the provincial capitals in Egypt, the Syrian Arab Republic, Iraq, and Morocco, etc., and also includes certain national capitals, such as that of Democratic Yemen. The next category of smaller-sized cities with a population of less than 200,000 persons comprises provincial cities in most of the Arab countries, although it also includes certain capitals in the Gulf states, such as Doha, Manama, Abu Dhabi, and Muscat, in addition to the city of Sana'a.

The countries of the Arab world differ not only in regard to their level of urbanization and growth rates, but also in regard to the components for the growth of major cities. As a general rule, the growth of cities is conditioned by two factors, namely, natural population increase among residents and net immigration. With the exception of the Gulf cities, the growth of Arab cities is mainly the result of natural population increase and net internal migration. Table 6 shows the difference in these overall urban growth rates.

From this table it can be seen that the major cities in traditionally agricultural societies act as poles for rural migrants. Because rural areas are characterized by high rates of natural increase and, consequently, by increasing pressure on agricultural land (due to the continued utilization of time-honoured agricultural methods in lieu of modern ones and the unchanging area of cultivated land), part of the surplus population resort to migration, and the major cities have, up to now, represented their usual destination. On the other hand, there is internal migration in some Arab countries caused by various factors such as low population density on agricultural land and the resulting neglect and low productivity of such land, which has a centrifugal effect in promoting migration to the major cities. The Sudan and Iraq offer examples of this process.

The components of population growth are different in the major cities in the Gulf states since the greater part of their growth is the result of international immigration brought about by oil-industry operations and petroleum revenues. This has led to the continuous mushrooming of the major cities at rates far higher than those attained by other Arab cities (see tables 3 and 6). This has been accompanied by a considerable rise in the rate of urbanization, which is higher than elsewhere in the Arab world or in the developing countries as a whole. In the states of Kuwait and Qatar, for example, around three-fourths of the population live in cities, and at their present rate of growth the capital cities of these two states could double within a period of less than 10 years. Kuwait now contains 75 per cent and Doha 70 per cent of the population of their respective countries and both can thus be considered

city-states. By virtue of its cosmopolitan composition, their population differs considerably from the population of other Arab cities. Half of the population of Kuwait City consists of foreigners of a variety of nationalities, although most are citizens of Arab states, and Doha, Manama, Abu Dhabi, and Dubai exhibit a similar pattern.

TABLE 6 THE COMPONENTS OF POPULATION GROWTH IN CERTAIN MAJOR CITIES IN THE ARAB WORLD IN 1970

Growth type and city	Approximate annual growth rate (per cent)	Average percentage growth resulting from	
		Natural increase	Net migration
Low growth			
Alexandria	3.1	83	17
Beirut	3.7	64	36
Cairo	4.5	60	40
Damascus	4.5	66	34
Medium growth			
Baghdad (1965-1970)	6.1	54	46
Basra (1957-1965)	8.3	39	61
Jeddah	8.5	34	66
High growth			
Amman (1967-1971)	9.0	37	63
Riyadh	10.0	29	71
Kuwait (1961-1965)	18.0	18	82

Sources: Abu-Lughod 1970-1972, pp. 47.
Cairo and Alexandria figures supplied by the author.

In view of the high population growth rates in the principal cities of the Arab world, it is expected that the sizes of these cities will increase to an extent that might be difficult for the present generation to conceive. For instance, Cairo, which is currently growing at an average rate of 4.5 per cent per annum, will double in size every 18 years, thus bringing its population to around 9 million in 1980 and 20 million in the year 2000.[1]

[1]. In order to enable the reader to visualize this situation more clearly, it should be noted that a city growing at a rate of 10 per cent per annum doubles in size every 7 years and if it grows at a rate of 7 per cent per annum its size will double every 10 years. In other words, a city with a population of half a million persons growing at a rate of 10 per cent per annum is subject to an annual numerical increase of 50,000 persons.

Baghdad is growing at a slightly higher rate, which will cause its population to double after only about 12 years; thus it could reach 12 million by the year 2000 (see table 7). If we assume that Kuwait City will reduce its rate of growth in the future from 18 per cent to 7.5 per cent per annum, its population could easily reach 4 million persons by the end of this century (Ibrahim 1974, p. 78).

TABLE 7 GROWTH OF THE 10 LARGEST CITIES IN THE ARAB WORLD, 1970 TO 2000

City	Size in 1970	Size in 2000
Cairo	5,700,000	20,600,000
Baghdad	2,200,000	12,000,000
Alexandria	2,000,000	7,200,000
Casablanca	1,400,000	5,000,000
Algiers	1,200,000	4,800,000
Greater Beirut	1,000,000	3,500,000
Damascus	850,000	3,000,000
Tunis	755,000	2,300,000
Aleppo	600,000	2,200,000
Kuwait	570,000	4,500,000

Source: Ibrahim 1974, p. 81.

Riyadh is currently growing at a high rate of 10 per cent per annum (possibly higher), and if this rate is maintained in the future it is probable that the population will reach 10 million by the year 2000. It should be pointed out that these future sizes have been estimated assuming that present growth rates will be maintained, that international migration to the major cities in the oil-producing countries will continue, and, of course, that these countries will continue to pursue urban development policies without attempting to channel migration towards the smaller cities.

Aspects of Urban Primacy

Urban primacy is not a product of the modern era but dates back to previous ages when the city carried out numerous functions on behalf of its

surrounding region. In the opinion of many demographers, however, the modern concept of urban primacy is linked only to population size, since a capital city or a commercial or industrial centre attracts large numbers of the surplus population in other rural environments with the result that its population mushrooms, the variety of its functions increases, and it becomes a primate city, comprising the greatest proportion of both the national and the urban population of the country.

In effect there are no limits to the size of a city since it is constantly changing and growing in accordance with various geographic factors, which might make the capital city the largest city in the country. On the other hand, the country might contain only two large cities and a number of smaller towns (e.g., Cairo and Alexandria in Egypt, Damascus and Aleppo in the Syrian Arab Republic, Tripoli and Benghazi in the Libyan Arab Jamahiriya, Riyadh and Jeddah in Saudi Arabia, etc.). The size of these cities is not subject to any mathematical law or principle but is conditioned by local, regional, and, occasionally, international environmental factors.

This leads us to believe that population size is a mere indicator and not a precise yardstick of urban primacy for which it is necessary to obtain data on the various functions exercised by the city and on the latter's relationship to other cities in the national urban hierarchy. The problems encountered in obtaining such data at the local level become much more formidable at the national level and it is difficult, in consequence, to make inter-country comparisons. Hence population size remains the basis for comparison, despite its evident unsuitability in view of the fact that the importance of cities is measured in terms not only of population size, but also of their administrative, commercial, cultural, industrial, and other functions and of the role they play in the life of their local, regional, and national hinterland.

The growth rates of the major cities in the developing countries, including the Arab states, greatly exceed their rates of natural increase since most of this growth is attributable to the influx of migrants from backward rural areas attracted by employment prospects in the cities in which industries and services are concentrated. The numbers of immigrants, however, now far exceed the employment opportunities available in the cities, which are teeming with multitudes of unemployed or semi-employed persons who normally live in uncontrolled settlements in the outskirts or in slum areas of the cities. These squatter settlements, which have grown up at random, currently constitute at least around one-third of the population of many cities in the developing countries and they are growing at a rate of 12 per cent per annum, thus causing a chronic social and housing problem in these cities (Breese 1966, p. 145).

It has already been mentioned that there is a pronounced trend in the Arab countries towards urban primacy, i.e., towards a concentration of population in the largest urban centre. In all of the Arab countries with the exception of Morocco, the largest city is the capital, and as such it has expanded its role to such an extent that the primate city is in effect the country. Such a city is the country's window on the outside world and the outside

world forms its first impression of the country as a whole from the cultural, material, and living standards observed in the capital or principal city. This is a characteristic feature of the capitals of the developing countries in general and is not restricted to the countries of the Arab world (Breese 1966, p. 145).

With regard to the extent of their primacy, the major cities in the Arab world differ from country to country in accordance with economic and environmental circumstances such as their size in relation to the country as a whole, their geographic location in relation to the inhabited area, their level of development, the density of their transportation network, etc. It has already been noted that the urban hierarchy is out of balance in most of the Arab countries, some of which have become aware of the problem inherent in the excessive concentration of urban population in the capital. For the first time, thought is being given to the development of alternative centres to attract part of the population away from the capitals. In certain cases consideration has been given to the establishment of new capitals (e.g., Al-Baidha in the Libyan Arab Jamahiriya), but this has not proved effective in reducing the urban primacy of the major cities in such countries.

In order to obtain an understanding of the various aspects of urban primacy in the major cities, Cairo and Beirut could be taken as examples. Of all the world's capitals, Cairo is possibly the most centrally located in regard to its developed regions, with the Delta to the north, the Nile valley to the south, and the desert to the east and west. This location has been the determining factor in the city's growth and expansion in various historical periods.

Since the establishment of the first united capital in Egypt, this metropolis has assumed enormous magnitude in relation to, and at the expense of, the overall size of the country. Centralization promotes metropolitan expansion and the Egyptian capital has always exercised an extraordinary degree of dominance over life in Egypt. It is probably no exaggeration to say that the history of Egypt is hardly more than the history of the capital (Hamdan 1967, p. 82).

The huge size of Cairo, which is the largest city not only in the Arab but also in the Islamic world, is not a recent development since the city was large even in the nineteenth century and has always been the focal point of economic activity and the demographic centre of gravity in Egypt. Its primacy became even more pronounced after the Second World War and, in particular, following the socio-economic changes witnessed in Egypt after 1952.

Cairo has occupied a primate position since the Middle Ages. At the time of the French Expedition (1798-1801), Cairo contained around one-fifth of the population of Egypt, which in those days amounted to 2.5 million persons. It now contains around 8 million out of a total, country-wide population of 40 million persons, which makes Cairo the largest city not only in the Arab world and Africa, but also in a huge area of the ancient world embracing all of southern Europe and extending from the Alps and Carpathians across South-West Asia to the southern Caucasus and western Indus valley.

It has already been mentioned that crude size alone is not the only weighting factor. Even if Cairo did not account for over one-fifth of the population of Egypt, it would be at least equiponderant with half of the total population in terms of other weighting factors. In fact, if we evaluate the city's high income, real estate and property holdings, and advanced industries, facilities, and services together with other factors that cannot be measured in numerical terms—such as power and influence, etc.—the capital might well easily outweigh the rest of the country (Hamdan 1967, p. 84). It would, therefore, be no exaggeration to say that Egypt is Cairo. It is no coincidence that Egypt is one of the few countries in which the name of the country, in common parlance, is given to the capital in spite of the official differentiation.

The concentration of administrative functions in Cairo has had the effect of depriving the rural and surrounding regions of the minimum level of basic services, despite the fact that the capital was orginally established for the purpose of serving the rural and provincial areas. The following figures (table 8) show the extent of Cairo's superprimacy and the degree to which the human, productive, and consumptive potential of Egypt is concentrated in one location (Hamdan 1967, p. 87).

TABLE 8 CONCENTRATION OF POPULATION IN GREATER CAIRO BY SELECTED INDICATORS

Population by selected indicators	Per cent
Proportion of total national population	18.0
Proportion of government employees	30.0
Proportion of agricultural engineers in Cairo	53.0
Proportion of medical practitioners in Cairo and Giza	52.2
Proportion of veterinarians in Cairo and Giza	48.2
Proportion of graduate engineers in Cairo and Giza	58.7

From this it can clearly be seen that the bureaucratic density in the capital is two or three times higher than the overall national average, with the result that the capital has assumed huge dimensions, is facing a multitude of urban problems, and is constantly increasing its primacy over the various provinces of the country.

Beirut exercises even greater hegemony over Lebanon than does Cairo over Egypt. Most of the industries and services are concentrated in the city of

Beirut and its suburbs, which contain around 75 per cent of the total number of persons employed in the industrial and service sectors; this means that the city has polarized around 60 per cent of the country's total manpower engaged in various sectors. Consequently, Beirut has assumed a degree of primacy that is unprecedented in many countries. It has already been stated that Beirut's index of primacy amounts to 2.5 (on a four-city index), which is one of the highest levels in the world, and this figure is constantly increasing; during the period 1960-1970, it rose from 1.8 to 2.5. In other words, the city of Beirut exercises much greater primacy over Lebanon than other capitals do over their countries, and this primacy is constantly increasing (Tabbarah 1977, p. 18).

In fact, the most outstanding feature of urban development in Lebanon is this concentration of population in the capital and its suburbs, and it is estimated that around two-thirds of internal migration in Lebanon is directed towards Beirut, the population of which has increased around 10-fold since 1932. Beirut alone contains around one-fifth of the national population and three-fourths of the country's urban population. Hence Beirut is characterized by overwhelming primacy and is five times as large as the second city (Tripoli), which in turn is four times as large as the third city (Zahle).

It has already been said that Beirut's urban primacy is manifested in the over-concentration of economic, political, social, cultural, and other institutions since the capital is the site of all the government ministries, around 79 embassies and consulates, over 90 per cent of the banks and lawyers in the country, 82 per cent of the engineers, around 75 per cent of the doctors and nurses, almost 60 per cent of the commercial and industrial institutions, and over 80 per cent of the employees working in these institutions (Khalaf and Kongstad 1973, p. 19).

The Principal Problems Facing Primate Cities in the Arab World

The excessive urbanization in the developing countries, including the Arab states, undoubtedly has numerous drawbacks manifested in the continuous growth of major cities at rates exceeding the population growth rates in these countries. This gives rise to many problems in meeting the requirements of these ever-increasing numbers in housing, transportation, and various services such as health and education.

In fact, the problems of primate cities in the Arab world are the result of several factors, principally the absence of integrated country-wide socio-economic development plans, the centripetal characteristics of the rural areas, and the power of attraction exercised by the major cities. Shortcomings with regard to settlement and modernization operations in these cities have also aggravated many of their problems.

The concept of primacy signifies over-concentration in the primate city—concentration of population, economic activity, and services—and the consequent inability of any other city within the country to compete with the primate city. Thus the primate city continues to polarize the population

despite the numerous drawbacks to which it is consequently subject with regard to urban absorption capacity and land use.

In fact, the primate city usually suffers from the lack of an integrated development plan, with the result that slum areas and shanty towns grow up within the city and on its outskirts. In the city of Beirut, for example, the only planning instrument consists of the Building Statutes, promulgated in 1933 and superficially modified in 1954, which are mainly concerned with the establishment of a road network within the capital and do not touch on the most important considerations of urban planning, such as the demarcation of residential and commercial areas, the conservation of natural and historical resources, and the establishment of parks and children's playgrounds. As a result, commercial centres have encroached on residential areas and many of the city's streets are severely congested with traffic (Tabbarah 1977, p. 18).

In the major Arab cities, there are indications that housing is one of the greatest, if not the greatest, problems being faced, and present housing conditions reflect the growing seriousness of this problem. In these over-crowded conditions, the room occupancy rate in Cairo, for example, amounted to 2.8 persons in 1960, while the social survey carried out in Amman in 1966 revealed an estimated rate of 2.5 persons per room, and in Greater Baghdad the average was estimated at 3 persons per room (Abu-Lughod 1972, p. 56).

Some demographers estimate that 30-50 per cent of the population of the Arab capitals live in slum areas or in unsuitable accommodations (Ibrahim 1974, p. 90). Taking Beirut as an example, according to the official statistics, 30 per cent of the total housing in the capital could be classified as slum dwellings, and this category of housing accommodates around 40 per cent of the capital's population. In his study on Beirut around 25 years ago, Churchill gave a similar estimate for the proportion of dilapidated housing, but with a smaller proportion of occupants in relation to the total population (see Ibrahim 1974, p. 90). Among the Arab capitals, Beirut possibly exhibits the greatest proportion of shanty-town settlements following a pattern of unplanned development–built by migrants to the city behind the back, and sometimes even under the eye, of the authorities.

The situation is no better in Cairo, where it is estimated that slum dwellings house around 45 per cent of the total population. Although there are no real shanty towns on the outskirts, the city is surrounded with semi-rural dwellings, and 100,000 to 200,000 persons live in the large cemetery area extending to the east and south of the city.

The population density in Cairo is increasing at a high rate. In 1976 the average was around 24,000 persons per square kilometre, and in one district (Bab al-Shaariya) the actual figure was in excess of 100,000 persons per square kilometre.

The solution of housing problems in the primate cities of the Arab world is not an easy matter since these problems have to be approached within a context of overall national planning aimed at the redistribution of population in a scientific manner and the creation of alternative centres of attraction to curb the flow of migrants towards the major cities. The development of

rural areas will also have the result of reducing the exodus of manpower and youth from these areas.

Of course, this should also be accompanied by efforts to reduce population growth rates in general since, in the long term, high rates of population increase hamper not only development plans, but also the redistribution of resources throughout the country as a whole. Population growth within a country is without a doubt one of the principal interrelated factors that have given rise to the development boom in major cities. This is because pressure on housing and governmental response thereto constitute one of the vicious circles in the phenomenon of Arab urbanization. By the time houses are built in response to a particular demand, new demands arise that may far exceed the available supply, and the housing situation thus goes from bad to worse. This vicious circle has led some demographers to conclude that the problem of urban housing in the developing countries, including the Arab states, of course, is an insoluble problem (see Ibrahim 1974, p. 90). Although we do not share this pessimistic outlook, it does contain a large element of truth.

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CHAPTER 16. CONTEMPORARY URBAN GROWTH AND CONCENTRATION IN THE MIDDLE EAST

*John Clarke**

The Middle East, here defined as stretching from Morocco to Iran and from Turkey to the Sudan, contains about 224 million people (1977 estimate) living on 8.7 million square kilometres—5.5 per cent of the global population living on 6.5 per cent of the world's land area. The long history of urban life in the Middle East must be seen in the perspective of greater relative numerical strength in former times (cf. Abu-Aianah's chapter earlier in this volume), which facilitated and even stimulated urban growth.

Currently, this region is not one of the major demographic concentrations in the world. On the other hand, with many capital surplus oil exporters and middle-income countries, and few low-income countries, it is one of the most urbanized regions among the so-called less developed countries, exceeded only by middle and tropical South America. It is also one of the most rapidly urbanizing regions. Precise figures are unobtainable, but estimates for 1977 by the Population Reference Bureau suggest that some 44 per cent of the population of South-West Asia and 39 per cent of the people of North Africa live in towns (as defined by each country), and that these percentages are higher than those of other regions in Asia and Africa. A United Nations (1975) survey, however, suggested that in 1975 the urban population of North Africa and the Middle East as a whole accounted for 44 per cent of the total population (cf. 32 per cent in 1960), and that the average annual growth rate of the urban population during the period 1960-1975 was 5.0 per cent.

Urban Populations of the Middle East

For a variety of reasons, the estimates of the urban populations of individual countries in the region (table 1) are not very reliable, particularly for international comparisons. First, census data are distinctly uneven in quantity and quality: while countries like Algeria, Tunisia, Egypt, and Turkey have had a long run of censuses, others have never held a full census. Jordan did not hold one between 1961 and 1979, and Qatar never officially accepted the results of its only census, taken in 1970. Another major difficulty for international comparability is the variation in definition of urban status from

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country to country and from time to time. Table 2 reveals that the criteria for definition vary considerably, and it should be noted that Lebanon, Oman, Qatar, Saudi Arabia and Yemen have no official definitions.

TABLE 1 URBAN POPULATIONS OF MIDDLE EASTERN COUNTRIES

Country	Total population (millions)	GNP per capita (U.S.$)	Area (thousand square km)	Per cent urban population		Per cent annual growth rate of urban population	
	1976	1976		1960	1975	1960-1970	1970-1975
Turkey	41.2	990	781	30	43	5.2	4.2
Egypt	38.1	280	1,001	38	48	4.3	3.9
Iran	34.3	1,930	1,648	33	44	5.0	4.7
Morocco	17.2	540	447	30	38	4.2	5.1
Algeria	16.2	990	2,382	31	50	3.2	3.2
Sudan	15.9	290	2,506	9	13	6.2	5.5
Iraq	11.5	1,390	435	43	62	6.3	5.0
Saudi Arabia	8.6	4,480	2,150	12	21	6.6	6.3
Syrian Arab Republic	7.7	780	185	37	46	4.8	4.2
Yemen	6.0	250	195	4	9	9.0	8.0
Tunisia	5.7	840	164	32	47	4.9	4.2
Lebanon	3.2	1,070	10	35	60	7.4	5.4
Jordan	2.8	610	98	43	56	5.1	4.9
Libyan Arab Jamahiriya	2.5	6,310	1,760	23	31	5.8	5.0
Democratic Yemen	1.7	280	330	20	29	5.5	5.4
Kuwait	1.1	15,480	18	69	89	13.0	8.2
Oman	0.8	2,680	213	–	55[a]	–	–
United Arab Emirates	0.7	13,990	84	–	84[b]	–	–
Cyprus	0.6	1,480	9	–	42[a]	–	–
Bahrain	0.3	2,140	1	–	80[a]	–	–
Qatar	0.2	11,400	11	–	88[a]	–	–

Source: World Bank 1978.

[a] United Nations, ECWA 1978.

[b] Population Reference Bureau 1977.

TABLE 2 DEFINITIONS OF URBAN POPULATION IN SOME MIDDLE EASTERN COUNTRIES

Country	Definition
Morocco	All municipalities, autonomous centres, and other urban centres.
Algeria	Centres of communes with 1,000 or more population and at least 50 per cent or more of them in non-agricultural sectors. More than 75 per cent: urban; between 50 and 75 per cent: semi-urban.
Tunisia	Population living in all communes.
Libyan Arab Jamahiriya	No specific definition. After the census is taken, the population of Tripoli and Benghazi mohafazas and the urban parts of the mutasarrifiyyas of Beida and Derna are treated as urban.
Egypt	The governorates of Cairo, Alexandria, Suez, Ismailia, and Port Said and the chief towns of provinces and districts.
Sudan	Centres with 5,000 or more population having some urban characteristics.
Jordan	Urban includes the population resident in all localities of 10,000 or more population (excluding localities inhabited only by Palestinian refugees); all district capitals regardless of size; all localities of 5,000 to 10,000 inhabitants in which two-thirds or more of the economically active males were reported in non-agricultural occupations; and those suburbs of Jerusalem and Amman cities with at least two-thirds of males in non-agricultural pursuits.
Syrian Arab Republic	Cities, district (mohafaza) centres, and subdistrict (mantika) centres.
Cyprus	Six district towns and Nicosia suburbs.
Turkey	Population of the localities within the municipality limits of administrative centres of provinces and districts.
Iraq	Population living within the boundaries of municipality councils.
Iran	All shahrestan (county) centres, regardless of size, and all places of 5,000 or more inhabitants.
Kuwait	Kuwait City (Dasman, Sharq/1, Sharq/2, Murgab, Salihiya, and Qibla) and Labourer's City.
Bahrain	Towns of Manama, Muharraq (including Muharraq suburbs), Hidd, Jidhafs, Sitra, Rifa'a, and Awali.
Democratic Yemen	The entire former colony of Aden, excluding the oil refinery and villages of Bureika and Fugum.

Source: United Nations, Department of Economic and Social Affairs 1948-1977.

Perhaps one of the most important reasons for the low degree of international comparability of levels and rates of urban population growth is the wide range of population sizes of states—from 0.1 million to 41.9 million inhabitants (1977 estimates). This results from the intense political fragmentation of the Middle East, one of the world's shatter belts. At the bottom end of the demographic scale are some small countries (e.g., Qatar, the United Arab Emirates, and Bahrain), which are little more than city states, while at the top of the scale the large countries (Turkey, Egypt, and Iran) have complex urban systems and well-developed urban hierarchies, including regional capitals. However, there are no clear relationships between the areas and populations of countries, on the one hand, and the per cent of the population that is urban, on the other (table 1 and figure 1).

It would appear that national boundaries are not very significant divides between urban systems. Some of the largest countries (e.g., Saudi Arabia, Algeria, the Sudan, Iran, and the Libyan Arab Jamahiriya) contain several urban subsystems, while some of the smallest countries (e.g., the small Gulf states) form part of multi-national urban systems. Indeed, most of the largest cities in the Middle East—Cairo, Tehran, Istanbul, Baghdad, Casablanca, and Beirut—have considerable influence far beyond the boundaries of the countries in which they are situated. Tehran has more inhabitants than over half of the countries in the region, including Lebanon, Jordan, and the Libyan Arab Jamahiriya. So does Cairo; Baghdad has as many as Lebanon; and Istanbul has as many as the Libyan Arab Jamahiriya.

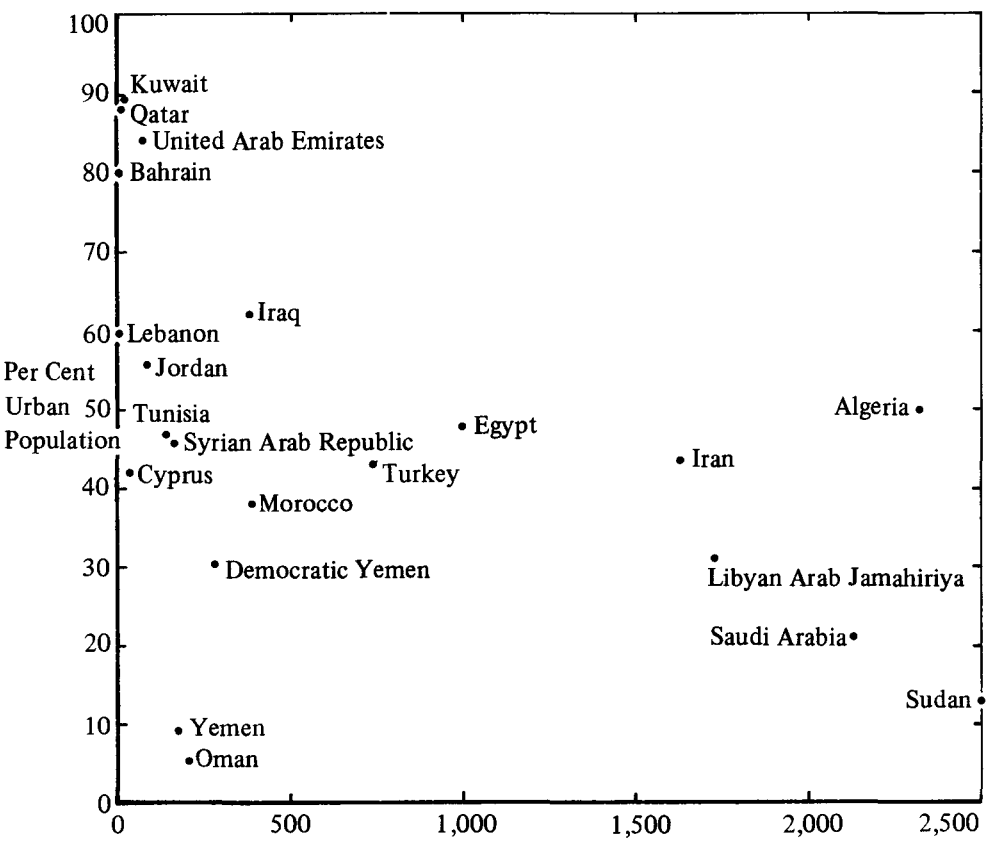
In these circumstances, statistical analyses of urban populations, however defined, are not particularly enlightening except in the broadest terms. It is apparent that there is a fairly marked north-south contrast between the more urbanized, longer-settled countries of the northern tier—Turkey, Iran, those of the fertile crescent, and the Atlas lands of the Maghreb—and the less urbanized, traditionally more nomadic countries of the Arabian Peninsula as well as the Libyan Arab Jamahiriya and the Sudan (table 1). In nearly all the more urbanized countries, at least 40 per cent of the population live in localities defined as urban by each country, while in most of the Gulf states over 80 per cent live in such localities. On the other hand, in the less urbanized countries less than 40 per cent of the people live in towns; in two countries, Yemen and Oman, probably less than 10 per cent are urban.

We should remind ourselves, however, that the percentage living in urban localities is a rapidly changing statistic. The oil-rich countries of the southern zone (Oman, Saudi Arabia, and the Libyan Arab Jamahiriya, for example) are undergoing very rapid urbanization and will not be permanently at the base of the urban populations. Certainly, high GNP per capita is not closely correlated with high urban population levels, but in time the correlation will be closer.

Urban Growth Rates in the Middle East

Some indication of recent changes in the levels of urban population may be gleaned from the estimates by the World Bank for 1960 and 1975

FIGURE 1 RELATIONSHIP BETWEEN THE TOTAL AREA OF MIDDLE EASTERN COUNTRIES AND THE PER CENT OF THEIR POPULATIONS THAT IS URBAN, 1975



(table 1). Unfortunately, urban growth rates are not available for some of the smaller states. From those that are available, however, it is clear that in almost every country of the region the annual rate of urban growth was faster during the 1960s than during the first half of the 1970s and was rarely less than 4 per cent, the only major exception being Algeria. The average national rate for 1960-1970 was 5.9 per cent and for 1970-1975 it was 5.1 per cent, which implies that urban populations doubled every 12-14 years. In Kuwait and Yemen, the rates were even more spectacular, exceeding 8.0 per cent, but in Kuwait the *total* population was small and in Yemen the *urban* population was small, so absolute growth is less impressive there than relative growth. Perhaps more impressive is the rapid growth (over 6 per cent annually) of Saudi Arabia's urban population from a previously low level and of the urban populations of a number of countries that were already moderately urbanized: Algeria, Tunisia, Lebanon, Jordan and Iraq. Here political events have usually played an important role, contributing to the snowballing urbanization, though in Algeria this was in spite of more modest overall population growth.

In contrast, Egypt's urban growth has been more impressive in absolute terms than in relative terms—along with that in Turkey and Iran it constitutes the bulk of Middle Eastern urban growth. Only little Cyprus has seen very little recent fluctuation in its numbers of town dwellers.

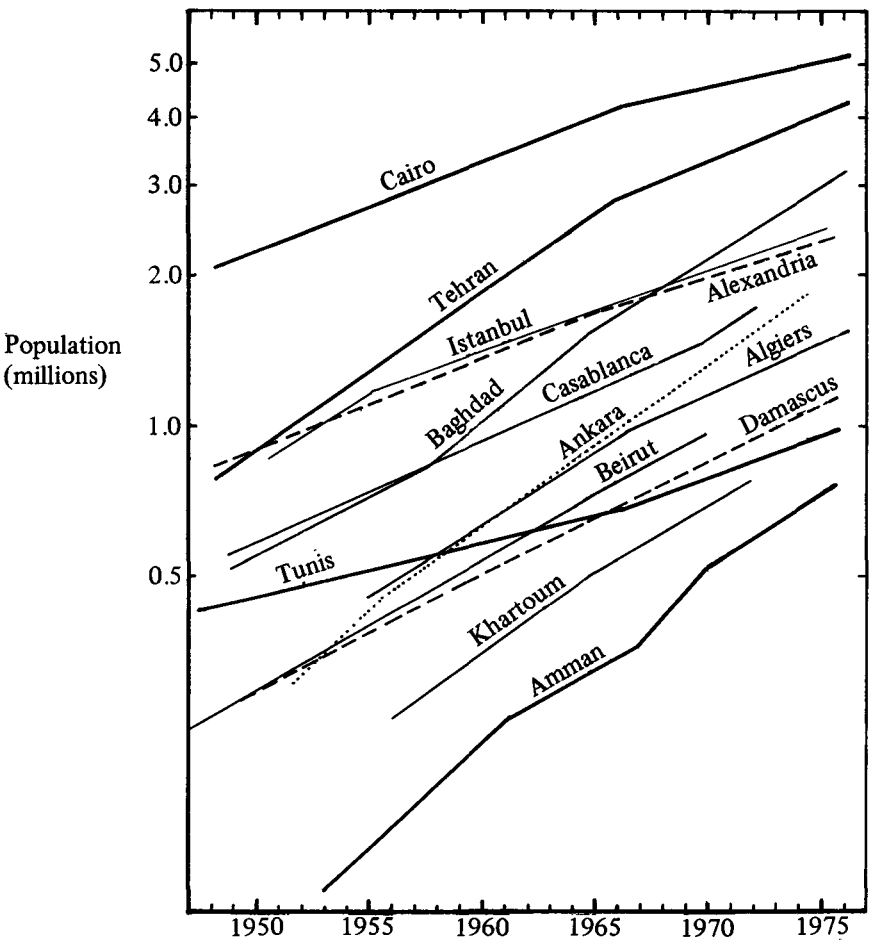
Large City Populations

One of the most noteworthy feature of urban growth in the Middle East is that it occurs overwhelmingly in large cities. In the mid-1970s, there were more than 140 cities with 100,000 inhabitants or more, but over half of them were in Egypt, Iran or Turkey, the most populous countries. In a number of countries (Egypt, Iraq, the Syrian Arab Republic, Lebanon and Kuwait), these cities comprise at least one-third of the total populations. In contrast, middle-sized towns with 50,000 to 100,000 inhabitants are only numerous in the most populous countries, though the Middle East is not unusual in this respect.

Cities with at least a million inhabitants are becoming much more numerous. By the late 1970s, there were at least a dozen: Cairo, Teheran, Istanbul, Alexandria, Baghdad, Casablanca, Ankara, Algiers, Beirut, Damascus, Greater Khartoum and Tunis. In addition, it cannot be long before the list is joined by Riyadh, Tripoli (the Libyan Arab Jamahiriya) and Amman. Moreover, by 1976, Cairo had over 5 million, and Baghdad had over 3 million; so all three were well into the ranks of major world cities. Figure 2, which is based upon census data, depicts the growth of most of the actual and near *million-cities* of the region and is perhaps more effective than a table of growth rates giving a spurious indication of accuracy. It may, however, give a false impression of smooth growth; in reality, especially where in-migration is voluminous (e.g., Baghdad, Amman), growth is less even.

Particularly striking growth may be observed for Tehran, Baghdad and Ankara, all interior capitals of highly centralized states and therefore,

FIGURE 2 RECENT GROWTH OF SOME LARGE CITIES OF THE MIDDLE EAST



Note: Different types of lines have been used solely to facilitate reading.

somewhat unusual among less developed countries (though Mexico City and Bogota are other examples). Tehran's population doubled from 1.5 million to 3.0 million between 1956 and 1966, and another 1.5 million were added by 1976. Even more remarkable was the growth of Ankara, which multiplied nearly six times in the 25 years from 1950 to 1975 to reach a total of 1.7 million, while the formerly very much larger city of Istanbul multiplied just under three times to attain 2.5 million. Baghdad also multiplied six times during the 30 years from 1947 to 1977. Lesser cities like Beirut, Khartoum, Riyadh and Amman–the last three again with inland locations–have also grown rapidly, faster than most of the major cities of North Africa (Cairo, Alexandria, Casablanca, Algiers and Tunis), some of which were affected by decolonization. Capital status is also important to the growth of large cities, and all but three of the million-cities are capitals, the exceptions being the port cities of Istanbul, Alexandria and Casablanca. Istanbul and Alexandria are curiously similar in size and rates of growth. Istanbul and Casablanca are still the largest cities in their respective countries, but the fact that there are two major cities in Turkey means that Istanbul contains a smaller percentage of the total population than do most of the largest cities in countries of the Middle East.

City-Size Hierarchies

In most countries, the largest city is incorporating an increasing proportion of the total population. Excluding the micro-states with fewer than 1 million inhabitants, the largest cities of most of the remaining countries comprise at least one-tenth of the total populations, but in Saudi Arabia and Democratic Yemen they contain a fifth; in Iraq, Jordan and the Libyan Arab Jamahiriya a quarter; and in Lebanon nearly a half (table 3). Obviously, there is a tendency for greater concentration in the largest cities of the less populous countries and more highly urbanized countries, but the correlation is not very clear. Apart from Istanbul, the two cities of Greater Khartoum and Sana'a stand out because they contain only small proportions of the total populations of their respective countries, neither of which is highly urbanized.

On the other hand, analysis of two- and four-city indexes (table 3) shows that Greater Khartoum is dominant in the urban hierarchy of the Sudan, as are Tehran, Baghdad and Beirut, respectively, in Iran, Iraq and Lebanon. All these cities are more than five times larger than their nearest rivals and more than twice as large as the combined population of the second, third and fourth cities. Tunis also exhibits marked primacy, and city-size distributions of these five countries (table 3) clearly differ from those of most other countries in the Middle East, though Iran and Morocco have many more cities with at least 100,000 inhabitants than do Iraq, Tunisia and the Sudan.

The city-size hierarchies (Clarke and Murray 1973; Clarke 1978) of Egypt, Turkey and Algeria approximate log-normal, i.e.,

TABLE 3 URBAN PRIMACY IN MIDDLE EASTERN COUNTRIES

Country	Population of largest city (thousands)	Percentage of total population	Urban primacy two-city index	Four-city index
Turkey	2,547 (1975)	6	1.50	0.91
Egypt	5,084 (1976)	14	2.19	1.33
Iran	4,496 (1976)	14	6.69	2.44
Morocco	1,753 (1973)	11	2.93	1.20
Algeria	1,523 (1977)	9	3.10	1.42
Sudan	800 (1973-1974)	6	5.92	2.26
Iraq	3,206 (1977)	26	5.58 (1965)	2.41
Saudi Arabia	669 (1974)	18	1.19	0.59
Syrian Arab Republic	1,042 (1975)	14	1.34	0.86
Yemen	139 (1975)	3	1.68	0.75
Tunisia	900 (1975)	16	3.46	2.12
Lebanon	1,173 (1975)	46	5.97 (1970)	4.16
Jordan	691 (1976)	23	2.66	–
Libyan Arab Jamahiriya	552 (1973)	24	1.96	–
Democratic Yemen	285 (1973)	18	–	–
Kuwait	277 (1975)	28	–	–
Oman	–	–	–	–
United Arab Emirates	141 (1975)	25	–	–
Cyprus	116 (1973)	18	1.45	0.84
Bahrain	111 (1975)	43	–	–
Qatar	145 (1975)	85	–	–

Source: Population censuses and statistical yearbooks.

Note: Two-city index $= \frac{P_1}{P_2}$ and four-city index $= \frac{P_1}{P_2 + P_3 + P_4}$, where P_1 is the population of the first city, P_2 is the population of the second city, etc. If the rank size rule applied to the situation, the two-city index would equal 2 and the four-city index would equal 0.9.

$$P_n = \frac{P_1}{N}, \text{ where}$$

P_n = the population of the nth city,
P_1 = the population of the first city, and
N = the number of cities in the array,

a reflection, perhaps, of factors such as their large size, long history of urban life and economic diversity. Turkey, however, has a tendency towards a binary (or intermediate) city-size distribution with two main cities, a pattern manifested as well by the Syrian Arab Republic, Saudi Arabia and Yemen, where no single city has achieved overwhelming preponderance.

These city-size distributions are not immutable; the growth of Ankara, offsetting the formerly strong primacy of Istanbul, is indicative of how city-size distributions can change, as is the growing primacy of Tripoli in the Libyan Arab Jamahiriya. On the other hand, the evidence suggests that where the largest city is the capital, the tendency for growing concentration is very strong, even when it is far from the sea. When it is also the major port (Algeria, Tripoli, Tunis, Beirut and Aden), primacy is often intensified. Casablanca is the only primate city that is a port but not a capital.

Components of City Growth

Rapid city growth results from high natural increase, net in-migration, and incorporation of surrounding villages. Natural increase averages 2.8 to 2.9 per cent per annum for the region as a whole; it is substantially lower only in Cyprus (1.5 per cent) and substantially higher in Kuwait (4.2 per cent) and the Syrian Arab Republic (4.1 per cent). High rates are caused by sustained high fertility and declining mortality. In cities they are even higher because the difference between urban and rural mortality is greater than the difference between urban and rural fertility; frequently, natural increase rates of cities exceed 4.0 per cent, which means a doubling time of less than 18 years.

In the period 1970-1975 the death rates of many countries were 14 to 16 per 1,000; they were higher (about 20) in the Sudan, Saudi Arabia, Yemen, Democratic Yemen, Oman and Qatar and much lower (below 10) in Cyprus, Lebanon, Kuwait and Bahrain. For many reasons, mortality in cities has declined more rapidly than fertility. Although Middle Eastern cities were formerly extremely unhealthy (this is still the case in shanty towns and refugee camps), there have been great improvements in sanitation, hygiene, nutrition and medical and pharmaceutical services, which have raised the life expectancies of city-dwellers. Naturally, the degree of mortality decline varies considerably and is less in Sana'a than Sousse, in Muscat than Meknes, but oil-rich countries with smaller populations are able to effect more rapid declines than most other countries.

The situation is quite different as far as human fertility is concerned since in this predominantly Islamic region the fertility levels of many countries are

among the highest in the world, with birth rates of 45-50 per 1,000 (1970-1975) and total fertility rates (TFRs) of about 7.0 (Cassen 1978)—i.e., a woman would have seven children if she gave birth at the prevailing age-specific fertility rates and survived to the end of her reproductive years. The major exception is Cyprus with a TFR of 2.8, but some fertility decline has been experienced in Egypt (TFR of 5.2); Turkey (5.8); and Tunisia (5.9), especially in urban areas; and the partly Christian Lebanon has a lower level of fertility (TFR of 6.3) than more Islamic Arab countries. But even in countries with high total fertility rates there are distinct signs that fertility is beginning to fall among some city-dwellers—as in Tehran (Amani 1972)—and that improved living standards, increased education, and other aspects of socio-economic development are related to lower fertility (Audroing et al. 1975). Family planning is making limited progress among urban elites and more widespread progress in Egypt, Turkey and Tunisia.

Further mortality decline in cities is more likely than further fertility decline. Some of the oil states, for example, are not interested in family planning schemes, partly because they have so many immigrant workers that they see their own nationals being outnumbered—yet they are able to establish the most modern medical services. So high natural increase is likely to be the major and most persistent component of urban growth for some time to come.

Migration, on the other hand, is the cause of much of the spectacular growth of Middle Eastern cities and acounts for many of the differences between the growth rates of large cities. It is a more spasmodic and less general component of urban growth than natural increase, partly because net migration is the balance of in-migration and out-migration. Generally it leads to spurts of growth, as in the case of Amman. Cities in oil-rich states, not merely the capitals but others such as Benghazi, Jeddah, Dammam and Abadan, have been particularly attractive to migrants. But perhaps most impressive is the huge flow of migrants into the major Middle Eastern cities—Cairo, Tehran, Baghdad—where net in-migration frequently exceeds 2 per cent per annum (Cairo Demographic Centre 1973) despite their size.

Population Concentration and Redistribution

Thirty-seven per cent of the world's urban inhabitants may live in million-cities by 1985, and there may be 15 cities with 10 million inhabitants, most of them in less developed countries. The Middle East is no exception to this growing concentration. Greater Cairo is expected to be one of these "10 million-cities," and there could well be "15 million-cities" by 1985. This volatile metropolitan expansion poses urgent problems of many kinds, not least of which is the formulation of policies to cope with the spatial concentration of population.

Most modernization in the Middle East has been highly polarized and strongly linked with the world economy. It has thus contributed substantially to urbanization, which has increased through initial advantage and cumulative

causation. The often harsh conditions of the physical environment have made rural development expensive and difficult, and the huge revenues of the oil industry, the epitome of capitalistic multinational enterprise, are more easily spent in cities than in deserts or steppes. Industrialization, the panacea of the 1960s, was also urban-oriented, so the contrast between cities and their rural environs was intensified. The cities attracted rural labour, but their links with the world economy meant that many of the traditional urban industries suffered from external competition, except where tourism aided their survival, as in Tunisia.

There has been much discussion over whether these metropolitan cities are parasitic or generative, whether they drain their countries' life-blood, or whether they are centres of innovation and diffusion. In fact, it is unwise to generalize, since the situation varies from country to country, but there can be little doubt that many large cities have developed an enclave type of economy, especially those in poor countries that suddenly acquire wealth. On the whole, the spread effects of large cities are greater in middle-income countries, where there is less spatial inequality than in low-income countries and where there are stronger links between rural areas and major cities.

Despite much discussion over the economies and diseconomies of large cities in less developed countries, there is a growing concensus that the diseconomies are excessive and may culminate in "ecodisasters" (Elizaga 1973), a situation that may not be far off in Cairo. Many favour intermediate or middle-sized cities as potential growth centres (Hansen 1971). Unfortunately, few population policies in less developed countries, and the Middle East is no exception, have paid much attention to spatial distribution or redistribution of population; instead they have focused on population growth (Bose 1977). The main policy approach to this question has been through urban and regional planning, which has aimed mostly at decentralization but has produced mixed results. Algeria, for example, applied growth centre concepts to restrict concentration of development and spread it to lagging regions, but success has been limited because much development has been based upon industrialization as the propulsive factor, thus causing further urban concentration even if in lesser cities. In Iran development plans have contributed to the evolution of regional capitals (Behman and Amani 1974), but without appreciably slowing down the massive growth of Tehran. We shall have to see whether "de-Westernization" in Iran will lead to changes in the urban system; so far, decolonization of the Maghreb has had no significant effect.

Growth centre policies have tended to reinforce economic dependency and existing urban spatial patterns. Time will tell whether political changes in the Middle East will provoke new approaches to regional and urban planning. These will not and should not be alike, because each country presents different historical and geographical conditions of urbanization. But it is very doubtful whether population measures to arrest migration or control fertility will do much in the first instance except effect an initial slowing down of metropolitan expansion. The real solution must be found in more effective spatial economic planning of each country as a whole. So far, planners' dreams have done little to change the spatial patterns of urban growth.

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PART V. POPULATION POLICIES

CHAPTER 17. VARIATIONS AND POLICY ISSUES IN MORTALITY

*Vasilios Valaoras**

The main feature of the so-called demographic transition is the depression of fertility and mortality to very low levels, which still maintain the traditional slow rate of population growth but produce a more functional age composition. This transition came about naturally as a result of the Industrial Revolution, which began in Europe about 200 years ago with the objectives of increased production and expansion of world trade for monetary profits. The previous stage, based upon an agricultural economy, had begun to encounter difficulty because of the dividing up and partial exhausion of available arable land in the face of a growing, impoverished, and restless population. Human ingenuity and the tapping of fossil energy initiated the new type of technological economy, which provided the means for larger incomes, more food and leisure, and an accelerated pace of economic and social progress.

Characteristics of the Demographic Transition

At first, little thought was given to the possible repercussions of this new and fundamentally different type of economy on population size and dynamics. The leading demographer of the time, Thomas Malthus, was still thinking of the problem in the older terms—of the balance between agricultural production and a growing population—and the few economic specialists of the nineteenth and early twentieth centuries spent their energy on improving working conditions in factories and raising standards of living in congested and filthy industrial centres. Indeed, the demographic effects of industrialization were largely ignored until after World War I, and the problem was not placed in its proper perspective until after World War II, when the Population Division of the United Nations conducted a careful study.

The transition from an agricultural to a technological economy entails fundamental changes in the vital rates and the structure of a population in accordance with the boundaries contained in table 1.

Each set of values fits the corresponding type of economy. In the agricultural populations before the Industrial Revolution, natality had to be very high to offset the loss of life caused by frequent epidemics, unsanitary living conditions, and hidden malnutrition—none of which could be controlled.

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Moreover, children were economic assets and less of a family burden than they are in modern societies. Survival until the end of the reproductive period was sufficient in an agricultural population, which had little use for older people who could not produce as much food as they consumed.

TABLE 1 BOUNDARIES OF VITAL RATES ASSOCIATED WITH THE DEMOGRAPHIC TRANSITION

Vital rate	Initial level	Terminal level
Birth rate	40-45	15-20
Death rate (around)	35	10
Gross reproduction rate	3.8	1.1
Life expectancy at birth (both sexes)	35	70
Growth rate (per cent)	0.5- 1.0	0.5- 1.0
Age distribution (per cent)		
0-14	40	25
15-64	55	65
65+	5	10

On the other hand, the new technological economies were oriented towards mass production, which requires a large body of skilled labourers; a well-informed, educated general population; increased life expectancy; and substantial reduction of family burdens. Thus the control of excessive mortality as well as the avoidance of surplus fertility became two of the prime requirements for the promotion of industrialization. However, only mortality was controlled effectively—although to different degrees in various regions. Fertility was often left to retain its previous (pre-industrial) high level, with grave consequences for the composition of the population and the rate of population growth.

This different behaviour of mortality and fertility can be explained rather easily. Effective means and organized social action for the control of mortality became available when the medical sciences recognized the cause of, and developed effective measures for the reduction of, epidemic diseases. Moreover, an innate enmity towards death has dominated human consciousness since time immemorial. No similar motivation existed to combat excessive, and presumably unwanted, fertility. On the contrary, natality continued to be

viewed as God's blessing and as a powerful instrument for the perpetuation of the family and the national population, which had so often been decimated by epidemics and malnutrition. Similar anachronistic feelings are often shared by contemporary populations, which accounts for the fact that while mortality control is practised all over the world, the curtailment of fertility is lagging far behind the desired schedule.

Means for the Control of Mortality

Among the many factors that facilitate the decline of mortality is an adequate supply of medical personnel and facilities (one doctor per 600 population and one hospital bed per 100 inhabitants are viewed as optimal). However, curative techniques do not produce reductions in mortality as large as those produced by preventive techniques. Frontal attack against any given disease with a high prevalence or lethal nature (such as the control of anopheles for the eradication of malaria or the mass-scale vaccinations against smallpox) is highly desirable but difficult to put into practice. Such an endeavour usually requires input exceeding locally available funds and human resources and can be successfully carried out only through international co-operation.

There are other lines of social action that can be carried out by local means with good chances of success. For instance, improved child nutrition may lead to substantial reduction of infant and childhood mortality rates. Safe drinking water and uncontaminated (boiled or pasteurized) milk are essential prerequisites of this process. Also, the regular administration of the necessary prophylactic vaccinations against the epidemic diseases of childhood represents a cheap and easily applied procedure for reducing the preventable part of morbidity and mortality.

Better nutritional standards for the entire population and a scientific control of food and drink (especially the water supply) intended for general consumption also help to reduce mortality, but these measures require a bigger outlay of public funds and more sophisticated social and economic organization. Finally, the construction of modern systems of water supply and sewage disposal and the expansion of the system of public education, including public health education as an integral part, complete the arsenal of the community against preventable diseases and premature death. The establishment of these last three systems requires the expenditure of considerable amounts of funds and time, but their impact upon health and longevity is important and long lasting.

Many countries have a low death rate. They have good medical and hospital services; an adequate nutritional level with clean food, pasteurized milk, and chlorinated drinking water; and a very low illiteracy rate. Other countries have only some of these amenities. But there are no countries completely devoid of modern hygienic means, be it the services of a general practitioner, some "wonder drugs" (antibiotics), or vaccinations against epidemic diseases. Therefore, it is not surprising that the death rate has

fallen in almost every country of the world, while the birth rate has remained sometimes near or even above the pre-industrial level in vast areas of the globe. This imbalance of the vital rates has led to the current world crisis of unprecedented population growth, sparked by a falling death rate and not by a rising birth rate.

Falling Mortality and Population Growth

The reduction of mortality as opposed to an almost stable fertility is directly associated with the acceleration of the annual rate of population growth. The growth rate is different in the various regions of the world, which may be seen in the trend of population increase by continent since 1800 (see table 2). During the 200 years under review, the population of Europe increased 3.5 times, the population of Asia 5.8 times, that of Africa 7.6 times; the population of the new continents (the Americas and Oceania) grew to almost 30 times its initial level.

Human populations grow from an excess of births over deaths (which can be measured as the number of births per 100 deaths) and from positive net migration. Migration to America and Oceania was heavy, which helps to explain the very fast growth rate of their population. In the other continents, population increase was due mostly to the excess of births over deaths—in other words, to falling mortality against an almost steadily high fertility. Following World War II, significant decreases in mortality occurred in Africa and Asia, which caused a swift upward turn of population growth in those continents. Table 3 contains the vital rates for the various continents, using when necessary projections of vital rates prepared by the United Nations.

Two major deductions may be drawn from these observations. The first refers to the rapidly declining death rate, which by the end of the century will probably reach the lowest level biologically attainable in all major regions of the world. By contrast, the birth rate will still be high (between 18 and 39 per 1,000 population) in most of the world's population. Only in Europe, North America, and North-East Asia will the birth rate have come down to the level of around 15 per 1,000. In the meantime, the imbalance of births and deaths will create more and more redundants as time goes on. In Latin America at the end of the century there will be 519 births per 100 deaths, which is about three times higher than the ratio for the entire world.

Since 1950 the vital rates in Europe appear to have reached the final stage of the demographic transition, with a birth rate ranging between 20 and 15 and a death rate around 10 per 1,000 population.

Occasionally the vital rates descend to much lower levels than expected (a death rate of 6 or less in Latin America or a birth rate of less than 10 in certain European countries). This is produced by a temporary disturbance in the age composition of the population. A very young population produces a very low death rate, and a relative dearth of prospective parents produces a very low birth rate. The abnormality will disappear as soon as the age composition stabilizes.

TABLE 2 POPULATION OF THE WORLD BY CONTINENT IN KEY YEARS DURING THE LAST TWO CENTURIES, RELATIVE GROWTH BY 2000, AND YEARS REQUIRED FOR DOUBLING THE POPULATION

Continent	Population (millions)						Relative growth	Doubling time
	1800	1850	1900	1950	1975	2000	(1800=100)	(years)
World	978	1,262	1,650	2,501	3,968	6,254	639	62.6
Europe	152	208	296	392	473	539	355	112.7
U.S.S.R.	56	76	134	180	255	315	563	71.0
Asia	630	801	925	1,368	2,257	3,637	577	69.3
Africa	107	111	133	219	401	814	761	52.6
Americas	31	64	156	330	561	916	2,955	13.5
Oceania	2	2	6	12	21	33	1,650	24.2

Source: Figures for 1800-1900 are from United Nations (1973), table II.4, and for 1950-2000 from United Nations (1977), table 5.

TABLE 3 BIRTH AND DEATH RATES AND BIRTHS PER 100 DEATHS BY REGION IN THE PERIODS 1950-1955, 1970-1975, AND 1995-2000

Region	Birth rate			Death rate			Births per 100 deaths		
	1950-1955	1970-1975	1995-2000	1950-1955	1970-1975	1995-2000	1950-1955	1970-1975	1995-2000
World	35.6	31.5	25.1	18.8	12.8	8.9	189	246	282
Europe	19.8	16.1	15.3	10.9	10.4	10.4	182	155	147
U.S.S.R.	26.3	17.8	16.3	9.2	7.9	9.6	286	225	170
East Asia	35.6	26.2	18.1	20.1	9.8	7.9	177	267	229
South Asia	44.0	41.9	28.4	25.2	16.7	8.9	175	251	319
Africa	48.1	46.3	39.1	26.7	19.8	11.4	180	234	343
Latin America	41.0	36.9	29.6	14.4	9.2	5.7	285	401	519
North America	25.1	16.5	15.1	9.4	9.3	9.8	267	177	154
Oceania	27.6	24.8	21.2	12.4	9.3	8.0	223	267	265

Source: United Nations 1977, tables 33 and 34.

As stated earlier, mortality decline proceeds much faster and spreads more freely than the sluggishly moving high natality. Up to the period 1970-1975, there were 112 (or 72 per cent) major countries that had reduced their death rate to the range below 20, while only 46 countries (29 per cent) had brought their birth rate into the same range (see table 4). A similar discrepancy exists in the more specialized indexes, such as the life expectancy at birth (both sexes) and the gross reproduction rate. It may be seen in table 5 that 69 of the countries (44 per cent) managed to increase their life expectancy to more than 60 years, while 110 of them (71 per cent) have a gross reproduction rate above 2. This, then, is the sole source of the current demographic crisis.

Young, Mature, and Aged Populations

The lag in the fall of the birth rate associated with a quickly declining death rate accounts not only for the rapid rate of population growth but also for a considerable retardation of the pace towards "demographic maturity" of the population concerned. As mentioned earlier, one prerequisite for technological and economic development is a suitable age composition of the population, in which the child population (under age 15) does not exceed the 25 per cent mark and the potential labour force (ages 15-64) fluctuates at around 65 per cent of the total. This is taken as the optimum (mature) age composition, in contrast to the young populations with a proportional age distribution around 45-55-5, respectively, or the aged populations with proportional age distributions near 20-62-18. Measured by this yardstick, the populations of Africa, South Asia, and Latin America were still young in 1970 and will continue to be young until the end of the century. On the other hand, the populations of East Asia and Oceania will reach maturity within the next two decades, while those in North America, the U.S.S.R., and Europe will probably proceed from maturity in 1970 to the ominous stage of aging (table 6). It must be recalled that young populations may live in poverty for the time being, but they maintain the potential to proceed towards maturity and economic development. The aged populations, on the other hand, cannot easily retrace their steps because they have lost so much of their capacity to restore production and fertility to the required levels for biological replacement and economic advancement.

These changes in the age structure and the rate of population growth result from the rapid decline in mortality unaccompanied by a similar decline in fertility. One interesting point is that both rates, or rather their more specialized expressions—the gross reproduction rate (GRR) and life expectancy at birth (e_0^0)—can move only within a rigid biological framework. Human populations cannot survive if the GRR falls far below 1.0, nor can the GRR be much higher than 3.5. Likewise, an e_0^0 of about 20 years is the lowest level that can sustain the reproductive capacity of the population, while 74 or 75 years appears to be the highest level attainable given the present status of scientific knowledge and living standards. A

TABLE 4 DISTRIBUTION OF COUNTRIES BY CRUDE BIRTH RATE AND DEATH RATE AND REGION DURING THE PERIOD 1970-1975

	Death rate											
	20+	10-19	-10	Total	20+	10-19	-10	Total	20+	10-19	-10	Total
	Africa				Asia				Americas			
Birth rate												
50+	7	–	–	7	–	–	–	–	–	1	–	1
40-49	26	10	–	36	9	14	1	24	–	6	5	11
30-39	1	4	1	6	–	–	5	5	–	1	11	12
20-29	–	–	1	1	–	–	6	6	–	–	6	6
-20	–	–	–	–	–	–	1	1	–	–	2	2
TOTAL	34	14	2	50	9	14	13	36	–	8	24	32
	Europe, U.S.S.R.				All countries				ECWA countries			
Birth rate												
50+	–	–	–	–	7	1	–	8	1	2	1	4
40-49	–	–	–	–	36	33	6	75	2	3	1	6
30-39	–	–	1	1	1	6	20	27	–	1	1	2
20-29	–	2	1	3	–	2	17	19	–	–	–	–
-20	–	14	10	24	–	14	13	27	–	–	–	–
TOTAL	–	16	12	28	44	56	56	156	3	6	3	12

Source: United Nations 1977, tables 33 and 34.

TABLE 5 DISTRIBUTION OF COUNTRIES BY GROSS REPRODUCTION RATE AND LIFE EXPECTANCY AT BIRTH (BOTH SEXES), 1970-1975

	Life expectancy at birth (both sexes)											
	All countries						ECWA countries					
	-40	40-49	50-59	60-69	70+	Total	-40	40-49	50-59	60-69	70+	Total
Gross reproduction rate												
3+	7	30	21	4	–	62	1	3	4	1	1	10
2-3	3	17	9	19	–	48	–	–	1	2	–	3
1-2	–	–	–	12	26	38	–	–	–	–	–	–
-1	–	–	–	1	7	8	–	–	–	–	–	–
TOTAL	10	47	30	36	33	156	1	3	5	3	1	13

Source: United Nations 1977, tables 38 and 41.

TABLE 6 POPULATION DISTRIBUTION BY REGION AND MAJOR AGE GROUP IN 1970, 1985, AND 2000

Region	1970			1985			2000		
	0-14	15-64	65+	0-14	15-64	65+	0-14	15-64	65+
Africa	44.1	53.0	2.9	43.9	53.1	3.0	39.5	57.0	3.5
South Asia	43.4	53.6	3.0	40.9	55.9	3.2	34.2	61.8	4.0
Latin America	42.8	53.5	3.7	39.5	56.4	4.1	33.5	61.6	4.9
East Asia	33.7	60.9	5.4	27.9	65.5	6.6	23.9	67.9	8.2
Oceania	32.1	60.6	7.3	29.3	62.7	8.0	25.1	66.3	8.6
U.S.S.R.	28.6	63.6	7.8	24.1	66.1	9.8	22.0	65.4	12.6
North America	28.4	61.9	9.7	22.4	66.5	11.1	20.3	68.3	11.4
Europe	24.9	63.7	11.4	21.4	66.3	12.3	20.1	65.8	14.1
TOTAL	36.6	57.9	6.5	34.0	60.2	5.8	29.9	63.4	6.7

Source: United Nations 1977, table 44.

convincing argument to this effect is shown in figure 1. Life expectancy increases rapidly when it starts at a low level, but when it reaches the area beyond 70 years—specifically, beyond a maximum level of 74-75 years—an invisible *asymptote* appears to retard further improvement. At the upper level, females live longer than males. Their e_0^0 exceeds that of males by 5-6 years. The difference is much lower (2-3 years) at the lower levels of mortality (e_0^0 = 40-50), and in the very low levels (e_0^0 less than 30 years) female longevity tends to be equal to, or even less than, male longevity.

The reasons for the possible existence of an upper *asymptote* in human longevity or its reversible behaviour between the two sexes are not very well understood. One fact that emerges clearly, however, is the rapid decline of human mortality set against a very slow decrease of natality, which results in the twin crises of explosive world population growth and the deformity of the age composition and often hinders social efforts for further economic development.

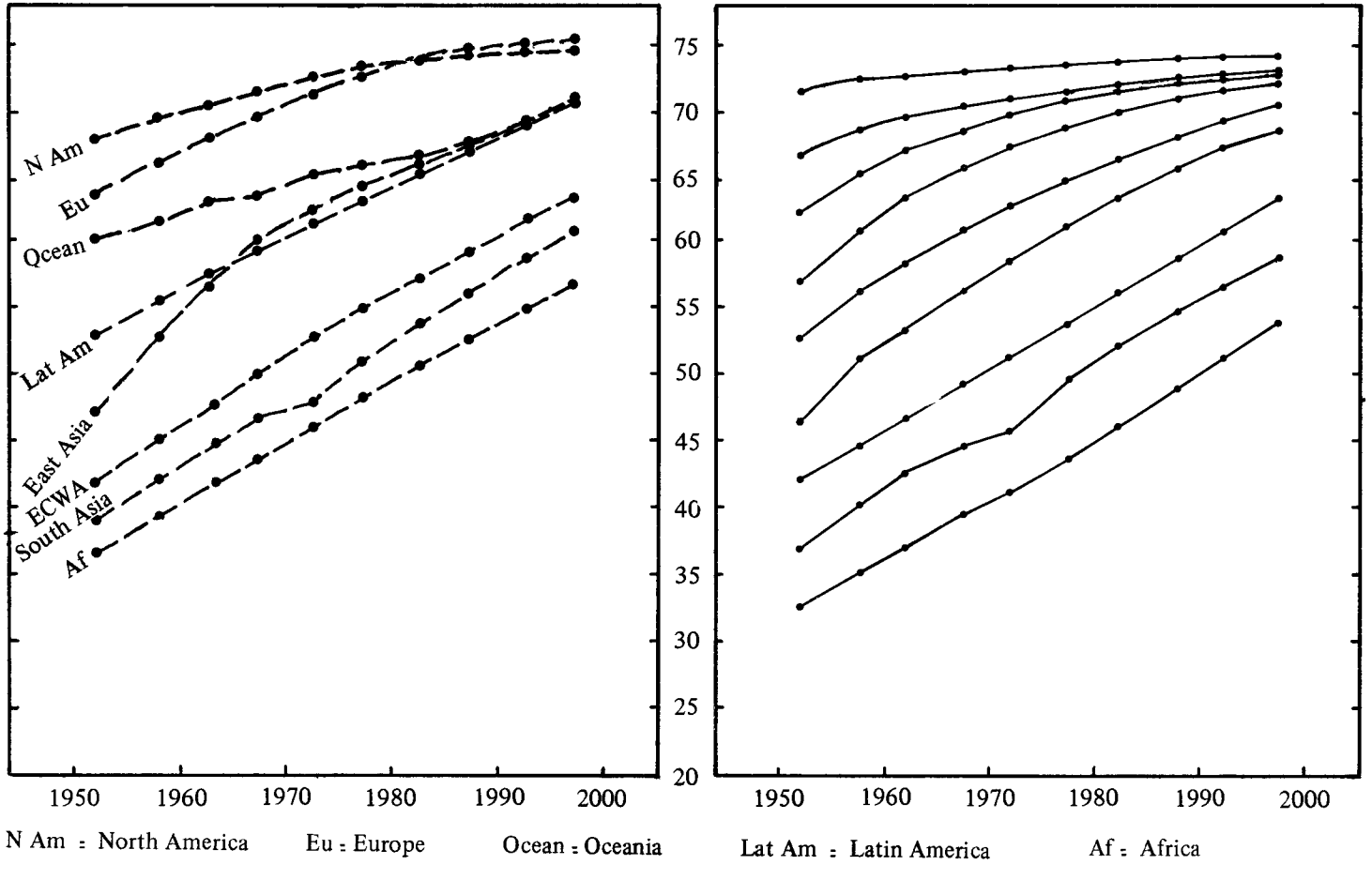
Under the impact of falling mortality and natality, the age structure of the population changes gradually from a regular (isosceles) pyramid to a deformed one with a narrow base and higher centre of gravity. In other words, the child population shrinks proportionately and the component goes first to the middle ages and later to the terminal ages of 65+. This may also be seen in table 6, where the populations in the various regions of the world can be separated into three groups: Africa, South Asia, and Latin America have young populations; East Asia, the U.S.S.R., and Oceania are rapidly advancing towards demographic maturity; and North America and Europe are approaching demographic aging.

Rapid population growth and demographic aging are detrimental to the well-being of a people and its aspirations for social and economic development. They emerge from a serious discordance between the vital rates—when the death rate declines much faster than the birth rate or when the birth rate operates at too low a level. If the two vital rates descend gradually and at about the same pace, the rate of population growth will be maintained at a manageable level and the cost of mortality reductions will be less. Excess natality is always associated with high (premature) mortality, and the same is true for an aged population, where the tendency towards heavier mortality and precariously low natality cannot be easily checked. Therefore, the essence of a sound demographic policy consists in a gradual and parallel reduction of fertility and mortality, for only then can the demographic transition proceed smoothly, without the inconveniences of a rapid rate of population growth or an abrupt deformity of its age structure.

The ECWA Countries

The ECWA countries have very rapid population growth, doubling in size every 26.5 years. There is a considerable variation in the size and rate

FIGURE 1: THE COURSE OF LIFE EXPECTANCY AT BIRTH (BOTH SEXES) BY REGION OR CONTINENT AND BY STARTING LEVEL IN 1950/55, FROM 1950 to 2000.



of population growth among the 13 countries comprising the ECWA region. Egypt has almost half of the total population but the smallest rate of population growth, while Kuwait is small but growing very rapidly. Evidently there is considerable in-migration to Kuwait, for the biological increments (excess of births over deaths) can never produce such rapid growth.

Population and vital statistics are not well developed in most of the ECWA countries, with the exception of Lebanon and Egypt, which are examined separately in table 7. The high birth rate in 1950-1955 is not unexpected, but its failure to decline since then certainly comes as a great surprise. Only Egypt (and to a certain extent Lebanon) managed to lower its birth rate by even a small proportion between 1950-1955 and 1970-1975. By contrast, the death rate was cut to almost half of its initial level and life expectancy at birth was pushed to a level 10 years higher than before. This is certainly a brave social achievement, but its full contribution to the quality of life of the general population will occur when the GRR comes down to one-half of its current level.

TABLE 7 ESTIMATED VITAL RATES (1950-1955 AND 1970-1975) IN SOME ECWA COUNTRIES (OR GROUPS OF COUNTRIES)

Rates	Arabian Peninsula		Syrian Arab Republic, Iraq, Jordan		Lebanon		Egypt	
	1950-1955	1970-1975	1950-1955	1970-1975	1950-1955	1970-1975	1950-1955	1970-1975
Birth rate	49.8	49.1	47.1	47.0	41.0	34.4	44.9	35.6
Death rate	27.1	17.1	21.5	14.9	18.7	9.1	21.6	15.0
Births/100 deaths	184.0	287.0	220.0	316.0	219.0	378.0	208.0	237.0
Gross reproduction rate	–	3.5	–	3.5	–	2.7	–	2.5
e_0^0 (both sexes)	39.5	49.8	43.2	53.3	54.0	64.0	42.5	51.1

Source: United Nations 1977, tables 33, 34, 38 and 41.

As stated earlier, a young age distribution (40 per cent or more of the population aged 0-14) is a barrier to further reductions in mortality and inhibits the course towards demographic maturity, which represents the best age-composition suitable for a progressive modern population. Table 8 shows that all of the countries in ECWA are in the early stages of their demographic transition, with a wasteful process of population replacement and decay.

There is ample room for sizeable reductions of both fertility and mortality, but without a drastic curtailment of fertility further attempts to control mortality will become more expensive and less effective.

TABLE 8 PER CENT OF POPULATION BY MAJOR AGE GROUP IN SOME ECWA COUNTRIES, EUROPE, AND WORLD, 1970

Country	Age group		
	0-14	15-64	65+
Europe	24.9	63.7	11.4
Egypt	41.9	54.9	3.2
Iraq	46.6	51.0	2.4
Saudi Arabia	44.1	53.2	2.7
Syrian Arab Republic	45.2	50.1	4.7
Yemen	44.1	53.2	2.7
Lebanon	43.9	51.2	4.9
Jordan	45.8	51.1	3.1
Democratic Yemen	44.1	53.2	2.7
Kuwait	43.5	54.9	1.6
All others	44.9	52.5	2.6
TOTAL	36.6	57.9	5.5
Average (ECWA countries)	43.0	53.2	3.8

Source: United Nations 1977, table 44.

Given the present economic prosperity of the ECWA area, the development of proper systems of medical and health services and improvements in nutrition and environmental sanitation may be easier to accomplish here than in other areas of the world. But the improvement of the educational levels of the general population, which is among the prerequisites for the betterment of the quality of life, is a long-term process and is affected by a disproportionally large child population.

It is evident, therefore, that social efforts should be directed simultaneously towards a variety of targets. Some will aim at a smaller mortality, others at the curtailment of excessive fertility. All efforts should combine to improve the living conditions of the population, in which education in general and public health education (including family planning) deserve a high priority.

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CHAPTER 18. POLICIES FOR THE REDUCTION OF MORTALITY DIFFERENTIALS*

*William Brass***

Knowledge and Measurement

The existence of large variations in mortality levels among subgroups of population defined by socio-economic characteristics has been repeatedly established both in developed and developing countries. But the next stages of elucidation for the guidance of policy makers, namely, the measurement of the features of the subgroups that contribute most to the variations and hence the assessment of the likely determinants, have rarely been pursued. In June 1979 a major seminar on Socio-Economic Determinants and Consequences of Mortality, sponsored by the UN, WHO, and several other international organizations, was held in Mexico City. The extant knowledge of the subject was reviewed in a number of papers, revealing how slight is the firm evidence. Most of the discussion was focused on conceptual frameworks and on needed research. It cannot be said that there is a body of widely accepted scientific doctrine. Rather, there are scattered and largely indirect studies, which are difficult to interpret in terms of an integrated theory or as a basis for an intervention programme.

Although the reasons for the poverty of our knowledge are obvious enough, it is useful to consider them because of their bearing on the tentative nature of any conclusions that may be reached. The traditional vital registration system, even where accurate and sophisticated, is not an effective means for the "in-depth" examination of mortality differentials by individual circumstances required to highlight dominant associations and, therefore, the most likely determinants. The key limitations are the lack of detail of socio-economic characteristics in the death record and the difficulty, for the features that are reported, of finding the numbers at risk, on a comparable basis, in the population. These defects have been examined many times and need no further illustration. They are closely related, for an increase of detail on deaths would generally lead to bigger errors in the specification of the risk subgroups, with dubious improvement in valid information.

The traditional system can provide good measures for well-defined groups, classified, for example, by sex and age, area of residence, and derivations such as urban-rural and size of community, and, in some places, ethnicity or religion. The mortality differentials by such categories are intriguing,

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but to unravel them further is not easy. There have been many attempts to relate areal variations with other measures by multivariate techniques of analysis. It is normally found that mortality is associated with clusters of characteristics: partly of a community kind—for example, environmental or health services—and partly an aggregation for individuals—say, proportion unemployed or in agricultural occupations. Without further micro-data, the assessment of the separate effects can only be speculative. Probably more important still is the fact that communities (whether villages or ethnic groups) are influenced by culture and history in ways that bear only a slight relationship to the current socio-economic indexes. These influences are difficult to isolate and measure, but ignoring them can result in distorted conclusions about the significant factors determining mortality.

Because of the frustrations and slow progress of research based on traditional data, new approaches have become popular. Broadly, these can be described as "linkage" schemes, where the deceased is located in records of those living "at risk." The comparability of the classification of the numerator and denominator in the death rates is thus ensured and the range of variables widened. These variables can be taken from the census or survey reports for the living, which usually contain much more detail than the death records. A notable pioneering example was the individual linkage of deaths in the four months following the United States census of 1960 with the census schedules. More recently, longitudinal surveys have been established in which large samples of persons with known characteristics (usually derived from censuses) are followed up and deaths are noted. The new approaches have already produced important findings but they are still at an early stage.

If knowledge for developed countries is weak, it is reasonable to expect that for the developing world it would be considerably weaker. In general this is true, but there are some shadings in the overall picture. Except in a few special populations, the attempt to examine mortality differentials by traditional methods is impracticable. In addition to the difficulties found in the developed countries, there are special problems posed by incomplete death registration, lack of acceptable recording of causes of death, and substantial biases in populations at risk due to response errors and the rapidity of population change. These handicaps are so overwhelming that only a few fragments of useful evidence survive. To offset this there has been good progress in the application of indirect methods of estimating mortality, particularly in childhood. Over the past 10 to 15 years, census and survey data on children born and children surviving to mothers of different ages have been extensively used to derive infant and childhood death rates. The technical methods are now widely known and have been greatly refined. The approach is particularly powerful for the study of differentials because the data can easily be classified by the social and economic characteristics of the mother, family, and household. There are some methodological problems in the estimation of the fertility pattern of the relevant subgroups (required in the estimation procedure), but these can be largely solved and are not critical. Demographers are just beginning to recognize the full potential of this

approach for the analysis of the separate contributions of the different factors to the differentials, but its exploitation over the next few years can be expected.

The corresponding methods for the examination of differentials in adult mortality must use data on orphanhood, the ever widowed, and, perhaps, siblings. Here, the technical problems are rather more difficult but by no means insurmountable. The major limitation is the doubtful relevance of the socio-economic characteristics of the respondents (sons and daughters, brothers and sisters, etc.) to the conditions for the person dying. The ever-widowed information is probably the most promising in terms of appropriateness of characteristics. So far there have been few attempts to utilize such methods except for inter-country and, in a few instances, interregional or inter-ethnic comparisons. Because knowledge of adult mortality differentials is so slight, these procedures could be of considerable value. A review of possibilities was given in Brass (1979).

General Findings

In order to reach some conclusions, however tentative, on the kinds of policies that might reduce mortality differentials, it is necessary to review some of the general findings about patterns of mortality by sex, age, and cause of death and their changes over time. These findings are heavily dominated by the experience of developed areas. Differentials among countries at different stages of development can also provide some insights. Trends in differentials by socio-economic characteristics for populations with good records are relevant too, but, as pointed out above, their reliability is in doubt. How far the experience of the West can be generalized to apply to the Third World is also uncertain. Such extrapolations are often dangerous, as will be noted below, but they are necessary when there is no satisfactory alternative. Most important is the direct evidence from developing countries, however imperfect, particularly in those few cases where a multi-factorial analysis has been applied to cull the contributions of the variables.

In primitive societies (of which a few still exist in the world), the death rate is about 40 per 1,000 and the life expectancy at birth some 25 years. In the countries of lowest mortality, the life expectancy is about 75 years. It is sufficiently obvious that the level of mortality is strongly correlated with development, which creates the conditions for improved health. It is also plausible that the characteristics of development most strongly related to improved mortality of countries will also be important for subgroups within countries. There have been many attempts to determine these characteristics, but none has been particularly convincing. The two major difficulties are those of specifying well-defined and comparable aggregate measures for the different countries and of distinguishing the relative contributions of various factors. In general, those countries with the highest income will also have the highest levels of education, health services, environmental control, and so on. Assessing the relative importance of these

factors is then often dependent on a few cases of uneven development, which are likely to be aberrant and special in other ways.

The rather different approach of Preston and Nelson (1974; Preston 1975) has provided the most persuasive basis for interpreting the broad influences on mortality change in this century. This work is well known and only the main relevant points need be noted here. Essentially, it is based on the examination of how the pattern of the relation between the level of mortality and living standards, as measured by national income per capita, changed from the 1930s to the 1970s. The significant findings are (1) that life expectancy for a given standard of living is now much higher than it was 40 or 50 years ago, and (2) that after a threshold level of national income per capita has been reached (and the threshold is decreasing with time), the level of mortality is weakly related to income. The reasonable deduction is that progress in medical technology has lessened the dependence of health on wealth. The major policy implication is that measures to reduce differentials within countries can be made successful by the application of "medical technology" even where money and resources are limited.

Of course, "medical technology" is a very broad term, including many different types of activity. Further clues come from Preston's attempts to estimate how declines in mortality by causes of death have been related to development. However rough and uncertain the assessment, the orders of size seem acceptable. Declines in influenza, pneumonia, and bronchitis (diseases that have not been much affected by preventive measures) caused about one-third of the total decline. Clinical treatment played some part, but probably a small one. The decrease in deaths from diarrhoeal diseases was about one-tenth of the total gain, largely a consequence of improvements in water supplies and sanitation. Much of the remaining fall was due to reduced mortality from causes such as malaria, smallpox, tuberculosis, measles, etc., which are relatively cheaply vulnerable to direct preventive intervention through vector control and immunization. Without entering into difficult questions of definition and disease interactions, it would seem that approximately half the mortality fall resulted from improvements in levels of living and half from medical technology.

The comparative simplicity of these general conclusions should not mislead us about the complexity of the specific case. Factors never operate in isolation, and often the combination of features is synergistic (i.e., greater than the component parts). A few examples may be illuminating. The rapid fall in mortality in Sri Lanka from 1945 to 1950 has been thoroughly studied by Newman (1970), Gray (1974), and others; it coincided with the malaria eradication programme, which, undoubtedly, made a large contribution to it. Estimates of the proportion of the total decline in mortality caused by this activity vary, but there is agreement that a substantial part was due to other factors that must have been interacting with the eradication. Similar programmes, for example, in Guatemala, appeared to have little effect. In a recent study, Macrae (1979) looked at the childhood mortality trends in the islands of the British Solomon group from 1960 to 1972 where malaria

eradication took place at different times. A substantial drop in mortality occurred following eradication in the less developed, higher-mortality areas but there was little decline in mortality in the more advanced parts with moderate mortality levels. In some conditions, large falls in mortality have been claimed following the introduction of simple preventive measures—for example, in coastal areas of Papua and New Guinea (Scragg 1967)—but the efforts in the Matlab area of Bangladesh to reduce cholera and diarrhoeal diseases, intensely monitored from the mid-sixties to the present, have been associated with little change in child mortality (Chowdbury and Sheikh 1979).

The differentials in death rates over time from tuberculosis among Maoris and non-Maoris in New Zealand illustrate another feature of the complexity. Among the non-Maoris the rate was as low as 10 per 100,000 by 1881 (about 40 per cent of the level in England and Wales at the time) but had fallen to below 4 per 100,000 in 1941. This attainment of a low rate was achieved through improving the living standards, since neither effective chemotherapy nor immunization had been provided. In 1941 the tuberculosis death rate for Maoris (at 45 per 100,000) was more than 10 times the non-Maori mortality. By 1961, with the introduction of chemotherapy, it had been reduced to less than 3 per 100,000; but by that date the non-Maori rate was negligible. Thus the proportional reduction of deaths, mainly by means of chemotherapy, among Maoris was greater than that from improved standards of living among non-Maoris, although over the whole period the relative differential remained about the same. The absolute differential had, of course, decreased enormously.

Differentials by Socio-Economic Characteristics in Developed Countries

Britain has by far the longest series of measures of differential mortality according to individual characteristics. This comes from the pioneering work of William Farr in the middle of the nineteenth century. The classification used was occupation, with later grouping into "social classes." It has never been clear whether the classification was intended to serve as an economic index, a surrogate for income or wealth, or a social categorization covering such factors as education, type of environment, and way of life. In practice, both operate, as is clear from the designation. Thus Class I contains men in professional occupations and Class V the unskilled. The death rates are calculated for years around the census from the information on last occupation at registration and in the census for the population at risk. Table 1 shows infant mortality by the social class of the father and table 2 gives indexes of male adult mortality over the 50 years from 1921 to 1971.

The infant mortality differentials are the easier to specify. Over the period the rates fell by nearly 80 per cent but the relative levels remained approximately the same, with the highest some 2.5 times greater than the

TABLE 1 ENGLAND AND WALES: INFANT MORTALITY RATES BY SOCIAL CLASS, RATES PER THOUSAND BIRTHS

Year	Social class						Mortality rate index for class V, where the rate for class I equals 1
	I	II	III		IV	V	Total	
			III N	III M				
1921	38.4	55.5	76.8		89.4	97.0	79.1	2.53
1930-1932	32.7	45.0	57.6		66.8	77.1	61.6	2.36
1949-1953	18.7	21.6	28.6		33.8	40.8	29.5	2.18
1970-1971	11.6	13.6	14.5	16.9	19.5	30.7	17.6	2.65

Sources: Occupational Mortality, 1958.
Occupational Mortality 1970-1972, 1978.

Note: N = non-manual; M = manual.

the lowest. If the causes of death are examined, one finds that the differentials are consistently larger for the acute and "environmental" diseases, such as acute bronchitis, bronchopneumonia, and accidents, than for congenital anomalies and conditions arising from pregnancy and birth. The standardized indexes of adult male mortality show a smaller range of variation, and the 1930-1932 and 1949-1953 differentials are particularly small. However, it would be unwise to give much weight to these anomalous periods. Over the years there has been a series of changes and problems in the classification by social class, which could only be described in a long report. As an example, adjustments to the 1949-1953 indexes to take account of presumed errors gave values quite close to the 1921-1923 results with a ratio equal to 1.4 for class V to class I. The infant mortality trends are also likely to have been affected by these errors but probably not to the same extent. The conclusion about differentials over time can, therefore, only be the very crude one that they have persisted at around the same relative size despite the declines in overall mortality levels.

TABLE 2 ENGLAND AND WALES: MALE MORTALITY BY "SOCIAL CLASS"[a] (NATIONAL AVERAGE= 100)

Period	Social classes					Ratio V:I
	I	II	III	IV	V	
1921-1923	82	94	95	101	125	1.5
1930-1932	90	94	97	102	111	1.2
1949-1953	98	86	101	94	118	1.2
1959-1963	76	81	100	103	143	1.9
1970-1972	77	81	104	114	137	1.8

Source: Occupational Mortality 1970-1972, 1978.

[a] Depending on the period, the data refer to the ages 15 or 20 to 64 or 65 years and have not been adjusted to allow for changes in classification.

The interpretation of this purely formal quantitative statement in terms that have a meaning for action is not easy. There has been much argument about the validity of the social classification, particularly for retired persons (among whom a high proportion of the deaths occur), whose last occupation

may be a poor measure either of lifetime experience or present condition. For women the problems are worse than for men because "housewives" are classified by the occupation of their husbands. These issues, in comparison with the errors in relating registration to census "at-risk" characteristics, highlight the limitations of the traditional approach. More fundamental questions concern the genesis of the differentials. There is a good case for the argument that poor health leads to changes in occupation and hence a downward move in social class. In addition, the proportions in different occupations and the nature of work have altered much over the years. There are now higher percentages in the upper social classes. A population with a small proportion of disadvantaged persons would presumably enjoy more equality than one with a large proportion even if the absolute size of the disadvantage were the same. These reservations support an attitude of caution but do not destroy the evidence, particularly that derived from infant death rates, of large and continuing socio-economic differentials in mortality.

It is convenient to discuss the issues in terms of the England and Wales indexes because of the long time series. But the findings can be supported by studies in other developed countries. Thus the ratio of infant mortality rates for families in the professions and senior management to those for unskilled workers in France was 2.6 in 1956-1960 and 2.5 in 1966-1970, although the overall rate had halved in the interval (Vallin 1979). These differentials are remarkably close to the British ones. A well-known study of Chicago (Kitagawa and Hauser 1973), although using a different classification system, obtained rather similar differentials for adult males under 65 years of age over the period 1930-1960.

Studies of characteristics other than occupation in the developed countries have not been so common; but, in view of results from the Third World discussed later, it is important to note the findings on income and education from a survey carried out in the United States by the National Center for Health Statistics, which links birth and death registration records with a family questionnaire from 1964 to 1966. In families with a household income of under $3,000, the infant mortality was 60 per cent higher than in families with a household income over $10,000. The differentials for the educational groups were higher and much the same whether the measurement was for the mother or the father. The infant rates for the categories with less than 8 years' education were nearly twice those for the parents educated for 13 years or more. Of greater significance is the fact that the income and educational associations were to a considerable extent independent and that cross-classification gives an even wider variability in rates (Fox 1979).

As pointed out in the opening section, the severe limitations of the traditional data sources have recently led to new initiatives such as longitudinal surveys. Early results from the follow-up of a national sample of more than half a million persons in England and Wales (chosen from the 1971 census and brought up to date by the addition of the new born and immigrants) have recently been produced (Fox 1979). The potential and some of the restrictions of the method are illustrated by the measures of

mortality over the period 1971-1975 by education of persons aged 18-70 in 1971. The standardized indexes for men and women with university degrees were only 70 per cent of the country average. However, for the bulk of the population, differentiation by length of education is impossible because it is the same for all. The group with a substantial excess mortality of 20 per cent consisted of persons who did not answer the question. In a specific survey there could have been exploration in greater depth than is possible with a multi-purpose and self-administered census questionnaire.

The wealth of information that can be assembled on differentials by socio-economic characteristics that have been little studied is shown by tables 3 and 4 (modified from the Fox paper). Note that in some of the cells of the tables the numbers of deaths were rather small and the sampling fluctuation could be considerable. The variations by housing characteristics in table 3 are not unexpected but draw attention to the multi-factorial nature of mortality differentials. Crowding in houses may lead to deaths directly through the transmission of disease; on the other hand, it is also associated with poverty. The strong and persistent gradients by number of rooms, tenure, and access to a shower–largely a product of income–suggest that the indirect influences dominate. A cross-tabulation by tenure and number of rooms gives an extreme ratio of about two for the mortality of men aged 15-64 years in small, local-authority residences to that of men in large, owner-occupied houses.

TABLE 3 STANDARDIZED MORTALITY RATIOS (SMR) BY HOUSING CHARACTERISTICS, PERSONS AGED 15-64 YEARS, ENGLAND AND WALES, 1971-1975

Characteristic	SMR	Characteristic	SMR
Tenure		Level of crowding (persons per room)	
Owner occupied	85		
Privately rented	111	0 - 0.49	94
Local-authority tenant	119	0.50	100
		0.51 - 0.99	98
		1	115
Number of rooms		1+	123
1 to 3	122		
4	110	Access to bath or shower	
5	96		
6	97	Yes	98
7 and over	81	No	127

Source: Fox (1979) with modified categories.

TABLE 4 STANDARDIZED MORTALITY RATIOS (SMR) BY FAMILY STATUS, PERSONS AGED 15-64 YEARS, ENGLAND AND WALES, 1971-1975

Family status	SMR	Family status	SMR
Married couple	94	Not family in family household	140
Lone parent	111	One-person household	114
Dependent child in family	86	Not family in non-family household	114
Other child in family	127	Resident in non-private household	215

Source: Fox (1979) with modified categories.

The differentials by family characteristics are more complex. It is not surprising that mortality is high for non-private persons because many of these are living in institutes for health reasons. But the lower rates for stable families (married couples with "dependent child in family") are notable. The excess deaths for one-person households and "not family in family household" may reflect the lower nuptiality of the less healthy but may also be a product of poorer care—for example, when illness occurs. The latter may apply also to the lone parents, but this group is also likely to suffer from greater relative poverty. Until more extensive multi-variate analyses are carried out, these interpretations must remain indicators rather than conclusions.

Mortality Differentials in Developing Countries

As stated in the opening section, knowledge of differentials in adult mortality in developing countries is lacking except for a few special issues. These will be dealt with briefly before child mortality is considered. The most studied factor is sex, but even here information is scrappy and unreliable.

Adult Mortality. In the developed countries, female mortality is lower than male mortality at all ages, although the difference may be small from 5 to 15 years. The female advantage in adulthood is large. This has been taken to imply that, given equality of treatment, the female has a biological superiority with respect to longevity. The evidence is strong, even if adequate attention has not always been given to the different living conditions of the two sexes. The suggestion that in some developing countries female

mortality is, in contrast, higher than that of males is an old one. It was considered but rejected in the analysis of Indian census data a hundred years ago. But the cumulative evidence that it is indeed true is now overwhelming, despite the indirect nature of the estimation. Direct study is difficult because female deaths are generally reported less accurately than male deaths in such countries. Currently, female and male mortality are at about the same level in countries such as Bangladesh and Pakistan, but in the past the female rates were higher in those countries and in India as well. The household section of the Jordan Fertility Survey of 1976 included questions on orphanhood and the ever widowed that can be used to estimate adult mortality. There are discrepancies that have yet to be resolved by further analyses, but the preliminary results suggest that the sex differential is small. There are signs that as the death rate falls a female advantage is beginning to appear. (See the later discussion of the childhood mortality data.)

There are many developing countries where female mortality is lower than male mortality, which is consistent with both the current and the historical experience of the West. If the contrary holds, the implication is that women suffer from some special social disadvantages. In a recent study in north-west Pakistan, Ahmed (1979) investigated male and female mortality in a survey using a range of modern retrospective techniques, including the attempt to obtain some indications of cause of death. It was possible to compare male and female mortality in the broad stages of life and conclude that it was almost equal for the two sexes. Since there were indications that the female deaths might be underreported, there might, in fact, have been a male advantage. The most striking feature of the causes of death that could be reliably ascertained was that about one-quarter of the female deaths at ages 15 to 49 years were in childbirth, but this was offset in males by a high mortality from violence. If homicide had been at a more normal level, the excess female deaths would have been considerable. There were clear measures of the social disadvantages of girls. For example, boys who fell ill were more likely to be treated in clinics and hospitals than their ill sisters.

A few good studies of differentials among ethnic groups have been carried out in places where vital registration is reasonably complete. The latter condition makes them atypical and the causes, as opposed to the existence, of the effects are not established. An interesting illustration comes from Fiji. Between 1946 and 1966, there were large falls in both childhood and adult mortality but the decreases occurred much faster in the Fijian component of the population than in the Indian (the two communities are about the same size). There was a reversal of the life expectancies over the period. Since no one has suggested that there were significant changes in the relative economic positions over the period, it must be assumed that the culture of the Fijians made it easier for them to take advantage of the major improvements in health technology.

Research in interregional differences in adult mortality within countries has not been very illuminating–it suggests that the differentials of childhood persist into adulthood, which is hardly surprising in view of the socio-economic

variations. There are some intriguing glimpses of anomalies where the adult ordering by mortality level is not the same as the childhood one—for example, in Turkey and in Kenya (recent unpublished survey analysis). Such discrepancies could provide a basis for establishing the determinants of the differentials more specifically.

Child and Infant Mortality. The abundance of estimates of childhood differentials in developing countries over the past few years drawn from the retrospective techniques makes it necessary to be selective. Since the classification factors have usually been the same in the censuses and surveys and have produced generally similar results, this is not an important limitation. In addition, multi-classification, which could help to elucidate the contributions of different factors, has rarely been produced. A particularly systematic comparative study of childhood mortality in Latin America has been made at the UN Latin American Demographic Centre (CELADE) by Behm (1979), who examined its implications for the socio-economic determinants of mortality; table 5, taken from his paper, is a useful starting point for discussion.

The focus is on education of mothers, which repeatedly has been shown to be powerfully related to childhood mortality. In the Latin American series, the ratio of mortality up to age 2 years for children born to women with no education is three to four times that for children born to women with 10 or more years of education. The ratio for Chile is slightly lower and those for Honduras and El Salvador are higher. The only notable exception to the gradients of mortality with education is Cuba. There, differentials are by no means unimportant but they are much smaller than in the other countries. It should be noted that the differentials persist over a wide range of mortality levels and that they are larger than, although comparable with, the findings from the United States and Europe.

Women with more education are richer, live in better homes in superior environments, have more leisure and/or home help, and have educated husbands with better occupations. Before too much weight is put on this characteristic, the associated effects should be disentangled. Nevertheless, the differentials are so large that they are likely to be fundamental and it is appropriate to look at them in greater depth before considering other simple factors. Some valuable multi-classification studies have been made. Schultz (1979) has carried out an elaborate analysis of the 1973 census sample data from Colombia showing that the variation in child mortality with father's education is of about the same size as it is with mother's education. The two factors behave, to a large extent, independently, with very large child mortality differentials when there is a combined classification. The mortality ratio for parents with no education compared with those where both father and mother have secondary education and above is four- or fivefold. The differentials are larger in urban than in rural areas. Schultz also examined the husband's income and concluded that the addition of this factor did not affect the educational relationship; that is, the latter behaved independently. Since this was contrary to expectation, he tried to arrive at indexes of imputed wages over a longer period from indirect measures and concluded that

TABLE 5 MORTALITY UNDER TWO YEARS OF AGE BY EDUCATION OF WOMEN IN LATIN AMERICAN COUNTRIES, 1966-1971

Country	Probabilities of dying (per thousand) Years of study of the mother						
	0	1-3	4-6	7-9	10+	All years	Ratio, 0:10+
Bolivia	245	209	176	110[a]	–	202	
Peru[b]	207	136	102	77	70	169	3.0
Nicaragua	168	142	115	73	48	149	3.5
Guatemala	169	135	85	58	44	149	3.8
El Salvador	158	142	111	58	30	145	5.3
Honduras	171	129	99	60	35	140	4.9
Ecuador	176	134	101	61	46	127	3.8
Dominican Republic	172	130	106	81	54	123	3.2
Chile	131	108	92	66	46	91	2.8
Colombia[c]	126	95	63	42	32	88	3.9
Costa Rica	125	98	70	51	33	81	3.8
Paraguay	104	80	61	45	27	75	3.9
Argentina	96	75	59	39	26	58	3.7
Cuba[d]	46	45	34	29	–	41	–

Source: Behm (1979).

[a] 7 and more.

[b] The groups are 0-2, 3-4, 5, 6-9, and 10+.

[c] The groups are 0, 1-3, 4-5, 6-8, and 9+.

[d] Provisional figures.

these did alter the educational associations. But the assumptions were demanding and the reasoning complex.

Behm (1979) presents some results on occupational differentials and their interaction with education. Taucher (1978) showed that, in Chile in 1972-1973, infant mortality when the father was a "blue-collar" worker was twice as high as when he was a "white-collar" worker, at 67 per 1,000 to 30 per 1,000. There were strong educational gradients within both these groups by the mother's education, particularly among white-collar workers, approaching a fourfold advantage of the mothers with high-school-or-above education (24 per 1,000) compared with the mothers with none (86 per 1,000). In Costa Rica, 1968-1969, a CELADE survey showed mortality up to 2 years of age as 20 per 1,000 births for the children of the "high and middle bourgeoisie" (roughly Social Class 1 of the British classification); 80 per 1,000 for the "proletariat"; and 99 per 1,000 for agricultural workers. Within the proletariat it varied from 46 per 1,000 when the father had 7 and more years of education to 102 per 1,000 for none-to-3 years.

Thus there are differentials by income, occupational class, and urban-rural residence, but these are smaller than that by education and do not explain it. Some further points may be made about urban-rural differences in mortality. There are many measurements of these in developing countries. In almost all of them, mortality is lower in the towns; when further classification is made by size of town and rural densities (as in Ecuador, 1969-1970), there is generally a downward gradient from the dispersed rural areas to the large cities. But the differentials are moderate to small. Since the educational and income levels are higher in the towns, allowance for this could reduce the residual urban differences to modest levels and, in some cases, even reverse them. Urban living can have positive advantages in access to health services but infection increases as a result of crowding; for the very poor, nutritional deprivation in the city may be greater than in the rural areas.

The England and Wales OPCS longitudinal survey revealed significant mortality differentials by family structure. There is a little evidence that this may be even more important in developing countries. In Buenos Aires in 1973, infant mortality was 22 per 1,000 when the mother was legally married, but 42 per 1,000 when she had a common-law marriage or was single. A series of surveys in the early fifties examined child mortality differentials by the characteristics of the mother in several East African communities. Until recently these were the only research in the topic in sub-Saharan Africa. The most striking finding was the enormous impact of "marriage stability" (where the parents continued to be married or the mother was a widow who had married only once). In most of the communities, mortality of children up to 5 years was 40 per cent to 70 per cent higher where the mother was separated or had married more than once. The variations persisted when a number of other socio-economic characteristics were allowed for (Brass 1959).

Table 6 is taken from Caldwell (1979) and documents an attempt to disentangle the separate associations of a number of factors with childhood

mortality from a survey in Ibadan City, Nigeria. The measure of childhood mortality employed is the sum of the proportions of children dead to mothers in the successive 5-year age groups from 15 to 49 years. Despite the difficulty of interpreting the absolute levels, there is no reason to doubt the validity of the comparisons. The results are arranged in a hierarchy of increasing education, better-paid employment for wives and husbands, and superior areas of residence. All these characteristics show differentials in the expected direction but education displays the steepest gradient; occupation of father also has a substantial effect. Child mortality is also lower for the women in monogamous, as compared with polygynous, marriages and for those who have used family planning. The analysis demonstrates that child mortality differentials may be associated with many factors. If all are included, the range from the highest to the lowest rates is large (on the order of five to one).

There is an increasingly large body of literature on the relation between child mortality and maternity characteristics such as the age of mother, the number of children in the family, and birth spacing. Apart from the special features relating to the first birth, the mortality increases for older mothers, more children, and closer spacing. These factors are, of course, related but they appear to have separate effects. Probably the most significant factor for policy decisions is birth spacing. There are a number of ways in which short birth intervals can lead to higher mortality, for example, the pressure on the physiology of the mother leading to low birth weights and reduced lactation, the curtailment of breast-feeding for the preceding child, and the burden of care when there are several young children. Research in the West into the causes of death has tended to show the importance of the last of these, but in the developing world the balance may be different. Table 7 presents some results from the East African surveys already cited as an illustration of the very large child mortality differences by birth spacing that may occur. The measures are taken from maternity histories and the spacing is the average over all the children born to the mothers.

Over the past few years in the ECWA countries, a number of surveys have been completed that provide data for the exploration of mortality differentials. As yet, however, little appears to have reached the stage of publication.[1] The potential is considerable and is likely to be realized soon. Tables 8 and 9 give some preliminary measures of childhood mortality by socio-economic characteristics based on recently collected data from Jordan and Kuwait. To reduce sample errors and time fluctuation, averages of deaths of children up to ages 2, 3, and 5 years have been used, corresponding approximately to mortality to age 4. The comments will relate these findings to the review of evidence from other populations.

The first and major conclusion is that the patterns exhibited for these countries are fully consistent with the general picture. In Jordan female child mortality is slightly higher than male, the opposite of the typical result

[1] ECWA's *Sources for Research on Population and Development in the ECWA Region* (1979) contains a section indicating the nature of existing surveys.

TABLE 6 CHILD MORTALITY BY EDUCATION AND OCCUPATION OF MOTHER, OCCUPATION OF FATHER, AND RESIDENCE AREA OF FAMILY, TYPE OF MARRIAGE AND FAMILY PLANNING PRACTICE SURVEY 1, IBADAN CITY, NIGERIA, 1973

Mother's education	No schooling				Primary schooling				Secondary schooling and above					
Mother's occupation	NWC				NWC				NWC				WC	
Father's occupation	NWC		WC		NWC		WC		NWC		WC		WC	
Area of residence	OI	NI	OI	NI	OI	NI	OI	NI	OI	NI	OI	NI	OI	NI
Number of respondents	1,887	598	517	232	560	348	333	280	109	90	182	199	177	269
Child mortality[a]														
All respondents	1.391	1.254	1.263	0.890	1.077	0.776	0.738	0.790	0.675	0.622	0.452	0.488	0.555	0.340
Monogamous NFP	1.282	1.126	1.010	0.679	0.499	0.918	0.276	0.801	0.659	1.029	0.334	0.640	–	0.307
Monogamous FP	–	–	–	–	–	–	0.557	0.690	–	–	0.186	0.396	0.336	0.373
Polygynous NFP	1.523	1.347	1.427	1.046	1.191	0.622	1.025	0.620	–	–	–	–	–	–
Polygynous FP	1.078	–	–	–	–	–	–	–	–	–	–	–	–	–

Relative child mortality[b]														
All respondents	100	90	91	64	77	56	53	57	49	45	33	35	40	24
Monogamous NFP	84	74	66	45	33	60	18	53	43	68	22	42	–	20
Monogamous FP	–	–	–	–	–	–	37	45	–	–	12	26	22	25
Polygynous NFP	100	89	94	69	78	41	67	41	–	–	–	–	–	–
Polygynous FP	71	–	–	–	–	–	–	–	–	–	–	–	–	–

Source: Derived from Caldwell (1979).

Note: The following abbreviations are used: WC = white collar; NWC = non-white collar; OI = Old Ibadan; NI = New Ibadan; FP = family planning has been used; NFP = family planning has not been used.

[a] Sum of proportions of children dead to mothers in the successive 5-year age groups from 15-49 years.

[b] In the row "all respondents," the measure of relative child mortality is the ratio of the absolute measure for each category to 1.391, the highest measure reported for "all respondents." In the sub-populations, the relative measures are based on 1.523, the highest category reported for any sub-population.

in low-mortality countries. It is, however, in line with populations such as Pakistan and Bangladesh where there is no female advantage in childhood and indeed perhaps higher mortality. The indications are that it is associated with cultures where there is a strong preference for male children and a tendency for them to be given greater care, for example, by resorting to health services when they are sick. It is notable, however, that a female advantage reappears for the highest schooling group when mortality is down at a moderate level. In Kuwait the overall level of child mortality is about the same as for the most educated group of mothers in Jordan, and there is also a considerable female advantage.

TABLE 7 PER CENT CHILDHOOD MORTALITY FOR MOTHERS UNDER 40 YEARS

Community	Average birth spacing (years)					
	-1½	1½-2	2-2½	2½-3½	3½+	Total
Bukoba[a]	36		30		14	29
Kisimba[a]	23			15		19
Kisii[b]	39	42	34		26	35
Msambweni[b]	32	29		27	24	28
Kibondo[b]	36	39		29	17	30
Kasulu[b]	43	36		18	11	28

[a] Mortality under 1 year: Bukoba grouping is -2, 2-4, 4+.

[b] Mortality under 5 years.

The one-third excess of rural child mortality over urban is a differential of the order commonly found. Further analysis should throw light on the extent to which it simply reflects the higher incomes and greater proportions educated in the towns. The ratio of mortality where the mothers are illiterate to that when they have completed secondary school is 2.2 for males and 3.1

TABLE 8 CHILDHOOD MORTALITY BY SEX, RESIDENCE, AND EDUCATION OF MOTHER IN JORDAN, 1976 (AVERAGE OF PROPORTIONS DEAD BY AGES 2, 3, AND 5)

				Schooling of mother				
	Total	Urban	Rural	Illiterate	Literate	Primary	Preparatory	Secondary
Male	.1029	.0901	.1224	.1188	.0885	.0898	.0609	.0540
Female	.1071	.0959	.1293	.1239	.0999	.0885	.0764	.0405

Source: Table produced from World Fertility Survey n.d.

for females. Although exact comparisons with other populations are hampered because of the variety of methods of classifying educational levels, the gradients are of similar order. The large basic effect of education is thus confirmed as applicable in a Western Asian country.

TABLE 9 CHILDHOOD MORTALITY BY SEX AND ORIGIN IN KUWAIT, 1975 (AVERAGE OF PROPORTION DEAD BY AGES 2, 3, AND 5)

	Kuwaitis	Non-Kuwaitis
Male	.0550	.0563
Female	.0428	.0483

Source: Kuwait, Ministry of Planning 1976.

The Kuwaiti results indicate the impact that state wealth, establishing high standards and widespread availability of health services, can have. The child mortality rates are comparatively low but still much higher than the levels of Western Europe, where in the best conditions only about 1 in 100 births end in death within the first few years of life. The discrepancy may be due to the social factors in child mortality, such as education of the mothers, which have changed more slowly than the economic factors. It appears that after a large decline childhood mortality in Kuwait has become more resistant to change, an occurrence that parallels experience in other populations where health services have been improved rapidly. Although the rates are given for Kuwaitis and non-Kuwaitis, the examination of immigrant mortality does not contain much of significance for understanding socio-economic determinants. It is often higher than that of the indigenous population but may respond quickly as greater integration proceeds. Everything depends on the function of the immigrant within the society.

Policies for the Reduction of Mortality Differentials

Effective policies for the reduction of mortality differentials can only be formulated from a knowledge of what these differentials are and some understanding of what determines them. The preceding review draws attention to the limitations of our information. It is the function of a scientific paper to reach conclusions, however tentative, from the available

evidence and not to promulgate subjective judgements. Policy makers and administrators, however, often have to act on the basis of such judgements and may be helped by a compilation of research findings even if these are negative. In the light of these principles, the discussion of possible policies will properly be brief. It may be noted in passing that little can be deduced about the present topic from intervention trials. There have been few well-controlled ones. Something has been learned about policies for the reduction of mortality, particularly child mortality, but there has been no focus on differentials.

Measurements mean nothing without a conceptual framework within which they can be interpreted. There has been remarkably little effort to do this for mortality differentials. One important issue has already been raised. Should we regard differentials by a socio-economic classification as remaining unchanged if the spread of measures is relatively the same, or must the proportions in the extreme divisions of the classification be reduced? It seems sensible to regard this as an advance in individual equality since the variability among *persons* will be less. Further, should the criteria be absolute or relative and, if the latter, relative to what? For example, if infant mortality is halved overall but the ratio of the rate in the highest educational group to that in the lowest remains the same, the absolute difference will also be halved. Is this a reduction in differentials? It is hard to resist the conclusion that in some respects it is. Looked at in another way, it is a change, say, from *survivors* at age 1 year in the two groups of 96 and 88 per cent to 98 and 94 per cent. It would not be unreasonable to regard this as a move towards greater homogeneity with respect to mortality despite the continuance of the relative difference. On the other hand, this is to look at the society from the outside. Within it the continuance of the factors of inequality may be more significant. These questions have not even begun to be resolved. Nor is much known about the advantages of reducing mortality differentials. It seems plausible that such reductions may form a path towards lower overall mortality since the prevention of deaths in the disadvantaged groups through a diversion of resources towards them is likely to be much greater than any retardation of gains for the more prosperous groups. There are some indications that countries with greater social equality tend to have lower mortality but the evidence is impressionistic. It should not be forgotten that the level of mortality is an indirect index of sickness, disability, and poor health; reduced differentials in the first are inevitably associated with reduced differentials in the others.

A useful unification of ideas comes in the concept that the level of mortality in a group is determined by the capacities of the families to control their environment. Control implies both the economic resources and skills to make use of the features of the environment such as health services. It also includes the capacity to alter the environment by ways of living, including migration. It is important to emphasize the family as a significant feature, not only in child mortality, but also in deaths at later ages. Policies to reduce mortality differentials must change the environment or operate on the capacities of the

families to control it. It is suggested that the latter has greater potential. The evidence is that broad measures to improve the environment (such as the mass application of medical technology through vector eradication, immunization, etc.) or social and health activities (such as the improvement of water supplies or housing) will reduce mortality but not socio-economic differentials so long as the spread of control capacities over families remains the same. But there must be reservations. If there is a clear geographical association of poor environment with socio-economic disadvantage, mass measures can have notable effects. For example, the malaria eradication programmes in Sri Lanka and the British Solomon Islands (the field operations affected other vector-transmitted diseases as well as malaria) reduced socio-economic differentials in areal terms also. In addition, overall improvements in the environment provide the conditions within which alterations in the family control capacities can be made significant.

Policies to improve clinical and personal health services also operate on the environment but only at the family level. Their interaction with the opportunities to use them is the critical factor. To the extent that there are no alterations in the variability of such opportunities, the outcome (as exemplified by a number of Western countries) is likely to be overall reduction but similar or even greater diversity. Families with the advantages of resources and skills will make more profitable use of the new facilities. The history of mortality from tuberculosis among Maoris and non-Maoris in New Zealand exemplifies this. In the broadest terms, family control can be increased through more resources or more skills. The most notable finding of research into socio-economic differentials in mortality is that both resources and skills matter. The two aspects are closely interrelated but far from identical.

Provision of free health services on a substantial scale by spreading resources more evenly will tend to reduce differentials but will not eliminate them. It is clear that while greater equality in income will contribute significantly to smaller variations in mortality, other factors will also intervene. The two that have been most often singled out by research are education and family behaviour. In both cases the evidence is much clearer for child than adult mortality, but the indications are that they operate over the stages of life. It should be noted that the emphasis on these two features may, to some extent, be dictated by the limitations of studies of subcategories of the population, defined by other characteristics. But the differentials are so large that they are almost certainly primary rather than secondary.

The obvious interpretation of the educational differences in mortality, which persist when allowance is made for economic variables, is that they derive from the skills of the parents in protecting the child from the adverse features of the environment. These are exercised in child feeding and care as well as in the use of health and other services. The fact that the influence of mother's education is strong when that of the father is discounted indicates the nature of the relationships. Because the decrease in child mortality with education of parents continues through all levels of schooling, it would appear

that there are no thresholds of policy significance, that is, levels below which or above which the effect does not operate. This suggests that the determinant is not a specific aspect of education but the broadening of knowledge that comes from it. There is no evidence on the types of educational development that would have the most impact on the differentials.

The behaviour of the family influences child mortality in a number of ways. As always, it is difficult to isolate the extent to which the effects are resource–as opposed to skill–determined, nor is the contrast always useful. Thus several closely spaced births interactively constitute an economic and a family care burden. But there are many indications that improvements in child care could greatly reduce child mortality without additional resources. The scope is large for the more deprived socio-economic groups and the potential for reducing differentials is correspondingly great. The needs are for a stable home environment; longer birth intervals; higher status for female children; good practice in lactation, nutrition, and child hygiene; more highly skilled use of services; and, of course, a better knowledge of how these can be achieved. These all fall under the broad heading of family welfare. The evidence supports the view that even a modest effort in family welfare policies for the more disadvantaged groups could produce a good return in reduced mortality differentials.

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CHAPTER 19. INDIRECT MEANS OF FERTILITY POLICY

Lincoln H. Day *

Current rates of population increase in the ECWA region are among the highest the world has ever seen. Growth rates from natural increase alone are high enough to double populations in the various countries of the region in from no more than 37 years to as few as 21 years. Ultimately, of course, natural increase of this magnitude is a necessarily temporary phenomenon, for populations cannot go on increasing without limit. The demographic question is not *whether* these populations will or will not stop increasing, but *when* they will stop increasing. And *what will be the demographic means* to this cessation of growth: lower fertility, higher mortality, or emigration? The related non-demographic question is, *What will be the conditions of life*—economically, socially, environmentally—once this population increase has halted?

It is assumed that a minimum goal of any population policy would be the achievement and retention of lower, rather than higher, mortality. Therefore, the issue these questions pose for population policy is, How can the necessary cessation of population increase be achieved without resort to higher death rates? We are left with two demographic variables: migration and fertility. Either out-migration must be increased and maintained indefinitely at levels commensurate with natural increase, or fertility must be reduced to the point where the average annual number of births equals the average annual number of deaths. What, then, are the relative merits of these two variables as the basis of population policy?

There is no doubt that out-migration can be both socially and demographically useful and that it can benefit the individual mover. But as an adjustment to continued natural increase, out-migration is unreliable, expensive, and wasteful. It depends on the continued acquiescence of those who inhabit the places of destination, and in the society of origin it entails a net loss of prior expenditure on the maintenance and training of those who move. In addition, it often gives rise to much stress and unhappiness—not only among the migrants themselves, but also, for different reasons, among the families and friends they leave behind and, all too frequently, the people they come into contact with at their places of arrival and future settlement. Moreover, if only because of the difficulty of absorbing the numbers involved, migration can never be more than a temporary expedient to relieve the pressures of high rates of natural increase. It would not take long for the out-migration of an

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annual natural increase of, say, 400,000 Iraqis; 320,000 Syrians; 280,000 Saudis; or 200,000 Democratic Yemenis (on the basis of a continuation of present growth rates) to more than double the population of some of the countries to which they migrated.

This leaves fertility, specifically, the reduction of fertility to a level ultimately commensurate with that achieved by reductions in mortality. What sorts of programmes would seem appropriate for the achievement of such a goal in the countries of the ECWA region?

Programmes to Reduce Fertility

One approach that can be taken in considering a programme intended to alter human behaviour is to look at it in terms of the three continua of intention, direction, and sanctions—in terms, that is, of (1) whether a particular change in behaviour that might be anticipated is to develop out of behaviour intentionally or unintentionally undertaken for the purpose, (2) whether behaviour is to be changed through means applied directly or indirectly to the persons whose behaviour is in question, and (3) whether the sanctions to be applied are to be rewards for the desired or punishments for the undesired behaviour.

The elements of any particular programme may tend towards the extremes of each of these continua. Specifically with respect to demographic behaviour, lower fertility could be the intentional result of liberalization of laws on abortion or the unintentional result of temporary separation of husbands and wives in conjunction with a programme of "guest worker" migration to other countries. Similarly, the means to be utilized could range from indirect rewards (such as provision of greater opportunities for a higher material level of living to parents of few children) to direct punishments (such as higher taxes for schooling imposed upon parents of many children).

As it happens, almost anything a government does can evoke some kind of demographic response: an increase in participation in the work-force, change in the direction of internal migration, or the postponement of childbearing, for example. Certainly, the unintentional consequences of social policy can be widespread and difficult to foresee. Where lower fertility is the goal, it is therefore useful to scrutinize and evaluate all governmental undertakings in terms of the extent to which they might conceivably minimize undesirable responses (in this instance, those conducive to higher fertility) and maximize desirable ones (those conducive to lower fertility)—whether the consequences of these responses for fertility happen to be intended or unintended. And when it comes to formulating a policy specifically intended to reduce fertility, careful consideration should be given to the extent to which this goal might be reached unintentionally—that is, through individual behaviour undertaken for purposes other than the specific reduction of fertility.

Nonetheless, prime emphasis in fertility policy should be on creating a setting in which people reduce their fertility intentionally. Intentional control over fertility need not necessarily eventuate in fertility that is invariably low;

and there is always the example of Ireland, where for some generations now low average fertility has been the unintended result of marriage patterns (characterized by late age at marriage and high proportions remaining permanently celibate) that have evolved for quite other purposes than the limitation of family size (Kennedy 1973).

Nevertheless, I think it can be reasonably argued that lower fertility is more likely to endure if it is achieved intentionally, rather than unintentionally—if only because, with intentional control, both the goal and the means to attainment of that goal are specified and recognized by the individual exercising the control. Then, too, there is a positive value attaching to the individual's exercising control over the course of his or her life—all the more so if that control extends to something as personally significant as the bearing of children.

Not so very long ago, with the notable exception of China (Chen and Miller 1975; Banister 1979), programmes established with the intention of reducing fertility, whether governmental or private in origin, attempted little more than to provide birth control information and materials on a voluntary basis. Where they went beyond this, it was ordinarily no further than into the closely related areas of maternal and child health, including the discouragement—for maternal health reasons—of abortion, particularly of abortion performed under non-medical auspices (Demerath 1976). Limited as these programmes were, however, the countries of the ECWA region were conspicuous for their lack of participation in them.

Probably none of these programmes were allotted the funding or efficient and skillful administration necessary to ensure either their success or a fair test of their efficacy. Nonetheless, it is now widely accepted that such an approach is not enough. While some recent reductions in birth rates do appear to have followed very closely upon inauguration or extension of family planning programmes, significant reductions in fertility, especially if fertility is to continue at these new, lower levels, are now seen to require more than the mere provision of birth control. People do not, after all, make childbearing decisions within a vacuum.

However extensive the provision of birth control, if there is to be any significant and continuing change in decisions about the number and spacing of children, it is now generally accepted that there must be some prior change in the social and cultural setting within which these decisions are to be made. This is not a new idea, but it is an idea that until recently was seldom in evidence as a cornerstone of policies intended to reduce fertility. Kingsley Davis portrayed the significance of the social setting particularly well in an article published 12 years ago (Davis 1967, pp. 29-31): "At most, family planning can reduce reproduction to the extent that unwanted births exceed wanted births.... [T]he creation and care of new human beings is socially motivated, like other forms of behaviour, by being part of a system of rewards and punishments that is built into human relationships, and thus is bound up with the individual's economic and personal interests...." It is therefore necessary, he continued, to change the social structure and economy—particularly the

structure of the family, the position of women, and sexual mores–before a deliberate reduction in the birth rate can be achieved.

However, Davis saw the implications of this concept for population policy in pessimistic terms: "A realistic proposal for a government policy of lowering the birth rates reads like a catalogue of horrors: squeeze consumers through taxation and inflation; make housing very scarce by limiting construction; force wives and mothers to work outside the home to offset the inadequacy of male wages, yet provide few childcare facilities...." Davis recognized that no government would "institute such hardships simply for the purpose of controlling population growth" and concluded that "the task of contemporary population policy is to develop attractive substitutes for family interests, so as to avoid having to turn to hardship as a corrective" (p. 739).

Whether coercion is a necessary component of effective policies to reduce fertility remains a debatable point. For example, Alice Day (1968, p. 10) has taken issue with the elements of Davis' "realistic proposal." She has argued that an effective programme of population control need not be coercive and that it is "possible that potential parents might choose to have small families as a response, instead, to a healthy adjustment to their surroundings, and confidence that their lives can be rewarding without resorting to childbearing in excess of the number necessary for replacement."

Five years later, William Rich (1973, p. 3) concluded from a comparison of various countries and regions within countries that a reduction in fertility could, indeed, occur as a response to non-coercive, favourable social conditions. He stated that "family planning programmes generally have been much more successful in those countries where increases in output of goods and social services have been distributed in such a way that they improved the way of life for a substantial majority of the population rather than just a small minority" and that " a stepped up rate of production, greater economic and social justice, and a lower rate of population growth can be mutually reinforcing policy goals."

The next year, 1974, the idea that non-coercive measures could be effective was incorporated into United Nations policy, with paragraphs 31 and 32 of the United Nations World Population Plan of Action recommending that national efforts to reduce fertility be made part of more general efforts towards social improvement, particularly with respect to health and schooling. Specifically mentioned as the kinds of programmes likely to affect "the socio-economic context of reproductive decisions" in a way conducive to lower fertility were the following: (1) the reduction of infant and child mortality; (2) the "full integration of women into the development process"; (3) the promotion of "social justice, social mobility, and social development, particularly by means of a wide participation of the population in development and a more equitable distribution of income, land, services and amenities"; (4) the promotion of wide educational opportunities for the young of both sexes; (5) the elimination of child labour and child abuse; (6) the establishment of social security and old-age benefits; and (7) the establishment of an "appropriate" lower limit for age at marriage (United Nations 1975).

Surely, all of these are worthy goals in their own right. Yet the question remains, Would their attainment reduce fertility? More specifically for present purposes, Would it reduce fertility in the ECWA countries to levels commensurate with those that can be anticipated for mortality? Or must reliance be placed, instead, primarily on the sorts of intermediate means listed in Davis' "realistic proposal"? There is little agreement in the demographic literature about either the effectiveness or the desirability of various specific policy measures for the reduction of fertility (see, e.g., Davis 1967; Berelson 1969; Chen and Miller 1975; Demerath 1976; Caldwell 1978). Nonetheless, I think the experience of fertility control programmes in various countries and regions of the world has been instructive—so much so, in fact, that a number of points about such programmes can now be made with some confidence.

Government Policy for the Reduction of Fertility

General Considerations

At the more general level, a well-designed programme for the reduction of fertility would have several attributes. It would incorporate a high degree of flexibility, provide for continuous monitoring, provide for the collection of appropriate data, emphasize inducements rather than negative sanctions, incorporate recognition of the importance of population diversity, recognize that what may be advantageous for the society as a whole may be disadvantageous for certain individuals, and be based upon an understanding of the socio-cultural setting within which family-size decisions are made.

High degree of flexibility. A government should not get locked into some specific course of action that no longer serves its purpose unless such a continuation can be justified on non-demographic grounds.

Continuous monitoring. This is necessary to (1) assess the success of its operation and the efficacy of its various provisions, (2) assist in obtaining a better understanding of the causal mechanisms at work within different sectors of the population at different stages of the programme, and (3) help in anticipating possible future changes to be made in the programme.

Collection of appropriate data. Data that are (1) accurate, (2) related to the needs of the programme, and (3) based on sufficient coverage are necessary for a sound fertility reduction programme.

Emphasis on inducements. Inducements to limit births, rather than punishments for parenthood, are desirable. A programme should avoid relying on negative measures such as those listed in Davis' "catalogue of horrors." In fact, ideally, it should rely on measures that are worthwhile in their own right, measures conducive to human welfare, whatever their effect on fertility.

The value of negative measures is questionable. Most are patently inconsistent with the goal of improving conditions of life, surely the ultimate purpose of any defensible population policy. Their use could promote some of the very conditions that a reduction in fertility would be intended to prevent or alleviate. Moreover, they can be questioned on grounds of efficacy itself. Far

from producing lower fertility, a population programme employing measures that run counter to human interests might well boomerang by enhancing the role of the family as a source of security and personal intimacy in a harsh social setting (A. Day 1968, pp. 9-10) and in that way actually encourage additional childbearing. At best, the employment of such measures would be effective only in the short run, particularly if these measures were to constitute a striking contrast with previous conditions. Although the imposed conditions might be effective in the beginning, succeeding generations might well come to regard them as simply a fact of life, either of no consequence to fertility or, worse, conducive to higher fertility. There is no denying the fact that many of these negative conditions are already prominent features of life in many of today's highest-fertility countries. Certainly there is need for both a continuous assessment of any programme's results and a fair degree of flexibility with respect to the continuation of its various provisions.

Diversity of the population. The effectiveness of specific measures can vary with the social setting in which they are applied and with the needs presumably met by childbearing among persons in different socio-economic conditions and at different stages of life. Because of this, population policy will need to incorporate a variety of measures and be flexible enough to change in response to altered conditions.

Macro- versus micro-level benefits. What is advantageous for the society as a whole may be quite disadvantageous for certain individuals within that society—at least in the short run, which is, after all, the framework within which most people must lead their lives. Here again is an argument for variety and flexibility in the programme.

Socio-cultural setting. Population policy programmes should be based as much as possible on an understanding of the social-cultural setting within which people determine whether, and to what extent, to limit the number of their children. Only if this is done can a programme be constructed of those measures best suited to the achievement of its goals. The alternative is to run the risk of wasted money, wasted time, and possibly even the institution of provisions with consequences that will prove contrary to what was intended.

Because this degree of understanding seldom exists, the researcher is tempted to call for more research. Unquestionably, there is still much to be learned, especially if we are to understand what is really happening. What, for example, do people actually expect to gain or lose by having a particular number of children? What are the interests served by childbearing among the different sectors of the population? Can alternatives be provided that will reduce dependence on children as a means of satisfying these interests? What are the actual consequences for different people of having different numbers—or sexes—of children? To what extent is such control considered advantageous? To what extent and by what means is childbearing already subject to control within the various sectors of the society? To what extent are the decisions affecting fertility made by the potential parents and to what extent by others—potential grandparents, for example?

As it happens, few such questions are of a sort to be answered by the more usual types of demographic research; they require, instead, a more anthropological, personal approach. As Gavin Jones has written, "endless computer runs aimed at 'explaining' a larger proportion of the variance in completed fertility, using survey data of questionable reliability and an embarrassing number of 'proxies' are no substitute for an understanding of the social and family structure in the culture under study" (1977, p. 38).

More Specific Considerations

But to postpone introduction of programmes designed to reduce fertility on the grounds that more research is needed is hardly a prudent course to follow in the present circumstances of continued rapid growth. Time is too short, especially in the ECWA region (Rizk 1974, pp. 142-149). Besides, our ignorance is hardly so extensive, or of such character, as to justify letting it immobilize us. So, having noted some of the more general elements of a well-designed programme of fertility reduction, what can we now say of a more specific nature?

What I shall say here can be subsumed under two general headings: (1) provision of ready access to the means of controlling births and (2) extension of the range of allowable human behaviour.

Improved access. Ensuring to all who need it the ready availability of the means of fertility control is a matter of singular importance. Not only is the ability to control fertility now widely considered a fundamental human right, but there is growing evidence that it "can be in the vanguard of social change, that in certain situations it can lead to improvements in social justice, women's rights, community participation and individual responsibility" (Wahren 1979, p. 10).

Another paper at this conference, that of Adnan Mroueh (chapter 20 below), is addressed to this topic, so I shall not go into detail here. Obviously, the ready availability of contraception and abortion would help make control over fertility physically possible, but there is also a motivational element to be considered. If the means are readily available, people do not need to be as highly motivated to undertake such control in the first place and, once they have begun, to persevere with it throughout the period of potential childbearing.

Moreover, the exercise of fertility control can itself be a stimulus to the diffusion of such control, for anything that reduces the number of unwanted births is going to alter the demographic setting in which people, as they come to accept the idea of controlling childbearing, decide what number of children they want to have. The very existence of large families can promote higher fertility in two ways: (1) by encouraging (or at least not discouraging) additional childbearing among those who already have many children and (2) by encouraging additional childbearing among those with few children by setting the examples of higher-fertility families and women continuing to bear children at more advanced ages.

While conscious choosing within a framework of norms and customs can doubtless play an important role in childbearing, most human behaviour—fertility and otherwise—entails little conscious decision making among well-defined alternatives. In any particular instance, the individual is ordinarily but dimly aware of why he or she is behaving one way rather than another (L. Day 1977). Thus, even if one's perception of the demographic situation were not entirely accurate in a statistical sense, a society in which 2 out of 3 women ultimately bore at least 5 or 6 children would surely, other things being equal, provide greater encouragement to additional childbearing among lower-parity women than would a society in which the proportion who had 5 or 6 births was but 1 out of 20.

In short, the ready availability of the means to control fertility can be highly significant, partly for its effect on the individual's *ability* to exercise such control, and partly for its effect on the individual's *willingness* to do so. The goal of a much lower fertility level will be difficult enough to achieve in high-fertility countries without adding to this difficulty by restricting people's access to the most efficient and reliable means of preventing birth.

Diversity of approach and behaviour. In drawing up a programme to reduce fertility, the most efficacious approach would appear to be to move on several fronts simultaneously and in so doing to *emphasize diversity*, that is, to (1) incorporate provisions specifically designed to serve the needs and interests of different elements of the population and (2) increase the range of behaviour and thought patterns available to individual men and women.

In developing programmes to be addressed to particular sectors of the population, it is necessary to look closely at the *distribution* within the population of behaviour, roles, and relationships and not merely at averages or at what is "typical." The particular need is to look at statistical minorities and at those with a counter or deviant life-style. By "statistical minorities" I mean, for example, those with low fertility (in a high-fertility population), unmarried adults, migrants to the cities, persons in new or unusual occupations (like taxicab drivers, factory assembly-line workers, and those in non-familial types of employment in general).

By "those with a counter or deviant life-style," I mean those such as religious sectarians, itinerant workers, and merchants; those who wear "Western" clothing; or those who dance to "Western" popular music. (For examples of this approach in the ECWA region see El-Asad and Khalifa 1977; Chamie 1977; Kandis 1977; Zurayk 1977.) Such groups—whether "minorities" or "deviants"—having somewhat different needs and interests could be expected to respond differently to different types of programmes and for that reason to require different provisions and emphases in the programmes designed to reach them. But more important is the fact that these groups offer clues to what changes are happening in a society and thus to the kinds of fertility reduction programmes most likely to produce favourable results in society as a whole.

To play a truly effective role in changing people's behaviour, the fact of diversity must be accompanied by a widespread belief that one's condition in

life can actually be altered, that it is not something to be fatalistically accepted as the only possible reality. While the existence of diversity may itself encourage such a belief, there is no assurance that it will—witness a country like India, with its extensive diversity superimposed upon a rigid caste and class system. It is here that the mass communications media and improvement of the means of public transport can play an important role.

The mass communications media are often cited as a mechanism through which to foster diversity and lessen fatalistic acceptance of one's lot in life. These media can enhance diversity and create belief in the possibility of change by informing people of achievements in reducing mortality and of advantages that can accrue to individuals who control their fertility. They can also provide information about specific methods of birth control and the local availability of various related services, and they can directly raise levels of aspiration through advertising (Freedman 1976, pp. 357-358).

However, it is the indirect messages in the media that are likely to be more influential. People's fertility attitudes and behaviour can be influenced through the contact these media provide with the modern world and with alternative life-styles, one aspect of which is smaller families. Levels of aspiration can be raised not only through advertising, but also through offering as models "ordinary" people enjoying goods and services that are more difficult to attain if one has many children.

Particularly important is the way in which these media can promote acceptance of new roles for women by, for example, showing women working outside the home, becoming educated, participating in politics, and enjoying social contacts outside the immediate family.

Overall, exposure to the media can create a climate more favourable to the adoption of new modes of thought and behaviour by the following means: increasing people's awareness of the fact and the possibility of difference; enhancing their ability to empathize, that is, to envision themselves in the roles of others; and informing them of the means available to undertake change in their condition (Freedman 1976, p. 358).

Another mechanism, which has received little attention but which would seem to offer a number of possibilities, is public transport. Through improved public transport, people can be afforded a greater range of opportunities in employment and housing; better access to community services; a greater variety of intellectual stimuli; the chance to fit more gradually—and hence, presumably, less stressfully—into a newly acquired status (as, for example, through combining weekday work and residence in the city with weekend visits to the parental village); and, overall, a heightened sense of being able to cope with conditions and in some degree to exercise control over the events of one's life. In addition, public transport can be an important source of employment for relatively unskilled workers.

Admittedly, many of these functions could also be performed by private transport. However with the exception of such vehicles as bicycles, private transport is so costly, both economically and non-economically, that its extensive development in countries of the ECWA region can hardly be viewed as

other than detrimental to society as a whole.

Diversity is also enhanced, at least initially, by anything that contributes directly to a reduction in higher-parity births—such as making birth control more readily available, or introducing greater variety in age at marriage. In this instance, the greater diversity would be with respect to the process of childbearing: in both age at commencement and age at completion of childbearing and in the intervals between successive births. (Of course, out of this greater diversity in the *process* of childbearing could be expected to come eventually a lesser diversity in the *distribution* of family sizes because of the declines in the proportions at the higher parities.)

Another approach to greater diversity would be the creation of more variety in occupations for both men and women. This commonly results from expansion of the non-agricultural sector of the economy. But while economic development of this kind is generally welcomed, it must be recognized that, whatever its benefits, it will inevitably entail costs, and these costs, in any rational assessment, must be reckoned in more than narrowly economic terms. It is long past the time when the desirability of economic "development" could be taken for granted, and the worth of such development assessed, without reference to its full implications for either the natural environment or the culture and well-being of the population experiencing this "development."

Another means to greater diversity, one of the most common, is the extension of formal schooling. At the very least, this can increase a population's skills and knowledge and prepare its members for participation in a greater variety of roles. It can also create employment opportunities within the system itself for those who graduate from it. But in extending schooling it is important to focus on what can best serve the needs of the society. Is society served by creating a class of people who consider themselves superior to the rest of the population or who possess a trained incapacity—or unwillingness—to perform the socially more useful tasks? Is it served by those who, after acquiring skills and knowledge for which there is no local demand, either have to emigrate to put their training to use or resign themselves to a state of continuing frustration over not having such an opportunity? It makes little sense to train heart surgeons and architects if what the society really needs are public health nurses and bus drivers.

But if schooling is important for its direct consequences, it is also important—perhaps even more important—for its indirect consequences. These are of two types, those that related to the individual's own development, and those that relate to the collective response of families to the demands of mass schooling. For the individual, schooling can enhance the variety and breadth of one's experience, raise one's levels of aspiration, and create (this is of particular significance in the case of women) a feeling of confidence in one's ability to function as an individual—or as a partner in a marital union—in making decisions about one's own behaviour. It can also add to the diversity of both the ideas and the people one encounters, people with different ways of looking at things, different aspirations, different values. Formal schooling is by no means the only avenue to these kinds of developments, but it is surely one of

the most important. Given the kinds of changes now under way in the ECWA region, the illiterate or semi-illiterate person of either sex will be functioning under an increasingly serious social handicap.

For women, the importance of extending formal schooling can hardly be overestimated. In fact, the Caldwells (chapter 5 above), writing specifically of the ECWA region, assign schooling a place of first importance, particularly for its indirect consequences:

> The continuation of the traditional family, characterized by high fertility, is likely to depend most on whether or not the present low levels of female education are maintained. Such low levels alone can probably maintain female subservience to husbands and to in-laws, the relatively high level of female work and low level of consumption, and the low degree of participation by young couples in budgetary and fertility decisions.... The potential for change is enormous, the single most explosive factor being the possibility of a rapid increase in female education.

However, from the standpoint of the family, the results of extending schooling may follow quite a different path. To be sure, there is the possibility that schooling will increase a child's value in the market-place for labour, thereby increasing the potential economic return to the family. And it is possible that schooling might also enhance a child's value in the market-place for marriage partners, thereby bringing some further status to the family and possibly some economic gain as well. But these are essentially the sorts of benefits that accrue to families capable of sending a child well beyond the level of schooling reached by the masses. For most families in societies in which mass education is only now getting under way, schooling represents a cost, not a gain. It does so in two ways: by making the child more expensive to maintain—because of the additional costs incurred for school fees, suitable clothing, books, and the like (Caldwell and Ruzicka 1978, pp. 88-90)—and by decreasing the amount of work the family can, or feels it should, extract from the young scholar.

As already alluded to, a particularly important approach to increasing the amount of diversity would be the creation of new roles for women, roles beyond the traditional ones of wife, mother, and worker in family enterprise. Schooling is important in this regard, as is ready access to birth control, but these are not the only factors at work. The variety of roles available to women is severely restricted if women are secluded. Ruth Dixon (1976, p. 291) has noted that seclusion deprives women of direct access to material and social resources in the community at large and creates in them "a condition of extreme economic and social dependence that not only compels their early marriage but also militates against the effective practice of birth control within the marital union."

Increasing the access of girls and young women to material resources such as income-producing labour and to social resources such as schooling and the kind of freedom of movement outside the home that permits the open

exchange of ideas with other people in the community (Dixon 1976, p. 300) would thus appear to be not only desirable in itself, but also demographically significant. It would help release young women (and often their husbands as well) from the control of the wider kinship unit, extend to them the possibility of exercising greater direct control over their lives (and assist them in acquiring the economic means and self-confidence to take advantage of such a possibility), and encourage development of that greater degree of communication and equality between husbands and wives in household decision making (p. 303) that appears so conducive to the extension of control over childbearing.

> [T]he condition of economic and social dependence engendered among women observing seclusion has highly disadvantageous consequences for the individual, the family, and the community. Those women who are most dependent are most likely to have been married without their consent, most likely to be unaware of birth control methods or to practice them, and most likely to accept their lot in life with resignation. Moreover, the social and economic development of the community in which they live may in turn be impeded by women's lack of schooling, their low level of participation in gainful economic activity, and their resistance to change. Male workers are weighted down by the heavy dependency burden of their women as well as their young children. Women themselves become active participants in their own oppression, hoping for sons to relieve their burdens and greeting the birth of daughters with indifference or despair. Birth rates remain unacceptably high, a drain on the woman's health and on the carrying capacity of the village community. [P. 305]

A specific recommendation by Dixon that would go far in creating new roles for women is the establishment in rural villages and towns of small-scale, collective light industries that would employ only women (at all levels, including the supervisory) and thus draw them out of the home while removing one of the central obstacles to their employment among groups practising female seclusion, namely, the fear of indiscriminate association with men. In addition to offering an economic return to both married and unmarried women, such industries, if they provided closely supervised residential quarters for unmarried girls, training in functional literacy, and information on health and birth control, would help create greater diversity—and the greater latitude of choice associated with that diversity—through the development among women of vocational skills, peer-group support and solidarity, and a source of pride and prestige beyond that afforded by marriage and childbearing (Dixon 1976, pp. 305-310).

Finally, an important type of diversity to foster is that relating to patterns of marriage, specifically, age at marriage (which has been alluded to) and proportions ultimately marrying. As already noted, extension of schooling is one common means to this end and the provision of non-familial employment, particularly for women, is another. A third possible approach could be the

establishment of a system of national service. But whatever the means, the purpose, so far as the reduction of fertility is concerned, would be twofold: first, reduction of the number of woman-years of exposure to conception during the most fecund years of life—by reducing the proportion who ultimately marry and, particularly, the proportion who marry at the younger ages; and, second, development of aspirations that run counter to multiple childbearing as well as alternative means for the satisfaction of those needs presumably satisfied by childbearing—in both cases, by postponing marriage and childbearing long enough to permit such developments to take place.

Conclusion

The minimum conditions for intentional control of fertility are (1) that individual men and women consider it possible, (2) that they consider it acceptable, (3) that they consider it to their advantage, and (4) that the means for such control are available.

Supplying the means can present difficulties, but what is involved in doing so is comparatively straightforward and essentially a matter of governmental determination and priorities. Convincing individual men and women that controlling fertility is both possible and acceptable is far more difficult. But the most difficult task, by far, is to create a setting in which people consider it to their advantage to control fertility. This could, of course, incorporate all degrees of coercion and persuasion. Just how much coercion or persuasion would be necessary in any particular society is a matter of some concern. But at the minimum, establishment of such a setting would entail knowing what a particular people expected to realize from childbearing and then devising alternative means for the fulfilment of these ends in ways that did not lead to excessive procreation.

The demographic criterion of success in such an endeavour would be the reduction of fertility to a level ultimately commensurate with that of mortality. But the story does not end there. The appropriateness of any of these alternative measures ought also to be evaluated in terms of three non-demographic criteria, namely, the extent to which its introduction would (1) enhance or detract from the well-being of people of both sexes and all ages, (2) improve or degrade the natural environment, and (3) expand or contract people's ability to predict, and exercise control over, the most important events in their lives. No mean task this, but the importance of the goal is so great that the effectiveness of every government in the ECWA region must ultimately be judged in terms of its success in attaining it.

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CHAPTER 20. FAMILY PLANNING AND FAMILY WELFARE

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Family planning aims at improving the quality of life. By promoting the health and welfare of the family, it contributes to economic and social development. Increased rates of perinatal mortality, prematurity, infant mortality, and malnutrition as well as retarded intellectual and physical growth of children are health risks associated with excessive births at short intervals and pregnancies at older ages. Family planning should not be pursued in isolation but should be combined with a number of other measures whose objective is to improve the health of the family. The main concern is to bring family health care, including family planning services, within the reach of the people.

Background

Historically, family planning was initially concerned with efforts to relieve women of the ill effects of continuous childbearing and induced abortion. Some groups pioneered family planning in an effort to confer human rights on women. The scope has since widened to concern itself with regulating the number of children in accordance with the circumstances of the family to enable parents to provide for the health and future prosperity of the family group. In the past two decades, family planning has widened further to encompass the escalating concern with rapid population growth, which has come to be seen as undermining national development, exacerbating economic and social problems, aggravating environmental population, and jeopardizing political stability. High population growth rates penalize many of the developing nations, draining resources, diluting per capita income, and increasing inequality. Governments must then devote more and more investment to providing minimal services to an increasing number of children. More children mean greater expenditure on food, shelter, clothing, health, education, and every other service, hence lesser expenditure on investment to achieve economic growth. As children reach working age, problems are compounded by mounting unemployment. Hence the cycle of poverty and over-population tightens.

Whereas family planning is universally justified as a human right, it has created a great deal of controversy and complacency. Some question whether the family planning programmes relying on voluntary co-operation of individual

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couples will reduce growth rates soon enough to avert catastrophes. That is why measures have been introduced by some governments rewarding couples who conform to a desired fertility norm and providing disincentives to those who exceed it. There are different problems in various countries and regions of the world. In some African countries, family planning is concerned with the problems of rampant sub-fertility, whereas in India it is directed against all the health, social, and economic evils of excessive fertility. The trend today is for more and more governments to introduce their own national programmes, not only because of rapid population growth, but also in the interest of maternal and family welfare. Frequently, family planning services are incorporated into the basic health services.

Table 1 shows some of the salient demographic and socio-economic data for 13 ECWA countries compiled by the Population Reference Bureau for mid-1979. One must begin with a word of caution about the quality of the data. But they certainly are consistent. The total fertility rate averages six children per woman and the crude birth rate is about 42 per 1,000. This combination results in a growth rate of 2.8 per cent, which means a doubling of the population every 25 years. Even if, hypothetically, fertility were to drop to replacement level, the population would continue to increase until the age structure stabilized. This establishes the ECWA region as one of fastest-growing regions in the world. Some of the countries are expected to witness further increases in the rate of growth as death rates drop further. Although statistics in this field are fragmentary and the situation they describe varies widely from one country to another, there appears to be a fertility decline in a few countries. This decline appears to be gathering momentum; however, its pace is far too slow. In the developing world over the 6-year period 1969-1975, the crude birth rate dropped slightly, as did the crude death rate (see table 2). If this conclusion is confirmed by various censuses, then we are witnessing an immense change. Experience illustrates that once fertility turns downward from high levels it does not resume an upward direction until it has fallen quite low.

What are humane and rational measures to accelerate the demographic transition in ECWA countries?

The experience of the industrialized countries demonstrates that socio-economic development and mortality declines were accompanied by significant reductions in fertility. Which element in the general development led to that specific result? Many countries in the region have higher per capita incomes than many developed countries, but without the parallel reduction in fertility. Disparities in income did not lead to great differences in fertility behaviour. But similarities in culture, language, and ethnic background lead one to conclude that cultural considerations are more decisive than economic ones. A suitable mix of variables is at work. Mortality decline, urbanization, educational advance, high aspirations for oneself and one's children—all are involved in differing combinations. The experience of the developed nations, whereby low fertility norms were adopted before family planning existed as an organized movement, is not a valid reason for complacency. Western

TABLE 1 DEMOGRAPHIC AND SOCIO-ECONOMIC DATA IN THE ECWA COUNTRIES

Country	Population estimate mid-1979 (millions)	Birth rate	Death rate	Rate of natural increase	Number of years to double population	Population projection to 2000	Infant mortality rate	Population under 15 years	Population over 64 years	Life expectancy at birth	Urban population	Physical quality of life index	Per capita gross national product (U.S.$)
Bahrain	0.3	44	9	3.6	19	0.5	78	44	3	63	78	61	3,790
Democratic Yemen	1.9	48	21	2.7	26	3.5	155	48	3	45	33	32	320
Egypt	40.6	38	12	2.6	27	63.5	108	41	3	55	44	44	310
Iraq	12.9	47	13	3.4	20	24.8	104	48	3	53	66	45	1,530
Jordan	3.0	46	13	3.3	21	5.8	97	47	3	53	42	47	710
Kuwait	1.3	42	5	3.7	19	3.1	39	44	2	69	56	75	12,700
Lebanon	3.1	36	11	2.4	29	4.9	59	42	5	63	60	79	–
Oman	0.9	49	19	3.0	23	1.7	142	45	3	47	5	–	2,520
Qatar	0.2	44	14	3.0	23	0.4	138	45	3	48	69	31	11,670
Saudi Arabia	8.1	49	18	3.0	23	15.6	150	45	3	45	21	29	4,980
Syrian Arab Republic	8.4	44	13	3.2	22	16.3	114	49	4	57	48	52	900
United Arab Emirates	0.9	44	14	3.0	23	1.9	138	34	3	48	65	34	14,420
Yemen	5.8	48	25	2.3	30	10.0	160	46	3	45	9	27	390

Source: Population Reference Bureau 1979.

Europe had lower growth rates and much more gradual mortality declines when it entered this fertility transition. Expanding job opportunities were available and the mass migrations to the Americas and Australia took care of the excess unemployed. In ECWA countries the precipitous fall in mortality has driven up the growth rates without a parallel expansion of industrial infrastructure. Stringent migration laws have prevented any significant amelioration of this problem.

TABLE 2 BIRTH RATES AND DEATH RATES IN DEVELOPING AND DEVELOPED COUNTRIES

	Crude birth rate	Crude death rate	Rate of natural increase
Developing countries[a]			
1969	42.9	17.0	2.6
1975	39.0	15.1	2.4
Developed countries			
1969	18.0	9.1	0.9
1975	17.3	9.3	0.8
Total world[b]			
1969	32.0	13.3	1.9
1975	30.0	12.3	1.8

Source: McNamara 1977.

[a] Excludes People's Republic of China (PRC).

[b] Includes rough estimates of data relating to PRC.

Government intervention must aim at altering the social and economic environment that tends to promote fertility and by so doing create a demand for a smaller family norm. Once this is attained, the demand for family planning services must be met. Of the actions that are most likely to promote a desire for reducing fertility, the following are most important.

Expansion of Health Services to Reduce Infant Mortality

It is known from the experience of both the developed and developing countries that a decline in fertility rates can be expected to follow a reduction

in infant and child mortality. Current mortality rates in ECWA countries remain over 10 times higher than those in the developed nations. This is because of low nutritional standards, poor hygienic conditions, and inadequate health services.

While health services have contributed to increased rates of population growth, they have an essential role in limiting population growth. There is a fertility-mortality cycle in which high fertility leads to large families, crowded and malnourished in an unfavourable environment, which leads to high childhood mortality and thus sustains high fertility. Reducing child mortality is a necessary prerequisite for reducing fertility. Furthermore, health services help in providing and promoting the measures needed for family planning. Whether the goal is to improve health or to reduce birth rates, the means is behavioural change, and this can seldom be accomplished in hospitals or clinics. A health programme can start a process of health education and thus encourage an orientation necessary for controlling fertility.

In their slow move towards modernization, countries have expressed their intention to provide health care to every one of their citizens, a reflection of human concern and political wisdom. Yet those who decide where and how efforts and money are to be spent have hard choices. The strategies adopted have been modelled on those of industrialized countries. This is exemplified by the tendency to create sophisticated health services staffed by highly qualified personnel in the hope of expanding them as resources increase. The sad outcome has been that services are centered around cities and large towns, are predominantly curative, and are available only to a small, privileged segment of population. There is always pressing political and professional demand to maintain and establish central hospitals that consume disproportionate amounts of the budget. Hence the people with the greatest need in rural areas are left without care. The economic realities are such that similar services and supporting facilities cannot be provided. Many governments have a health budget of less than one dollar per head per year, with health receiving low priority in the allocations of the total government budgets. This is traceable to a philosophy of development that has stressed the overriding importance of investment in the physical elements of national growth such as roads, dams, factories, etc. In Lebanon health expenditures during 1961-1970 ranged from 3.1 to 4 per cent of the total budget, far below other sectors. The per capita expenditure in 1970 was 2.68 dollars (U.S.). Myrdal, in his study of problems of development in Asia, maintains that health should not be considered in isolation from other elements in the development process. Planning for health must be integrated into the overall planning for development. Thus it is important for health that agricultural production be increased, education improved, and the masses lifted out of poverty.

In addition to the inadequacy of resources for health services, the problem is aggravated by non-utilization of actual and potential resources. The reasons for underutilization of health services differ from culture to culture but basically it reflects lack of confidence in the local health institutions.

Whereas the onset of fertility ranges from age 10 to the mid-teens, pregnancy becomes safest from a biological point of view around the age of 18 or 20. In ECWA countries the proportion of babies born to teen-age mothers varies, being related to the customary age of marriage. A recent Pan American Health Organization (PAHO) survey of infant deaths in the Americas showed irrefutably that teen-age pregnancy entails heightened risks (Puffer and Serrano 1975). The period of maximum safety lasts for about a decade; risks to mother and child begin to rise when a woman reaches age 30 and they continue to escalate with each passing year.

The actual magnitude of risks involved in bearing a large number of children depends on the family's social and economic circumstances, but in every country and in each social class the risks increase beyond the fourth child. This affects in the most severe manner women of low-income levels who bear over six children. Their babies pay a heavier toll. The latest born are usually hardest hit, sometimes because of discrimination (especially if they are female) in family food distribution, which leads to stunted physical and intellectual growth rates. The ill effects of numerous births on mothers and infants are aggravated when pregnancies occur in quick succession. If dietary and nutritional supplements are not provided, their bodies draw upon their own reserves. For millions of women, the two decades or so of uninterrupted pregnancy and lactation are made harder by demands of agricultural work and housework. The traditional prolongation of pregnancy intervals by breast-feeding is being gradually eroded by subtle socio-cultural change in favour of bottle feeding, with disastrous consequences for mothers and children.

Governments of the region can encourage an optimal reproductive pattern for all families by stressing the health benefits of family planning. Similarly, legislation and education to raise the age of marriage is an effective means of reducing the incidence of early adolescent pregnancies.

Provision of family planning services for all people was the consensus of 136 governments at the World Population Conference in 1974 (United Nations 1975): "...All couples and individuals have the basic right to decide freely and responsibly the number and spacing of their children and to have the information, education and means to do so..." (p. 157).

Family planning services should include more than mere provision of contraceptives. A WHO expert committee has put forward the following objectives of family planning (WHO 1970): (1) to avoid unwanted births; (2) to facilitate wanted births; (3)to regulate intervals between pregnancies; (4) to control the time at which births occur in relation to the ages of the parents; and (5) to determine the number of children in the family.

In addition to these objectives, family planning should include information and education on sexuality and guidance for family life.

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CHAPTER 21. THE IDEA OF COMPENSATION IN INTERNATIONAL MIGRATION

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This paper traces the recent development of the idea of compensation in international migration. It has been said that a discussion arose in Italy at the turn of the century on the costs of bringing up emigrants, and the suggestion was made that these costs should be recuperated from the immigration countries. However, the major country of destination, the United States, received the idea coolly (Höpfner and Huber 1978, p. 35). As it has not yet been possible to throw more light on this particular event, the following account starts at the beginning of the 1970s.

As compensation is a comparatively new and controversial subject with fluid boundaries, readers will bear with me if I do not offer a definition but merely retell the history of its evolution insofar as it is known to me. I am convinced that there have been several political initiatives that have not been publicized but that are worth analyzing as regards their approach and tactics.

The Early Exploration: Taxing the Brain Drain

Towards the end of the 1960s a number of development economists and politicians became concerned over the apparent inability of most Third World countries to catch up with the First World. Simultaneously, the large-scale movement of professional, technical, and kindred workers from the Third to the First World became an international issue. The first to articulate certain links between the two subjects was an Indian involved in the so-called brain drain, Jagdish Bhagwati, Professor of Economics at MIT in the United States. He proposed that a surtax be levied on the income accruing to brain drain categories in developed countries and the receipts paid over to developing countries (Bhagwati 1972). This proposal was subsequently explored by an international private group of distinguished economists and lawyers (Bhagwati and Partington 1976; Bhagwati 1976). The secretariats of international intergovernmental organizations involved in the moves towards the New International Economic Order swiftly approached Professor Bhagwati for background papers (Bhagwati 1976a, pp. 139-160; Bhagwati 1977).

* Project Manager, International Labour Office Migration for Employment Project.

There are now several modifications, permutations, and justifications of the original proposal, which rested largely on moral grounds. The various schemes—some of which were excessively complicated in their economic/econometric derivation—have recently been systematized in simple language by their major proponent (Bhagwati 1978), as follows:

Taxing Migrants

If one assumes that highly-skilled nationals of developing countries who have migrated to developed countries thereby improve their incomes, one can justify taxing them for the benefit of the Third World in several ways.

Compensation for losses to developing countries. "If the case for taxing highly-skilled migrants is to be based on losses inflicted by their migration on 'those left behind' (TLBs), then the case is one for compensation, this to be paid by the migrants themselves for the privilege of being allowed to move internationally in a world which, unlike in the 19th century, has unfortunately learnt to accept immigration restrictions as consistent with human rights. But it is also then a case which needs argumentation on a case-by-case approach for the brain drain phenomenon is not always a brain drain problem..."

Modern migration legitimizes global tax systems. Because contemporary international labour migration is frequently temporary and does not lead to a change in nationality, "it therefore makes sense to extend the net of taxation to such migrants who, by and large, escape their domestic taxes while maintaining their rights as citizens."

Taxing rents. "An economic case for taxing migrants' incomes, in excess of their tax assessments in developed countries of immigration, is founded on the oldest argument for taxation in economic science: the taxation of rents. The stiff immigration restrictions and the substantial differentials in economic returns on skills in developed countries and less developed countries imply that the less developed country professionals who manage to get into developed countries are earning a very substantial rent."

"Of the three rationales produced above for taxing highly-skilled less developed country migrants' incomes (over and above their taxes in developed countries of immigration), only the first is based on the assumption of a loss to TLBs in less developed countries of origin. Moreover, the first two arguments imply that the revenues so raised must be transferred to the less developed countries of origin/nationality whereas, in principle, the last argument (based on rents) can be used to de-link the less developed countries of origin from (their) migrants and the tax revenues on rents implied by migration in an imperfect world might well be recommended for social use as, say, development aid to less developed countries *en bloc*."

Sharing Developed Countries' Tax Revenues

"On the other hand, the taxes related to the brain drain phenomenon may be levied on the developed countries, to be paid out of their general tax revenues. The rationale for such brain-drain-related taxation on developed countries can be provided in two alternative ways: *either* that the developed countries ought to *compensate* the less developed countries for the losses that the brain drain into developed countries imposes on the less developed countries, *or* that the developed countries gain from the brain drain and therefore, regardless of whether there is any loss to the less developed countries, they ought to share these gains (based on the inflow of less developed country nationals) with the less developed countries who need developmental resources."

Special Tax Allowances

Two other tax and quasi-tax proposals were generated by the Bhagwati circle (Oldman and Pomp 1976) and have recently gained international prominence (Pomp and Oldman 1977):

Tax deductions. Individual migrant taxpayers in developed countries could be allowed to deduct from their taxable income the amounts they might wish to contribute to charities in less developed countries. Eligibility for tax-exempting contributions need not be confined to the nationals of developing countries.

Tax credits. "Following the recent U.S. practice of taxpayers being allowed to earmark part of their taxes to finance presidential elections, one might suggest that less developed country immigrants in developed countries be allowed, in the same way, to earmark (up to, say, 10 per cent of their) taxes for routing to a designated UN agency for developmental spending."

Other Migrant-Related Tax Proposals

While Professor Bhagwati was reaping academic credentials from the idea of taxing skilled migrants, the subject had a slow start in political circles. There were, however, some early flutterings. At a 1974 ILO regional conference a representative of the Italian government suggested that "part of the benefit received by immigration countries from migrant workers, such as taxes, should be paid into a special fund to be used for the purpose of transferring work" to the emigration countries (ILO 1974). On another occasion, a representative of the Finnish Ministry of Labour considered that "part of the direct taxes paid in the host country by a migrant worker are (to be) transferred to the country of origin... Since income is more or less related to education, income tax will take into account varying sizes of human capital investments. Obviously, the proportion

of taxes remitted should be higher in countries where direct taxes are comparatively low"[1] (Majava 1974, p. 7).

The Big Push: Compensation on the International Agenda

The issues of taxing brains or compensating migrants' countries of origin were not on the agenda of the 1976 ILO World Employment Conference, but international manpower movements and employment were. During the negotiations on the Programme of Action, several delegates from developing countries wished to refer explicitly to measures of financial compensation by means of an international fund. However, the leading developed countries were strictly against it. The Programme of Action, therefore, merely states (paragraph 43 [i]) that multilateral and bilateral migration agreements should "provide ways of limiting losses in countries of origin, particularly developing countries, which may result from the departure of skilled personnel whose education and training they have provided."

In June of the following year, Crown Prince Hassan bin Talal of the Hashemite Kingdom of Jordan gave the traditional address to the International Labour Conference. In order to do justice to the various dimensions touched upon in his speech, it will be quoted extensively.

Address by Jordan to the 1977 International Labour Conference

> Under the mounting pressure of rising costs of living, (Jordanian) workers were easily lured by lucrative salaries abroad. Unable to resist the temptation, skilled and semi-skilled workers continued to leave the country. This labour drain reversed the traditional picture, and we found ourselves in Jordan in dire need of labour, compared with our previous surplus. This shortage of necessary skills had its impact in turn on our ability to implement our development plans...
> Since the primary resource of my country is the human element... we feel that there is a pressing need for a set of formulae to be elaborated and adopted at a universal level in order to ensure that the terms of trade between capital and labour do not degenerate further in favour of capital. Unless this imbalance in terms of returns is discouraged, the gap between the rich and poor countries is bound to widen further and may, in the foreseeable future, reach intolerable limits.

[1] It might also be mentioned that, in giving further publicity to these two proposals, I suggested a differential surtax on migrants' gross wages to be held in trust in case of return. "Skilled migrants might, for the sake of argument, be levied at a rate of 2 per cent, unskilled ones at 0.5 per cent. This would reflect the different education costs and constitute a disincentive for those whose out-migration is least desirable. Should the migrant return within, say, five years, he would receive the accumulated amount to use as he wished...If he did not return...the funds would revert to the State as a proper compensation for its original expenditure on education and training" (Bohning 1975, p. 275).

> It is hardly necessary for me to emphasize here the obvious fact that labour is at least as important a factor of production as capital. It is becoming increasingly clear to planners around the world that man is the primary development factor and capital occupies a secondary position. The issue is fortified if one looks at the cost incurred in preparing capable human beings and that of accruing capital. In many developing countries, qualified labour is getting to be in chronically short supply. Thus, economic conditions should be, but are not, tipping the exchange rate between labour and capital in favour of labour. The world at large still discriminates between labour and capital exports. The time has come to give labour exports the attention and consideration traditionally accorded to capital transfers. In order to do this, there is a need for an international agreement on the movement of labour whereby proper remuneration and treatment are ensured... What I have just said naturally applies equally to the outflow of highly-skilled manpower. The familiar phenomenon of the brain drain must be harnessed, regulated, and controlled if we are to keep developing countries from becoming anaemic economically, socially and intellectually.
>
> In this overall context, I should also like to propose the establishment of an International Labour Compensatory Facility (ILCF). It could be elaborated along the lines of the Trust Fund for Compensatory Facilities of the International Monetary Fund. The proposed facility would draw its resources principally from labour-importing countries, but in a spirit of solidarity and goodwill, other ILO members may contribute to it. The accumulated resources will be diverted to developing labour-exporting countries in proportion relative to the estimated cost incurred due to the loss of labour...
>
> I would suggest that part of the funds from the proposed International Labour Compensatory Facility be used as soft loans to participating developing countries for the purpose of promoting and financing social projects (ILO 1977, pp. 281-283).

Jordan's Crown Prince Hassan was the first political spokesman of the Third World to raise the issue of compensation squarely. He did not mention taxes on migrants and although he referred to the brain drain, his thinking encompassed ordinary skilled and semi-skilled migrants. He indicated two distinct rationales: (1) the historic cost of education, and (2) the cost incurred due to the loss of indigenous labour, which resulted in delays in the implementation of development projects. By speaking of "discrimination" between capital and labour exports and calling for equal "attention and consideration," he seemed to point the finger at the fact that the flows of labour are an unrequited international resource transfer by comparison with capital flows.

Population and Development

Resolution 192 of the 32nd Session of the UN General Assembly

In December 1977 the UN General Assembly adopted a resolution on the "reverse transfer of technology" (UNCTAD's designation for the drain of brains from Third to First World countries). Its eighth preambular paragraph gave a kind of endorsement to the idea of compensation by "taking note of the *constructive* proposal made by His Royal Highness Crown Prince Hassan bin Talal of Jordan...concerning the establishment of an International Labour Compensatory Facility." Moreover, one operative paragraph requested the Secretary-General of the UN, in co-operation with UNCTAD and ILO, "to undertake an in-depth study of the 'brain drain' problem, taking into account specific proposals made on this subject, including the proposal referred to in the eighth preambular paragraph above"[2] (United Nations General Assembly 1978).

A Yugoslav Initiative

In February 1978 the Yugoslav government addressed an *aide-mémoire* to the government of the Federal Republic of Germany concerning measures for returning migrants and economic assistance for employment creation projects in Yugoslavia. It argues, *inter alia*, as follows:

In the autumn of 1973 the Federal Republic of Germany brought to a halt the close co-operation that had developed on the recruitment of Yugoslav workers for temporary employment in Germany. One has to accept the recruitment stop; but it gave rise to new problems and Yugoslavia therefore expects that future relations will also be co-operative and will be enriched by measures enabling a more rapid increase in employment opportunities in Yugoslavia. The Federal Republic of Germany had greatly benefitted from the engagement of Yugoslav workers, for these workers had significantly contributed to economic and social progress and the increase in material prosperity of the Federal Republic. International labour migration generally favours the recruitment countries. Yugoslavia, too, has derived certain advantages from it. However, a very high price has been paid. The investment of Yugoslav society and of Yugoslav parents in educating and training a citizen until he has reached working age, which costs on average US$11,000, was a burden for Yugoslavia. A great deal of this investment has, without

[2] The report of the Secretary-General prepared in response to this General Assembly Resolution (*The "Brain Drain" Problem: Outflow of Trained Personnel from Developing to Developed Countries* [E/1978/92, 9 June 1978]) makes but a few brief references to compensation, especially in the summary of the ILO submission. There was apparently some dissatisfaction that the lengthy in-depth analysis submitted by UNCTAD was not published separately, for in December 1978 UNCTAD's Committee on Transfer of Technology (see also [d] below), and the UN General Assembly each passed a resolution inviting and requesting, respectively, the Secretary-General "to make available" this study. This was reiterated in two resolutions passed by UNCTAD V and the 65th International Labour Conference in 1978 (see also [f] below).

compensation, benefitted the foreign countries in which Yugoslavs were employed. The family members who stayed behind had, of course, access to the common resources, services, and utilities of society, the cost of which was borne by the Yugoslav workers employed within the country. Moreover, among those going abroad there were many highly trained workers who were employed and who were needed. They had to be replaced by new and less experienced workers. This had negative consequences for the Yugoslav economy and for its position on the international market. For these reasons, any future international co-operation should seek to share the advantages and disadvantages of international labour movements in a more equitable manner.

Among the concrete proposals put forward by the Yugoslav government, the first centres around a fund to be established with the aid of a grant from the Federal Republic of Germany. Particular attention is drawn to German public revenues, which the Yugoslav migrant workers had augmented by their taxes. Such a grant could be earmarked for joint employment-creating projects. The amortization could be directed to a special fund, which could thus be renewed and from which further credits could be granted to new projects, and so on.

It is not clear from the *aide-mémoire* whether the Yugoslav government was aiming at a one-time large-scale grant or several small-scale payments up to the time when there would be no more Yugoslav workers in the Federal Republic. The mention of the average historic cost of education suggests a definite target sum. The arrangement foreseen falls into the category of revenue sharing.

Preliminary discussions between German and Yugoslav authorities that had preceded the *aide-mémoire*, and to which reference is made in it, had left a German interministerial project group on the promotion of migrants' return with the certitude that Yugoslavia wanted "solutions and not models." This group, in a position paper that was not expected to be kept secret, did not and could not make a clear recommendation on the question of granting financial aid.

Stirrings at UNCTAD

Low-level and middle-level conferences of UNCTAD were seized in 1978 with the taxation and compensation questions.

Governmental experts on reverse transfer of technology. In spring 1978, a group of governmental experts met to consider the studies undertaken by or for UNCTAD on the brain drain (among them the Bhagwati and Pomp-Oldman papers cited above). The Representative of Jordan submitted a number of recommendations on behalf of the States Members of the Group of 77 (UNCTAD 1978b). The relevant sections start with the following statement: "The emigration of skilled manpower represents a transfer of productive resources and there is evident need to take systematic account of this in international resource flow accounting. The gains associated with

skill flows between the recipient and source countries should therefore be shared on the basis of reciprocity." The group then urges the developed countries "to institute arrangements whereby the developing countries share in the economic gains accruing to developed countries from skilled migration, by means of revenue-sharing arrangements..." The following rationales are noted:

a. Where developing countries incur disruption and economic difficulties in their economies, there is a cogent case for financial assistance-cum-compensation so that they may adjust to their loss of manpower with greater ease.

b. Where developing countries do not incur any measurable disruption and their comparative advantage is in skill production to export skills abroad, they can legitimately improve their economic returns from such migration through revenue-sharing arrangements; and

c. In so far as there is *prima facie* case for deducing that the developed countries benefit from the inflow of skilled migrants...such benefits...may legitimately be shared through income-tax revenue-sharing arrangements with the developing countries from which these skilled migrants originate.

The position paper of the Group of 77 then refers to the Bhagwati and Pomp-Oldman tax proposals already mentioned, as well as to Jordan's suggestion for an ILCF.

The experts of the industrialized market economy countries were not at all of the same opinion as their colleagues from developing countries (UNCTAD 1978b). They played down the tax proposals and the ILCF and considered that "any compensatory scheme runs the risk of exacerbating rather than mitigating the brain drain problem since it puts a premium on brain drain flows."

As a result, the Agreed Conclusion and Recommendations of the Group of Governmental Experts on Reverse Transfer of Technology (UNCTAD 1978b, pp. 25-28), were devoid of substantive agreement on the tax and compensation issues raised.

Commission on transfer of technology. In December 1978 UNCTAD's next highest body was confronted with the same problems (UNCTAD 1979, pp. 40-48 and 66-67). A "Resolution on the Development Aspects of Reverse Transfer of Technology" was adopted, but no substantial progress was made. The spokesman for the indu trialized market-economy countries explicitly stated that its adoption by consensus should not lead to the assumption that the position of his group had changed insofar as compensation for the brain drain was concerned.

A Broader Perspective

UNCTAD's extensive concern with the migration of "brains" has on several occasions been questioned by industrialized market-economy countries. The delimitation of its competence within the UN system is difficult: how is one to validly separate the flows of highly qualified people

or of trained personnel from the flows of skilled, or even unskilled, workers? Moreover, UNCTAD has—for very understandable reasons—shied away from posing the compensation issue in migration between developing countries. But one may ask, Why should brain drain categories be singled out artificially? And, Why should rich developing immigration countries be spared compensation? Why be concerned with only a small minority of contemporary migration movements?[3] (Böhning 1979; UNCTAD 1978a, p. 4).

Since my first writing on compensation, I have rejected the Bhagwati and UNCTAD-type limitations as being incompatible with consistent analysis and a universalistic approach (Böhning 1977). There is no need here to go into details, for my considerations have been developed subsequently in a comprehensive framework (Böhning 1978) and are reflected in the conclusions of the 1978 ECWA Seminar on Population and Development.[4] I am prepared to admit that these apply with greater force to industrial nation states than they do to others. A summary, with some inevitable simplification, goes as follows.

Nation states generally admit four distinct types of foreign migrants (apart from passing crewmen, visiting businessmen, newsmen, or tourists):

1. Refugees, i.e., persons who leave their own country for another because of a well-founded fear of persecution for reasons of race, religion, nationality, political association or social grouping;

2. Economically active persons, for the purpose of employment;

3. A residual category such as pilgrims, ministers of religion, diplomatic and assimilated personnel, students, volunteers sponsored publicly or by charity, retired or other persons living entirely on their own means; and

4. A derivative category, namely the parents, spouses, siblings and children of some or all of the preceding three groups.

Immigration on demographic grounds is a fifth and partly overlapping category; it is the exception rather than the rule and can be neglected for all practical purposes.

Compensation can conceivably be related only to the second category. Due to the fact that the world is organized according to the principles of nation states, international economic migration movements are in essence determined by the countries that wish to admit foreigners, or that tolerate their presence, rather than by the countries of out-migration. Furthermore,

[3] There was a stock of at least 20 million foreign or migrant workers in the mid-1970s. According to UNCTAD's own estimates, which freely mix gross flows and stocks, one can arrive at a "rough global total for developing-to-developed country skill flows of about 420,000...as at the early or mid-1970s."

[4] The conclusions of the 1978 ECWA Seminar contain the following paragraph: "To take into account, at the Arab level, co-ordination and complementarity in the utilization of financial and human resources and to work for the establishment of a fair system to compensate the Arab countries [that are] exporters of manpower for the loss of their skilled labour and the expense they incurred in their training and to utilize these compensations in social and economic development projects which have wide public benefits" (doc. E/ECWA/POP/WG.12/2, 13 June 1979, p. 2).

the in-migration of economically active foreigners is governed, not by altruistic or humanitarian considerations, but by the economic demand for them. A nation state considers opening its borders if land or capital are not utilized to their potential. Foreigners who are explicitly admitted, or implicitly tolerated, for the purpose of employment, help to provide real goods as well as value added. The value of the migrants' activity comprises their income plus the income accruing to the various co-operant factors of production—land, other labour, and capital. It follows that the in-migration country's national product rises in terms of the supply of both real goods and money. The income received by migrants stays to a large extent in the country of employment. A portion of it is sometimes remitted to dependants in the countries of origin. By and large, however, the value added deriving from migrant labour is internalized in the migrant-receiving country. As a consequence, its economic and political agents grow stronger and more powerful vis-à-vis their competitors. For the country of origin, on the other hand, the income and production gains deriving from the outflow of its human resources are neither immediate nor assured (which does not mean, as is sometimes maintained, that they are on balance negligible or negative). Even in the long run they cannot match in size the gains reaped by the country of employment, let alone enable the country of origin to catch up. It therefore follows that international labour migration contributes to the widening gap between poor and rich countries in terms of the provision of goods, income, and power. And, in principle, it does so regardless of the skill level of the migrant and the expense that has gone into his education.

There is no room to go into the question of distribution. Some sections, such as private employers of immigrant workers, may well profit more than others. Whether or not competing national workers suffer a relative or absolute setback in terms of the supply of goods and/or income, in the short term or the long term, is too complicated a question to be validly examined in a few pages. The conceptual framework used here assigns the part of a migrant's income that is spent and saved in the country of employment to that country, and the part that is remitted to his country of citizenship (or of origin or last residence) to the latter. This is in accordance with both national accounting practise and reality. The fact that a migrant-sending country has thousands of citizens earning incomes abroad does not make it richer or better off by the amount of remuneration received by these migrants.

International economic migration is an inherently inequitable resource transfer. In my view, equity or solidarity demands that the migrant's country of nationality be compensated by the advancing country of employment on a regular and contractual basis rather than on the basis of charity. I would suggest establishing the criteria for liability for compensation by reference to a certain level of economic well-being. One could, for example, exempt countries of employment if their per capita income is lower than the average for developed market-economy countries.

The 1979 Conferences of UNCTAD, ILO, and UNCSTD

UNCTAD V. In May 1979 UNCTAD V considered a Resolution on Development Aspects of the Reverse Transfer of Technology, which was eventually adopted without dissent. Apart from restating pertinent sections of earlier UNCTAD documents, the resolution calls on "the international community" to "consider examining, in the light of the in-depth study by the Secretary-General of the United Nations, possible arrangements whereby developing countries experiencing large-scale outflows of their skilled professionals which cause economic disruptions could secure *assistance* in dealing with adjustment problems arising therefrom" (para. 9.D. [i], my emphasis).

Two points are worth noting. First, the word "compensation," which drew fire from the First World, had to be replaced by the word "assistance." Opponents of the idea of compensation may now say that compensation is one thing, and is not acceptable, while assistance is another, and is acceptable. Proponents of compensation will naturally contest this. It is also possible to argue that the term "compensation" was somewhat ambiguous and undefined from the start; that it nevertheless clearly meant financial assistance measures and that the position paper of the Group of 77 submitted to the 1978 UNCTAD Group of Governmental Experts already spoke of "financial assistance-cum-compensation" as though it was one and the same notion (see quote above).

Second, whatever arrangement might be discussed, its justification would have to be predicated on the existence of brain-drain-inflicted economic disruption in the developing emigration country, rather than on any gains of the migrant-receiving country.

The follow-up to the World Employment Conference. In June 1979, the 65th Session of the International Labour Conference[5] had before it a draft resolution concerning follow-up to the World Employment Conference which mentioned compensation several times but where the word was finally re-replaced by the word "assistance" (UN, ILO 1979b). The resolution calls on states "to conclude multilateral and bilateral agreements for solving the problems of migrant workers in host and home countries. These could provide, where appropriate, for...possible schemes to *assist* developing countries especially in the area of training, welfare services, taxation and re-employment" (para. II.C [d], my emphasis). It also suggests that the ILO promote and, on request, assist in consultations or negotiations between emigration and immigration countries with a view to "ensuring that the interests of both sending and receiving countries are safeguarded and, in particular, that migration does not deprive countries of origin of scarce labour required for their development and, whenever appropriate, undertaking *assistance* and co-operation schemes in such areas as training, re-

[5] To which a report had been submitted that made several innocuous references to compensation (ILO 1979a, pp. 91-97, 116).

employment, taxation, and welfare services" (para. III. Migration [a] [iii], my emphasis). Finally, it cites the paragraph of the UNCTAD V resolution quoted above and asks the ILO to co-operate with UNCTAD in examining these matters.

During the preparation of the UN Conference on Science and Technology for Development (UNCSTD) draft programme of action, an international compensation fund under UN auspices was proposed. The August 1979 Vienna conference adopted the principle of establishing a financing system for science and technology for development sometime in the 1980s. It was agreed that contributions to the system could include "resources that may accrue from the proposed 'international labour compensatory facility' related to the reverse transfer of technology" (United Nations 1979, p. 10).

What Future?

Is compensation dead before it has seen the light of day? There is no reason to be unduly pessimistic. If but a single government of an immigration country were moved by the call for solidarity, the technical problems of giving life to compensation would fade into insignificance. Under certain conditions, one can also envisage that emigration countries supplying significant numbers of people to one or several immigration countries might join hands in order to make themselves heard (Stahl and Böhning 1979).

I should like to add two points which I consider crucial for the future of compensation. First, compensation should be freely negotiated, in a spirit of solidarity rather than of charity. It should give rise to a contractual, long-term and binding commitment; because only in this way would it afford the weaker emigration country the opportunity to utilize the additional resources effectively.

Second, one should not blur the two issues of national and international distributive justice. To extend the income tax system to one's citizens working abroad is perfectly legitimate and desirable, although one should make sure that this does not lead to onerous double taxation. Tax allowances aiming to support poor countries are also worth wishing for. But neither has anything to do with international solidarity or intersocietal equity. Taxing migrants is no substitute for international revenue-sharing.

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CHAPTER 22. LEGAL ASPECTS OF INTRA-REGIONAL MIGRATION: PROPOSALS FOR ACTION*

*George Dib***

The study of migration laws is vastly complicated by two factors: the scarcity of studies on the subject, and the diversity of existing legislation. Few research projects have been undertaken on the legal aspects of migration. For instance, the brain drain has not been dealt with at all from the legal point of view, in contrast to the considerable amount of attention that has been paid to the economic, social, cultural, and other non-legal aspects of the issue. The study of international migration laws is also complicated by the diversity of legislation pertaining to the circumstances and conditions of migration. A study of migration laws requires familiarity with such different factors as labour regulations, the commercial code, the various insurance laws, the education law, the laws governing political asylum and refugees from disaster areas, and the laws pertaining to residence, naturalization, and other aspects of everyday life.

One way to broach the subject of migration laws is to divide migration into four areas of study: (1) the migrant's departure from the home country; (2) the migrant's entry into the country of destination; (3) the migrant's residence in the country of immigration and his departure from that country; and (4) the migrant's return to his home country.

This paper will concentrate on a person's legal right to engage in each of these four actions. It is divided into two parts. The first deals with the right of every Arab citizen to leave his native country and return to it at a later date. The second part deals with the right of every Arab citizen to enter, reside in, and depart from Arab countries other than his own. Questions concerning the employment of immigrants are not discussed due to space limitations, though they are of tantamount importance. The various laws regulating migration and naturalization in several Arab countries are discussed in much greater detail in Dib (1978 and 1979).

The Right to Leave and Return to One's Native Country

In this part of the paper the thesis is presented that the resort to laws or directives to prevent or limit the freedom of individuals to leave their native

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country yields little or no result. Thus countries facing the problem of emigration should look elsewhere for a solution. The alternative proposed is the enactment of bilateral or multilateral agreements between the sending and the receiving countries.

This thesis is arrived at in two steps. First, the constitutions of all Arab countries included in this study and of the laws relevant to the issuance of travel documents, are analyzed to determine the exact status of the legal right of a citizen to leave his country of birth. Second, the application of this right is studied in terms of the situation prevailing in 5 Arab countries facing a problem of emigration—the Syrian Arab Republic, Iraq, Democratic Yemen, Somalia and Sudan.

The Constitutions and Laws of Arab Countries

The right of the individual to leave his country figures in the constitutions of only three Arab countries—Egypt, Iraq and Democratic Yemen. These constitutions do not, however, guarantee this right; they merely mention it or call for it to be respected in accordance with the laws in force. The relevant text in the Egyptian constitution serves to illustrate this point. Article 52 reads:

> Citizens shall have the right to emigrate permanently or temporarily. This right, together with the procedures and conditions for emigration and leaving the country, shall be regulated by law.

With the exception of the Lebanese constitution,[1] the constitutions of all Arab countries[2] contain nearly identical texts referring to the right of the citizen not to be expelled from or prevented from returning to his country. The text of Article 28 of the constitution of Kuwait is representative:[3] "No Kuwaiti may be expelled from or prevented from returning to Kuwait."

Does the reference to the right of the citizen to leave in the three constitutions mentioned above make them different from the constitutions of the remaining Arab countries? This is the case only if these countries' laws on the issuing of travel documents differ from the laws in countries whose constitutions do not refer to this right. Assuming, for the present, that this is the case,

[1] Lebanon's constitution, promulgated in 1926, differs in some respects from the constitutions of other Arab states that were promulgated after World War II and were influenced—like most constitutions throughout the world—by the Charter of the United Nations and the Universal Declaration of Human Rights.

[2] These countries are Bahrain, Jordan, Kuwait, Qatar, Sudan, the Syrian Arab Republic, the United Arab Emirates and Yemen. In Saudi Arabia and Oman, the Koran and Islamic jurisprudence take the place of a constitution. Somalia's constitution was put to referendum in August 1979, and has yet to be translated from the Somali language.

[3] In the original study in Arabic the relevant texts in all the Arab constitutions were quoted.

why then is the right of the individual to leave his country not guaranteed in the constitutions of all Arab states?

This phenomenon can be explained in two ways. Either these countries consider that the right of their nationals to leave their country is taken for granted and, consequently, see no need to guarantee this right in the constitution; or these states regard a written guarantee of this right in the constitution as a threat to the state's national security in its broad sense, i.e., from the political, economic, cultural and social standpoint, bearing in mind that we assume in all cases that the citizen has not committed a crime or a felony and that he has always been law-abiding.

Which of these two interpretations is more reasonable?

Obviously, the absence of constitutional provisions granting the citizen the right to leave his country does not necessarily mean that this right is denied. All the Arab states covered in this study are members of the United Nations; as such, they are parties to the Universal Declaration of Human Rights, and are morally bound to grant this right to their citizens. Furthermore, none of these countries has legal provisions forbidding its citizens to leave the country under normal circumstances. The right of citizens to leave these countries can thus be taken for granted on the basis of the legal principle that anything not prohibited by the law is permissible.

All of this means that, in normal circumstances and under normal conditions, the citizen has a right to leave his country despite the absence of a constitutional provision to this effect. In exceptional cases and under unusual circumstances, the state may impose restrictions that prevent its nationals from leaving the country on the grounds that their departure would constitute a threat to national security, public order, public morals or the freedom and rights of others. In order to leave their country, citizens must obtain a passport or other travel documents. If a political regime places wider restrictions on the right of its nationals to leave the country, even in normal circumstances, the regime has transformed this right into a privilege that it may grant or refuse as it wishes by granting or refusing to issue passports or travel documents. The question thus arises as to whether the laws of the Arab countries restrict the power of political regimes to extensively interpret concepts like "national security," "public order" and "public morality," and thus legally bind these regimes to issue travel documents to citizens under certain conditions.

The answer to this question is that in all the Arab countries,[4] the laws relevant to the issuing of travel documents give discretionary power to the Minister of the Interior, or indirectly to one of his subordinates (the director of the *Sûreté Générale*, or the director of the Department of Immigration and Passports), to refuse travel documents to a citizen or to prevent him from

[4] Not all the texts are quoted in the original study in Arabic. The writer could not obtain these laws from all the Arab countries. However, he was able to establish this fact through direct personal contacts with the authorities responsible. In any case, the laws quoted above do confirm this observation.

leaving the country if he already has a valid travelling document; in Iraq, for "interests of justice or security or for any other exceptional reason;"[5] in the United Arab Emirates and Kuwait, for "reasons to be determined by the Minister of the Interior alone;"[6] in Saudi Arabia, because the citizen's departure would be "undesirable;"[7] and in Lebanon, for reason of "national security."[8]

In view of these constitutional and legal provisions concerning the right of a citizen to leave his country, it can be said that this right is revocable and may vary depending on time and place, since a political regime may often change its attitude, sometimes regarding it as the citizen's right and sometimes as a privilege granted to him.

The question that arises is whether there is any relationship between the legal status of the right of a citizen to leave his country, and the migration problem in the Arab countries. Furthermore, if such a relationship does exist, how important is it?

The following information on the actual situation in some Arab countries answers both questions.

Two initial observations are, however, necessary. First, it is not the aim of this paper to throw doubt on the legality of the steps taken by some Arab countries—in particular, the Syrian Arab Republic, Iraq, Democratic Yemen, Somalia and Sudan—to deal with the problem of emigration. On the contrary, as the above discussion shows, these steps are perfectly in accordance with the laws of these countries. Second, the following information is taken from two sources. Where the source is a study made in the field concerned, the source is noted; where no reference is made to the source, the writer has obtained the information through his personal contacts with the authorities and by accompanying these authorities in their work during visits to the Syrian Arab Republic and Iraq in the latter half of January 1979 and to Democratic Yemen, Somalia and Sudan in the first half of August 1979.

The Actual Situation

Officials of the departments of immigration and passports in the Syrian Arab Republic and Iraq work according to the instructions issued by the political regime in each country. These instructions indicate that citizens holding a university degree, particularly medical doctors, engineers, pharmacists and the like, should not be issued travel documents allowing them to leave the country except in cases of extreme necessity. These instructions

[5] Article 6 of Law No. 55 of 1955.

[6] Article 41 of Law No. 17 of 1972 (U.A.E.) and Article 19 of Law No. 11 of 1962 (Kuwait).

[7] Article 5 of *nizam* No. 17/3/2 of 19/1/1358 A.H.

[8] Law of 9 May 1968 (Official Gazette No. 38).

are justified on the grounds that these people's services are needed for the society's well-being,[9] and on the basis of the philosophy held by the party in power in both countries, that it is every citizen's duty to contribute to the building of a just socialist society. This philosophy is clearly stated in the preamble of Iraq's Law No. 154 of 1974 relative to the sponsorship of holders of university degrees by the state:

> One of the aims of the revolution of 17-30 July 1968 is to stir a cultural and scientific awakening for the purpose of building the material as well as the mental basis of a socialist society. Because this can be achieved only through the collective efforts of holders of university degrees, the educated, scientists, etc...

But despite these directives, the educated and scientists continue to flow out of the Syrian Arab Republic and Iraq. How does this happen? Table 2 of Dr. Antoine Zahlan's study on "The Arab Brain Drain" (chapter 12 above), gives figures for immigration to the United States from Arab countries during fiscal year 1977. Some of these figures are reproduced in table 1.

TABLE 1 IMMIGRANTS ADMITTED TO THE UNITED STATES IN FISCAL YEAR 1977 BY COUNTRY OF BIRTH AND LAST RESIDENCE

Country	Birth	Last residence
Democratic Yemen	48	26
Iraq	2,811	634
Lebanon	5,685	5,498
Syrian Arab Republic	1,676	1,170
Yemen	376	351

We assume that 5 per cent of these immigrants were not nationals of the state they were born in.

As can be seen from table 1, in the cases of Iraq and the Syrian Arab Republic, many more people emigrated to the United States via a third country than directly from their country of birth. This difference is particularly marked

[9] Article 29 of the Universal Declaration of Human Rights places a moral obligation on everyone to remain in his community "in which alone the full development of his personality is possible," and "in the exercise of his rights and freedoms, everyone shall be subject only to such limitations as are determined by law solely for the purpose of securing due recognition and respect for the rights and freedoms of others and of meeting the just requirements of...the general welfare."

in the case of Iraq. In the case of Lebanon, which is known to follow a liberal emigration policy, the gap between those who emigrated from Lebanon and those who emigrated from a third country is so narrow as to be almost negligible.

The political regime in Democratic Yemen follows a strict policy against allowing its citizens to emigrate, while Yemen is more permissive. It can be seen in the above table that in 1977 almost half of the immigrants to the United States who had been born in Democratic Yemen migrated from a third country. In contrast, over 90 per cent of the immigrants born in Yemen migrated directly from their own country.

This suggests that no matter how strict the law, citizens can still find ways to circumvent it and exercise their right to emigrate by doing so from a country other than their own.

One comes to the same conclusion if one turns to Sudan and Somalia, where the problem of emigration is intense. In these two countries, since early 1976, officials in the Department of Immigration and Passports have been instructed by the authorities not to allow skilled labourers and holders of degrees of higher education to emigrate. Yet emigration from these two countries continues.

With respect to Somalia, there are no figures to show the large number of emigrants in the last four years. But this fact can be easily established by observations in the field. Such were the findings of the Employment Advisory Mission sent by the International Labour Office in 1977 to study an employment development strategy for Somalia. In its report to the Government of Somalia the Mission wrote (pp. 219-220):

> One of the recent phenomena which will tend to worsen the supply position of skilled manpower in the country, is migration. We have not been able to get the actual figures, but it is said that a large number of artisans and middle-level manpower have recently been going to the Middle East countries, where wages are comparatively high. From the country's point of view, particularly when its own development is suffering because of the lack of skilled manpower, the skill drain must be viewed seriously. We understand that the government is aware of the problem and is taking measures to reduce the drain. We support this attitude and stress that the measures should be strengthened to ensure that the country is not denuded of the skills which are critically needed for its development.

Figures on emigration from Sudan are available, and show it flowing unchecked. In 1975, 45,400 people emigrated (Birks and Sinclair 1978); in 1976 the number quadrupled, reaching 229,000 (Aisha 1978). The Government Employment Bureau put the number of emigrants at 280,000 in 1977 and added that the vast majority had left on an "unofficial" basis, meaning through personal work contracts. According to one study (Aisha 1978), those who left unofficially made up 60 per cent of the total.

It is often said that remittances by migrants advance the development of countries like Sudan and Somalia. This is partially but not wholly true,

because remittances have negative effects as well. One of these is that a large portion of remittances is spent on consumer goods. Here one cannot help but point out that the laws related to residence of aliens in the Gulf states that attract most of the region's migrant labour, encourage the spending of remittances on consumer goods (these laws are cited in the next section). The residence laws of all these states give discretionary power to the Minister of the Interior to refuse or grant residence to the members of an immigrant's family; in the U.A.E. such residence is expressly prohibited. Such provisions lead to the separation of families and their division into two units: a producing unit residing in the host country, and a consuming unit (or one should say consuming units) residing in the sending country. As a result, much of remittances is spent on food, housing, clothing and education, in addition to luxury goods, with an attendant increase in inflation. Moreover, because wages are high in the receiving country, more often than not the sending country is obliged to increase wages for those who do not leave in an effort to keep them at home. This also adds to inflation in the sending country.

It is in the light of these facts that one can truly appreciate the dimensions of the problem of emigration from countries like Sudan and Somalia. No wonder, then, that these countries have resorted—however unsuccessfully—to directives restricting the right of citizens to leave their country.

Why have these directives proved ineffective?

The authorities in Sudan and Somalia answer this question by saying that many emigrants obtain their travel documents under the pretext that they are going on pilgrimage to Mecca or for *Manasik al-Omrah*, another duty that every Moslem hopes to perform once in his lifetime. The authorities in both countries have tried to deal with this subterfuge by issuing travel documents valid for only a short time. But when thousands of Somalis gathered at the Somali Embassy in Saudi Arabia demanding an extension of their travel documents, the Somali government was forced to instruct its embassy to comply. The Sudanese, on the other hand, return to Sudan after performing their religious duty carrying with them contracts with Saudi establishments or individuals for work in Saudi Arabia. On the basis of these contracts, the Sudanese government is obliged to issue new travel documents valid for a longer period of time.

As the above instances amply illustrate, the enactment of laws or the issuing of directives to prevent or restrict citizens' exercising their right to leave their country, does not produce the intended result. Countries that face an emigration problem should thus look elsewhere for a solution. One such solution could lie in the conclusion of bilateral or multilateral agreements between sending and receiving countries. The Arab countries recognized the value of such agreements when, in Bucharest in 1974, they approved the World Population Plan of Action, Article 62 of which reads as follows:

> Countries affected by significant numbers of migrant workers are urged, if they have not yet done so, to conclude bilateral or multilateral agreements which would regulate migration, protect and assist

migrant workers, and protect the interests of the countries concerned. The International Labour Organisation should promote concerted action in the field of protection of migrant workers, and the United Nations Commission of Human Rights should help, as appropriate, to ensure that the fundamental rights of migrants are safeguarded.

The Right of Arab Citizens to Enter, Reside In, and Leave Arab Countries Other than Their Own

Entry

In the Syrian Arab Republic and Iraq, the laws regulating entry, residence and departure give full freedom of movement to all citizens of Arab states. There is, however, a slight difference between the two laws, as can be seen from the following texts.

Legislative decree (law) No. 29 of 15 January 1970, which regulates the entry, residence and departure of aliens in the Syrian Arab Republic, excludes all Arabs from the category of aliens. Article 1 states:

> For the purpose of this legislative decree, an alien is defined as anyone who is not a citizen of the Syrian Arab Republic or any other Arab country.

As the authority responsible for implementing this law, the Minister of the Interior issued Order No. 270/N of 20 May 1970, outlining the principles for its enforcement. According to this order:

> Citizens of all Arab states...shall be exempted from entry and transit visas, residence permits, exit visas, passports and attendant fees... These exemptions shall not be restricted by considerations of reciprocity...

While the corresponding Iraqi law does not exclude Arab citizens from the category of aliens, it considers Arab citizens as aliens exempt from the provisions on entry, residence and departure. Thus, Article 1, paragraph 5 of Law No. 118 of 1978 defines an alien as "anyone who does not hold Iraqi citizenship," and Article 2 of the same law stipulates that "Arab citizens are exempt from the provisions of this law."

The remaining Arab countries do place conditions on the entry of citizens from other Arab states. These conditions can be summed up generally as follows: (1) entry must be made through a police station, i.e., airport, seaport, or police station at land border entry points; (2) the alien must carry a valid passport or other travel documents required by law; (3) these travel documents must be stamped with a visa issued by the proper authorities; and (4) aliens applying for entry in order to work must obtain a work permit in advance from the proper authorities.

However, all these countries have enacted laws exempting citizens of all or some Arab states from some of these conditions. In Lebanon, for example, the law of 29 May 1953 and the decree of 8 July 1956 exempted all Arab nationals from the need to obtain an entry visa, and the law of 10

November 1956 exempted Jordanian nationals from carrying passports, making an identity card sufficient for entry.[10]

Residence Permits and Work Permits

Aliens who wish to reside in Lebanon must obtain either a temporary residence permit, valid for one year subject to renewal, or a permanent residence permit, valid for 3 years subject to renewal (law of 10 July 1962). Aliens who wish to reside in Jordan must obtain a residence permit good for one year subject to renewal; after 10 years, the alien may obtain a residence permit good for 5 years subject to renewal (Law No. 24 of 1973). Residence permits are valid for one year, subject to renewal, in the United Arab Emirates (Law No. 6 of 1973), Saudi Arabia (*nizam* No. 17/3/35/1373 of 11 Ramadan 1371 A.H.), Qatar (Law No. 3 of 1963 as amended by Law No. 8 of 1978) and Egypt (Law No. 89 of 1960). In Egypt, however, an alien who obtains a temporary residence permit and renews it every year for 5 years becomes entitled to an ordinary residence permit good for 5 years, after which he becomes entitled to a special resident permit valid for 10 years subject to renewal. Only in Kuwait is the residence permit valid for 5 years, again, subject to renewal (Amiri Decree No. 17 of 1959 as amended by Law No. 1 of 1963).

In all the Gulf states, an alien is not entitled to a residence permit unless he first obtains a work permit. In the Syrian Arab Republic and Iraq neither is required of Arab citizens. In the rest of the Arab countries, obtaining a residence permit is not dependent upon obtaining a work permit, it being assumed that the alien does not want to work. The Minister of the Interior may ask the alien to show his source of income, or may even ask the alien for a financial guarantee.

Departure, Deportation and Expulsion

First of all, it is important to distinguish between departure, deportation and expulsion.

Departure refers to an alien's leaving the host country of his own will. Lebanon is the only Arab country in which an alien who has obtained a temporary residence permit for one year (or a permanent one for 3 years) is free to leave and return as long as his residence permit is valid. In all other Arab countries (except the Syrian Arab Republic and Iraq, as was stated earlier), an alien wishing to leave the host country must obtain authorization from the authorities concerned, and his absence cannot exceed 6 months except for reasons of extreme necessity acceptable to the Minister of the Interior; for example, to receive medical treatment, to perform a service for his country, or to pursue his education.

[10] Because of the uncertain conditions in the country, these legal provisions were suspended in April 1978. Since then, all Arabs (and other foreign nationals), except Syrians, are required to carry valid passports and to obtain visas in order to enter Lebanon.

When the authorities order an alien to leave because of legal defects obtaining in his papers, this is called deportation. The alien retains his right to return as soon as he puts his papers in order. For example, if the alien's passport expires and he fails to renew it, he may be deported, but as soon as he renews his passport, he is allowed to return.

An alien who is expelled, on the other hand, does not retain his right to return, and may do so only with the special permission of the Minister of the Interior.

An alien may be expelled for one of the following reasons: (1) when a court orders his expulsion as part of a judgment against him; (2) when the alien has no apparent source of livelihood; or (3) when the Minister of the Interior judges that the alien's expulsion is required by the public interest, public security or public morals.

It must be emphasized that in all Arab countries the Minister of the Interior enjoys by law discretionary power to judge by himself whether an alien has become a threat to the public interest, public security or public morals. In practice, these three concepts mean that the Minister of the Interior may expel any alien by a simple administrative decree and "with no need to show cause." There is thus no authority to which an alien can appeal, except the Minister himself.

As a corollary to this power, the Minister of the Interior is also given discretionary power to cancel the residence permit of an alien, again "with no need to show cause," even if the permit is still valid. To give two examples, Article 33 of Saudi Arabia's residence law (*nizam* No. 17/3/35/1373 of 11 Ramadan 1371 A.H.) stipulates:

> The Ministry of the Interior may withdraw from any alien his right to reside and his residence permit and may order him to leave the country at any time the Ministry so desires, without showing cause.

And Article 19 of the residence law in Jordan (Law No. 24 of 1973) states:

> The Minister of the Interior may...annul a residence permit granted to an alien and may order him to leave the country, without showing cause.

Final Remarks

It is evident from the foregoing that there is a need to bring some uniformity into the right of every Arab citizen to enter, reside in and depart from Arab countries other than his own. It is submitted that such uniformity cannot be less than what already exists in two Arab countries, the Syrian Arab Republic and Iraq: namely, full freedom of movement of Arab citizens in Arab countries, particularly since all these countries (with the exception of Lebanon, because its constitution was promulgated in 1926), have crowned their constitutions with a declaration that the Arabs form one nation and that their people are a part of the Arab nation, a declaration that implies recognition of the right of all Arabs to move freely in their own land.

Moreover, the Arab states have already given explicit recognition to this principle by endorsing, on 3 June 1957, the Agreement on Economic Unity among the members of the Arab League, Article 1 of which reads:

> Full economic unity shall be established among the members of the Arab League, which shall, in particular, guarantee to these states and their citizens, on an equal basis, freedom of movement of persons and capital...and freedom of residence, work and employment.

However—so as not to be accused of putting forward a utopian proposal for action—some suggestions can be made to make progress in this direction.

A single passport cover, uniform in shpae, colour and writing, should be established for all Arab countries while the inside should contain the particulars of every country: in other words, the passport currently in use by individual countries should be enclosed in a standard cover for all Arab countries. The Arab countries should establish the right of every Arab citizen to reside in an Arab country other than his own for a period of not less than 5 years, subject to renewal, as is the case in Kuwait.

Residence permit and work permit requirements should be separated, and, as is the case in Lebanon, departure should not be subject to previous authorization. Priority in employment should be given to Arab workers, after the nationals of the country concerned. This is the case in Jordan and all the Gulf states. Migrants should be given a legally binding right to be accompanied by members of their family if they so desire. Finally, in cases of expulsion, the Minister of the Interior should be legally bound to show cause, and expulsion should be effected according to due process of law. This would enable the alien to resort to a court of law to defend himself against any charge that might lead to his expulsion.

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